Fishery Management Report No. 17-60

Annual Management Report for the 2016/2017 Southeast Alaska and Yakutat Tanner Crab Fisheries

By

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and

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

Symbols and Abbreviations

The following symbols and abbreviations, and others approved for the Système International d'Unités (SI), are used without definition in the following reports by the Divisions of Sport Fish and of Commercial Fisheries: Fishery Manuscripts, Fishery Data Series Reports, Fishery Management Reports, and Special Publications. All others, including deviations from definitions listed below, are noted in the text at first mention, as well as in the titles or footnotes of tables, and in figure or figure captions.

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. 17-60

ANNUAL MANAGEMENT REPORT FOR THE 2016/2017 SOUTHEAST ALASKA AND YAKUTAT TANNER CRAB FISHERIES

by

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ABSTRACT

This report reviews the commercial fishery for Tanner crab in Region I, which includes Registration Area A – Southeast Alaska and Registration Area D – Yakutat.

Tanner crab harvests in Region I totaled 993,614 lb valued at $2.68 million during the last completed season. The average dock price per pound for Tanner crab during the 2016/2017 season was $3.00.

Most of the shellfish fisheries in Region I are fully developed. Tanner crab stocks in Southeast Alaska are assessed in an annual Tanner crab pot survey, and in an annual red king crab pot survey. There have never been stock assessment surveys for Yakutat Tanner crab stocks. Yakutat stocks of Tanner crab have been designated as collapsed and recovering. The Yakutat Tanner crab fishery will remain closed until signs of recovery are apparent, and until a management plan and stock assessment plans are developed to provide sustainable harvest.

The ability of the department to manage for sustained yields varies among the fisheries due to different levels of stock assessment program development and management plans. Southeast Tanner crab has a developing stock assessment program. Over the past decade, Tanner crab stock analyses have changed as survey methods have changed and the quantity and quality of data have improved. Dockside sampling and skipper interviews are routinely conducted in Southeast Alaska.

At the January 2009 Board of Fisheries meeting on Southeast Shellfish, the board passed an amended proposal from industry that outlined a Tanner crab harvest strategy for Southeast Alaska [5 AAC 35.113]. Under the current Tanner crab harvest strategy, the commercial Tanner crab season length is determined by the number of registered pots at the start of the fishery and the overall mature male abundance estimate. There is also a mature male abundance threshold of 2.3 million lb built into the harvest strategy.

Key words: Tanner crab, *Chionoecetes bairdi*, Southeast Alaska, Yakutat, Fisheries management, Crab, Invertebrate fisheries, Region I, Harvest statistics

CHAPTER 1: SOUTHEAST ALASKA TANNER CRAB FISHERY

INTRODUCTION

LIFE HISTORY

Tanner crab, *Chionoecetes bairdi*, embryos are hatched in late winter through early summer. Larvae are suspended in the water column for approximately two months through three stages of molts and settle as megalopae with a 6 to 7 mm carapace width (CW). This stage can last from one month to a year. The megalopae migrate to the ocean floor where they molt into their first instar around 3.5 mm CW. The females are estimated to complete 12 instars in about five years before they terminally molt to maturity and males are estimated to complete as many as 18 instars before they molt to maturity at six years (Donaldson et al. 1981).

The pubescent (first year) mating females terminally molt to maturity and mate with smaller males in shallow water from January to May. Females that have reproduced once (primiparous) and more than once (multiparous), mate in deeper water with larger males from April to May. The multiparous females form mating aggregations, which large males migrate towards (Stevens et al. 1994).

Male Tanner crab become reproductively mature at a size of 80 mm CW (Paul 1992) but the size of functional reproductive maturity is probably closer to 100 mm CW (Stone 1999, Stone et al. 2003). The size at which 50% of the males are morphometrically mature or large clawed (L_{50}) in Southeast Alaska is 138 mm. More recently, Tamone et al. (2007) provided evidence that these large males were terminal molts, indicating final growth once the males become large clawed. It is important for large clawed males to be present in the population because it is likely the quality of sperm reserves in small males is reduced. Studies on snow crab, *Chionoecetes opilio*, suggest that a disproportionate relative abundance of small to large males can cause variability in primiparous female sperm reserves, indicating a reduction in large males may decrease the quality of the sperm reserves rather than the number of females not receiving sperm (Rondeau and Sainte-Marie 2001; Sainte-Marie et al. 2002).

DISTRIBUTION

Tanner crab are a widely distributed brachyuran (true) crab that inhabits temperate and subarctic waters of the eastern Pacific Ocean from northern California to the Bering Sea. In Southeast Alaska, it is likely the Tanner crab stocks are composed of several distinct populations within limited geographic areas where most settled crab make localized movements. For example, the entrance into Glacier Bay is composed mostly of bedrock and it is considered a natural barrier to crab in their habitat (Taggart et al. 2008). Radiotagged male Tanner crab made large movements within Glacier Bay, but their general movements were localized (Taggart et al. 2008). Other tagging studies have revealed movements that are more restricted in male Tanner crab. In the Kodiak area, a six-year tagging study found the movement of Tanner crab was contained within several defined geographic areas, irrespective of time of release to capture (one month to 3.8

years) (Donaldson 1985). In fjord habitats of eastern Canada, movements of male snow crab were restricted by local geomorphology (Brethes and Coulombe 1989; Taylor 1992). In the double fjord system of Bonne Bay, Newfoundland, radiotagged male snow crab moved several miles in a few days, but generally favored the same spots year-to-year (Conan et al. 1995).

COMMERCIAL FISHERY

Registration Area A (Southeast Alaska) encompasses all waters in Southeast Alaska within the Alexander Archipelago and offshore waters from Dixon Entrance to Cape Fairweather, divided into Districts 1 through 16 (Figure 1.1).

The male-only Tanner crab fishery starts in mid-February and occurs primarily in northern Southeast Alaska (Figure 1.2). Recently, the most productive fishing grounds have been classified as "core" while the less productive fishing grounds are classified as "noncore" areas. In order to redistribute effort back into less productive fishing areas, different preseason lengths have been set for core and noncore areas; this is a significant departure from the historic regional approach to Southeast Tanner crab management.

The policy objectives for biological concerns of this fishery are to minimize sorting of juveniles and females, to avoid fishing during molting periods, and to continue reproductive viability. These objectives are addressed by the regulations governing gear, season, and the legal size limit. Escape rings or panels of large mesh permit the escapement of female and sublegal crab and are required in regulation for Tanner crab pots. Also in regulation, the fishery starts and typically ends in February, which avoids the major male Tanner crab molt period from late March to early April (Stone 1999). Finally, only male Tanner crab 140 mm (5½ inches) or greater in carapace width can be legally harvested, allowing males at least one to two years of reproducing before entering the fishery.

Historically, the principal management objective of the fishery was to attain the allowable harvest level. When inseason management was still possible, a rough harvest rate of 60% legal biomass was targeted by inseason depletion modeling of catch rate data. A guideline harvest level (GHL) of two million pounds was in effect from the 1999/00 season through the 2008/09 season. Beginning in the 2009/10 season, management of the fishery has been dictated by a harvest strategy carried by the Alaska Board of Fisheries (board) at its 2009 meeting [5 AAC 35.113] incorporating an abundance threshold.

The Tanner crab fishery is generally pursued as a secondary, though seasonally important, source of income. Vessels used in the Tanner crab fishery range from smaller vessels from 35 to 50 ft in length, to limit purse-seiners and a few larger vessels up to about 80 ft. Smaller boats generally participate in the ring net fishery. Almost all the pot vessels have live-tanking capability. Currently, lighter cone or pyramid nesting pots that occupy less deck space are used more often than the heavier, seven by seven-foot stacking pots, which were originally designed for king crab in the Bering Sea fisheries.

FISHERY DEVELOPMENT AND HISTORY

COMMERCIAL FISHERY HISTORY

Pot Fishery

Although Tanner crab landings have been reported in Southeast Alaska since the early 1960s, they were not deliberately targeted until the early 1970s. Well into the mid-1970s, crab harvesters commonly discarded Tanner crab incidentally caught with red king crab.

The harvest of Tanner crab in Southeast Alaska in the 1970s averaged 1.5 million lb (Table 1.1). The 1970s were characterized by gradual fishery development and corresponding managerial response. Seasons during the 1970s averaged 9.7 months in length. Historically, most of the harvest from the major fishing grounds was taken from January to April of each year regardless of the length of the season (Table 1.2).

Southeast Tanner crab harvest in the 1980s averaged 1.6 million lb. As fishing pace increased over this period, season length shortened to an average of 1.6 months. During the 1981/82 season, 74 vessels landed a record 3.3 million lb between December 1, 1981 and April 16, 1982. Approximately two-thirds of this total was caught in Icy Strait, where the previous long-term average harvest had been about 0.73 million lb. Participation increased to 97 vessels during the 1982/83 season due to increasing product demand, an earlier season opening in Southeast Alaska than in other registration areas to the north and west, and open access registration. Many larger crab vessels on their way to Kodiak and Bering Sea fisheries fished in Southeast Alaska first. The 1982/83 season closed after two weeks by emergency order based on onboard observer catch-rate information collected from the Icy Strait fishing grounds. Both the fishing effort and exploitation rates were extremely high and the stocks were depressed in District 14 for many subsequent years. There was no fishery in calendar year 1983. During the 1983 shellfish board meeting, the season opening date was changed to February 10 in order to match the rest of the state and to discourage larger vessels from fishing in Southeast Alaska because the more lucrative grounds to the north and west opened at the same time.

Inseason management in the 1980s was predicated on depletion modeling whereby declines in the catch rate from fish ticket data were used to estimate an exploitation rate (the percent of legal crab harvested) inseason. The fisheries closed after the target exploitation rates were achieved. Depletion modeling relies on multiple landings by the same vessel during the course of a season. Vessels land crab about once per week, so this management strategy is most appropriate for fisheries at least 21 days in length. The limitation of this method was the speed at which catch data could be obtained from the fleet and inseason management of seasons shorter than 21 days was problematic. The last season in which a fishery lasted 21 or more days was 1989/90. The 1990/91 season, which opened for 18 days, was barely long enough to allow this kind of management.

The harvest of Tanner crab in the 1990s increased to an average of 2.0 million lb. During this period, the fishery continued to intensify and seasons were reduced to an average of 11 days. Effort became increasingly concentrated on the most productive fishing grounds and many marginal Tanner crab grounds were ignored due to the shorter seasons. The fleet adapted to short seasons in several ways. The use of tenders, the frequency of leasing larger vessels, crew size, pot pulling frequency, and bait volumes all increased. Thus, the fishery continued to intensify despite the shorter seasons. The only factor that alleviated the intensity of this fishery was the

increasing GHL of the golden king crab fishery, which resulted in vessels focusing on that species in lieu of Tanner crab.

During the 1990s, inseason management by depletion modeling was no longer possible. Beginning with the 1995/96 season, the closure date was announced preseason based upon the estimated length of time to harvest two million pounds if stock abundance was average. Recognizing the risk of this harvest strategy, the department initiated a Tanner crab stock assessment survey in 1997. The goal of the survey is to establish a preseason GHLs based on catch-survey estimates of stock biomass. Setting and targeting abundance-based preseason GHLs allowed harvest to be maximized while minimizing the risk of recruitment failure.

The harvest of Tanner crab in the 2000s (1999/00 through 2016/17 seasons) has averaged 1,007,539 lb (Table 1.1). For most of the 2000s, closure dates were announced preseason based upon the estimated length of time to harvest two million pounds if stock abundance was average. By the end of the decade, catch survey estimates were refined to the point of setting preseason GHLs based on those estimates. In the 2007/08 and 2008/09 seasons, the department set a GHL of 987,000 and 931,000 lb, respectively. Fishery regulations did not allow the opportunity for the department to target GHLs inseason, so closure dates were announced preseason based upon the estimated length of time needed to harvest the GHL. The 2009/10 to 2016/17 seasons were managed according to the Tanner crab harvest strategy [5 AAC 35.113] adopted at the 2009 board meeting.

Ring Net Fishery

With the beginning of the pot permit moratorium on January 1, 1984, new entrants who wished to harvest Tanner crab commercially were limited to legal ring net gear. New ring net permits could be obtained because the permit moratorium only limited issuance of permits for pot gear. Use of ring nets is most appealing when the abundance and price of crab is high because their use is labor intensive and efficiency is limited.

The number of ring net crab permit holders reporting landings increased from five in the 1984/85 season to a peak of 92 in the 1989/90 season, and gradually declined to 44 by the 1993/94 season. The total climbed again to 110 for the 1999/00 season in expectation of higher prices. The number of ring net permits has gradually declined to an average of 18 over the past five seasons (Table 1.1).

Total ring net harvest increased from 1,451 lb in the 1984/85 season to 101,045 lb, or 5.0% of the total harvest, during the 1989/90 season. During the 1990 board meeting, a number of restrictive regulations passed that were intended to cap the ring net portion of the total Tanner crab harvest at a maximum of four percent. Since adoption of these restrictions, ring net harvests were consistently below this level until the mid-1990s. Ring net harvest in the 1990s fluctuated between 33,544 and 89,211 lb, exceeding the four percent cap in the 1996/97, 1999/00, and 2000/01 seasons respectively at 4.3%, 5.2%, and 5.7% of the total harvest. To avoid exceeding the 4% regulatory limit, the ring net season was shortened to 5 days relative to a 6-day pot season for the 2001/02 season. As effort in the ring net fishery has declined in recent seasons, so has the overall harvest and percent of total harvest. For the five most recent seasons, average harvest in the ring net fishery is 20,318 lb, slightly less than 2% of the total harvest.

EXPERIMENTAL FISHING

Exploratory Tanner Crab Fisheries

In 1988, in response to shorter seasons and requests by crab fishermen, the board adopted regulations for exploratory Tanner and red king crab fisheries so the fleet could help the department assess the status of small stocks that were not fished during the short, regular seasons. In areas from which low harvests or no landings were reported during the regular fishery, fishing was allowed from July 1 to March 31, under conditions of a special permit. In general, these fisheries were scheduled during periods of the year to minimize overlap with traditional fisheries for red king and Tanner crab. A major assumption was that these fisheries would be of such low intensity that mortality associated with fishing during known molting and mating periods would be minimal. Special permits and logbooks were required because the primary purpose of this fishery was to provide information from areas that were not surveyed by the department.

After two seasons of exploratory fishing, it was obvious that interest in these fisheries was low, harvests were poor, and major unexploited populations had not been discovered. In addition, violations of regulations and permit conditions occurred. As a result, the board decided in 1990 to revoke the regulations that provided for these exploratory fisheries.

A Commissioner's permit was issued to one permit holder for the 2016/17 season to fish in federal waters (3–200 nm) of Registration Area A, but no fishing occurred. Conditions of the permit included a total maximum allowable harvest of 250,000 lb, a limit of 80 Tanner crab pots, and mandatory logbooks.

Deepwater Chionoecetes Species Fisheries

The department issued permits for *C. tanneri* (grooved Tanner crab) and managed a fishery by emergency order from September 16, 1983, through October 31, 1983, and again from December 5, 1983, through January 24, 1984. Harvest levels did not support development of an economically viable fishery at that time. Requests for permits for *C. tanneri* and *C. angulatus* (triangle Tanner crab) recurred in 1995. Permits were issued for the period from March 5 through April 30, 1995, and the fishery was managed by emergency order. The fleet expended additional effort and more areas were fished, but the results were discouraging. The number of crab per pot, pots pulled per hour, and crab meat-fullness were low, preventing the development of a viable fishery. A single permit was issued in 2000, again resulting in minimal harvest. In 2003, a single permit was issued, but no fishing occurred.

Bitter Crab Syndrome

During the 1984/85 season processors handling crab from the extreme north end of Southeast Alaska, notably Lynn Canal, were receiving complaints from consumers of bitter tasting meat from some section-packed crab. At the time, the cause was thought to be associated with a normal premolt condition in Tanner crab since the fishery partially extended into the initial phases of the annual molt in some areas. However, a few samples of crab blood collected during the 1985/86 season revealed that the bitterness was closely associated with the presence and concentration of a systemic parasite. This systemic parasite is a highly specialized dinoflagellate of the genus *Hematodinium* (Meyers et al. 1989).

Symptoms associated with bitter crab disease (BCD) had been reported since at least the early 1980s, with some anecdotal references to off-tasting Tanner crab dating back to the mid-1970s. It has since been reported from most major fishing grounds in Southeast Alaska and sporadically from other areas as well (Meyers et al. 1990). Its definitive identification in Bering Sea snow crab (*C. opilio)* stocks, with its economic implications, has accelerated research on *Hematodinium*.

Hematodinium infects all sizes and both sexes of Tanner crab and is thought to be fatal within 1 to 1.5 years, although little research exists to confirm this time line. It severely reduces the vitality and reproductive capacity of crab; egg clutches of infected females are greatly reduced in size (Meyers 1993). The mechanism and seasonal timing of *Hematodinium* transmission continues to be unknown (Eaton et al. 1991; Love 1991; Love et al. 1993). The disease may be spread by free-living, infective spores released by dying crab, or vegetative stage organisms passively transmitted during periods of crab aggregation, such as immediately before and during seasonal mating periods.

Crab in later stages of infection are unmarketable because of the astringent taste and soft, chalky texture of the meat. These crab can be identified on the fishing grounds by characterizations such as an abnormal pink or pale coloration of their abdomens and ventral sides of their walking legs. Infected crab continue to be transported out of the areas in which they are caught when they are transported to processors. This may have contributed to the spread of this disease.

Currently, the fishing season occurs during a period of optimum meat condition in the majority of heavily fished stocks. Unfortunately, the season also occurs during a period when crab infected during the previous year have developed advanced symptoms of the disease, including the characteristic bitter taste.

Reported sorting rates as high as 80% bitter crab from some areas indicate the actual magnitude of the problem. There are no industry-wide standards, procedures, or regulations for safe disposal of infected crab. Control measures are limited to voluntary retention of bitter crab for later disposal in upland landfills, heat, or chemical disinfections before marine disposal, or hard freezing before marine disposal. Viability of the resource is still being risked by the continued transport and handling of infected crab.

The department has considered and attempted regulatory means to minimize the risks associated with catch and retention of infected crab. Part of District 15 was closed in l988 to prevent fishing on crab heavily infected with bitter crab disease. This resulted in reduced fishing opportunity for golden king crab and a total closure has not been imposed on the fishery since then.

During the 1992/93 season, product transfer restrictions were imposed on vessels fishing in District 15. Any Tanner crab caught in District 15 could only be shipped live out of the District if they were transferred onto tenders within the District and water from holding tanks on the tenders were not discharged while the crab were being transported to on-shore processors located in other areas. This requirement was intended to reduce handling of bitter crab and minimize the risk of spreading the infection to other areas. Enforcement of the restriction was difficult. There have been no comparable restrictions to fishing in District 15 since that season.

A proposal to develop an earlier season to improve marketability of bitter crab was approved by the board in 1990. The plan was repealed at the following board meeting because it was

determined that this fishery would not be manageable and would not provide the information for which it was intended.

The bitter crab problem does not seem to be diminishing and in fact, the level of infection has appeared to remain consistent over the past three seasons (ranging from 9% to 14% regionwide). High percentages of bitter crab, in excess of 40%, have been observed in some districts.

