Fishery Management Report No. 24-34

Southeast Alaska Region Shrimp Fisheries Management Report through the 2022/23 Season

by

Quinn Smith

and

Joseph Stratman

December 2024

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

Symbols and Abbreviations

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

FISHERY MANAGEMENT REPORT NO. 24-34

SOUTHEAST ALASKA REGION SHRIMP FISHERIES MANAGEMENT REPORT THROUGH THE 2022/23 SEASON

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ABSTRACT

This report reviews the commercial fisheries for shrimp in the Southeast Region, which includes Southeast Alaska (Registration Area A) and Yakutat (Registration Area D).

Shrimp harvests in Region I totaled over 1.22 million pounds and were valued at over $3.1 million in 2023. Eighty percent of the value of the fisheries was from the Southeast pot shrimp fishery; the Southeast beam trawl fishery made up the majority of the remainder. Over the last 10 years, the Southeast pot shrimp fishery has averaged 103 permits landing 529,867 pounds per year. During this time, stocks have declined, and guideline harvest levels have been reduced in response. Participation and harvest in the Southeast beam trawl fishery have fluctuated over the past 20 years due to market conditions. The Yakutat pot shrimp fishery has been harvested annually at a low level, with an average of 2 permits participating per year. Other Yakutat shrimp fisheries are also harvested at very low levels, with the last harvest in the otter trawl fishery occurring in the 2004/05 season, and the last nonconfidential harvest occurring in the 1992/93 season.

Levels of stock assessment and management planning differ significantly between the Southeast pot shrimp and beam trawl shrimp fisheries. The pot shrimp fishery has a more developed stock assessment program, which includes surveys in some areas but no abundance-based management plan. Beginning in 2010, annual survey and on-the-grounds sampling plans were revised to maximize available data, and in 2011, 2 new districts were added to further increase confidence in setting appropriate harvest limits. The Southeast beam trawl fishery has a low level of stock assessment and is currently only monitored by logbooks and dockside sampling. No sampling programs exist for the Yakutat fisheries.

Keywords: spot shrimp, *Pandalus platyceros*, coonstripe shrimp, *Pandalus hypsinotus*, northern shrimp, *Pandalus borealis*, sidestripe shrimp, *Pandalopsis dispar*, Southeast Alaska, Yakutat, fisheries management, invertebrate fisheries, shrimp, harvest statistics

CHAPTER 1: INTRODUCTION TO SOUTHEAST ALASKA/YAKUTAT SHRIMP FISHERIES

INTRODUCTION

This report reviews commercial fisheries for shrimp in the Southeast Region, which includes Southeast Alaska (Registration Area A) and Yakutat (Registration Area D). Area A encompasses all waters within the Alexander Archipelago and offshore waters from Dixon Entrance to Cape Fairweather, divided into Districts 1 through 16 (Figure 1.1). Area D encompasses state waters from Cape Fairweather to Cape Suckling, divided into Districts 81 through 91. Shrimp fisheries in these areas are entirely in state waters.

Shrimp harvests in Region I totaled over 1.22 million pounds and were valued at over $3.1 million in the 2023 calendar year (Table 1.1). Eighty percent of the value of the fisheries is from the Southeast pot shrimp fishery.

The Southeast pot shrimp fishery is fully developed, with on average 103 permits landing 529,867 pounds per year over the last 10 years. Over this time, stocks have been declining and guideline harvest levels (GHLs) have been reduced in response. In addition, participation and harvest in the Southeast beam trawl fishery fluctuated over the past 20 years due to market conditions.

The Yakutat pot shrimp fishery has been harvested annually at a low level, with an average of 2 permits participating per year. Other Yakutat shrimp fisheries are also harvested at low levels, with the last harvest in the otter trawl fishery occurring in the 2004/05 season, and the last nonconfidential harvest occurring in the 1992/93 season.

Limited entry has played a significant role in harvest and effort trends. All Southeast Alaska shrimp fisheries are currently limited entry, whereas all Yakutat shrimp fisheries remain open access.

SHRIMP RESEARCH AND MANAGEMENT

Levels of stock assessment and management planning differ significantly between the Southeast pot shrimp and beam trawl shrimp fisheries. The Southeast pot shrimp fishery has a more developed stock assessment program, but no absolute abundance estimates, requiring management to rely on relative indices of abundance. Southeast beam trawl shrimp and all the Yakutat shrimp fisheries have neither stock assessment programs nor management plans, elevating their risk of overharvest.

Stock assessment surveys have focused on Southeast Alaska, although in the past surveys have been conducted in Yakutat. Current surveys in Southeast Alaska include an annual pot shrimp survey in 6 districts. These surveys were initiated relatively recently; the District 3 survey started in 1997, Districts 7 and 13 in 1999, District 12 in 2000, and Districts 1 and 2 in 2011. The District 13 survey was suspended in 2015 due to program budget reductions, but reimplemented in 2017 due to declines in fishery performance. In 2012, a Southeast Alaska survey investigated the use of the Canadian spawner index management system but was cancelled after the 2013 survey due to budget reductions. Trawl surveys have been conducted in Yakutat on 7 occasions, ending in 1984.The survey goal was to estimate stock abundance and size class composition of northern and sidestripe shrimp in Yakutat Bay.

Annual sampling is conducted on the fishing grounds of 5 to 6 districts for the Southeast Alaska pot shrimp fishery. The objectives of this sampling are to get detailed fishing location and effort information, as well as data on size frequency and sex composition. The major target of this sampling is catcher–processors, which cannot be sampled dockside.

Dockside sampling and skipper interviews are routinely conducted in Southeast Alaska for all shrimp fisheries. The objectives of dockside sampling are to gather data and information on size frequency, sex, fishing location, effort levels, and estimates of average catch per unit of effort (CPUE). This data provides the only biological information for shrimp beam trawl fisheries, which lack stock assessment surveys. However, for Yakutat shellfish fisheries even basic port sampling has not been systematically conducted. Harvest and effort data are also collected through the fish ticket system for both Yakutat and Southeast Alaska shellfish fisheries.

Onboard observers were used sporadically in the beam trawl shrimp fishery beginning with the 2001/02 season, but the program is no longer conducted.

Logbooks were made mandatory for catcher–processor vessels in the Southeast Alaska pot shrimp fisheries beginning in the 2015/16 season and were also made mandatory for the shrimp trawl fisheries in all areas beginning in the 2018/19 season. This type of information is particularly valuable for management of the fisheries because it provides detailed catch and pot lift information.

TASK FORCE STATUS

The Southeast Alaska Pot Shrimp Task Force was formed by the Alaska Board of Fisheries (board) in 2003 and was charged with conducting an annual joint meeting with the Alaska Department of Fish and Game (ADF&G/department). The goals of this task force were to review pot shrimp stock status and exchange information and ideas to further improve fishery management. The board chose to dissolve the formal task force in 2012 in favor of an *ad hoc* organization.

STAFF

The Region I pot shrimp fishery is the only shellfish fishery managed individually by area offices within the region. These fisheries are managed by Area Management Biologists under the supervision of Troy Thynes, Regional Management Coordinator, stationed in Petersburg. The Southeast and Yakutat beam trawl fisheries are managed by Joseph Stratman, stationed in Petersburg. All Region I shrimp stock assessment and research programs are led by Quinn Smith, Southeast Dive and shrimp Fisheries Research Biologist, stationed in Douglas. Regional biology staff conduct dockside sampling and skipper interviews with assistance from the shellfish and area management staff.

SHRIMP PROJECT STAFF

Name	Title	Job Class	Location
Quinn Smith	SE Dive and Shrimp Fisheries Research Biologist	Fishery Biologist 3	Douglas
Troy Thynes	SE Fisheries Management Coordinator	F&G Coordinator	Petersburg
Joe Stratman	SE Crab and Trawl Shrimp Biologist	Fishery Biologist 3	Petersburg
Katie Palof	Shellfish Fishery Scientist	Fishery Scientist 1	Juneau

CHAPTER 1: TABLES AND FIGURES

Table 1.1–Registration Area A (Southeast Alaska) and Registration Area D (Yakutat) shrimp fisheries approximate exvessel values based on calendar year, from Commercial Fisheries Entry Commission (CFEC).

Year	Southeast pot shrimp	Southeast beam trawl	Yakutat pot shrimp	Yakutat otter trawl
1996	$310,996	$912,042	$26,835	$0
1997	$302,482	$764,643	$44,362	$0
1998	$1,071,080	$682,745	$27,720	$0
1999	$2,109,451	$574,011	$12,314	$0
2000	$3,676,558	$520,939	$29,717	$0
2001	$1,969,586	$393,216	$56,346	$0
2002	$2,268,806	$418,327	$33,218	$0
2003	$2,412,286	$398,998	$12,447	$0
2004	$2,269,396	$440,567	$9,579	[a]
2005	$2,624,072	$194,841	$12,128	$0
2006	$2,648,196	$62,745	[a]	$0
2007	$1,787,934	$78,797	[a]	$0
2008	$1,797,769	$75,490	[a]	$0
2009	$1,862,466	$83,233	[a]	$0
2010	$1,572,961	$82,144	[a]	$0
2011	$1,724,155	$215,682	[a]	$0
2012	$2,068,885	$160,288	[a]	$0
2013	$2,963,155	$75,621	$17,333	$0
2014	$2,409,160	$146,649	[a]	$0
2015	$1,703,389	$482,721	[a]	$0
2016	$2,445,725	$526,581	[a]	$0
2017	$2,425,675	$536,527	[a]	$0
2018	$2,789,941	$822,708	$26,168	$0
2019	$2,573,677	$654,638	[a]	$0
2020	$2,378,311	$323,618	[a]	$0
2021	$2,682,216	$225,182	[a]	$0
2022	[b]	$413,364	[a]	$0
2023	$2,712,070	$355,008	[a]	$0
10-year Average	$2,508,332	$448,700	[a]	$0

[a] CFEC data confidential due to fewer than 3 participants in the fishery.

[b] Fishery start changed from Oct 1, 2022, to May 15, 2023, so annual value data is not comparable in 2022

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

CHAPTER 2: SOUTHEAST BEAM AND YAKUTAT OTTER TRAWL SHRIMP FISHERIES

INTRODUCTION

Life History

The northern shrimp *Pandalus borealis* has a circumboreal distribution from Maine to Southeast Alaska, although the Atlantic population is thought to differ at the subspecies level (Squires 1992). It is a pelagiobenthic species, associated with soft bottoms, and exhibits diurnal vertical migrations to feed on plankton (Barr 1970; Rice et al. 1980) as well as seasonal migrations to shallow water for reproduction. Like most of its genera, this species is a protandric hermaphrodite, with most individuals beginning life as males and transitioning to females after reproducing for 1 or 2 years (Berkeley 1930; Butler 1964). However, primary females occur at varying prevalence in all populations and there is significant plasticity in the time of transition, which is related to growth rate. At higher growth rates, the species matures as a female at a smaller size; growth rate increases with increasing water temperature and food availability—a factor affected by both food supply and population density (Koeller et al. 2003; Wieland 2004). Besides changes in the size at transition, water temperatures outside their narrow preference (3–6 ºC for *P. borealis*) can cause both delays in oviposition timing and reductions in the number of breeding females (Nunes 1984). Thus, increased water temperature can cause declines in recruitment.