REGULATION DEVELOPMENT

The first regulations pertaining specifically to Tanner crab were adopted in 1954. Prior to 1954, there was no formal recognition of a commercial Tanner crab fishery in Southeast Alaska.

FISHING SEASONS AND PERIODS

In 1963, the season for Tanner crab was established from January 1 to December 31. In 1969, the season was shortened in some areas, mostly to facilitate management of the red king crab fishery. In 1974, the season was closed by emergency order on May 15.

In 1974, the season start date was changed to September 1. During much of the 1970s, the season started on September 1 and closed by emergency order in April or early May. In 1981, the season started on December 1 and closed on April 16, 1982, by emergency order after a record harvest of over 3.0 million lb. In 1982, the season was closed by emergency order in mid-December after two weeks of fishing, because of unprecedented effort heavily concentrated in District 14. In early 1983, the season start date was changed to February 10.

In 1987, the season start date was changed to January 15, in part to be consistent with the opening date in other parts of the state. The season changed again in 1989, starting on February 15, to reduce conflict with the January food and bait herring fishery in which many crab harvesters participated. Between 1989–2005, the season start date was February 15 and the length of the season was progressively shortened to about a week.

Starting with the 2003/04 season, the department began setting different season lengths in “core” and “noncore” areas. Core areas are defined as those areas that have high levels of effort and Tanner crab catch or significant red king crab populations. Noncore areas have extended fishing time to allow for exploratory fishing into nontraditional fishing grounds. The fishery has been open in core fishing areas from four to eight days with an additional four to five days of fishing time in noncore areas. The season start date for Tanner crab was changed at the 2005 board meeting to the smallest Juneau tidal range between February 10–17. This was intended to minimize gear loss in the golden king crab fishery, which opens concurrently with the Tanner crab fishery. The core and noncore areas were defined in regulation at the 2009 board meeting with the implementation of the Southeast Alaska Tanner crab harvest strategy [5 AAC 35.113]. In 2012, weather delay criteria were added to regulation to delay the fishery start date due to adverse weather conditions.

SEX AND SIZE LIMITS

The current minimum size limit of 5½-inch (140 mm) or greater carapace width for males was implemented in 1976. This size permits nearly all males at least one and possibly two seasons of reproductive activity prior to attaining legal size.

QUOTAS AND GUIDELINE HARVEST RANGES

A GHL of 1,750,000 lb was first set in 1976. It was revised down to a guideline harvest range (GHR) of 750,000–1,500,000 lb in 1978. In 1979, the GHR was revised to 750,000–2,500,000 lb. In response to locally high harvest rates and the subsequent effects on the stocks in Icy Strait in the early 1980s, the GHR was revised downward to between zero and two million pounds in 1985. This range was sufficient to provide a relatively stable harvest until the 1997/98 season when an unanticipated shift in effort to nontraditional fishing grounds south of Petersburg and west of Wrangell pushed the total season harvest to over 2.7 million lb. If the increased harvest from nontraditional grounds were discounted from the total harvest, the harvest from traditional districts would have totaled a little more than 2.0 million lb. Following the board meeting in 1990, the GHL was changed to a maximum allowable harvest of 2.0 million lb. At the 1999 board meeting, the maximum allowable harvest was changed to a GHL of 2.0 million lb. Although the average Tanner crab harvest in Southeast Alaska for the 1990s was 2.0 million lb, harvest in the 2000s averaged just under 1.0 million lb. At the 2009 board meeting, the 2.0 million lb GHL was repealed when the Southeast Alaska Tanner crab harvest strategy was implemented.

INSEASON MANAGEMENT TOOLS

Daily harvest logbooks have been mandatory since the start of the 1993/94 season. Logbooks were one of the last remaining options left to managers trying to conduct inseason management. At the 1996 board meeting, the department was directed to assess the feasibility of using daily radio reports of catch and effort from all active participants during the 1995/96 and 1996/97 seasons to support continuing inseason management based on real-time catch data. The reporting requirement was dropped after two seasons due to technological challenges and low compliance. At the 2002 board meeting, a regulation was established giving the department the authority to require inseason reporting of Tanner crab logbook data. Cell and satellite phone technology advanced to the point where the marine operator was discontinued in 2004, having been deemed unnecessary by the United States Coast Guard. Inseason reporting of logbook data has not been required since the 2003/04 season.

FISHING GEAR

Pots

Gear restrictions, first imposed in 1954, permitted use of pots or trawl gear to harvest Tanner crab. Ring nets were added as legal gear in 1960. Scuba diving gear was legalized in 1966. Shrimp beam trawls were specified as legal gear and diving was rescinded in 1969. Although legal, trawl gear was rarely, if ever, used in this fishery during this period. Tanner crab pot gear was further defined in 1969, with four-inch tunnel heights and buoys having to be marked with the vessel registration number preceded by the letter “T.” In 1973, in-water storage restrictions were adopted, the “T” part of the buoy-marking requirement was dropped, and a pot limit of 60 was implemented for all inside waters. In 1974, tunnel heights were increased to five inches.

Starting in 1976, escape panels incorporating a biodegradable seam were required. South of the latitude of Cape Fairweather, Tanner crab pots were required to have an entire vertical seam laced with biodegradable twine. In 1977, a 100-pot limit was implemented. Trawl gear was dropped as legal gear in 1977 leaving only pots and ring nets as options. In 1978, the vertical seam requirement was modified to be more flexible and applicable to different types of gear and

tunnel eye definitions were clarified. Buoy stickers have been required since 1979 to facilitate enforcement of pot limits. In 1985, two 4¾-inch diameter escape rings were required in each Tanner crab pot to reduce retention and aid in the sorting of small males and females and a moratorium on new pot permits was implemented. Beginning in 1987, escape rings had to be located within eight inches of the bottom of pots. The escape ring requirement was repealed in 1988 due in part to shorter soak times becoming prevalent in the fishery. At the 1996 board meeting, the department had recommended reducing the pot limit to 50. The board adopted an 80-pot limit; this was implemented starting with the 1997 season.

At the 2002 board meeting, escape rings or panels of large mesh to permit the escapement of female and sublegal Tanner crab were again required in Tanner crab pots.

Ring nets

Between the mid-1980s and 1990, use of ring nets grew because pot permits were under moratorium. In 1990, the board adopted a comprehensive set of regulations to control the increasing use of ring net gear by people who did not receive limited entry permits for the pot fishery. The number of ring nets was limited to 20 per vessel and ring net marking requirements were defined. Ring nets were also defined in more detail, with limits set on their size, and the longlining of ring nets was prohibited. The allowable ring net harvest was capped at four percent of the total harvest. Vessels could not concurrently be registered to fish with both ring nets and pots. Wording was incorporated to prevent use of ring net gear to conduct preseason test fishing under the guise of subsistence or personal use fishing.

GEAR STORAGE AND OPERATION OF OTHER POT GEAR

Since 1981, in-water pot storage was permitted for 72 hours after the season closure. In 1984, fishing with pots or storing pots in the water during the 10 days before the start of the season was prohibited. In 1985, the prevention of preseason fishing was lengthened to 14 days. Also in 1985, post-season pot storage was extended to seven days after closure of the entire registration area or 72 hours after closure of a portion of the area. Starting in 1986, a 10-day preseason, in-water storage period was allowed with some restrictions. Since 1987, preseason gear storage for a period of 10 days before the start of the season has been permitted under some conditions.

Beginning with the 1999/00 season, vessels and persons registered for the commercial Tanner crab fishery could not fish with any commercial, sport, subsistence, or personal use gear except for commercial Dungeness and shrimp pot gear for 30 days prior to the start of the season. At the 2009 board meeting, the board carried a proposal extending pot storage from 72 hours to 5 days after the closure of a portion of the registration area.

LIMITED ENTRY

In response to a request by locally based vessel operators and processors, the Commercial Fisheries Entry Commission (CFEC) initiated a permit moratorium for the king and Tanner crab fisheries in Southeast Alaska on January 1, 1984.

The CFEC instituted a complex system of combined permits for Tanner crab and the three species of king crab. The full impact of the moratorium was not felt until the 1985/86 season because many prospective entrants to the 1984/85 fishery had exercised the two-year option on permit renewals and obtained their permits prior to the January 1 cutoff date for the moratorium on new permit issuance. Moreover, the CFEC was obligated by their regulatory guidelines to set

the maximum number of permits at 83, which was high relative to historic participation. This has proved to have long-term implications, such as progressively shortened seasons as the efficiency of the fleet improved.

The Tanner crab pot fishery in Southeast Alaska was the first Tanner crab fishery in the state to be placed under limited entry. As of August 2017, 77 permits have been issued (CFEC permit category K49A, K59A, K69A, and T19A); 72 are permanent permits, and an additional five are interim-entry permits. There are 76 active permanent and interim permits issued that could potentially register a vessel in the pot fishery. Ring net gear (CFEC permit category T10A) is not under limitation.

REGISTRATION AND DELIVERY REQUIREMENTS

In 1974, Southeast Alaska and Yakutat were combined into a single nonexclusive registration area. In 1975, preseason hold inspections and vessel registrations were required. A preseason registration deadline was in effect in 1978. A registration deadline of 30 days prior to the season start was implemented in 1979. Also in 1979, the hold inspection requirement was dropped because it was considered unnecessary in Southeast Alaska and Yakutat.

Southeast Alaska was designated as a superexclusive registration area during the 1985 board meeting in order to discourage operators of larger vessels, whose primary sources of income were from crab fisheries in other registration areas. Vessels registered to fish for Tanner crab in Southeast Alaska cannot fish in any other registration area in Alaska for Tanner crab during the same registration year (August 1–July 31).

In 1986, the board adopted a regulation to restrict the boundaries of Southeast Alaska to those waters of the state between Dixon Entrance and Cape Fairweather. A new registration area, Registration Area D (Yakutat), was established for those waters between Cape Fairweather and Cape Suckling. Major restructuring of the Alaska Administrative Code was necessary to accommodate this change, which was implemented in 1988.

It is unclear when the 30-day registration deadline was repealed; however, it was decided at the 1999 board meeting to reinstate the regulation starting in 2000. This regulation requires permit holders to apply for an extension of the registration period under Title 16.05.065; if an extension is granted, permit holders must pay a $45 late registration fee.

In 1981, crab had to be delivered within 24 hours of the close of the season. In 1983, permit holders had 72 hours to deliver crab after the season closure. In 1986, this period was again shortened to 24 hours after the close of the season.

TASK FORCE STATUS

In 2000, the board developed the Southeast Alaska King and Tanner Crab Task Force (KTTF) with the intent for this group and the department to work together to develop a management plan for Southeast Alaska Tanner crab and methods to reduce harvest pressure in core Tanner crab areas. Currently, the department and KTTF conduct an annual joint meeting to review stock status of all Southeast Alaska king and Tanner crab and exchange information regarding management activities and plans.

MANAGEMENT CONCERNS

MANAGEMENT PLAN

During the early years of the Tanner crab fishery there was no management plan or harvest strategy outlined in regulation. From the 1990/91 through 1998/99 seasons, there was a maximum allowable harvest of 2.0 million lb in regulation. At the 1999 board meeting, this maximum allowable harvest was changed to a 2.0 million lb GHL. Since the 2.0 million lb GHL went into effect, this level of harvest has never been achieved.

Declines in survey abundance during the past 15 years indicate that current stocks cannot sustainably support a 2.0 million lb harvest. Recent advances in the modeling of stock assessment surveys have created the opportunity for abundance-based management approaches. Biological thresholds for critical stock components and appropriate harvest rates for varying stock sizes are still under development. Advances in survey modeling, along with assessing Tanner stocks using Tanner catch in the annual red king crab survey, led to GHLs being produced and targeted in the 2007/08 and 2008/09 seasons.

At the January 2009 board meeting, the board passed an amended proposal from industry that outlined a Tanner crab harvest strategy for Southeast Alaska [5 AAC 35.113]. Under this harvest strategy, a regional GHL is no longer targeted. The harvest strategy includes a mature male abundance threshold that is one-half of the long-term average. The mature male abundance estimate and the number of registered pots at the start of the fishery determine the commercial Tanner crab season length.

FISHING EFFORT

Current pot limits for the fishery are set at 80 pots per vessel and it is not possible to manage the fishery inseason given the quick pace of the fishery. Season length is set prior to the season opening based on mature male abundance and the number of pots registered at the start of the fishery. Weather and tides also influence the pace of the fishery. In the last decade, managers have considered adverse weather conditions by postponing the start of the Tanner crab fishery for the 2007/08, 2010/11, and 2013/14 seasons. Delaying the start of the Tanner crab and concurrent golden king crab fisheries provided for fair starts and more orderly fisheries for the three seasons in which delays were implemented. Other regions of the state have adapted to the quickening pace of Tanner fisheries by lowering pot limits based on targeted GHLs and in some cases have gone to daylight fishing hours which limits when pots can be set and retrieved. These measures along with mandatory or voluntary daily call-ins have allowed managers in those areas to use real-time fishery data to manage the fisheries inseason.

STOCK ASSESSMENT

Tanner crab stock assessment has evolved continually over the past 20 years. Prior to 1997, stock assessment analyses consisted of simple summary statistics and trends (Clark et al. 2001) based solely on fishery-dependent data from dockside sampling, logbooks, and fish tickets. With the beginning of the Tanner crab survey in 1997, through its maturation in 2006, relative abundance was determined for survey areas as Tanner crab or red king crab survey catch per unit effort (CPUE). A catch-survey model was developed from survey data in 2005 (Zheng et al. 2006). Along with commercial logbook data, this model was used to estimate mature Tanner crab biomass for the 2006/07 season (Siddon et al. 2009). The 2007/08 season was the first for which

the CSA alone was used to provide an estimate of mature male Tanner crab biomass. After expansion of the biomass estimate to account for the proportion of harvest which comes from unsurveyed areas (29 percent prior to 2015, 34 percent after 2015), tiered harvest rates of 0, 5, 10, 15, or 20 percent of mature males or a maximum of 50 percent of legal males, depending upon stock health, are used to determine the harvestable surplus. Improvements to the survey and modeling methods will continue as the time series lengthens.

SURVEYS

Prior to 2015, surveys were conducted in 14 separate survey areas throughout Southeast Alaska. In 2015, due budgetary constraints, Port Camden and Port Frederick were removed from the surveyed areas and are currently considered part of the non-surveyed area for biomass calculations (Figure 1.3). This resulted in calculating biomass assuming that 34 percent of the Tanner crab biomass came from non-surveyed areas (29 percent prior to the 2015 changes).

Also beginning in 2015 and continuing to this day, Stephens Passage was removed from the October Tanner crab survey but is still included in the summer red king crab survey (Figure 1.3). Prior to 2015, both Tanner crab data from the summer red king crab survey and the fall Tanner crab survey were used to assess Stephens Passage and estimate biomass. Retrospective data analysis of this area showed that removing Stephens Passage from the fall Tanner crab survey did not affect the overall trends and biomass estimates for this area.

Since 2015, four surveyed areas exclusively target Tanner crab, and seven areas target red king crab. The red king crab survey (RKCS) areas obtain significant bycatch of Tanner crab. Surveyed areas correspond with commercial fishing grounds that account for over 65% of the total Tanner crab harvest (25-year average). The methods are very similar between the two surveys and are detailed elsewhere, by Bednarski et al. (2008) for the Tanner crab survey (TCS) and Clark et al. (2003) for the red king crab survey. Each area is divided into one of five strata. For the RKCS, strata boundaries are determined based on historic RKC survey CPUE (Clark 2008). Prior to the 2013 TCS, the survey areas were stratified based on crab density and depth, similar to the density stratification currently in place for the red king crab survey areas (Clark 2008). Preceding this stratification method, simple random sampling had occurred to determine pot placement in the survey areas. The goal of density-stratified sampling is to provide more confidence in CPUE estimates for use in the Catch Survey Analysis (CSA) model, which in turn provides more confidence in biomass projections. Survey sampling is currently performed by using these density strata to determine the randomized pot placement. The previous years' CPUE calculations and biomass estimates were also re-estimated to accommodate the changes in sampling methods. The primary differences between the TCS and RKCS methods are in timing and bait. The TCS occurs in October and uses half of a pink salmon as hanging bait in addition to chopped herring, while the RKCS occurs in June and July, and uses only chopped herring bait.

SAMPLING

Commercial Tanner crab fishery landings are sampled dockside in Juneau, Petersburg, Sitka, and Wrangell. Separate sampling goals in terms of the number of deliveries are set in four fishery areas; Icy Strait (District 14), Lynn Canal/Upper Stephens Passage (combined Districts 11 and 15), Frederick Sound/Lower Stephens Passage (combined Districts 8, 9, and 10), and other grounds (all other areas). Carapace width is measured and shell condition determined for 75-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 width and shell condition frequency.

Limited onboard sampling was conducted in the 1980s to collect specific inseason information needed for management. Since then, available personnel have concentrated more on collecting dockside sampling information.

LOGBOOKS

Logbooks are mandatory for pot permits and provide information on Tanner crab catch and effort by statistical area and date. Logbooks are not required for the ring net Tanner crab fishery.

REGIONAL OVERVIEW

A Southeast Alaska Tanner Crab Harvest Strategy (Title 5 Alaska Administrative Code 35.113) went into effect beginning with the 2009/10 season. For the 2008/09 through the 2016/17 commercial seasons, the biomass estimate exceeded the harvest strategy threshold of 2.3 million lb of mature males and fisheries were opened for each of those seasons.

For the 2014/15 season, Tanner crab biomass was estimated at 5.5 million lb of mature males (carapace width greater than 108 mm) and 2.9 million lb of legal males (carapace width greater than 137 mm) (Table 1.3). Beginning in the 2009/10 season, stock health categories were increased from three (poor, moderate, and healthy) to five (poor, below average, moderate, above average, and healthy). Using this system, stock health in the surveyed areas was below average in two areas, moderate in five areas, above average in three areas, and healthy in four areas (Tables 1.4 and 1.5). Applying harvest rates consistent with stock health criteria to each area, the harvestable surplus was estimated at 0.92 million lb (Table 1.3). Under the current harvest strategy, targeted GHLs are no longer required and the harvest recommendation is provided to evaluate fishery performance in context with stock health categories and may be of use, as more information becomes available, concerning the applicability and utility of the current harvest strategy.

Estimated biomass for the 2015/16 season increased to 5.7 million lb of mature males and increased to 3.2 million lb of legal males (Table 1.3). This is an increase of 0.34 million lb of legal male Tanner crab (12%) from the 2014 estimate; predominantly due to biomass increases in Glacier Bay, Seymour Canal, Pybus Bay, and Thomas Bay, countered by declines in Icy Strait, Stephens Passage, Holkham Bay, Excursion Inlet, Gambier Bay, Peril Strait, Lynn Sisters, and North Juneau. The stock health in surveyed areas was poor in one area, moderate in two areas, above average in four areas, and healthy in five areas (Tables 1.4 and 1.5). Applying harvest rates consistent with stock health criteria to each area, the harvestable surplus was estimated at 1.06 million lb (Table 1.3).