Commercial Fishery

The beam trawl fishery in Southeast Alaska has historically targeted primarily northern shrimp *P. borealis* and secondarily larger sidestripe shrimp *Pandalopsis dispar*. Local processors began to cease northern shrimp processing operations in the mid-2000s, and preference for beam trawl permit holders shifted to sidestripe shrimp due to low demand for northern shrimp. Starting in the 2015/16 season, a local processor reinitiated the purchase of northern shrimp. In recent seasons, some permit holders have focused on this northern shrimp market, while others have fished larger mesh gear to target sidestripe shrimp. Other species incidentally captured and landed in smaller quantities are the coonstripe shrimp (*P. hypsinotus)*, humpy shrimp (*P. goniurus*), and spot shrimp (*P. platyceros*).

Productive beam trawl fishing has historically been limited to 4 major fishing areas in Southeast Alaska. These areas are District 8, portions of District 6 (Duncan Canal and Kah Sheets Bay), District 7 (Eastern Channel), and District 10 (Thomas and Farragut Bays), all located in the Petersburg-Wrangell Management Area (Figure 2.1). The concentration of the fishery in these areas has been due to the abundance of the resource, the presence of the major processors, and limited vessel capabilities. Vessels participating in the fishery are generally less than 60 feet in length, utilize small horsepower engines, do not have refrigerated holds, and have a crew of 2 or 3. Vessels strive to provide a high-quality product through daily deliveries. Most of the participants are residents of Petersburg or Wrangell.

A beam trawl is a relatively simple gear type in appearance and function. A strong wooden or metal beam acts as a head rope, and metal shoes connected directly to each end of the beam act as the breast of the trawl. Thus, rigid components control 2 important net dimensions: (1) the width of the mouth is determined by the length of the beam; and (2) the opening height of the net is determined by the height of the metal shoes. Beam length varies by vessel size. Most beam trawls are deployed with a single bridle and fish best on flat substrates; however, they can effectively fish some gradual side slopes and irregular bottoms. When not deployed, the beam trawl is stored on the vessel bulwarks, somewhat compromising the sea-keeping capabilities of the vessel.

Management is based on a closed season designed to prevent fishing on major stocks during the egg-hatch period, from March 1 through April 30; GHLs determined by historic harvests; and 3 fishing periods in the 3 major fishing areas, plus a fourth fishing period in the Stikine Flats area only. The fishing periods were based upon industry input and are designed to spread out the harvest and processing requirements. Multiple fishing periods also take advantage of growth and recruitment.

This chapter describes the Southeast beam trawl shrimp fishery and regulation development, history, stock assessment, and management. Harvest has not occurred in the Yakutat otter trawl shrimp fishery since the 2004/05 season. Information regarding the Yakutat otter trawl shrimp fishery history, development, and harvest is reported in Smith and Gray (2017).

FISHERY DEVELOPMENT AND HISTORY

The first documented beam trawl harvest of shrimp in Southeast Alaska occurred in Thomas Bay (located in District 10) in 1915. By 1921, 5 processors were operating. Fleet size, production capacity, and expansion of fishing grounds occurred well into the 1950s. From 1955 through 1967, annual beam trawl harvests ranged from 1,800,000 to 7,600,000 pounds, with an average of 3,600,000 pounds per year (Table 2.1). The number of vessels participating ranged from 10 to 22. The peak production year was 1958 when 14 vessels caught over 7,600,000 pounds. During the late 1960s and early 1970s, harvest and effort declined. Seasonal harvests averaged 916,300 pounds and effort averaged 12 vessels during the 1970s. Through the 1980s, the harvest and effort increased to an average of 1,410,700 pounds by 19 vessels. During the 1990s, the harvest averaged 2,605,100 pounds by 33 vessels. Some of the participants that were involved in the fishery between 1992 and 1997 were speculating on qualification into the limited entry program. Relatively few of the maximum of 51 vessels contributed substantially to the harvest or were dependent upon the fishery for a major portion of their fishing income. The effects of the limited entry program are evident in the 1998/99 fishery when only 24 permit holders participated. Fisheries conducted during the 2000/01 through 2002/03 seasons averaged 1,130,600 pounds delivered by an average of 16 active participants, worth about $280,000 annually. Effort and participation in the fishery continued to decline after the 2002/03 season, mostly due to low prices as a result of large harvests of slightly larger northern shrimp from the Eastern seaboard and the western coast of North America. Regionwide harvest dropped off precipitously in the 2006/07 season after the main buyer of northern shrimp in Petersburg stopped buying after an 80-year history in the fishery (Table 2.1). From the 2006/07 to the 2015/16 seasons, harvests were largely marketed to small buyers and through dockside sales. A new processor in Petersburg began buying northern shrimp in the 2015/16 season, which has increased participation and harvest.

During the 1970s, harvest opportunities occurred in all major Southeast Region fishing areas throughout the year (Table 2.2). As substantial and consistent increases in effort began in 1980, GHLs were achieved quickly, and it became necessary to close major fishing areas by emergency order (EO). Fishing opportunities were no longer available in major fishing areas throughout the year, especially during the winter months. Typically, May through September received the highest effort (Table 2.2). Seasonal harvests for the region approached 1,000,000 pounds in the 1970s. During the 1980s, harvests increased and averaged just over 1,400,000 pounds. Harvest and effort in the fishery increased again during the 1990s and averaged about 2,700,000 pounds. Harvests declined to an average of about 600,000 pounds during the first decade of the 21st century,

averaged 670,000 pounds in the second decade, and averaged 560,000 pounds in the most recent 3 seasons.

Prior to 1970, Districts 6 and 10 produced the majority of the beam trawl harvest, and District 8 produced relatively low harvests. Harvests from District 10 occurred in Farragut and Thomas Bays, and harvests from District 6 included Duncan Canal and Kah Sheets Bay. With the decline in abundance in District 10, the fishery became primarily dependent upon District 6, and harvests from District 8 (the Stikine Flats) began to increase. From the 1969/70 through the 1978/79 fishing seasons, District 6 harvests averaged almost 600,000 pounds per season while District 8 harvests averaged less than 250,000 pounds per season (Table 2.3). During this 10-season period, harvests from District 8 exceeded harvests from District 6 only once. Regulatory GHLs were increased in 1978. In the following decade through the 1988/89 season, average shrimp harvests from Duncan Canal were nearly 850,000 pounds—more than double that of the Stikine Flats area (Tables 2.3 and 2.4). Three fishing periods were established in regulation in 1989 for the 4 major fishing areas. During the 1990s, the pattern of high harvests in Duncan Canal relative to the Stikine Flats continued, Duncan Canal averaging more than 1,200,000 pounds per year and the Stikine Flats averaging just over 800,000 pounds. As price per pound and processing capacity declined in the 21st century, fewer permit holders have found this fishery to be worth the effort, and thus, harvest and participation from all areas has declined. Since the 1999/2000 season, harvest has largely been dominated by effort in Duncan Canal and the Stikine Flats, with very little harvest coming from other areas.

REGULATION DEVELOPMENT

Documentation describing shrimp fishing regulations is available dating back to 1924. Regulations prior to that date are unknown. Regulations from 1924 through 1932 primarily concern fishing seasons. Size restriction regulations were first implemented in 1941. During the next decade closed areas were added and from 1947 through 1949, Duncan Canal, now a major shrimp fishing area, was closed to commercial fishing.

The beam trawl fisheries occur primarily in the vicinity of Petersburg and Wrangell (Table 2.4). Until recently, most other areas were not significantly constrained by fishing seasons, fishing periods, or guideline harvest ranges (GHRs).

Fishing Seasons and Periods

Traditional Northern Shrimp Fisheries

A fishing season from May 1 through March 15 was established by 1924. Since then, a similar season has been in place with slight modifications to beginning and ending dates. The season is now May 1 to February 28. The purpose of the closed period is to protect female shrimp during the egg hatch period when fishing would reduce the reproductive potential of the stock.

As the fishery intensified during the 1980s, the GHR was taken in successively fewer days. In response, three fishing periods were established beginning in 1989. These periods were May 1 through June 30, July 1 through August 31, and September 1 through February 14. A fourth fishing period, December 1 through February 14, was added in 1997 for the Stikine Flats area of District 8. These regulatory periods were established for several reasons: to protect shrimp during the critical egg hatch period; to lengthen the total fishing season by spreading harvest over a longer period of time; to reduce effort during recruitment and growth periods in the spring and summer months; and to increase overall harvest in District 8.

Nontraditional Northern Shrimp Fisheries

Prior to 1994, all fishing districts in Southeast Alaska, except District 8 and portions of District 6 (Duncan Canal and Kah Sheets Bay), District 7 (Eastern Channel), and District 10 (Thomas and Farragut Bays), were open throughout the year. During the early 1990s, large catcher–processor vessels using otter trawl gear requested permits to fish for shrimp in the region, leading to requests to the commissioner to close shrimp fisheries in outside waters. ADF&G initiated closures in some of the areas where these vessels were fishing to prevent bycatch of other commercially important species, primarily rockfish. Initial closures were made by either emergency regulation or EO. The issue was brought before the board and resulted in the closure of Districts 1, 2, 4, and 12–16, which had low and sporadic historical effort and harvests.

At the request of industry in 1997, regulations were developed by the board to provide additional fishing time during the egg-hatch period in most of the nontraditional areas if their respective GHLs had not been achieved during the normal fishing time of May through mid-February (Table 2.2). Justification for the change included the need for more exploration time due to greater fishing expense than in the traditional fishing areas, the fact that the months of March and April were generally free of commercial and personal use shrimp and crab harvest, and the improved weather in these months compared to harsh winter conditions. The additional fishing period, opened by EO only, was from February 15 through April 30. Logbooks were required. This exploratory fishery during the egg hatch period was eliminated in 2003 to provide greater consistency with the pot shrimp fishery, and because there was limited effort during the exploratory fishery.

Directed Sidestripe Shrimp Fisheries

In 1997, regulations were adopted to provide for directed sidestripe shrimp beam trawl fisheries during fishing seasons and periods in areas established by the commissioner by EO. Additional conditions include limiting the vessel from participating at the same time in a directed northern shrimp fishery, a larger minimum mesh size, and mandatory logbook completion. Incidental shrimp species harvest cannot be greater than 10 percent, and permit holders must notify the department 2 hours before landing to allow for biological sampling of the harvest. If necessary, the commissioner may require an onboard observer during fishing operations. The department evaluates opening a directed sidestripe shrimp fishery on a case-by-case basis. Because the sidestripe shrimp component of the Gulf of Alaska and Southcentral Alaska stocks seemed to be the most susceptible to overharvest and stock collapse, these measures were required in Southeast to collect the necessary information needed to manage sidestripe shrimp harvest conservatively. The department opened directed sidestripe shrimp fisheries 11 times between 1997 and 2002, with 8 of those openings occurring in District 8. Only once during these openings was the upper end of the GHR (50,000 pounds) reached, requiring an emergency closure prior to the regulatory closure date. The last opening of the directed sidestripe fishery occurred in the first fishing period in District 8 in 2002. Since 2002, sidestripe shrimp have only been harvested during the traditional beam trawl season and there have been no directed sidestripe fisheries as described in regulation.