The stock biomass estimate declined in the 2016/17 season to 4.9 million lb of mature males and 2.6 million lb of legal male crab (Table 1.3). This is a decrease of 0.61 million lb of legal male Tanner crab (19%) from the 2015 estimate, predominantly due to biomass decreases in Stephens Passage, Holkham Bay, Thomas Bay, North Juneau, Peril Strait, Lynn Sisters, and Icy Strait, countered by small increases in Glacier Bay, Excursion Inlet, Gambier Bay, and Seymour Canal. Stock health in the surveyed areas was poor in one area, below average in two areas, moderate in six areas, above average in one area, and healthy in two areas (Tables 1.4 and 1.5). Applying

harvest rates consistent with stock health criteria to each area, the harvestable surplus was recommended at 0.93 million lb (Table 1.3).

The number of below average or poor areas has declined and the harvestable surplus has generally increased and remains stable over the last few years. Generally, the areas surveyed have provided a mix of increasing and decreasing abundances, balancing out the overall regional abundance in recent years. The regional legal male biomass estimate appears similar to levels observed in the late 1990s, and has been generally increasing since 2010/11 (Figure 1.4). The mature male biomass has also increased slightly since 2010, with a slight decrease in 2016/17 (Tables 1.4 and 1.5). Overall, recruitment seems to be consistent regionwide and stock health has improved from previous years. Standardized commercial CPUE for the 2014/15 through 2016/17 seasons remained moderately stable (Figure 1.5). The heightened effort and increase in harvest of Tanner crab during the last three seasons may be a result of the recent decline in the golden king crab fishery.

RECENT SEASONS

2014/15 SEASON SUMMARY

The 2014/15 season opened at 12:00 noon AST, on February 13, 2015. The 2014/15 season was the sixth in which the current harvest strategy [5 AAC 35.113] has been used. The mature male biomass of 5.5 million lb (Table 1.3) exceeded the 2.3 million lb threshold in regulation and 5,200 pots were registered, resulting in a six-day fishery in the core areas and an eleven-day fishery in the noncore areas. District 16 remained open for the 2014/15 Tanner crab season. Daily logbooks were mandatory and permit holders were required to submit logbooks to the department with each fish ticket.

A total of 1,421,863 lb of Tanner crab were caught by 84 permit holders, making this the season with the highest catch since 1999/00 (Table 1.1). The major discard class was bitter crab, which accounted for 199,828 lb followed by deadloss, which totaled 2,720 lb. It was probable that the actual bitter crab catch was significantly higher, since an unknown amount were sorted and discarded on the fishing grounds. There were 2,720 lb of deadloss and 337 lb of soft-shelled crab reported, and 1,187 lb kept for personal use. At $2.26/lb, 1,217,791 lb of marketable product had a total exvessel value of $2.75 million.

Of the 84 permits that participated in the fishery, 64 were pot permits and the remaining 20 were for ring nets. Pot gear accounted for 98.7% of the total harvest or 1,403,610 lb (1,200,090 lb were marketable) while ring net fishermen caught at total of 18,253 lb (17,701 lb of marketable crab) (Table 1.1).

A summary of the harvest by fishing area indicated that about 1,319,424 lb (92.8%) of the total season's harvest was taken from the three major fishing areas; Icy Strait, Lynn Canal/Stephens Passage, and Frederick Sound (Table 1.6).

PORT SAMPLING DATA

Port sampling information summarized for the region indicated that the overall size of crab harvested averaged 153.4 mm CW and 2.5 lb (Tables 1.7 and 1.8). The percent of recruits was 64.5%; the highest percentage of recruitment since the 2009/10 season (Table 1.7). Catch per unit effort was estimated at 11.6 crab per pot, the same CPUE as the previous 2013/14 season (Table 1.8).

Crab from Icy Strait had an average size of 151.0 mm CW and 2.5 lb. The percent of recruits was 56.0%; the lowest since the 1977/78 season (Tables 1.9 and 1.10). Crab from Lynn Canal were larger, with an average size of 155.4 mm CW and 2.5 lb, and 63.3% were recruit-sized crab; the highest since the 2009/10 season (Tables 1.11, 1.12, and 1.13). Average crab size for the Frederick Sound area was 151.8 mm CW and 2.5 lb, similar to the previous seasons, with a percent recruit of 67.6% (Tables 1.13 and 1.14).

2015/16 SEASON SUMMARY

The 2015/16 season opened at 12:00 noon AST, on February 17, 2016. The mature male biomass of 5.7 million lb (Table 1.3) exceeded the 2.3 million lb threshold in regulation, and 4,880 pots were registered at the start of the fishery. The 2015/16 season closed after seven days in the core fishing areas on February 24, 2016 and after twelve days in the noncore areas on February 29, 2016. District 16 remained open for the 2015/16 commercial Tanner crab season.

A total of 1,306,416 lb of crab were harvested during the 2015/16 season (Table 1.1). This consisted of 1,145,318 lb of marketable crab; 745 lb kept for personal use; 89 lb of soft-shelled crab; 15,806 lb of deadloss; and 144,458 lb of bitter crab. As in the past, an unknown additional amount of bitter crab were sorted and discarded on the fishing grounds. At approximately $2.55/lb (Table 1.1), the marketable product had an exvessel value of $2.92 million.

Reported landings during the season came from 60 pot and 14 ring net permits. Pot permit holders landed 1,293,876 lb of crab (99%), of which 1,133,012 lb were marketable. Ring net permit holders harvested 12,540 lb, or about 1.0% of the total Tanner crab harvest (Table 1.1). Marketable crab comprised 12,306 lb of the total ring net harvest.

A summary of the harvest by fishing area indicated that about 1,178,048 lb or 90.2% of the total season's harvest was taken from the three major fishing areas; Icy Strait, Lynn Canal/Stephens Passage, and Frederick Sound (Table 1.6).

PORT SAMPLING DATA

The overall average crab size during the 2015/16 season was 151.8 mm CW and averaged 2.4 lb (Tables 1.7 and 1.8); similar to the previous season. The percent of recruits was up from the previous season at 69.3% and the highest recorded since the 2008/09 season (Table 1.7). Catch rate was estimated at 14.1 crab per pot, which was the highest since the 2006/07 season (Table 1.8).

Crab from Icy Strait had an average size of 149.3 mm CW, and had an average weight of 2.3 lb and the recruit percentage was 64.6% (Tables 1.9 and 1.10). Crab from Lynn Canal had an average size of 154.9 mm CW and averaged 2.5 lb; a slight decrease from the previous season (Tables 1.11 and 1.12). The percent recruitment for Lynn Canal was at 67.2%, the highest since the 2008/09 season. Average crab size for the Frederick Sound area was 151.2 mm CW and was similar to the previous season. Average weight was 2.4 lb; similar to the previous season. The percent recruit increased to 76.1%, the highest percent recruitment since the 2002/03 season (Tables 1.13 and 1.14).

2016/17 SEASON SUMMARY

The 2016/17 season opened at 12:00 noon AST, on February 17, 2017. The mature male biomass of 4.9 million lb (Table 1.3) exceeded the 2.3 million lb threshold in regulation and 4,640 pots

were registered at the start of the season. This led to the season closing in core fishing areas after six days on February 23, 2017 and noncore areas closed after eleven days on February 28, 2017. District 16 remained open for the 2016/17 Tanner crab season.

A total of 993,614 lb of crab were harvested during the 2016/17 season (Table 1.1). This consisted of 892,588 lb of marketable product; 1,135 lb kept for personal use; 1,452 lb of soft-shelled crab; 6,781 lb of deadloss; and 91,658 lb of bitter crab. Again, an unknown additional amount of bitter crab were sorted and discarded on the fishing grounds. At $3.00/lb (Table 1.1), the marketable product had an exvessel value of $2.68 million.

Fifty-nine pot and 14 ring net permits reported landings during the season. Pot permit holders landed 974,320 lb of crab (98%), of which 874,256 lb were marketable. A total of 19,294 lb was landed by ring net permit holders, or about 2.0% of the total Tanner crab harvest (Table 1.1). Marketable crab comprised 18,332 lb of the total ring net harvest.

A summary of the harvest by fishing area indicated that about 882,526 lb, 88.8% of the total season's harvest, was taken from the three major fishing areas; Icy Strait, Lynn Canal/Stephens Passage, and Frederick Sound (Table 1.6).

PORT SAMPLING DATA

The overall average crab size during the 2016/17 season was 150.3 mm CW with a 2.4-lb average weight (Tables 1.7 and 1.8), which was down from the previous two seasons. The percent of recruits was 65.7%, down from the previous season (Tables 1.7). Catch rate was estimated at 12.5 crab per pot, which was slightly down from the previous season (Table 1.8).

Crab from Icy Strait had a decreased average size of 148.1 mm CW from the previous season, and the same 2.3-lb average weight from the previous season (Tables 1.9 and 1.10). The recruit percentage of 80.6% was up from the previous season and was the highest since the 2009/10 season (Table 1.10). Crab from Lynn Canal had a slightly decreased average size of 152.3mm CW from the previous two seasons, but had the same 2.5-lb average weight (Tables 1.11 and 1.12). The percent recruit for Lynn Canal was 66.1%, down from the previous season (Table 1.12) Average crab size for the Frederick Sound area decreased to 148.7 mm CW from the previous season and was the lowest CW recorded since the 1971/72 season (Table 1.14); however, the 2.4-lb average weight was the same as the previous season (Table 1.13). The percent recruit was 71.9%, down from the previous season (Table 1.14).

2017/2018 OUTLOOK

The annual Tanner crab survey will be conducted in October 2017. Tanner crab catch from the Tanner crab survey and Tanner crab catch from the red king crab survey will be analyzed. Data are presented to department staff in early December and an announcement will be issued in December as to whether the minimum threshold for a commercial season was reached. If the minimum threshold is met, subsequent announcements will provide fishery details and season length based on mature male biomass and number of pots registered in the fishery.

CHAPTER 1—TABLES AND FIGURES

Table 1.1–Traditional commercial Tanner crab pot and ring net harvest information for Registration Area A, 1968/1969 to present.

	Pot Fishery					Ring Net Fishery			Combined Gears				
Year/ Season	Permits Fished	Number of Crab	Total Lb	Pots Lifted	CPUE	Permits Fished	Number of Crab	Total Lb	Permits Fished	Number of Crab	Total Lb	Average Weight	Price/ Lb
1968/1969	29	70,892	177,825	-	-	-	-	-	29	70,892	177,825	2.5	-
1969/1970	31	251,295	660,337	-	-	-	-	-	31	251,295	660,337	2.6	-
1970/1971	12	62,704	167,378	-	-	-	-	-	12	62,704	167,378	2.7	-
1971/1972	25	258,080	656,661	-	-	-	-	-	25	258,080	656,661	2.5	-
1972/1973	31	614,443	1,597,838	-	-	-	-	-	31	614,443	1,597,838	2.6	-
1973/1974	52	531,114	1,309,673	-	-	-	-	-	52	531,114	1,309,673	2.5	-
1974/1975	51	340,361	863,751	-	-	-	-	-	51	340,361	863,751	2.5	-
1975/1976	32	868,815	2,149,397	-	-	-	-	-	32	868,815	2,149,397	2.5	-
1976/1977	55	1,078,454	2,563,710	-	-	-	-	-	55	1,078,454	2,563,710	2.4	-
1977/1978	44	835,928	2,142,409	-	-	-	-	-	44	835,928	2,142,409	2.6	-
1978/1979	38	589,781	1,559,769	-	-	-	-	-	38	589,781	1,559,769	2.6	-
1979/1980	51	729,812	1,781,175	-	-	-	-	-	51	729,812	1,781,175	2.4	-
1980/1981	59	851,281	2,013,276	-	-	-	-	-	59	851,281	2,013,276	2.4	-
1981/1982	73	1,406,267	3,305,857	-	-	-	-	-	73	1,406,267	3,305,857	2.4	-
1982/1983	95	446,283	1,101,630	-	-	2	*	*	97	446,449	1,101,630	2.5	-
1983/1984	100	644,002	1,593,468	-	-	-	-	-	100	644,002	1,593,468	2.5	$1.20
1984/1985	78	472,669	1,129,473	-	-	5	660	1,451	83	473,329	1,130,924	2.4	$1.20
1985/1986	72	422,678	1,006,396	-	-	11	1,153	2,609	83	423,831	1,009,005	2.4	$1.87
1986/1987	67	462,702	1,120,373	-	-	7	1,605	3,601	74	464,307	1,123,974	2.4	$2.01
1987/1988	71	548,854	1,317,887	-	-	13	5,484	12,598	84	554,338	1,330,485	2.4	$2.20
1988/1989	77	631,705	1,583,711	-	-	63	25,501	62,621	140	657,206	1,646,332	2.5	$2.32
1989/1990	81	769,601	1,908,624	-	-	92	42,421	101,045	173	812,022	2,009,669	2.5	$1.91
1990/1991	72	850,706	2,182,813	-	-	36	23,728	58,780	108	874,434	2,241,593	2.6	$1.45
1991/1992	83	783,499	2,073,353	-	-	41	20,649	49,568	124	804,148	2,122,921	2.6	$1.72
1992/1993	83	614,958	1,536,143	-	-	51	13,771	33,544	134	628,729	1,569,687	2.5	$1.51
1993/1994	81	760,273	1,964,380	48,794	16	44	15,607	37,146	125	775,880	2,001,526	2.6	$1.97
1994/1995	91	940,233	2,433,571	55,771	17	82	29,685	73,576	173	969,918	2,507,147	2.6	$3.21
1995/1996	94	733,210	1,969,394	45,711	16	74	21,539	50,642	168	754,749	2,020,036	2.7	$1.89
1996/1997	94	688,431	1,818,884	41,898	16	70	33,974	81,935	164	722,405	1,900,819	2.6	$1.73
1997/1998	92	981,437	2,614,166	41,332	24	93	35,154	87,156	185	1,016,591	2,701,322	2.7	$1.60

-continued-

Table 1.1–Page 2 of 2.

	Pot Fishery					Ring Net Fishery			Combined Gears				
Year/ Season	Permits Fished	Number of Crab	Total Lb	Pots Lifted	CPUE	Permits Fished	Number of Crab	Total Lb	Permits Fished	Number of Crab	Total Lb	Average Weight	Price/ Lb
1998/1999	93	757,545	2,086,672	36,872	21	87	31,161	77,459	180	788,706	2,164,131	2.7	$2.06
1999/2000	92	588,428	1,616,945	34,432	17	110	34,276	89,211	202	622,704	1,706,156	2.7	$2.13
2000/2001	81	447,043	1,221,668	32,187	14	80	30,784	74,012	161	477,827	1,295,680	2.7	$1.93
2001/2002	83	356,704	935,026	29,035	12	57	12,312	29,810	140	369,016	964,836	2.6	$1.71
2002/2003	67	300,453	776,687	22,937	13	44	12,008	27,547	111	312,461	804,234	2.6	$2.05
2003/2004	68	328,814	811,647	23,463	14	30	8,049	20,511	98	336,863	832,158	2.5	$2.13
2004/2005	60	313,281	787,625	18,248	17	21	6,886	16,410	81	320,167	804,035	2.5	$1.96
2005/2006	53	341,115	866,037	18,839	18	19	8,376	20,484	72	349,491	886,521	2.5	$1.42
2006/2007	57	360,820	911,515	22,332	16	19	6,741	16,385	76	367,561	927,900	2.5	$1.67
2007/2008	49	235,789	594,735	16,295	14	18	3,948	10,327	67	239,737	605,062	2.5	$1.69
2008/2009	31	239,616	599,745	16,268	14	10	5,169	12,805	41	244,785	612,550	2.5	$1.78
2009/2010	33	365,525	944,639	18,871	19	11	7,212	18,871	44	372,737	963,510	2.6	$1.63
2010/2011	48	334,254	867,252	19,640	17	16	9,505	24,092	64	343,759	891,344	2.6	$2.85
2011/2012	47	417,791	1,082,699	23,520	18	23	10,772	27,085	70	428,563	1,109,784	2.6	$2.50
2012/2013	54	463,166	1,211,607	24,390	19	22	12,372	30,826	76	475,538	1,242,433	2.6	$2.47
2013/2014	59	461,774	1,236,061	25,240	18	21	8,296	20,678	80	470,070	1,256,739	2.7	$2.53
2014/2015	64	543,157	1,403,610	29,973	18	20	7,388	18,253	84	550,545	1,421,863	2.6	$2.26
2015/2016	60	514,288	1,293,876	32,495	16	14	5,273	12,540	74	519,561	1,306,416	2.5	$2.55
2016/2017	59	400,023	974,320	28,540	14	14	8,384	19,294	73	408,407	993,614	2.4	$3.00
5-year avg.	59	476,482	1,223,895	28,128	17	18.2	8,343	20,318	77	484,824	1,244,213	2.6	$2.56

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

Number of crab and pot lifts for pot fishery from 1993/1994 to present are from logbooks; all other information from fish tickets.

\- No data.

Table 1.2–Traditional commercial Tanner crab harvest in thousands of pounds, by month and season in Registration Area A, 1968/1969 to present.

Season	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
1968/1969	0	0	0	0	10,008	8,277	13,137	60,424	34,999	34,195	*	8,595	177,825
1969/1970	24,421	30,619	17,488	18,695	19,691	97,188	214,401	149,620	21,002	*	*	*	660,337
1970/1971	913	*	6,694	7,079	21,265	41,440	56,239	*	0	0	0	0	167,378
1971/1972	-	29,914	30,951	39,046	29,367	17,946	91,576	203,460	148,496	58,539	*	1,034	656,661
1972/1973	5,359	39,096	83,806	86,733	50,707	140,770	376,634	554,558	228,712	26,617	*	*	1,597,838
1973/1974	29,402	91,781	94,821	87,290	69,476	126,267	314,656	416,168	89,811	-	-	-	1,309,673
1974/1975	*	77,220	70,645	56,565	71,647	74,368	180,565	225,790	102,605	-	-	-	863,751
1975/1976	13,256	110,312	125,429	107,128	159,655	367,402	634,649	460,031	171,535	-	-	-	2,149,397
1976/1977	3,861	76,151	277,031	209,229	338,272	393,722	695,293	458,008	112,143	-	-	-	2,563,710
1977/1978	29,434	162,649	139,499	176,005	149,876	303,768	592,475	504,744	83,959	-	-	-	2,142,409
1978/1979	6,590	47,585	76,675	91,665	200,058	189,220	465,356	422,280	60,340	-	-	-	1,559,769
1979/1980	60,702	55,748	74,471	61,002	153,949	440,029	615,468	282,356	37,450	-	-	-	1,781,175
1980/1981	26,144	52,621	48,540	60,071	315,911	504,091	627,344	350,454	28,110	-	-	-	2,013,276
1981/1982	-	-	-	870,816	597,721	712,698	809,360	315,187	-	-	-	-	3,305,857
1982/1983	-	-	-	1,102,009	-	-	-	-	-	-	-	-	1,102,009
1983/1984	-	-	-	-	-	866,004	727,464	-	-	-	-	-	1,593,468
1984/1985	-	-	-	-	-	531,064	599,860	-	-	-	-	-	1,130,924
1985/1986	-	-	-	-	-	577,662	426,397	-	-	-	-	-	1,009,005
1986/1987	-	-	-	-	635,358	488,616	-	-	-	-	-	-	1,123,974
1987/1988	-	-	-	-	787,725	524,760	-	-	-	-	-	-	1,330,485
1988/1989	-	-	-	-	-	1,087,935	552,783	-	-	-	-	-	1,646,332
1989/1990	-	-	-	-	-	1,233,415	740,708	-	-	-	-	-	2,009,669
1990/1991	-	-	-	-	-	1,598,811	642,782	-	-	-	-	-	2,241,593
1991/1992	-	-	-	-	-	1,730,820	392,101	-	-	-	-	-	2,122,921
1992/1993	-	-	-	-	-	1,268,195	301,492	-	-	-	-	-	1,569,687
1993/1994	-	-	-	-	-	1,559,853	441,673	-	-	-	-	-	2,001,526
1994/1995	-	-	-	-	-	2,507,147	-	-	-	-	-	-	2,507,147
1995/1996	-	-	-	-	-	2,020,036	-	-	-	-	-	-	2,020,036
1996/1997	-	-	-	-	-	1,900,819	-	-	-	-	-	-	1,900,819
1997/1998	-	-	-	-	-	2,701,322	-	-	-	-	-	-	2,701,322
1998/1999	-	-	-	-	-	2,164,131	-	-	-	-	-	-	2,164,131

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Table 1.2–Page 2 of 2.

Season	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
1999/2000	-	-	-	-	-	1,704,408	-	-	-	-	-	-	1,704,408
2000/2001	-	-	-	-	-	1,295,680	-	-	-	-	-	-	1,295,680
2001/2002	-	-	-	-	-	964,836	-	-	-	-	-	-	964,836
2002/2003	-	-	-	-	-	804,234	-	-	-	-	-	-	804,234
2003/2004	-	-	-	-	-	832,158	-	-	-	-	-	-	832,143
2004/2005	-	-	-	-	-	804,035	-	-	-	-	-	-	804,035
2005/2006	-	-	-	-	-	886,521	-	-	-	-	-	-	886,521
2006/2007	-	-	-	-	-	927,900	-	-	-	-	-	-	927,900
2007/2008	-	-	-	-	-	605,062	-	-	-	-	-	-	605,062
2008/2009	-	-	-	-	-	612,550	-	-	-	-	-	-	612,550
2009/2010	-	-	-	-	-	961,681	-	-	-	-	-	-	961,681
2010/2011	-	-	-	-	-	891,344	-	-	-	-	-	-	891,344
2011/2012	-	-	-	-	-	1,109,784	-	-	-	-	-	-	1,109,784
2012/2013	-	-	-	-	-	1,242,433	-	-	-	-	-	-	1,242,433
2013/2014	-	-	-	-	-	1,256,739	-	-	-	-	-	-	1,256,739
2014/2015	-	-	-	-	-	1,421,863	-	-	-	-	-	-	1,421,863
2015/2016	-	-	-	-	-	1,306,416	-	-	-	-	-	-	1,306,416
2016/2017	-	-	-	-	-	993,614	-	-	-	-	-	-	993,614

* Fewer than three permits were fished; information is confidential.
- No data.

Table 1.3—Biomass estimates, recommended exploitation rates, and guideline harvest levels (GHLs) for 14 surveyed areas, 2014/2015 through 2016/2017 seasons. See the stock health determination matrix in Tables 1.4 and 1.5 for a more detailed look at the data behind stock status determination. Recommended exploitation rates (ER) are 0% of estimated mature male biomass for poor stock status, 5% for below average, 10% for average, 15% for above average, and 20% for healthy stock health. An expansion factor of 71% (29% for non-surveyed areas) was used to determine total regional crab biomass. This expansion factor was based on the percent of commercial catch harvested in surveyed areas from 1980 to 2000.

	Estimated														
	Mature biomass			Legal biomass			Mature ER			Legal ER			Recommended harvest		
Survey area	2014/ 2015	2015/ 2016	2016/ 2017	2014/ 2015	2015/ 2016	2016/ 2017	2014/ 2015	2015/ 2016	2016/ 2017	2014/ 2015	2015/ 2016	2016/ 2017	2014/ 2015	2015/ 2016	2016/ 2017
Icy Strait	128,907	93,417	68,663	72,291	41,469	32,009	20%	20%	20%	36%	45%	43%	25,781	15,758	12,163*
Glacier	994,219	794,144	691,915	215,735	287,413	315,233	20%	20%	20%	92%	55%	44%	81,979*	109,217	119,778*
Stephens	477,397	468,213	170,831	366,579	340,027	120,317	20%	20%	20%	26%	28%	28%	95,479	93,643	34,166
Thomas	146,644	252,729	159,735	58,916	163,885	88,007	20%	20%	20%	50%	31%	36%	22,388	50,546	31,947
Holkham	592,400	576,632	497,976	371,903	359,178	279,116	20%	20%	20%	32%	32%	36%	118,480	115,326	99,595
Camden	57,824	**	**	28,212	**	**	**	**	**	41%	**	**	10,721*	**	**
Seymour	376,835	470,409	557,224	230,556	283,093	296,206	20%	20%	20%	33%	33%	38%	75,367	94,082	111,445
N. Juneau	244,529	184,163	126,424	188,000	140,539	89,100	20%	20%	20%	26%	26%	28%	48,906	36,833	25,285
Excursion	271,546	301,398	363,816	177,982	168,251	190,684	20%	20%	20%	31%	36%	38%	54309	60,280	72,460
Pybus	156,833	264,787	236,141	86,715	147,161	146,148	20%	20%	20%	36%	36%	32%	31,377	52,957	47,228
Gambier	73,081	79,596	108,100	44,478	43,137	65,536	20%	20%	20%	33%	37%	33%	14,616	15919	21,620
Peril	282,996	200,507	209,497	161,982	119,722	78,962	20%	20%	20%	35%	33%	53%	56,599	40,101	30,005*
Lynn	68,868	71,418	49,264	49,501	48,654	38,799	20%	20%	20%	28%	29%	25%	13,774	14,284	9,853
P. Fred.	16,595	**	**	11,686	**	**	**	**	**	28%	**	**	3,319	**	**
Non-surveyed	1,588,352	1,935,637	1,668,878	843,261	1,103,727	896,424	-	-	-	-	-	-	266,757	360,063	317,105
Total	5,477,075	5,693,049	4,908,464	2,907,795	3,246,255	2,636,540	20%	20%	20%	38%	35%	37%	919,852	1,059,008	932,661

* Adjusted harvest due to >38% of legal biomass.

** Removed, now considered part of non-surveyed areas.

Table 1.4–Tanner crab stock health scores, 2014/2015–2016/2017 seasons for Tanner crab survey areas. Negative scores are significantly below the long-term (l-t) average or trending significantly down and vice versa. The long-term average is defined as available data from 1997–2010. Short-term (s-t) trends are based on individual regression analyses over the past 4 years, including the current year. Total score is the sum of scores (+1, 0, -1 for long-term; +.25, 0, -.25 for short-term) for each response variable. Stock health <-3.25 = poor, -3.25 to -1.26 = below average, -1.25 to 1.25 = moderate, 1.26 to 3.25 above average, and >3.25 = healthy.

Survey area	Season	Large / mature females				Prerecruits		Recruits		Postrecruits		Total score	Stock health
		Clutch		CPUE									
		l-t	s-t	l-t	s-t	l-t	s-t	l-t	s-t	l-t	s-t		
Icy Strait	2014/2015	0	0	0	0	-1.00	0	-1.00	-0.25	-1.00	0	-3.25	Below Ave
	2015/2016	1.00	0	-1.00	-0.25	-1.00	-0.25	-1.00	-0.25	-1.00	-0.25	-4.00	Poor
	2016/2017	0	0	-1.00	0	-1.00	-0.25	-1.00	-0.25	-1.00	-0.25	-4.75	Poor
Glacier Bay	2014/2015	1.00	0	0	0	1.00	0.25	0	0	0	0	2.25	Above Ave
	2015/2016	1.00	0.25	0	0	0	0	0	0	0	0	1.25	Above Ave
	2016/2017	1.00	0	-1.00	0	0	0	0	0.25	0	0	0.25	Moderate
Stephens Passage	2014/2015	0	0	0	0	0	0.25	0	0.25	0	0.25	0.75	Moderate
	2015/2016	1.00	0	0	0	1.00	0	1.00	0.25	0	0	3.25	Healthy
	2016/2017	1.00	0	0	0	-1.00	-0.25	-1.00	-0.25	-1.00	-0.25	-2.75	Below Ave
Thomas Bay	2014/2015	1.00	0	0	0	0	0	-1.00	-0.25	-1.00	-0.25	-1.50	Below Ave
	2015/2016	0	0	-1.00	0	0	0.25	1.00	0.25	0	0	0.50	Moderate
	2016/2017	1.00	0	0	-0.25	0	0	-1.00	0	0	0	-0.25	Moderate
Holkham Bay	2014/2015	1.00	0	0	0	1.00	0.25	1.00	0.25	1.00	0	4.50	Healthy
	2015/2016	1.00	0	0	0	1.00	0	1.00	0	1.00	0	4.00	Healthy
	2016/2017	0	0	0	0	1.00	0	0	-0.25	0	0	0.75	Moderate
Port Camden	2014/2015	1.00	0	0	0	0	0	0	0	-1.00	-0.25	-0.25	Moderate
	2015/2016	**	**	**	**	**	**	**	**	**	**	**	**
	2016/2017	**	**	**	**	**	**	**	**	**	**	**	**

Table 1.5–Tanner crab stock health scores, 2014/2015–2016/2017, red king crab survey areas. Negative scores are significantly below the long-term average (l-t) or trending significantly down and vice versa. The long-term average is defined as available data from 1993–2002. Short-term (s-t) trends are based on individual regression analyses over the past 4 years, including the current year. Total score is the sum of scores (+1, 0, -1 for l-t; +.25, 0, -.25 for s-t). Stock health <-3.25 = poor, -3.25 to -1.26 = below average-1.25 to 1.25 = moderate, 1.26 to 3.25 above average, and >3.25 = healthy.

		Large / mature females				Prerecruits		Recruits		Postrecruits			
		Clutch		CPUE									
Survey area	Season	l-t	s-t	l-t	s-t	l-t	s-t	l-t	s-t	l-t	s-t	Total score	Stock health
Seymour Canal	2014/2015	0	0	0	0.25	1.00	0.25	0	0	0	0	1.50	Above Ave
	2015/2016	1.00	0	1.00	0.25	1.00	0.25	0	0	0	0	3.50	Healthy
	2016/2017	1.00	0	0	0	1.00	0.25	0	0	0	0	2.25	Above Ave
North Juneau	2014/2015	1.00	0	0	0	1.00	0.25	1.00	0.25	1.00	0.25	4.75	Healthy
	2015/2016	1.00	0	0	0	1.00	-0.25	0	0	0	0	1.75	Above Ave
	2016/2017	0	0	0	0	0	-0.25	-1.00	-0.25	0	-0.25	-1.75	Below Ave
Excursion Inlet	2014/2015	0	0	0	0	0	0	0	0	-1.00	-0.25	-1.25	Moderate
	2015/2016	1.00	0	0	-0.25	1.00	0	1.00	0.25	-1.00	-0.25	1.75	Above Ave
	2016/2017	1.00	0.25	0	0	1.00	0.25	1.00	0.25	0	0	3.75	Healthy
Pybus Bay	2014/2015	1.00	0	1.00	0.25	1.00	0.25	1.00	0	0	0	4.50	Healthy
	2015/2016	1.00	0	1.00	0.25	1.00	0.25	1.00	0.25	1.00	0	5.75	Healthy
	2016/2017	0	0	1.00	0	1.00	0.25	1.00	0.25	0	0	3.50	Healthy
Gambier Bay	2014/2015	0	0	-1.00	0	0	0.25	0	0.25	0	0	-0.50	Moderate
	2015/2016	1.00	0	0	0.25	1.00	0.25	-1.00	0.25	0	0	1.75	Above Ave
	2016/2017	0	0	0	0.25	0	0.25	0	0.25	0	0	0.75	Moderate
Peril Strait	2014/2015	1.00	0	0	0	1.00	0	1.00	0.25	1.00	0	4.25	Healthy
	2015/2016	0	0	1.00	0	0	0	0	0	0	0	1.00	Moderate
	2016/2017	0	0	1.00	0	1.00	0	-1.00	-0.25	0	0	0.75	Moderate
Lynn Sisters	2014/2015	0	0	0	0	1.00	0	0	0	1.00	0	2.00	Above Ave
	2015/2016	1.00	0	0	0	1.00	0.25	1.00	0	0	0	3.25	Healthy
	2016/2017	1.00	0.25	0	0	0	0	0	0	-1.00	0	0.25	Moderate
Port Frederick	2014/2015	1.00	0	-1.00	0	0	0.25	0	0	0	0	0.25	Moderate
	2015/2016	-	-	-	-	-	-	-	-	-	-	-	-
	2016/2017	-	-	-	-	-	-	-	-	-	-	-	-

Table 1.6–Traditional commercial Tanner crab harvest in pounds by season, by fishing area in Registration Area A, 1971/1972 to present.

	Lynn Canal/Upper Stephens Passage[a]		Icy Strait[b]		Frederick Sound/Lower Stephens Passage[c]		Other[d]		
Season	Lb	% of S.E. Harvest	Lb	% of S.E. Harvest	Lb	% of S.E. Harvest	Lb	% of S.E. Harvest	Total
1971/1972	13,440	2.0	310,803	47.3	200,854	30.6	131,564	20.0	656,661
1972/1973	177,661	11.1	505,203	31.6	443,106	27.7	471,868	29.5	1,597,838
1973/1974	377,190	28.8	404,347	30.9	396,400	30.3	131,736	10.1	1,309,673
1974/1975	19,116	2.2	371,115	43.0	289,758	33.5	183,762	21.3	863,751
1975/1976	782,127	36.4	505,089	23.5	406,565	18.9	455,616	21.2	2,149,397
1976/1977	599,719	23.4	1,034,577	40.4	529,849	20.7	399,565	15.6	2,563,710
1977/1978	394,041	18.4	762,491	35.6	648,802	30.3	337,075	15.7	2,142,409
1978/1979	308,765	19.8	655,043	42.0	511,769	32.8	84,192	5.4	1,559,769
1979/1980	330,221	18.5	391,185	22.0	907,178	50.9	152,591	8.6	1,781,175
1980/1981	321,594	16.0	682,736	33.9	634,425	31.5	374,521	18.6	2,013,276
1981/1982	384,252	11.6	2,102,755	63.6	428,259	13.0	390,591	11.8	3,305,857
1982/1983	92,055	8.4	816,016	74.0	108,918	9.9	85,020	7.7	1,102,009
1983/1984	298,975	18.8	656,496	41.2	468,461	29.4	169,536	10.6	1,593,468
1984/1985	366,496	32.4	225,044	19.9	365,395	32.3	173,989	15.4	1,130,924
1985/1986	421,236	41.7	182,316	18.1	282,490	28.0	122,963	12.2	1,009,005
1986/1987	410,674	36.5	242,010	21.5	317,528	28.3	153,762	13.7	1,123,974
1987/1988	458,190	34.4	239,194	18.0	459,709	34.6	173,392	13.0	1,330,485
1988/1989	476,600	28.9	349,098	21.2	628,454	38.2	192,180	11.7	1,646,332
1989/1990	386,754	19.2	621,277	30.9	709,733	35.3	291,905	14.5	2,009,669
1990/1991	442,952	19.8	798,460	35.6	617,839	27.6	382,342	17.1	2,241,593
1991/1992	617,885	29.1	800,184	37.7	442,200	20.8	262,652	12.4	2,122,921
1992/1993	452,466	28.8	490,117	31.2	433,002	27.6	194,102	12.4	1,569,687
1993/1994	253,543	12.7	517,397	25.9	888,117	44.4	342,469	17.1	2,001,526

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Table 1.6–Page 2 of 2.

Season	Lynn Canal/Upper Stephens Passage[a] Lb	Lynn Canal/Upper Stephens Passage[a] % of S.E. Harvest	Icy Strait[b] Lb	Icy Strait[b] % of S.E. Harvest	Frederick Sound/Lower Stephens Passage[c] Lb	Frederick Sound/Lower Stephens Passage[c] % of S.E. Harvest	Other[d] Lb	Other[d] % of S.E. Harvest	Total Lb
1994/1995	409,187	16.3	735,200	29.3	1,051,899	42	310,861	12.4	2,507,147
1995/1996	314,961	15.6	725,970	35.9	704,529	34.9	274,576	13.6	2,020,036
1996/1997	293,328	15.4	673,305	35.4	490,752	25.8	443,434	23.3	1,900,819
1997/1998	418,743	15.5	692,620	25.6	517,500	19.2	1,072,459	39.7	2,701,322
1999/2000	468,373	27.5	440,239	25.8	536,957	31.5	258,839	15.2	1,704,408
2000/2001	412,435	31.8	298,607	23	391,751	30.2	192,887	14.9	1,295,680
2001/2002	346,676	35.9	265,940	27.6	228,773	23.7	123,447	12.8	964,836
2002/2003	311,273	38.7	226,527	28.2	192,255	23.9	74,179	9.2	804,234
2003/2004	237,442	28.5	263,533	31.7	249,000	29.9	82,183	9.9	832,158
2004/2005	189,323	23.5	319,875	39.8	224,851	28	69,986	8.7	804,035
2005/2006	162,500	18.3	386,736	43.6	280,586	31.7	56,699	6.4	886,521
2006/2007	152,729	16.5	363,656	39.2	294,745	31.8	116,770	12.6	927,900
2007/2008	135,312	22.4	230,612	38.1	176,516	29.2	62,622	10.3	605,062
2008/2009	154,634	25.3	239,294	39.1	140,355	22.9	78,267	12.7	612,550
2009/2010	291,627	30.3	296,623	30.8	290,829	30.2	82,602	8.7	961,681
2010/2011	227,605	25.5	231,424	26	336,497	37.8	95,818	10.7	891,344
2011/2012	255,526	23	304,206	27.4	443,484	40	106,568	9.6	1,109,784
2012/2013	269,489	21.7	334,244	26.9	492,846	39.7	145,854	11.7	1,242,433
2013/2014	333,198	26.5	259,301	20.6	524,958	41.8	139,282	11.1	1,256,739
2014/2015	581,152	40.9	209,969	14.8	528,303	37.2	102,439	7.2	1,421,863
2015/2016	414,221	31.7	221,820	17.0	542,007	41.5	128,186	9.8	1,306,416
2016/2017	338,123	34.0	204,681	20.6	339,722	34.2	111,088	11.2	993,614

[a] Includes all of District 15 and Subdistricts 111-30 through 111-99.

[b] Includes all of District 14.

[c] Includes all of District 10, Subdistricts 111-01 through 111-29, and Subdistricts 108-40 through 108-60.

[d] Includes all other areas of Southeast Alaska.

Table 1.7–Summary of traditional commercial Tanner crab size frequency and shell condition data collected during dockside sampling in Registration Area A, 1970/1971 to present.