Size Restrictions

As early as 1941, regulations specified that not more than 50% of the shrimp harvested by trawl could be less than 3 inches total length. These regulations were altered to no more than 25% in 1942, and in 1948 the size was changed to less than 2.5 inches total length. By 1952, there were no size regulations and the size of shrimp landed was controlled by industry through price.

By 1979, the board adopted a policy to discourage the harvest of shrimp less than 2 years of age. This policy exists today and instructs the department to act when the fishery targets segregated schools of small shrimp. Management measures are to optimize the harvest of larger female northern shrimp while minimizing retention of male, transitional, and smaller female shrimp.

In 1997, new regulations in Southeast Alaska defined the minimum average size of shrimp that could be sold. Shrimp taken by beam trawl gear must be at least 150 count per pound. To determine the average count per pound, 1 sample of at least 1 pound in weight of unbroken shrimp is taken from each 500 to 1,000 pounds of shrimp, up to a maximum of 20 samples.

Quotas And Guideline Harvest Ranges

Traditional Northern Shrimp Fisheries

In 1977, harvest quotas for each of the 4 major fishing areas (District 8, portions of Districts 6, District 7, and District 10) were first established. These quotas were based on historical harvest records with potential adjustment based on stock conditions. Strict quotas were difficult to monitor and regulate. In 1978, quotas were replaced by GHRs that provided more flexibility for inseason management and were based upon fishery performance and size-class distribution. The fishery continued to intensify through the influx of effort and increased processing capacity. In some districts, specifically Districts 8 and a portion of District 6, the seasonal GHR was achieved early in the fishing season, necessitating an EO closure for the remainder of the season.

In 1988, the GHRs were evenly distributed through 3 fishing periods to lengthen the fishery and to take advantage of growth and recruitment that occurred during the spring and summer months. GHRs for each of the 3 fishing periods were as follows: a portion of District 6 from 80,000 to 400,000 pounds; a portion of District 7 from 15,000 to 50,000 pounds; a portion of District 10 from 5,000 to 75,000 pounds; and all of District 8 from 25,000 to 175,000 pounds. In 1997, with the addition of a fourth fishing period in District 8 and an increase in the upper GHR from 175,000 to 250,000 pounds, the seasonal harvest potential increased by half a million pounds, increasing the total allowed season harvest to 1.2 million pounds, more than double the previous GHR.

Nontraditional Northern Shrimp Fisheries

In 1994, seasonal GHRs of 0 to 100,000 pounds were established for Districts 3, 5, 9, and 11, and remaining portions of Districts 6, 7, and 10. In 1997, at the request of industry, the total District 11 GHR was increased and is now more than triple the 1994 GHR. Seasonal GHRs were established by section: 11-A, 11-B, and 11-C from 25,000 to 75,000 pounds in each, and 11-D from 50,000 to 150,000 pounds.

Directed Sidestripe Shrimp Fisheries

With the implementation of the directed sidestripe shrimp fishery in 1997, a limit of 50,000 pounds of sidestripe shrimp may be taken from any district or section during a season. Participants cannot concurrently participate in a northern shrimp fishery, must use a large mesh net, and must complete logbooks.

Spot and Coonstripe Shrimp Bycatch Limits

In 2003, the board addressed a series of proposals regarding spot and coonstripe bycatch in the beam trawl fishery. The board adopted the current spot and coonstripe shrimp beam trawl trip and seasonal bycatch limits at this meeting. Those limits were based on historic harvest of these species in the beam trawl fishery. Spot shrimp bycatch limits are 1,000 pounds in all districts except

Districts 8, 9, and the nontraditional portion of District 10, where they are 6,000, 2,000, and 2,000 pounds, respectively. Coonstripe bycatch limits vary from 1,000 to 4,000 pounds per district, with the exception of Districts 6, 8, and the nontraditional portion of District 10, where they are 9,000, 10,000, and 7,000 pounds, respectively.

Gear Restrictions

In 1962, a regulation defining a minimum mesh size used in beam trawls was established for a portion of the Petersburg-Wrangell area. By 1969, similar regulations were in place for all areas. In 1997, the minimum mesh size was increased to the current regulatory mesh size of approximately 1.35 inches stretched measure (13.5 inches across 10 meshes). Due to the relatively low market value of small northern shrimp, many permit holders are currently using web between 1.38 and 1.50 inches stretched mesh to reduce their harvest of small northern shrimp.

A directed sidestripe fishery was established in 1997 by EO. In that fishery, trawl webbing must be at least 1 and 7/8 inches stretched measure, or no more than 13 meshes per foot, and the head rope may not be longer than the length of the beam plus 10%. After the 1997 board meetings, trawl web used during the directed sidestripe shrimp fishery was initially required to be square hung at the beam selvage (where the mesh is connected to the breast lines of the trawl), with the intent to allow the development of the directed sidestripe shrimp fishery while minimizing the impact on other smaller shrimp species. The regulation further provides that no more than 10% of the total pandalid shrimp harvest may be composed of other species of shrimp. However, during the 2000 board meeting, this regulation was eliminated, allowing diamond hung meshes to be used for the directed sidestripe shrimp fishery. It is not known what effect this change in net construction has on retention of small shrimp.

In 1959, otter trawls were not allowed in the Petersburg-Wrangell area in major locations utilized by the beam trawl fishery. Prior to the 1963/64 fishing season, this regulation was altered to the present district boundaries.

In 1980, beam trawling was prohibited in the waters of Lituya Bay (District 16) by the board, and in 1985, the National Park Service prohibited trawling in waters of Glacier Bay. Beginning in mid-1986, trawling was prohibited in the waters of Tenakee Inlet (District 12). The board eliminated otter trawls as a legal gear type in Southeast Alaska, effective May 8, 1998. In 2006, the board clarified that having a spare net onboard a beam trawl vessel is permissible as long as only a single net is fished at any time.