	Number sampled for size frequency		Carapace width (mm)		Recruitment	
Season	Boats	Crab	Mean	Range	% Recruits[a]	% Postrecruits[b]
1970/1971	1	99	157.0	137–177	76.5	23.5
1971/1972	4	235	144.5	121–180	81.4	18.6
1972/1973	3	429	156.9	128–183	88.1	11.9
1973/1974	9	1,658	153.0	111–190	80.9	19.1
1974/1975	4	616	157.9	127–190	74.7	25.3
1975/1976	12	1,663	154.1	116–190	75.7	24.3
1976/1977	25	3,753	154.4	124–192	60.6	39.4
1977/1978	34	4,786	155.3	124–192	28.2	71.8
1978/1979	26	3,273	154.9	129–198	48.1	51.9
1979/1980	43	4,509	154.6	128–193	70.5	29.5
1980/1981	45	4,223	152.1	125–192	71.0	29
1981/1982	59	6,556	149.7	129–193	71.1	28.9
1982/1983	55	5,808	150.8	123–185	78.8	21.2
1983/1984	24	2,444	152.0	135–187	81.6	18.4
1984/1985	23	3,211	152.6	135–197	82.4	17.6
1985/1986	50	5,453	151.0	128–191	80.1	19.9
1986/1987	61	6,984	152.2	133–188	79.9	20.1
1987/1988	104	10,933	150.8	134–186	72.4	27.6
1988/1989	93	10,030	152.9	133–194	65.1	34.9
1989/1990	121	12,806	150.8	129–185	67.5	32.5
1990/1991	133	13,050	152.3	131–193	79.7	20.3
1991/1992	110	11,568	154.9	129–190	67.5	32.5
1992/1993	99	11,175	151.9	130–192	71.1	28.9
1993/1994	127	14,731	150.1	130–190	79.6	20.4
1994/1995	149	18,235	151.7	99–191	79.6	20.4
1995/1996	119	15,085	153.7	132–189	77.4	22.6
1996/1997	129	13,123	152.4	132–196	77.2	22.8
1997/1998	152	11,345	153.8	127–190	74.1	25.9
1998/1999	121	9,306	154.2	125–193	65.1	34.9
1999/2000	138	9,195	155.0	69–193	68.5	31.5
2000/2001	116	9,096	154.7	134–197	64.3	35.7
2001/2002	126	9,194	152.9	118–197	75.1	24.9
2002/2003	111	7,864	152.7	133–190	77.8	22.2
2003/2004	96	6,925	152.1	131–189	74.7	25.3
2004/2005	92	6,841	150.9	127–192	65.4	34.6
2005/2006	85	6,268	151.6	126–185	73.4	26.6
2006/2007	84	6,200	152.4	129–190	69.4	30.6
2007/2008	65	4,761	151.5	132–186	60.8	39.2

-continued-

Table 1.7–Page 2 of 2.

	Number sampled for size frequency		Carapace width (mm)		Recruitment	
Season	Boats	Crab	Mean	Range	% Recruits[a]	% Postrecruits[b]
2008/2009	46	3,350	151.5	136–185	73.8	26.2
2009/2010	60	4,488	152.5	136–195	66.8	33.2
2010/2011	48	3,588	152.9	135–188	57.8	42.2
2011/2012	61	4,388	154.1	133–189	64.4	35.6
2012/2013	67	4,834	154.1	132–199	61.8	38.2
2013/2014	65	4,793	153.5	134–195	58.4	41.6
2014/2015	60	4,507	153.4	129–192	64.5	35.08
2015/2016	75	5,527	151.8	133–197	69.3	30.2
2016/2017	73	5,470	150.3	133–188	65.7	33.7

[a] Recruits = all new and soft-shell crab ≥140 mm and ≤164 mm carapace width.

[b] Postrecruits = all new and soft-shell crab ≥165 mm and old and very old shell crab ≥140 mm carapace width.

Table 1.8–Tanner crab catch rate and weights in Registration Area A, 1974/1975 to present. Data were collected during dockside sampling and interviews. [a]

Season	Number of			Mean number crab per pot	Range of number crab per pot	Weight (lb)		Estimated number of crab harvested [b]	Percent of harvest sampled [c]
	Boats interviewed	Pots lifted	Crab captured			Mean	Range		
1974/1975	2	ND	ND	ND	ND	2.7	2.1–3.2	324,648	0.2
1975/1976	10	ND	ND	ND	ND	1.9	1.7–2.1	1,153,110	0.1
1976/1977	20	58	1,400	24.1	24.1–24.1	2.5	2.0–3.0	1,014,551	0.4
1977/1978	40	270	6,805	25.2	16.0–43.1	2.5	1.6–3.1	840,881	0.6
1978/1979	20	4,096	122,784	30.0	17.2–48.6	2.6	2.3–2.8	610,816	0.5
1979/1980	25	8,047	306,017	38.0	7.7–93.0	2.3	2.1–2.8	777,310	0.6
1980/1981	34	4,113	59,620	14.5	2.3–27.1	2.4	2.1–3.2	833,775	0.5
1981/1982	33	6,266	197,787	31.6	8.1–111.6	2.3	2.0–2.5	1,424,520	0.5
1982/1983	57	2,043	30,321	14.8	4.9–29.2	2.3	1.9–3.0	474,611	1.2
1983/1984	18	680	7,380	10.9	6.9–14.0	2.5	2.3–2.7	638,523	0.4
1984/1985	19	1,555	17,326	11.1	3.9–16.5	2.6	2.3–3.0	435,249	0.7
1985/1986	50	6,990	94,784	13.6	1.8–47.2	2.4	1.8–3.1	415,708	1.3
1986/1987	61	15,452	191,786	12.4	2.9–32.0	2.5	2.1–2.8	451,523	1.5
1987/1988	99	23,497	278,085	11.8	1.1–32.9	2.4	2.0–2.7	558,059	2.0
1988/1989	106	26,288	389,997	14.8	0.4–42.7	2.5	2.1–3.1	652,278	1.5
1989/1990	126	35,352	389,983	11.0	0.2–34.6	2.4	1.6–3.0	823,038	1.6
1990/1991	135	41,706	604,723	14.5	0.9–40.3	2.5	2.1–3.1	883,237	1.5
1991/1992	115	33,978	411,104	12.1	0.8–99.2	2.7	2.1–3.1	799,838	1.4
1992/1993	95	28,569	307,225	10.8	0.5–31.7	2.5	2.0–3.0	625,073	1.8
1993/1994	127	28,408	355,379	12.5	0.3–47.5	2.4	1.9–2.9	824,186	1.8
1994/1995	144	27,846	369,490	13.3	0.3–59.5	2.5	2.0–3.0	1,002,415	1.8
1995/1996	115	22,426	461,886	20.6	0.5–284.8	2.6	2.1–3.2	771,905	2.0
1996/1997	128	20,799	332,706	16.0	0.4–65.8	2.5	2.1–3.1	745,996	1.8
1997/1998	151	28,592	564,853	19.8	0.4–91.6	2.6	2.0–3.9	1,028,370	1.1
1998/1999	121	25,736	442,061	17.2	0.3–60.6	2.6	2.1–3.3	823,499	1.1
1999/2000	139	25,526	326,463	12.8	0.3–62.5	2.7	2.1–6.2	636,523	1.5
2000/2001	116	26,821	319,114	11.9	0.1–32.6	2.7	2.2–3.4	484,896	1.9
2001/2002	126	28,194	299,031	10.6	0.3–64.9	2.6	2.1–3.1	371,710	2.5
2002/2003	111	20,469	248,123	12.1	0.2–44.6	2.5	1.8–3.0	323,381	2.4
2003/2004	96	19,223	247,274	12.9	0.5–41.3	2.5	2.1–3.1	334,054	2.1
2004/2005	92	18,783	247,799	13.2	0.6–41.5	2.4	2.0–2.9	329,784	2.1
2005/2006	85	20,311	334,479	16.5	0.5–63.0	2.5	2.2–3.0	357,983	1.8
2006/2007	84	25,262	367,483	14.5	0.6–57.3	2.5	1.9–2.9	371,697	1.7
2007/2008	63	13,212	147,907	11.2	0.4–34.6	2.5	1.9–3.0	246,722	1.9
2008/2009	46	10,948	142,871	13.0	0.6–31.4	2.5	2.1–3.0	243,176	1.4
2009/2010	60	14,893	236,303	15.9	0.8–47.0	2.5	2.1–2.9	382,679	1.2
2010/2011	48	8,046	116,427	14.5	0.4–36.2	2.6	2.3–3.0	348,553	1.0
2011/2012	43	12,251	146,329	11.9	0.6–31.9	2.6	2.1–3.2	426,840	1.0
2012/2013	67	13,403	183,803	13.7	0.1–43.5	2.6	2.2–3.1	477,859	1.0
2014/2015	59	14,151	164,090	11.6	2.2–40.2	2.5	2.2–2.9	559,207	0.8
2015/2016	74	14,703	206,744	14.1	0.4–38.1	2.4	2.1–2.7	534,660	1.0
2016/2017	74	13,818	172,760	12.5	0.6–38.6	2.4	2.2–2.9	407,665	1.3

[a] Summary tables of all dockside sampling data includes data from Tables 1.9, 1.11, and 1.13 plus data collected that could not be assigned to a fishing area.

[b] Calculated by dividing fish ticket weight data from Table 1.6 by dockside sampling mean weight per crab data.

[c] Calculated by dividing number of crab sampled for size frequency by estimated number of crab harvested. ND = No Data Collected.

Table 1.9–Tanner crab catch rate and mean weight in Icy Strait, 1975/1976 to present. Data were collected during dockside sampling and interviews.

	Number sampled			Mean number of crab per pot	Range of number of crab per pot	Weight (lb)		Estimated number of crab harvested [a]	Percent of harvest sampled [b]
Season	Boats inter-viewed	Pots lifted	Crab captured			Mean	Range		
1977/1978	3	ND	ND	ND	0.0–0.0	2.8	2.8–2.9	270,387	0.3
1978/1979	1	ND	ND	ND	0.0–0.0	2.7	2.7–2.7	247,186	0.1
1979/1980	1	100	9,300	93	93.0–93.0	ND	0.0–0.0	ND	ND
1980/1981	ND	ND	ND	ND	ND	ND	ND	ND	ND
1981/1982	19	3,535	91,832	26	8.4–71.6	2.3	2.0–2.5	918,234	0.3
1982/1983	25	1,656	24,130	14.6	4.9–36.5	2.4	2.2–2.8	334,433	0.9
1983/1984	8	ND	ND	ND	0.0–0.0	2.5	2.4–2.7	260,514	0.3
1984/1985	1	ND	ND	ND	0.0–0.0	2.3	2.3–2.3	97,845	0.3
1985/1986	1	98	811	8.3	8.3–8.3	ND	0.0–0.0	ND	ND
1986/1987	4	350	4,411	12.6	12.6–12.6	2.4	2.3–2.5	102,083	0.5
1987/1988	13	1,958	20,421	10.4	1.1–40.3	2.2	2.1–2.4	107,977	0.9
1988/1989	20	6,125	68,178	11.1	0.4–30.4	2.6	2.3–2.8	128,608	1.4
1989/1990	25	8,277	93,291	11.3	0.2–32.4	2.5	2.2–2.8	240,777	1.1
1990/1991	36	10,721	133,519	12.5	4.2–40.3	2.5	2.2–2.7	317,299	1.1
1991/1992	29	8,668	100,652	11.6	1.1–24.0	2.7	2.4–3.1	300,147	0.8
1992/1993	33	9,325	96,280	10.3	2.7–28.7	2.6	2.3–3.0	183,498	1.8
1993/1994	35	9,055	108,432	12	0.8–39.1	2.5	2.1–2.9	205,405	1.5
1994/1995	40	10,791	154,190	14.3	0.9–40.0	2.5	2.0.2–3	293,401	1.5
1995/1996	31	6,212	103,571	16.7	0.1–56.8	2.7	2.3–3.2	270,125	1.1
1996/1997	40	9,526	167,253	17.6	0.4–65.8	2.5	2.3–2.8	265,024	1.5
1997/1998	29	8,848	136,226	15.4	0.4–56.8	2.6	2.4–3.0	258,280	0.8
1998/1999	27	5,619	114,969	20.5	1.1–60.6	2.7	2.4–3.1	259,305	0.8
1999/2000	26	5,208	82,812	15.9	0.2–62.5	2.7	2.1–3.0	163,041	1.1
2000/2001	20	7,307	92,424	12.7	2.3–33.7	2.5	2.2–2.7	120,188	1.0
2001/2002	24	7,057	79,708	11.3	2.0–27.3	2.7	2.4–2.9	99,725	1.6
2002/2003	15	3,317	44,675	13.5	1.9–37.5	2.6	2.2–2.8	85,527	1.0
2003/2004	18	3,587	58,624	16.3	3.3–48.8	2.5	2.3–3.0	106,421	1.1
2004/2005	18	4,943	113,504	23	2.5–48.8	2.4	2.2–2.5	132,845	1.0
2005/2006	30	7,172	156,833	21.9	2.4–63.0	2.5	2.2–2.7	153,794	1.0
2006/2007	22	5,447	103,307	19	2.6–57.3	2.6	2.3–2.9	139,089	0.8
2007/2008	18	4,030	56,682	14.1	1.0–35.8	2.5	2.2–3.0	92,471	1.2
2008/2009	12	2,885	57,591	20	1.5–26.7	2.4	2.3–2.6	98,475	0.7
2009/2010	9	3,404	83,246	24.5	7.2–69.4	2.5	2.4–2.6	118,176	0.3
2010/2011	3	913	19,928	21.8	3.3–26.5	2.8	2.8–2.8	83,849	0.3
2011/2012	7	1,344	22,871	17.0	4.6–39.8	2.5	2.5–2.6	121,682	0.4
2012/2013	7	2,492	55,041	22.1	3.3–33.1	2.5	2.5–2.5	133,698	0.3
2013/2014	3	557	7,331	13.2	4.3–19.8	2.5	2.5–2.6	103,720	0.2
2014/2015	4	2,010	38,558	19.2	0.1–31.9	2.5	2.3–2.5	85,636	0.3
2015/2016	3	328	6,063	18.5	5.9–26.0	2.3	2.3–2.3	98,150	0.2
2016/2017	6	628	9,363	14.9	3.4–22.2	2.3	2.2–2.4	88,225	0.4

[a] Calculated by dividing fish ticket weight (pounds) data for Icy Strait from Table 1.6, by dockside sampling mean weight data.

[b] Calculated by dividing number of crab sampled for size frequency for Icy Strait by estimated number of crab caught.

ND = No Data Collected.

Table 1.10–Icy Strait summary of traditional commercial Tanner crab size frequency and shell condition, 1971/1972 to present. Data were collected during dockside sampling.

	Number of sampled		Carapace width (mm)		Recruitment	
Season	Boats	Crab	Mean	Range	% Recruits[a]	% Postrecruits[b]
1976/1977[c]	1	101	155.2	140–179	82.2	17.8
1977/1978	4	828	157.6	126–190	24.7	75.3
1978/1979	1	200	156	138–182	82.5	17.5
1979/1980	2	207	152.6	138–179	71.4	28.6
1980/1981	1	104	149.4	137–175	90.3	9.7
1981/1982	21	2,626	149	130–181	68.4	31.6
1982/1983	29	3,002	151	129–178	78.9	21.2
1983/1984	8	803	152.4	137–181	73.6	26.4
1984/1985	2	309	146.6	136–165	59.8	40.2
1985/1986	1	118	148.3	138–180	85.6	14.4
1986/1987	4	485	148.4	136–176	44.4	55.6
1987/1988	10	1,017	149	137–184	70.4	29.6
1988/1989	17	1,770	152.1	135–184	72.7	27.3
1989/1990	25	2,576	151.1	135–183	76.3	23.7
1990/1991	34	3,572	149.9	132–180	86.8	13.2
1991/1992	25	2,496	154.8	132–187	78.3	21.7
1992/1993	31	3,301	152.1	135–189	80.3	19.7
1993/1994	28	3,114	151.1	131–185	87.8	12.2
1994/1995	37	4,324	150.6	135–190	91.8	8.2
1995/1996	28	3,061	152.8	137–185	89.7	10.3
1996/1997	37	3,954	151.2	133–186	89	11.1
1997/1998	29	2,153	154.1	130–190	87.4	12.7
1998/1999	26	2,158	154.8	133–187	85.7	14.3
1999/2000	22	1,743	154.2	135–189	84.4	15.6
2000/2001	16	1,197	151.4	138–183	90.1	9.9
2001/2002	21	1,563	153.8	137–182	88.6	11.4
2002/2003	12	842	153.3	136–178	85.3	14.7
2003/2004	16	1,210	150.7	135–182	91.3	8.7
2004/2005	16	1,348	149.6	128–177	69.3	30.8
2005/2006	21	1,575	151	134–174	83.8	16.2
2006/2007	15	1,122	153.7	138–184	76.6	23.4
2007/2008	15	1,124	151.5	132–181	64.5	35.5
2008/2009	9	675	150	139–175	82.2	17.8
2009/2010	5	375	152.2	138–188	80.8	19.2
2010/2011	3	225	151	135–172	71.9	28.1
2011/2012	7	525	151.6	135–179	75.1	24.8
2012/2013	5	375	152.8	135–184	58.9	40.3
2013/2014	3	226	151.2	138–182	65.3	34.7
2014/2015	3	225	151	134–172	56.0	43.6
2015/2016	3	226	149.3	138–173	64.6	35.4
2016/2017	5	381	148.1	136–174	80.6	18.6

[a] Recruits = all new and soft-shell crab ≥140 mm and ≤164 mm carapace width.

[b] Postrecruits = all new and soft-shell crab ≥165 mm and old and very old crab ≥140 mm carapace width.

[c] The first season that legal size was 5½-inch (140 mm) carapace width.

Table 1.11–Tanner crab catch rate and mean weight in Lynn Canal/Stephens Passage, 1976/1977 to present. Data were collected during dockside sampling and interviews.