There is no regulation restricting the length of the beam of the trawl. At the 2015 meeting, the board passed regulation allowing for the use of multiple beam trawls as a mechanism to increase both safety and efficiency. If multiple trawls are used the combined lengths of the beams can be no more than 60 feet.

Limited Entry

The Commercial Fisheries Entry Commission (CFEC), in response to petitions received from beam trawl permit holders during 1995 and 1996, established January 1, 1997, as the qualification date for limited entry with the 4 years immediately preceding being the qualification period. Therefore, to be eligible to apply for an entry permit, an individual would have had to be a permit holder during at least 1 of the years during the qualification period of January 1, 1993, through December 31, 1996. To date, 42 permanent permits have been issued. Of the permanent permits issued, 13 have been cancelled, leaving 29 permits active in the fishery (CFEC 2023).

Other Regulatory Changes

At the 2006 board meeting, a new regulation was carried preventing simultaneous registration for the beam trawl and pot shrimp fisheries. New reporting requirements were issued for catcher–processors at the 2009 board meeting, allowing the department to require weekly reporting of any other information determined necessary for the conservation and management of the fishery. At the 2012 board meeting, the board carried a proposal to prohibit simultaneous registration in the commercial beam trawl shrimp and Dungeness crab fisheries. At their 2018 meeting, the board carried a proposal to expand the beam trawl shrimp fishery logbook requirement to cover all fishing areas.

MANAGEMENT CONCERNS

Effort decreased from 23 permits in the 1999/2000 season to an average of 6 permits fished during the 2006/07 to 2014/15 seasons. Participation increased in the 2015/16 season to a high of 11 permits in the 2019/20 season, but has decreased since then with 8 permits fishing the 2022/23 season (Table 2.1). Currently, participation in the fishery is still low compared to historical levels, with a total of 29% of available GHL taken during the 2022/23 season. If markets continue to improve, this fishery may see higher effort levels, more efficient and species-specific gear, and eventual development of nontraditional product forms such as value-added frozen-at-sea shrimp to garner a higher price from a currently undervalued resource. In turn, these changes identify the need to establish a research program for necessary biological information, institute a more active management program, and develop a management plan to ensure future conservation goals are achievable.

Beam trawl harvest levels are set based on average historical harvest levels, not population estimates. Since 2020, refinements have been made in calculating CPUE using harvest ticket and logbook data, and analyses of CPUE have been used to set GHLs in traditional areas. Although this fishery has sustained itself for nearly 100 years, the size composition of the harvest appears to be changing. The move by some permit holders toward use of larger mesh sizes appears to be focusing more effort on the larger species and larger individual shrimp. Regulation changes may be needed to adequately control the expansion of the fishery and to prevent high grading of some species of shrimp while dumping the less desirable species or smaller shrimp. Additional regulations to separate traditional northern shrimp and sidestripe fisheries may be necessary to ensure conservative management for sidestripe populations.

STOCK ASSESSMENT

The beam trawl fishery stock assessment program is fishery dependent with dockside sampling and collection. Length–frequency and sex-at-size sampling has been conducted since 1986, and sporadic sampling by onboard observers was conducted in 2002; however, to date, no fishery-independent survey program has been conducted or developed. More information is needed on northern and sidestripe shrimp stock size and life history in Southeast Alaska. Information is also needed on the effects of mesh size and gear configuration on catch size and species composition, what constitutes a sustainable harvest strategy, and estimates of bycatch and discards.

RECENT SEASONS

Traditional Northern Shrimp Fisheries

Harvest and Effort by Area

Reported harvest from fish tickets and dockside sampling data provide the information summarized for the traditional beam trawl fishing areas of Duncan Canal (a portion of District 6), Eastern Channel (a portion of District 7), Stikine Flats (District 8), and Thomas and Farragut Bays (a portion of eastern District 10). In recent seasons, effort has been concentrated in Duncan Canal and Stikine Flats. Harvest in Duncan Canal averaged 345,300 pounds per season from the 2020/21 through 2022/23 seasons, whereas harvest in Stikine Flats has averaged 198,000 pounds per season over the same period. Although confidentiality restrictions do not allow for reporting average harvest per season for Eastern Channel and Thomas and Farragut Bays in the 2020/21 through 2022/23 seasons, in combination, these areas account for less than 1% of the total harvest (Table 2.3).

Species Composition

Duncan Canal has primarily supported a northern shrimp fishery, which made up over 99% of the species harvested during the last 10 seasons. Species composition is more varied in Stikine Flats. Harvest by species for Stikine Flats averaged 76% for northern shrimp, 23% for sidestripe shrimp, and 1% for spot and coonstripe shrimp, in combination. Although confidentiality restrictions do not allow for detailed proportional harvest by species, the Eastern Channel harvest in the last 10 seasons has been predominantly made up of sidestripe shrimp, and to a lesser extent northern, spot, and coonstripe shrimp. Thomas and Farragut Bays have the same confidentiality restrictions for detailed proportional harvest by species, with effort and harvest over the last 10 seasons much lower than the other traditional areas. Generally, the harvest has been predominantly made up of northern shrimp, and to a lesser extent sidestripe, coonstripe, and spot shrimp.

From the 2017/18 through 2019/20 seasons, northern shrimp accounted for more of the total harvest at 92%. Sidestripe shrimp accounted for 8% of the harvest during this period, whereas spot and coonstripe shrimp in combination accounted for <1% of the harvest. Species composition in the 3 most recent seasons has shifted and is now made up of a higher percentage of larger sidestripe shrimp. Northern shrimp made up 83% of the harvest, with 16% composed of sidestripe shrimp, and <1% composed of spot and coonstripe shrimp combined in the 2020/21 through 2022/23 seasons.

Nontraditional Northern Shrimp Fisheries

Nontraditional beam trawl fishing areas include District 3, District 5, South Zarembo and Sumner Straits (a portion of District 6), Blake Channel (a portion of District 7), District 9, Upper Frederick Sound (a portion of western District 10), and District 11. Beam trawl fishing has occurred at low and sporadic levels in these areas and is managed with a single fishing season. The top end of GHRs for nontraditional areas range from 75,000 to 150,000 pounds.

Directed Sidestripe Shrimp Fisheries

The directed sidestripe beam trawl fishery last occurred in District 8 in June during the 2002/03 season, and none have been authorized since.

CHAPTER 2: TABLES AND FIGURES

Table 2.1–Registration Area A (Southeast Alaska) shrimp beam trawl harvest, number of permits, number of landings, pounds per permit, and pounds per landing, 1955 to present.

Year/ Season	Harvest in pounds– northern shrimp	Harvest in pounds– sidestripe shrimp	Number of permits	Landings	Pounds per permit	Pounds per landing
1955	1,777,122	–	15	–	118,475	–
1956	3,301,598	–	15	–	220,107	–
1957	2,350,499	–	10	–	235,050	–
1958	7,605,871	–	14	–	543,277	–
1959	5,518,843	–	22	–	250,857	–
1960	3,343,373	–	21	1,007	159,208	3,320
1961	4,212,300	–	20	1,394	210,615	3,022
1962	3,884,050	–	22	1,400	176,548	2,774
1963	3,110,340	–	20	1,080	155,517	2,880
1964	2,793,101	–	13	1,092	214,854	2,558
1965	2,941,429	–	13	1,338	226,264	2,198
1966	3,784,597	–	14	1,663	270,328	2,276
1967	2,203,753	–	13	1,105	169,519	1,994
1968/69	2,003,753	–	12	925	166,979	2,166
1969/70	1,840,727	–	11	952	167,339	1,934
1970/71	742,404	–	11	477	67,491	1,556
1971/72	1,050,978	–	9	592	116,775	1,775
1972/73	787,839	11,113	9	421	88,772	1,898
1973/74	514,740	4,032	8	460	64,847	1,128
1974/75	473,023	3,157	20	434	23,809	1,097
1975/76	1,010,814	16,512	12	450	85,611	2,283
1976/77	734,385	61,806	14	476	56,871	1,673
1977/78	927,414	18,887	10	404	94,630	2,342
1978/79	989,757	42,792	9	519	114,728	1,989
1979/80	821,983	141,193	17	982	56,657	981
1980/81	879,748	107,959	21	920	47,034	1,074
1981/82	884,656	35,297	15	524	61,330	1,756
1982/83	1,370,060	36,026	15	455	93,739	3,090
1983/84	1,699,964	55,444	18	667	97,523	2,632
1984/85	1,199,897	97,742	23	811	56,419	1,600
1985/86	366,741	65,670	16	252	27,036	1,717
1986/87	2,176,104	22,382	16	435	137,754	5,067
1987/88	1,718,985	39,003	25	389	70,513	4,532
1988/89	1,611,298	62,763	18	528	93,134	3,175
1989/90	1,717,758	95,966	21	645	86,422	2,814
1990/91	2,401,717	89,007	23	793	108,468	3,146
1991/92	2,817,243	117,026	29	1,052	101,573	2,800

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Table 2.1–Page 2 of 2.

Year/Season	Harvest in pounds–northern shrimp	Harvest in pounds–sidestripe shrimp	Number of permits	Landings	Pounds per permit	Pounds per landing
1992/93	2,227,023	156,496	41	941	58,421	2,545
1993/94	2,003,908	123,878	25	705	85,431	3,029
1994/95	3,178,121	42,139	25	814	128,969	3,961
1995/96	3,010,101	40,436	47	793	65,053	3,856
1996/97	2,442,298	63,502	49	876	51,780	2,896
1997/98	2,952,439	117,268	39	984	79,432	3,148
1998/99	2,090,157	139,987	24	852	94,490	2,662
1999/00	1,755,281	111,346	23	568	82,381	3,336
2000/01	1,228,595	154,355	16	564	88,098	2,499
2001/02	757,479	120,936	19	357	46,962	2,499
2002/03	886,609	184,208	13	426	83,840	2,559
2003/04	567,691	155,768	10	216	73,314	3,394
2004/05	865,605	107,524	8	233	122,720	4,214
2005/06	554,874	56,738	8	178	77,115	3,466
2006/07	98,382	28,552	7	50	18,599	2,604
2007/08	8,610	25,805	5	24	7,147	1,489
2008/09	20,667	52,305	6	66	12,722	1,157
2009/10	12,809	38,357	4	77	13,340	693
2010/11	65,468	49,880	5	114	24,188	1,061
2011/12	306,334	66,341	8	201	47,091	1,874
2012/13	174,459	48,880	6	144	37,654	1,569
2013/14	72,010	53,614	5	119	25,498	1,071
2014/15	261,197	53,108	5	186	65,047	1,749
2015/16	650,328	120,954	7	410	112,849	1,927
2016/17	821,455	134,871	9	472	108,010	2,060
2017/18	889,820	124,488	6	396	171,620	2,600
2018/19	1,396,698	123,874	9	517	169,748	2,955
2019/20	1,138,154	68,701	11	362	110,340	3,353
2020/21	336,572	69,477	9	183	45,322	2,229
2021/22	340,768	123,125	8	233	58,552	2,010
2022/23	719,174	79,973	8	279	100,348	2,877
Average: 1960–1969	3,011,742	–	16	1,196	191,717	2,512
Average: 1970–1979	805,334	37,437	12	522	77,019	1,672
Average: 1980–1989	1,362,521	61,825	19	563	77,090	2,746
Average: 1990–1999	2,487,829	100,109	33	838	85,600	3,138
Average: 2000–2009	500,132	92,455	10	219	54,386	2,457
Average: 2010–2019	577,592	84,471	7	292	87,205	2,022
Average: 2020–2022	465,505	90,858	8	232	68,074	2,372

Note: En dash = no known harvest, no data.