Season	Number sampled			Mean number of crab per pot	Range of number of crab per pot	Weight (lb)		Estimated number of crab harvested [a]	Percent of harvest sampled [b]
	Boats inter-viewed	Pots lifted	Crab captured			Mean	Range		
1976/1977	10	58	1,400	24.1	24.1–24.1	2.6	2.5–3.0	230,661	0.9
1977/1978	7	ND	ND	ND	0.0–0.0	2.7	2.6–2.9	146,484	0.9
1978/1979	6	196	3,922	20.0	17.2–22.4	2.7	2.6–2.8	115,211	0.9
1979/1980	3	175	8,350	47.7	7.0–86.4	2.7	2.7–2.7	122,304	0.5
1980/1981	2	125	289	2.3	2.3–2.3	2.9	2.9–3.2	109,386	0.1
1981/1982	3	720	8,744	12.1	12.1–12.2	2.3	2.3–2.3	165,626	0.3
1982/1983	7	387	3,394	8.8	5.5–13.7	2.4	2.4–2.5	38,064	2.9
1983/1984	2	ND	ND	ND	0.0–0.0	2.6	2.5–2.7	115,434	0.2
1984/1985	6	505	3,536	7.0	7.5–14.0	2.6	2.5–2.7	143,163	0.5
1985/1986	28	2,773	40,787	14.7	5.9–30.7	2.4	1.8–3.1	173,655	1.8
1986/1987	36	3,872	50,842	13.1	5.0–32.0	2.5	2.1–2.8	164,210	2.6
1987/1988	45	4,410	46,198	10.5	3.0–33.0	2.4	2.0–2.7	188,165	2.7
1988/1989	41	6,035	81,886	13.6	4.5–37.4	2.6	2.2–3.1	181,944	2.0
1989/1990	35	4,828	59,152	12.3	3.1–35.6	2.5	2.1–2.8	154,834	2.6
1990/1991	33	6,911	119,110	17.2	1.0–52.5	2.5	2.1–2.8	175,039	1.8
1991/1992	38	5,496	79,116	14.4	0.8–99.2	2.7	2.2–3.1	226,080	1.6
1992/1993	23	5,797	60,156	10.4	0.9–34.5	2.6	2.2–3.0	172,040	1.6
1993/1994	13	2,724	29,000	10.7	1.2–23.7	2.4	2.2–2.6	105,533	1.2
1994/1995	28	2,184	33,189	15.2	5.1–46.8	2.5	2.2–3.0	160,951	2.4
1995/1996	25	2,726	36,514	13.4	0.6–40.4	2.8	2.1–3.1	113,305	2.9
1996/1997	27	1,836	33,536	18.3	7.3–42.7	2.7	2.3–3.1	107,923	2.2
1997/1998	36	3,913	86,103	22.0	11.7–46.3	2.8	2.3–3.0	151,596	1.8
1998/1999	19	2,385	63,005	26.4	11.7–60.6	3	2.9–3.3	112,339	1.1
1999/2000	24	3,458	91,701	26.5	2.3–52.3	2.9	2.5–3.2	161,223	1.3
2000/2001	35	6,347	89,096	14.0	0.8–36.7	2.8	2.4–3.2	144,459	1.5
2001/2002	44	6,557	95,146	14.5	1.0–64.9	2.6	2.3–3.1	133,400	2.2
2002/2003	36	4,787	83,123	17.4	1.6–43.6	2.5	2.2–2.9	123,133	2.1
2003/2004	32	6,043	77,552	12.8	2.9–44.0	2.4	2.2–2.8	96,428	2.3
2004/2005	18	3,695	53,834	14.6	0.8–23.3	2.5	2.3–2.6	75,762	1.7
2005/2006	18	3,349	56,820	17.0	3.8–31.2	2.5	2.2–2.9	64,166	1.8
2006/2007	19	7,611	63,477	8.3	2.7–24.5	2.4	1.9–2.7	62,707	2.0
2007/2008	13	2,420	38,988	16.1	6.0–37.2	2.4	1.9–2.8	55,781	1.5
2008/2009	6	937	16,627	17.7	7.2–32.7	2.6	2.5–2.7	61,767	0.5
2009/2010	17	2,377	58,887	24.8	8.7–44.8	2.6	2.4–2.9	119,464	0.9
2010/2011	14	2,420	45,921	19.0	2.3–49.1	2.8	2.5–3.0	89,327	1.2
2011/2012	18	2,649	41,391	15.6	5.8–31.1	2.8	2.1–3.2	91,259	1.5
2012/2013	17	2,381	41,759	17.5	7.0–33.2	2.7	2.6–2.8	99,811	1.3
2013/2014	19	2,716	50,015	18.4	1.9–39.5	2.7	2.4–3.1	123,407	1.2
2014/2015	32	6,250	134,553	21.5	2.6–45.0	2.5	2.2–2.9	85,636	1.0
2015/2016	27	5,076	57,341	17.2	4.1–69.1	2.5	2.2–2.7	98,150	1.2
2016/2017	36	6,113	88,565	14.5	3.4–33.5	2.5	2.2–2.9	88,225	1.9

[a] Calculated by dividing fish ticket weight data for Lynn Canal/Stephens Passage from Table 1.6, by dockside sampling mean weight data.

[b] Calculated by dividing number of crab sampled for size frequency for Lynn Canal/Stephens Passage by estimated number of crab caught.

ND = No Data Collected.

Table 1.12–Lynn Canal/Stephens Passage summary of traditional commercial Tanner crab size frequency and shell condition, 1970/1971 to present. Data were collected during dockside sampling.

	Number of sampled		Carapace width (mm)		Recruitment	
Season	Boats	Crab	Mean	Range	% Recruits[a]	% Postrecruits[b]
1975/1976	4	555	155.7	126–182	54.8	45.2
1976/1977[c]	14	2,149	154.6	124–191	54.0	46.0
1977/1978	9	1,281	155.7	131–187	23.9	76.1
1978/1979	8	1,013	154.4	129–191	55.0	45.0
1979/1980	5	555	153.3	128–186	81.7	18.3
1980/1981	4	155	149.9	136–182	47.6	52.4
1981/1982	4	416	150.9	131–176	79.5	20.5
1982/1983	11	1,103	151.0	135–177	82.2	17.8
1983/1984	2	204	153.8	139–177	74.1	25.9
1984/1985	7	750	153.6	136–183	86.9	13.1
1985/1986	29	3,166	151.6	135–191	77.6	22.4
1986/1987	38	4,232	152.8	133–188	81.1	18.9
1987/1988	49	4,979	151.8	135–185	77.4	22.6
1988/1989	33	3,595	155.0	133–194	85.5	14.5
1989/1990	35	3,945	151.9	129–185	74.4	25.6
1990/1991	30	3,181	153.8	134–188	80.3	19.7
1991/1992	36	3,539	157.0	129–190	62.3	37.7
1992/1993	26	2,830	155.3	135–192	61.7	38.3
1993/1994	12	1,296	151.7	130–190	72.8	27.2
1994/1995	29	3,803	152.7	131–191	76.7	23.4
1995/1996	23	3,310	155.9	136–189	66.6	33.4
1996/1997	25	2,372	156.2	134–196	60.1	39.9
1997/1998	35	2,679	157.9	136–189	62.2	37.8
1998/1999	18	1,275	159.7	125–193	59.1	40.9
1999/2000	23	2,157	157.9	129–188	55.2	44.8
2000/2001	30	2,128	158.1	136–197	45.9	54.1
2001/2002	40	2,993	152.8	118–197	67.2	32.9
2002/2003	34	2,545	155.4	133–190	74.7	25.3
2003/2004	30	2,219	152.7	131–189	72.5	27.5
2004/2005	17	1,275	153.4	136–190	67.5	32.5
2005/2006	15	1,106	153.1	130–180	69.6	30.4
2006/2007	17	1,250	152.9	137–188	69.2	30.9
2007/2008	12	899	153.3	135–181	59.2	40.8
2008/2009	4	300	156.0	136–183	84.2	15.8
2009/2010	14	1,050	154.6	137–195	65.7	34.3
2010/2011	14	1,050	155.9	137–188	60.3	39.7
2011/2012	20	1,338	158.7	133–189	53.0	46.9
2012/2013	18	1,250	157.6	138–199	62.0	38.0
2013/2014	19	1,425	156.5	134–195	51.5	37.9
2014/2015	31	2,327	155.4	129–192	63.3	36.3
2015/2016	26	1,950	154.9	133–197	67.2	32.5
2016/2017	34	2,525	152.3	133–188	66.1	33.4

[a] Recruits = all new and soft-shell crab ≥140 mm and ≤164 mm carapace width.

[b] Postrecruits = all new and soft-shell crab ≥165 mm and old and very old shell crab ≤140 mm carapace width.

[c] The first season that the regulatory size was 5½-inch (140 mm) carapace width.

Table 1.13–Frederick Sound summary of traditional commercial Tanner crab CPUE and mean weight, 1974/1975 to present. Data were collected during dockside sampling and interviews.

	Number sampled			Mean	Range of	Weight (lb)		Estimated	
Season	Boats inter-viewed	Pots lifted	Crab captured	number of crab per pot	number of crab per pot	Mean	Range	number of crab harvested [a]	Percent of harvest sampled [b]
1974/1975	1	ND	ND	ND	ND	3.2	3.2–3.2	89,987	0.6
1975/1976	0	ND	ND	ND	ND	ND	0.0–0.0	ND	ND
1976/1977	4	ND	ND	ND	ND	2.6	2.4–2.8	206,167	0.4
1977/1978	14	ND	ND	ND	ND	2.7	2.5–3.1	236,789	0.8
1978/1979	5	ND	ND	ND	ND	2.5	2.6–2.9	188,150	0.9
1979/1980	1	ND	ND	ND	ND	2.8	2.8–2.8	323,992	1.2
1980/1981	8	ND	ND	ND	ND	2.5	2.2–2.8	253,770	1.2
1981/1982	6	ND	ND	ND	ND	2.4	2.2–2.5	176,238	1.2
1982/1983	5	ND	ND	ND	ND	2.7	2.4–3.0	42,053	1.9
1983/1984	4	ND	ND	ND	ND	2.4	2.3–2.6	192,782	0.4
1984/1985	8	ND	ND	ND	ND	2.7	2.3–3.0	135,754	0.6
1985/1986	15	2,992	21,651	7.2	1.8–47.2	2.5	2.1–2.7	115,041	1.3
1986/1987	10	2,179	17,323	8.0	2.9–17.0	2.5	2.1–2.9	129,076	0.9
1987/1988	34	8,103	76,247	9.4	2.4–32.0	2.4	2.2–2.7	190,676	1.3
1988/1989	34	6,619	107,571	16.3	2.8–59.6	2.4	2.3–2.8	245,835	1.4
1989/1990	48	9,423	83,539	8.9	1.0–36.0	2.5	1.6–3.0	269,714	1.6
1990/1991	47	11,310	122,867	10.9	0.9–28.9	2.6	2.2–3.0	231,054	1.8
1991/1992	30	7,876	71,863	9.1	0.8–20.0	2.7	2.3–3.0	158,978	1.6
1992/1993	27	5,931	66,961	11.3	1.4–31.7	2.5	2.1–2.8	173,208	1.3
1993/1994	56	11,608	175,553	15.1	0.6–68.3	2.4	1.9–2.9	356,388	1.8
1994/1995	51	8,252	79,355	9.6	0.4–59.5	2.5	2.0–3.0	401,831	1.4
1995/1996	49	7,020	158,017	22.5	0.5–284.8	2.7	2.1–2.9	258,073	2.2
1996/1997	39	4,286	57,385	13.4	3.8–32.0	2.6	2.1–2.9	186,461	1.8
1997/1998	35	4,366	86,792	19.9	0.5–54.6	2.5	2.2–3.1	196,591	1.3
1998/1999	25	7,378	112,153	15.2	1.1–54.9	2.5	2.1–2.9	211,257	0.9
1999/2000	51	11,948	148,149	12.4	0.5–69.2	2.6	2.2–3.3	190,398	1.8
2000/2001	44	9,448	106,877	11.3	0.2–32.9	2.8	2.3–3.3	137,832	2.5
2001/2002	39	8,371	76,916	9.2	0.6–38.0	2.7	2.1–3.1	80,771	3.0
2002/2003	37	8,371	71,339	8.5	0.5–44.6	2.6	1.8–3.0	69,523	3.5
2003/2004	36	7,009	88,212	12.6	0.7–34.0	2.6	2.2–3.1	92,872	2.8
2004/2005	34	6,699	88,029	13.1	0.5–34.0	2.5	2.1–2.9	90,302	2.6
2005/2006	28	7,001	102,133	14.6	1.1–39.6	2.5	2.2–3.0	110,904	1.8
2006/2007	25	7,227	103,586	14.3	0.6–31.1	2.6	2.2–3.0	115,135	1.4
2007/2008	16	4,271	46,987	11.0	1.3–18.5	2.6	2.1–3.0	69,222	1.6
2008/2009	20	4,165	54,315	13.0	1.0–34.4	2.5	2.1–2.8	56,595	1.9
2009/2010	29	6,527	101,912	15.6	0.8–47.0	2.5	2.3–2.9	114,500	1.5
2010/2011	22	3,426	40,486	11.8	0.4–29.7	2.6	2.3–2.8	131,960	1.0
2011/2012	21	4,548	64,456	14.2	0.7–32.0	2.6	2.3–2.9	170,571	0.7
2012/2013	25	4,613	70,382	15.3	0.1–43.6	2.6	2.2–3.1	189,556	1.0
2013/2014	15	3,242	46,076	14.2	0.4–29.3	2.6	2.3–3.0	201,907	0.5
2014/2015	18	3,280	49,852	15.2	1.1–26.4	2.5	2.2–2.9	210,410	0.3
2015/2016	28	5,738	80,136	14.0	0.8–37.9	2.4	2.1–2.7	221,002	0.2
2016/2017	21	4,069	36,360	8.9	0.3–38.6	2.4	2.2–2.6	144,611	0.4

[a] Calculated by dividing fish ticket weight data for Frederick Sound from Table 2.6, by dockside sampling mean weight data.

[b] Calculated by dividing number of crab sampled for size frequency by estimated number of crab caught.

ND = No Data Collected.

Table 1.14–Frederick Sound summary of traditional commercial Tanner crab size frequency and shell condition, 1971/1972 to present. Data were collected during dockside sampling.

	Number of sampled		Carapace width (mm)		Recruitment	
Season	Boats	Crab	Mean	Range	% Recruits[a]	% Postrecruits[b]
1971/1972	2	148	147.4	121–180	67.8	32.2
1972/1973	3	429	156.9	128–183	88.1	11.9
1973/1974	9	1,652	153.0	111–190	80.9	19.2
1974/1975	4	515	157.9	127–190	74.7	25.3
1975/1976	3	401	154.8	116–183	81.5	18.5
1976/1977[c]	7	820	155.3	129–192	75.7	24.3
1977/1978	15	1,866	156.2	124–192	38.0	62.0
1978/1979	14	1,652	155.8	131–198	47.2	52.8
1979/1980	36	3,739	155.0	134–193	68.9	31.1
1980/1981	29	2,960	153.1	125–192	74.6	25.4
1981/1982	21	2,148	151.0	130–193	67.7	32.3
1982/1983	8	785	153.4	135–185	77.6	22.4
1983/1984	7	733	152.3	135–187	86.2	13.8
1984/1985	8	853	155.7	135–197	76.4	23.6
1985/1986	14	1,524	151.5	131–188	85.8	14.2
1986/1987	10	1,146	151.8	136–187	86.6	13.4
1987/1988	25	2,537	150.7	135–186	69.6	30.5
1988/1989	33	3,434	151.9	133–182	47.9	52.2
1989/1990	43	4,393	151.0	132–185	63.8	36.2
1990/1991	41	4,178	154.0	131–193	77.5	22.5
1991/1992	25	2,487	154.6	134–189	70.8	29.2
1992/1993	22	2,223	149.4	133–185	75.9	24.1
1993/1994	50	6,470	150.0	130–186	82.4	17.6
1994/1995	49	5,658	152.8	115–188	80.6	19.4
1995/1996	41	5,648	154.0	135–188	75.8	24.2
1996/1997	37	3,331	153.7	132–195	75.3	24.7
1997/1998	31	2,444	152.3	127–186	76.3	23.8
1998/1999	21	1,798	153.9	135–188	74.2	25.8
1999/2000	49	3,572	154.4	131–193	74.0	26.0
2000/2001	39	3,448	155.1	134–188	66.1	33.9
2001/2002	33	2,422	153.9	132–192	73.7	26.3
2002/2003	33	2,443	153.7	134–185	78.6	21.4
2003/2004	35	2,608	153.5	134–187	75.6	24.4
2004/2005	32	2,318	151.6	135–192	73.8	26.2
2005/2006	26	1,947	152.7	126–183	72.0	28.0
2006/2007	22	1,637	153.2	136–190	67.6	32.4
2007/2008	15	1,122	152.0	137–183	57.4	42.6

Table 1.14–Page 2 of 2.

	Number of sampled		Carapace width (mm)		Recruitment	
Season	Boats	Crab	Mean	Range	% Recruits[a]	% Postrecruits[b]
2008/2009	15	1,103	151.7	137–178	71.3	28.7
2009/2010	23	1,725	152.0	137–187	62.5	37.5
2010/2011	17	1,270	152.5	136–186	61.3	38.7
2011/2012	17	1,277	152.9	136–181	72.7	27.0
2012/2013	25	1,817	153.9	123–192	67.4	32.5
2013/2014	14	1,050	154.3	136–188	64.4	35.5
2014/2015	16	1,201	151.8	136–187	67.6	32.2
2015/2016	28	2,021	151.2	137–183	76.1	23.5
2016/2017	19	1,431	148.7	136–175	71.9	27.0

[a] Recruits = all new and soft-shell crab ≥140 mm and ≤164 mm carapace width.

[b] Postrecruits = all new and soft-shell crab ≥165 mm and old and very old crab ≤140 mm carapace width.

[c] The first season that the regulatory legal size was 5½-inch (140 mm) carapace width.

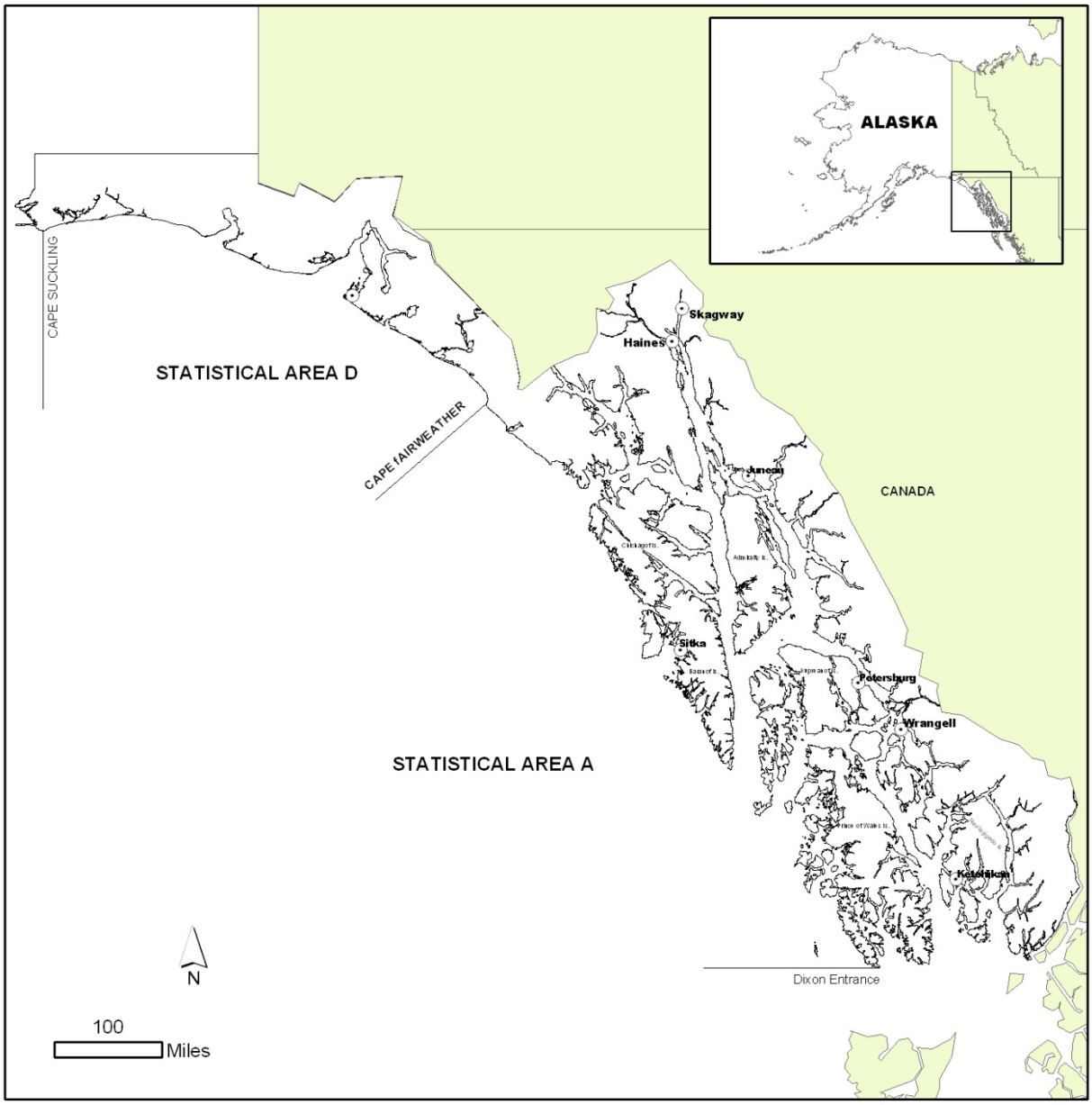

Figure 1.1–Registration Area A (Dixon Entrance to Cape Fairweather) and Registration Area D (Cape Fairweather to Cape Suckling).

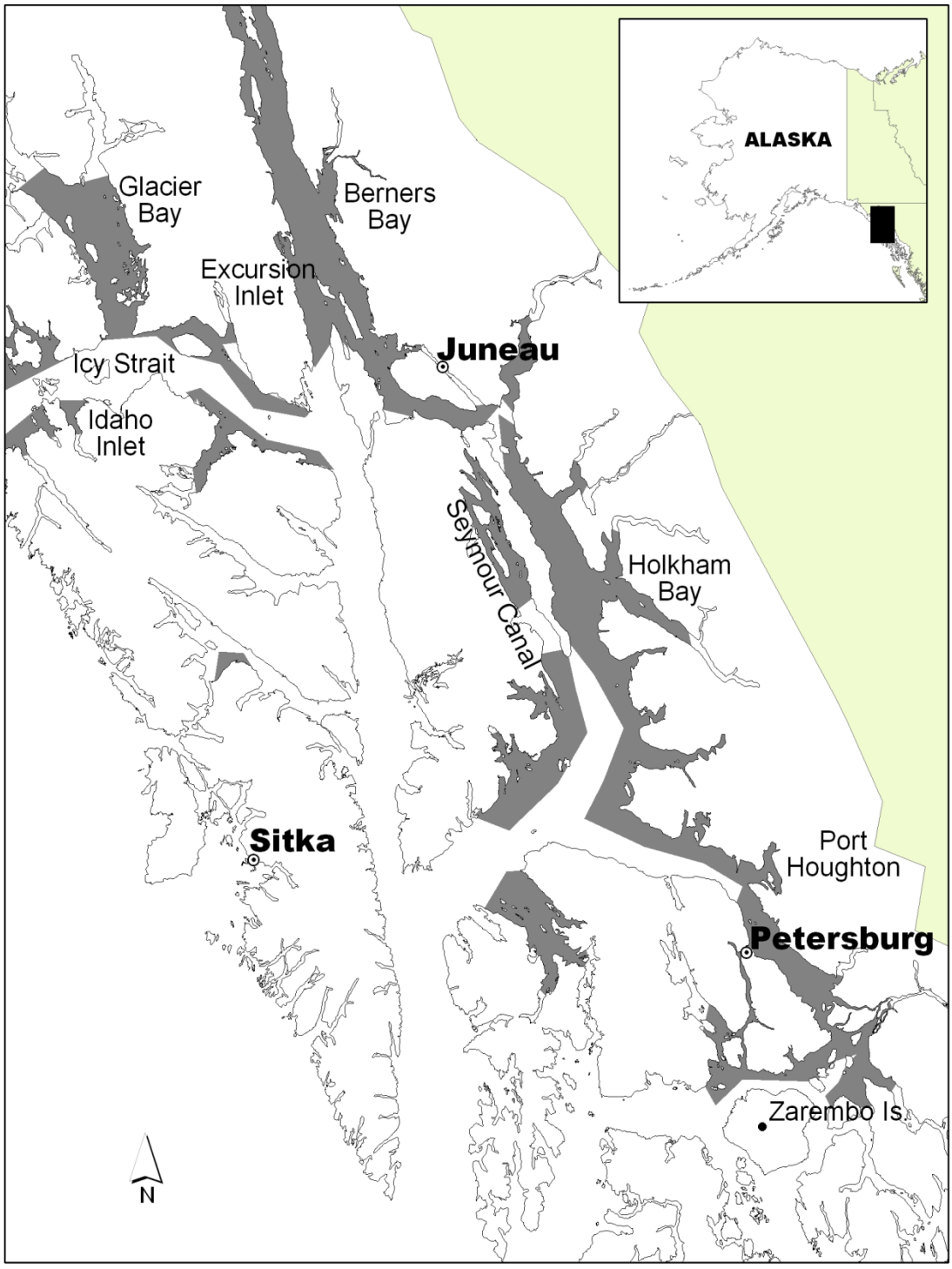

Figure 1.2–Map showing major Tanner crab fishing grounds in Southeast Alaska.

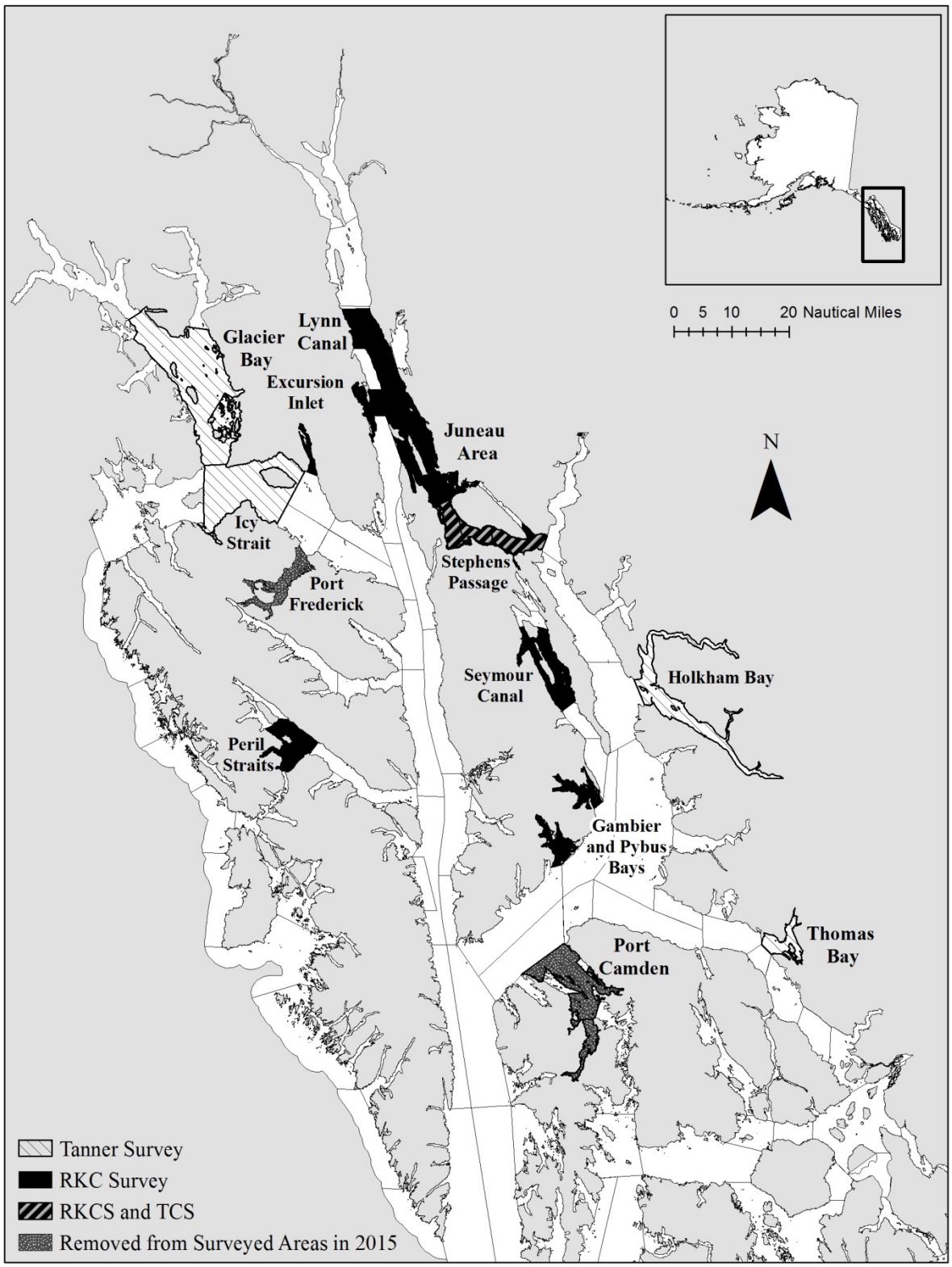

Figure 1.3–Red king and Tanner crab survey areas in Southeast Alaska, ADF&G Registration Area A.

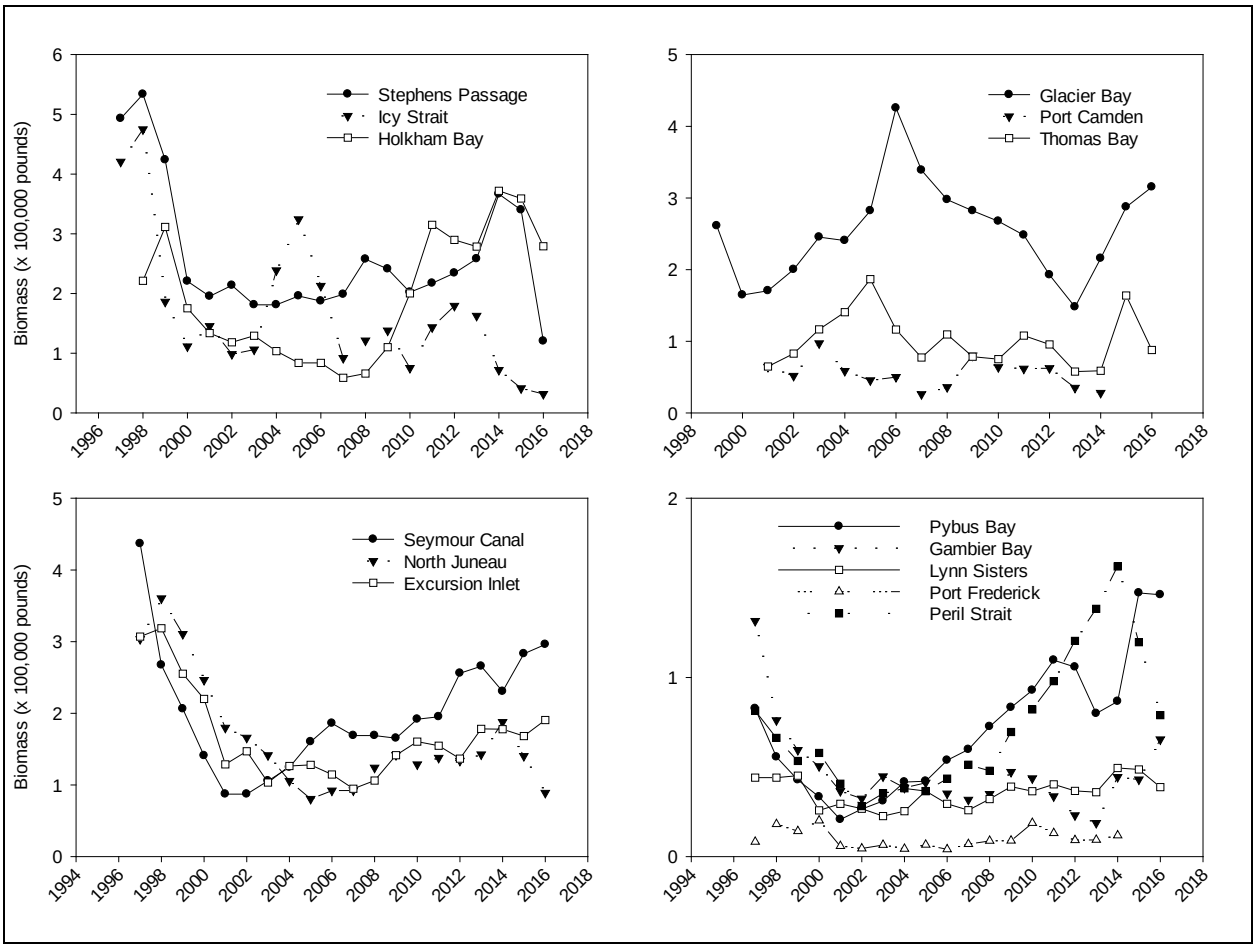

Figure 1.4–Tanner crab legal biomass estimates from catch-survey modeling of red king crab and Tanner crab survey data for 14 survey areas from 1997–2016. Data is absent for Port Camden and Port Frederick for 2015 and 2016 due to being removed from traditional survey areas. Note that the biomass scale varies for each graph.

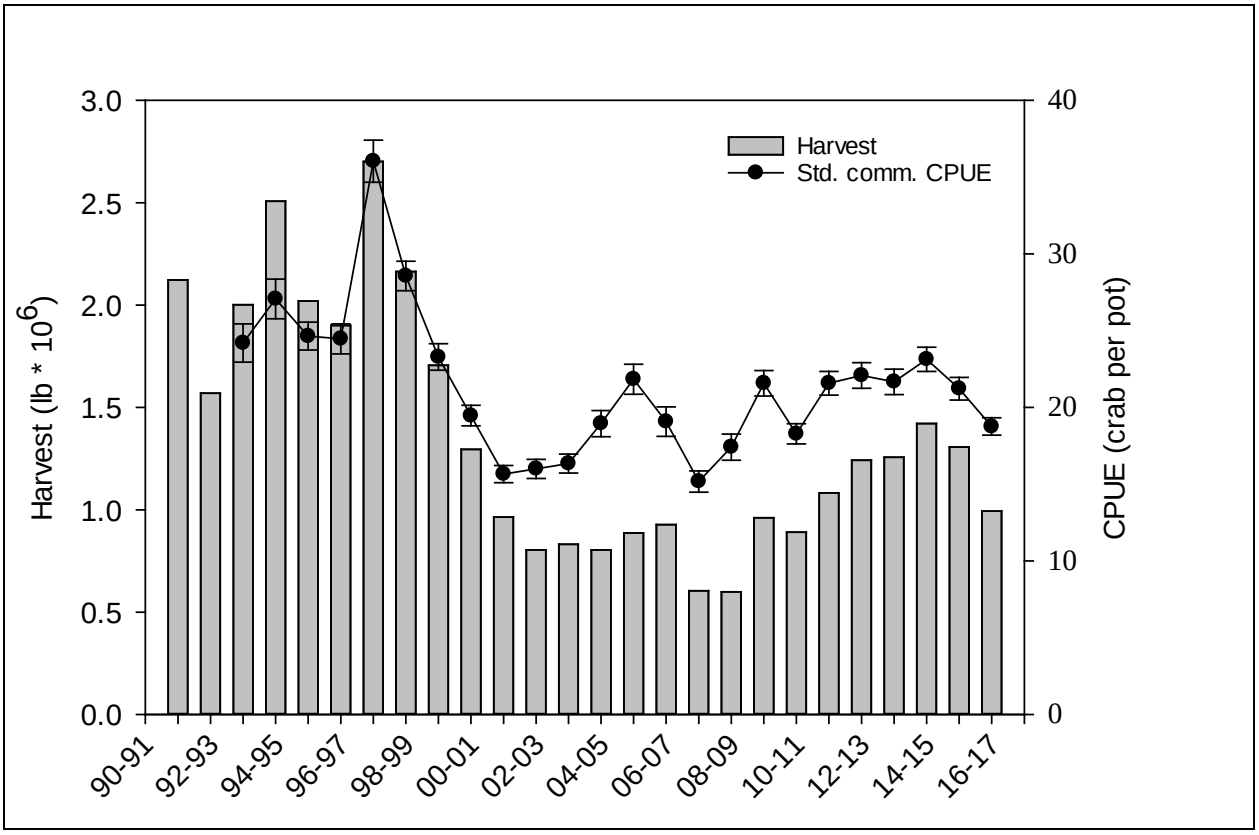

Figure 1.5–Tanner crab harvest and standardized CPUE for 1991/1992 through 2016/2017 seasons.

CHAPTER 2: YAKUTAT TANNER CRAB FISHERY

INTRODUCTION

Tanner crab are a widely distributed brachyuran (true) crab that inhabits temperate and subarctic waters of the eastern Pacific Ocean from northern California to the Bering Sea.

COMMERCIAL FISHERY

The Yakutat Tanner crab fishery occurs in major bays in the area, Icy Bay and Yakutat Bay, as well as in portions of the outside coast between Cape Fairweather and Cape Suckling (Figure 1.1). Most of the fishing occurs out to the 100-fathom contour. For reporting purposes, this area is divided into four major districts: 181, 183, 189, and 191. Districts 181, 183, and 191 encompass state waters within three miles, and District 189 includes waters under state management jurisdiction between 3 and 200 miles.

Yakutat is a nonexclusive registration area for Tanner crab, which means that a vessel fishing there may also fish in other nonexclusive registration areas in the same registration year (August 1 through July 31). The Yakutat fishery is open to entry for any properly licensed, permitted, and registered participant.

Despite many indications of poor recruitment and low abundance, continued fishing occurred throughout the late 1990s so that harvest data with which to assess stock condition was available. It was thought that a low level of fishing activity was tolerable as long as it did not significantly exceed that of recent seasons. However, a period of low harvest levels persisted from the early 1980s to 2000. Since continued fishing on reduced brood stock could prolong the recovery period, a decision was made to close the fishery until stock recovery could be demonstrated. The Yakutat Tanner crab stock was designated as a 'Collapsed and Recovering Fishery' (ADF&G 1999) prior to the January 2000 Alaska Board of Fisheries (board) meeting.

FISHERY DEVELOPMENT AND HISTORY

The Tanner crab fishery in Yakutat is less developed than the Tanner crab fishery in Southeast Alaska. During the open seasons from 1995/96 through 1999/00, the fishery was conducted either by smaller vessels based in Yakutat, fishing mainly in Yakutat Bay, or by larger vessels based in other ports. Most of the vessels had live tanks, although some of those on the smaller vessels were simple drop-in tanks intended for day fishing. Generally, no more than six vessels fished in any given season.

Lightweight cone or pyramid-shaped pots were commonly used rather than the heavier, 7-foot square pots originally designed for king crab. An additional factor favoring the lighter gear in Yakutat is the area-wide prohibition on the use of side-loading pots.

Regulations in Yakutat include harvest of only male Tanner crab larger than 5½-inch (140 mm) carapace width during a January 15 through May 1 season. In addition, a guideline harvest ceiling of 1,000,000 lb, based on historic harvest trends, has been established for this area.

Actual stock composition can only be inferred because no preseason stock assessments are conducted.

Port sampling of Tanner crab from Yakutat has been limited by the widespread, low-level nature of the fishery and limited staffing and funding. Available information demonstrates that Yakutat crab are smaller, more often skip-molts, and generally less robust than those harvested in more productive areas to the east (Southeast Alaska) and west (Kodiak). These characteristics have been assumed to indicate more marginal habitat or environmental conditions for Tanner crab in Yakutat than in other areas. Seasonal effort and total catch in the 1980s and 1990s were an order of magnitude less than the 1970s harvests.

It was not until the early 1970s that significant Tanner crab fisheries developed in the Yakutat area (Table 2.1). As the overall market for Tanner crab slowly grew, landings from the Yakutat area also increased, averaging about 1,500,000 lb per season between the 1972/73 and 1979/80 seasons. Following the record 2,435,000-lb catch during the 1979/80 season, the harvest steadily declined through most of the 1980s. Peak catches consistently occurred between the months of February and April (Table 2.2), although the season had extended from September 1–May 15 during most of the early years of the fishery.

During the 1970s, this fishery attracted large, long-ranging vessels with live tanks in which many tons of crab could be kept alive for extended periods. Landings from this period suggest that much of the area was heavily fished (Table 2.3). Many of these vessels also participated in shellfish fisheries in other areas of Alaska.

The stocks could not sustain the levels of harvest of the 1970s and crashed between the 1979/80 and 1980/81 seasons. The early 1980s saw the use of side-loading pots prohibited, the starting date of the season changed to mid-winter, and a continued decline in the number of vessels, the catch per vessel, and the total catch. Catch during the 1980s averaged about 130,000 lb per season and many of the larger vessels left the fishery. Those remaining were forced by regulation to switch to top-loading conical or pyramidal pots. By the 1983/84 and 1984/85 seasons, only small, local vessels, operated by residents of Yakutat, were participating in this fishery. Reported landings were limited to the immediate vicinity of Yakutat Bay (Table 2.3).

In the 1985/86 season, two larger crabbers entered the fishery. The larger vessels experienced uniformly poor catches despite extensive exploratory fishing. In the 1986/87 season, five large vessels based in Kodiak, Valdez, and Pelican registered for the fishery, along with the local fleet in Yakutat. Only two of the larger vessels actively participated in the fishery, and their disappointing landings discouraged the remaining three from entering the fishery. In the 1987/88 season, only one large vessel and several of the smaller vessels fishing around Yakutat Bay reported landings. In the 1988/89 season, one large vessel and several of the smaller vessels, based in Yakutat, reported landings from the Yakutat area. Much of the detailed data from this fishery is confidential because of the few vessels that fished in this area.

During the 1989/90 season, a few local vessels, limited to the waters of Yakutat Bay, participated in the fishery. During the 1990s, the general fishing pattern was one or two larger vessels a season prospecting throughout much of the area and landing most of the catch while smaller vessels based in Yakutat fished Yakutat Bay. Catch averaged 80,000 lb annually.

Because the Tanner crab stocks in the Yakutat area had not recovered since the crash in the early 1980s, the fishery was designated as 'collapsed and recovering' at the January 2000 board meeting.

REGULATION DEVELOPMENT

FISHING SEASONS AND PERIODS

Fishing seasons in Yakutat were first implemented for the 1973/74 season. By regulation, the season started on September 1 and ended on May 20. For most of the 1970s, the seasons started on September 1 and extended through May 15 of the following year.

The 1979/80 and 1980/81 seasons were shorter, closing by emergency order on April 20 in the 1979/80 season and by regulation on May 1, 1981, respectively. Stocks began crashing in the 1980/81 season, and subsequent changes to the season resulted in reduced fishing time. In 1981/82 and 1982/83, the season started on February 1 and closed on May 15. The season was further shortened in early 1982, starting on February 10 for the 1983/84 season and ending on May 1, 1984. Increasing catch resulted in adoption of a 1984/85 season that extended from January 15 to May 1, 1985. This season remained in effect until the fishery was closed by emergency order on January 31, 2000.

SEX AND SIZE RESTRICTIONS

Size restrictions permitting harvest of only male crab 5½-in or more in carapace width, were first implemented in the 1976/77 season, and have remained the same since.

QUOTAS AND GUIDELINE HARVEST RANGES

A 3,000,000-lb Guideline Harvest Ceiling (GHC) was instituted in 1976/77 in response to the rapidly escalating fishery. It was amended to a GHR in 1978/79, of between 500,000 and 3,000,000 lb. This range remained unchanged through the 1983/84 season. The GHR was revised for the 1984/85 season to 200,000 to 1,000,000 lb. The maximum allowable harvest was further revised to 1,000,000 lb in 1986/87 and has remained unchanged since. The last revision essentially reduced the lower end of the GHR to zero pounds and provided for closures if stock conditions did not support any harvest.

GEAR RESTRICTIONS

There were no gear restrictions during the 1973/74 season. Between the 1974/75 and 1976/77 seasons, pots, ring nets, and shrimp trawls were legal. In 1976/77, a pot limit was established for waters within Yakutat Bay. Only 60 pots could be used for king and Tanner crab within the bay when both seasons were open. During the closed season for Tanner crab, only 100 pots could be used for king crab. Starting in 1977/78, gear was limited to either pots or ring nets and the pot limit in Yakutat Bay was changed to allow 100 pots for both Tanner and king crab fisheries. Tanner pots had to have a tunnel eye opening with a maximum height of 5 inches and a tunnel eye perimeter of greater than 30 inches. This distinguished Tanner pots from Dungeness pots. Buoy stickers for fishing in Yakutat Bay were required. In 1980/81, the 100-pot restriction area was expanded to an area in Yakutat Bay east of a line from Cape Sitkagi to Ocean Cape, essentially including all productive waters within Yakutat Bay. Side-loading pots were prohibited from the entire registration area for the 1982/83 season to reduce halibut bycatch. Consequently, some vessels that had been using side-loading king crab pots with Tanner boards

were discouraged from entering the fishery. Two 4¾-inch diameter escape rings were required for each pot beginning with the 1984/85 season. Starting in 1985/86, gear storage was restricted to a period of seven days after the season closure. Escape rings were repealed for the 1988/89 fishery. Ring nets were prohibited starting with the 1991/92 fishery, because of board action restricting their use to only Southeast Alaska. Board action in 2015 resulted in reduced pot limits from 100 pots to 40 pots; logbooks and reporting requirements were also added.

OTHER RESTRICTIONS

Starting in 1979/80, formal hold inspections and certifications were repealed. Starting in 1985/86, preseason prospecting during a period 14 days before the season opening was prohibited and vessels were required to be at a processing plant within 24 hours after the closure of the season.

STOCK ASSESSMENT

There have never been stock assessment surveys for the Yakutat Tanner crab stock and the dockside sampling effort has been extremely limited. The fishery was reopened for a 14-day fishing period within the waters of Yakutat Bay and a 30-day period elsewhere during the 2003/04 season. Participation was limited, no crab were landed, and there was no evidence of stock recovery.

RECENT SEASONS

The Yakutat Tanner fishery has been closed since the 1999/00 season and was designated as "collapsed and recovering" prior to the January 2000 board meeting. The only sources of information at present are the ADF&G Sport Fish division statewide personal use and sport harvest survey, the bycatch of juvenile Tanner crab from the Yakutat scallop observer program, and anecdotal information from crabbers who set personal use pots. None of these sources indicate any stock recovery. The department does not intend to open the commercial Tanner crab fishery in the Yakutat area until stock status improves.

Although it is probable that the collapse of the Yakutat Tanner crab fishery is due at least partially to overharvest and excessive handling of the non-legal portion of the stock (ADF&G 1999), the changing oceanography of the Gulf of Alaska has also been implicated. Variations in recruitment of other Gulf of Alaska shellfish stocks have been correlated to oceanographic conditions (Zheng and Kruse 2000). Nonetheless, there is an underlying relationship between brood stock abundance and recruitment (Zheng and Kruse 1998), especially when populations are low. The best management practice until stock recovery is apparent will be careful maintenance of existing brood stock populations.

CHAPTER 2—TABLES AND FIGURES

Table 2.1–Commercial Tanner crab catches in pounds, number of vessels, pounds per permit, number of landings and pounds per landing in Registration Area D, 1972/1973 season to present.

Year/Season	Number			Lb per permit	Average weight
	Permits	Crab	Lb		
1972/1973	7	74,636	222,441	31,777	3.0
1973/1974	11	934,100	1,872,357	170,214	2.0
1974/1975	13	876,889	1,972,752	151,750	2.2
1975/1976	5	861,569	1,762,589	352,518	2.0
1976/1977	7	433,994	966,650	138,093	2.2
1977/1978	8	437,542	1,003,116	125,390	2.3
1978/1979	15	753,248	1,691,941	112,796	2.2
1979/1980	23	1,089,820	2,435,123	105,875	2.2
1980/1981	14	289,880	642,608	45,901	2.2
1981/1982	7	32,521	71,302	10,186	2.2
1982/1983	10	72,784	151,621	15,162	2.1
1983/1984	4	4,958	11,142	2,786	2.2
1984/1985	5	1,728	3,665	733	2.1
1985/1986	5	1,185	2,379	476	2.0
1986/1987	3	23,575	48,877	16,292	2.1
1987/1988	*	*	*	*	*
1988/1989	5	73,179	155,528	31,106	2.1
1989/1990	5	35,135	76,816	15,363	2.2
1990/1991	7	19,260	41,749	5,964	2.2
1991/1992	4	18,493	39,495	9,874	2.1
1992/1993	5	53,167	116,718	23,344	2.2
1993/1994	11	154,921	364,365	33,124	2.4
1994/1995	14	45,749	107,010	7,644	2.3
1995/1996	7	12,352	27,828	3,975	2.3
1996/1997	8	7,686	16,733	2,092	2.2
1997/1998	4	4,330	9,559	2,390	2.2
1998/1999	5	3,742	8,528	1,706	2.3
1999/2000	*	*	*	*	*
2000–2003	----------Seasons Closed----------				
2003/2004	*	0	0	0	0
2004-2017	----------Seasons Closed----------				

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

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Table 2.2–Commercial Tanner crab catch in pounds by month and season in Registration Area D, 1972/1973 to present.

Season	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Total
1972/1973	-	*	*	-	-	-	-	*	122,912	*	-	17,224	222,441
1973/1974	-	-	-	-	*	*	313,787	990,247	558,047	-	-	-	1,872,357
1974/1975	-	-	-	-	*	*	592,145	839,397	481,855	-	-	-	1,972,752
1975/1976	-	-	-	*	*	*	661,843	456,738	*	-	-	-	1,762,589
1976/1977	-	-	-	-	*	*	486,130	*	-	-	-	-	966,650
1977/1978	-	*	14,537	31,555	161,674	206,022	254,174	279,030	53,124	-	-	-	1,003,116
1978/1979	*	*	-	*	63,661	185,056	412,844	766,267	238,068	-	-	-	1,691,941
1979/1980	-	10,242	16,442	27,877	56,929	524,077	1,220,869	572,219	*	-	-	-	2,435,123
1980/1981	-	-	-	*	6,157	181,891	392,739	60,836	-	-	-	-	642,608
1981/1982	-	-	-	-	-	-	16,390	47,076	7,836	-	-	-	71,302
1982/1983	-	-	-	-	-	50,187	73,934	27,500	-	-	-	-	151,621
1983/1984	-	-	-	-	-	*	5,848	3,580	-	-	-	-	11,142
1984/1985	-	-	-	-	-	-	-	3,665	-	-	-	-	3,665
1985/1986	-	-	-	-	*	*	1,117	*	-	-	-	-	2,379
1986/1987	-	-	-	-	-	*	48,151	*	-	-	-	-	48,877
1987/1988	-	-	-	-	-	*	*	*	*	-	-	-	*
1988/1989	-	-	-	-	*	*	70,291	36,772	47,102	-	-	-	155,528
1989/1990	-	-	-	-	*	29,204	37,493	7,369	-	-	-	-	76,816
1990/1991	-	-	-	-	*	8,663	14,109	15,887	-	-	*	-	41,749
1991/1992	-	-	-	*	18,882	14,237	5,803	-	-	-	-	-	39,495
1992/1993	-	-	-	-	-	*	81,964	31,574	*	-	-	-	116,718
1993/1994	-	-	-	-	7,604	207,315	109,399	30,966	9,081	-	-	-	364,365
1994/1995	-	-	-	-	54,039	35,653	7,336	7,405	2,577	-	-	-	107,010
1995/1996	-	-	-	-	12,958	6,693	4,283	3,894	-	-	-	-	27,828
1996/1997	-	-	-	-	2,325	4,735	1,877	4,503	*	-	-	-	16,733
1997/1998	-	-	-	-	*	4,481	2,153	*	*	-	-	-	9,559
1998/1999	-	-	-	-	1,080	*	*	2,708	-	-	-	-	8,528
1999/2000	-	-	-	-	*	-	-	-	-	-	-	-	*
2000-2017	Seasons Closed / No Harvest												

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

\- No data.

Table 2.3–Commercial Tanner crab catch in thousands of pounds by district and season in Registration Area D, 1972/1973 season to present.

	District						
Season	181	182	183	185	189	191	Total
1972/1973	120,230	-	102,211	-	-	-	222,441
1973/1974	963,274	*	292,603	-	615,959	-	1,872,357
1974/1975	1,329,936	-	*	-	*	428,043	1,972,752
1975/1976	1,448,504	-	*	-	*	*	1,762,589
1976/1977	513,935	-	452,715	-	-	-	966,650
1977/1978	-	-	1,003,116	-	-	-	1,003,116
1978/1979	718,047	-	404,571	*	-	544,013	1,691,941
1979/1980	1,330,149	-	153,995	-	112,794	838,185	2,435,123
1980/1981	163,965	-	150,992	-	65,372	262,279	642,608
1981/1982	-	-	51,201	-	-	*	71,302
1982/1983	8,399	-	83,821	-	*	*	151,621
1983/1984	-	-	11,142	-	-	-	11,142
1984/1985	-	-	3,665	-	-	-	3,665
1985/1986	-	-	2,379	-	-	-	2,379
1986/1987	*	-	*	-	-	-	48,877
1987/1988	-	-	*	-	-	*	*
1988/1989	*	-	7,878	-	*	*	155,528
1989/1990	27,915	-	*	-	-	*	76,816
1990/1991	16,193	-	25,556	-	-	-	41,749
1991/1992	*	-	13,972	-	-	-	39,495
1992/1993	*	-	53,318	-	-	-	116,718
1993/1994	320,574	-	28,573	-	15,218	-	364,365
1994/1995	77,436	-	29,574	-	-	-	107,010
1995/1996	10,181	-	17,647	-	-	-	27,828
1996/1997	*	-	11,866	-	-	-	16,733
1997/1998	-	-	9,559	-	-	-	9,559
1998/1999	-	-	8,528	-	-	-	8,528
1999/2000	-	-	*	-	-	-	*
2000–2017	Seasons Closed / No Harvest						

* Fewer than three permits were fished; information is confidential.
- No data.

Table 2.4–Tanner crab size frequency and shell condition in Yakutat Area D, 1974/1975 to present. Data collected during dockside sampling.

	Number of sampled		Carapace width (mm)		Recruitment	
Season	Boats	Crab	Average	Range	% Recruits[a]	%Postrecruits[b]
1974/1975	3	516	141.4	110–174	87.3	12.7
1975/1976	11	1,079	140.7	96–179	39.3	60.7
1976/1977[c]	0	0	-	-	-	-
1977/1978	9	-	145.1	122–171	65.0	35.0
1978/1979	15	1,616	147.8	128–172	57.3	42.7
1979/1980	22	2,509	147.3	131–174	22.5	77.5
1980/1981	22	2,505	147.3	107–172	2.7	97.3
1981/1982	1	99	146.6	137–165	75.0	25.0
1982/1983	17	1,894	145.9	131–173	81.9	18.1
1983/1984	1	100	149.9	139–170	44.9	55.1
1984/1985	0	0	-	-	-	-
1985/1986	0	0	-	-	-	-
1986/1987	4	520	144.0	130–166	14.3	85.7
1987/1988	2	548	145.4	136–169	59.2	40.8
1988/1989	6	611	148.4	135–177	35.8	64.2
1989/1990	5	779	147.0	137–174	4.1	95.9
1990/1991	0	0	-	-	-	-
1991/1992	4	0	148.5	137–178	8.7	91.3
1992/1993	0	0	-	-	-	-
1993/1994	4	654	147.0	436–171	71.1	28.9
1994/1995	0	0	-	-	-	-
1995/1996	0	0	-	-	-	-
1996/1997	0	0	-	-	-	-
1997/1998	0	0	-	-	-	-
1998/1999	0	0	-	-	-	-
1999/2000	2	206	147.7	139–175	88.3	11.7
2000–2017	Seasons Closed / No Harvest					

[a] Recruits = all new and soft-shell crab >140 mm and <164 mm carapace width.

[b] Postrecruits = all new and soft-shell crab >165 mm and old and very old crab >140 mm carapace width.

[c] The first season that the regulatory legal size was 5½-inches (140 mm) carapace width.

- No data.

Table 2.5–Summary of commercial Tanner crab CPUE and average weight in Yakutat Area D, 1975/1976 to present. Data collected during dockside sampling and interviews.

Season	Number of			Average catch/pot	Range of catch/pot	Weight (lb)		Estimated no. of crab caught[a]	Percent of catch sampled[b]
	Boats interviewed	Pots lifted	Crab captured			Average	Range		
1975/1976	11	-	-	-	-	1.9	1.7–2.1	947,628	0.1
1976/197	2	-	-	-	-	2.1	2.0–2.2	460,310	-
1977/1978	4	-	-	-	-	2.2	2.0–2.5	451,854	0.5
1978/1979	7	3,810	160,164	34.1	20.1–48.6	2.3	2.3–2.4	729,285	0.2
1979/1980	21	8,802	322,624	40.9	7.7–79.0	2.3	2.1–2.4	1,082,277	0.2
1980/1981	12	3,688	51,765	17.8	10.2–27.1	2.3	2.1–2.7	280,615	0.9
1981/1982	0	-	-	-	-	-	-	-	-
1982/1983	16	-	-	-	-	2.1	1.9–2.2	72,895	2.6
1983/1984	0	-	-	-	-	-	-	-	-
1984/1985	1	-	-	-	-	2.4	-	1,521	-
1985/1986	0	-	-	-	-	-	-	-	-
1986/1987	3	1,460	18.629	15.5	10.0–19.8	-	-	-	-
1987/1988	2	840	17,850	23.3	18.6–28.0	2.1	-	-	-
1988/1989	5	705	12,429	9.8	1.4–38.1	2.1	-	74,061	0.8
1989/1990	4	142	1,621	11.3	7.9–16.3	2.2	2.1–2.3	35,076	2.2
1990/1991	0	-	-	-	-	-	-	-	-
1991/1992	5	597	8,335	7.6	1.2–16.6	2.3	-	16,168	3.5
1992-1999									No information
1999/2000	2	*	*	*	*	*	*	*	*
2000-2017	Seasons Closed / No Harvest								

[a] Calculated by dividing fish ticket weight data by dockside sampling average weight per crab data.

[b] Calculated by dividing number of crab sampled for size frequency by estimated number of crab catch.

[c] The first season that the regulatory legal size was 5½ inches (140 mm) carapace width.

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

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