Table 2.2–Registration Area A (Southeast Alaska) shrimp beam trawl harvest in thousands of pounds by month and season, 1969/70 to present.

	Month												
Season	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
1969/70	326.7	280.2	78.8	129.1	184.7	241.2	119.6	165.2	160.0	100.6	32.4	22.4	1,840.7
1970/71	131.3	105.1	65.4	79.8	49.7	64.3	54.8	59.2	59.9	56.8	[a]	13.2	[a]
1971/72	139.0	106.3	144.5	106.5	69.7	78.3	101.6	71.1	66.0	121.1	38.7	[a]	[a]
1972/73	168.5	126.4	77.2	[a]	[a]	44.7	64.0	46.3	81.6	42.2	6.1	8.5	797.4
1973/74	96.3	124.1	[a]	[a]	[a]	[a]	59.1	64.8	60.3	29.2	[a]	8.4	674.4
1974/75	160.9	199.2	202.4	168.0	120.1	61.4	73.9	90.8	104.2	21.6	[a]	[a]	1,205.6
1975/76	180.7	130.3	67.2	a	112.3	154.5	73.0	77.8	38.9	46.1	[a]	6.7	983.6
1976/77	78.8	171.7	120.0	118.8	61.8	37.4	55.2	33.3	65.0	25.7	[a]	[a]	768.9
1977/78	73.7	235.3	147.9	166.6	126.2	48.3	29.5	18.7	81.2	21.7	0	0	949.0
1978/79	107.0	130.9	140.6	240.2	112.0	93.1	67.8	36.0	72.3	22.5	8.3	[a]	[a]
1979/80	98.2	154.9	146.6	177.4	104.2	55.1	58.4	39.6	66.3	48.1	[a]	[a]	956.9
1980/81	153.8	168.6	164.9	153.7	54.2	30.2	35.5	12.2	33.6	31.6	5.5	0.0	843.7
1981/82	165.1	183.4	124.0	168.8	81.1	52.7	36.5	48.3	33.0	22.3	0.9	3.1	919.3
1982/83	181.1	171.7	168.8	159.4	134.0	50.1	60.7	82.0	152.6	119.8	64.4	52.5	1,397.0
1983/84	436.3	249.0	287.0	218.2	127.5	132.0	83.3	86.9	101.7	16.2	9.0	9.6	1,756.5
1984/85	156.3	252.5	272.5	232.8	132.9	59.5	61.8	49.7	51.9	22.5	[a]	[a]	1,294.5
1985/86	125.6	105.3	46.1	23.3	39.1	13.8	29.8	30.5	[a]	7.7	[a]	[a]	432.6
1986/87	294.4	508.3	576.0	446.7	372.0	[a]	[a]	[a]	[a]	[a]	[a]	[a]	2,204.1
1987/88	633.0	721.0	292.7	90.8	[a]	[a]	[a]	10.9	[a]	[a]	[a]	[a]	1,762.8
1988/89	633.8	382.5	258.4	137.9	[a]	2.5	82.9	127.9	37.8	[a]	[a]	[a]	1,676.4
1989/90	472.7	237.0	259.0	173.4	224.3	115.5	67.6	38.4	167.5	53.7	[a]	[a]	1,814.9
1990/91	546.7	336.5	385.1	359.2	257.4	183.3	161.2	148.7	16.8	9.4	17.1	73.2	2,494.8
1991/92	611.7	325.6	887.2	80.5	336.4	219.0	167.3	165.7	114.1	17.1	6.2	14.8	2,945.6
1992/93	469.5	253.7	403.9	296.3	194.5	185.7	140.0	129.0	131.6	65.5	57.3	68.2	2,395.3
1993/94	548.0	215.5	372.0	239.3	121.3	86.9	102.5	102.3	147.4	85.7	110.9	[a]	[a]
1994/95	559.9	266.2	574.8	468.4	196.3	96.9	148.6	189.2	387.0	41.9	231.6	63.5	3,224.2

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Table 2.2–Page 2 of 2.

Season	Month												
	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
1995/96	686.6	338.2	526.7	344.7	515.0	66.3	137.8	55.8	63.2	157.9	104.1	61.3	3,057.5
1996/97	781.5	263.6	609.2	162.5	506.3	104.4	73.3	6.8	[a]	1.4	[a]	[a]	2,537.2
1997/98	725.3	240.2	639.8	222.7	673.4	144.1	127.7	261.1	[a]	41.5	[a]	0.0	3,097.8
1998/99	524.2	263.0	500.7	317.4	349.9	134.7	106.7	3.4	17.1	21.4	[a]	[a]	2,267.8
1999/00	580.5	232.2	385.1	313.0	223.7	65.4	27.2	8.9	4.6	48.4	[a]	[a]	1,894.8
2000/01	485.5	172.7	218.8	183.8	89.5	81.9	118.7	[a]	19.6	30.5	[a]	[a]	1,409.6
2001/02	351.2	155.3	8.6	41.5	97.1	[a]	92.8	11.6	37.8	18.0	[a]	0.0	892.3
2002/03	348.6	136.6	[a]	91.3	147.0	[a]	128.9	9.4	28.9	128.4	[a]	0.0	1,089.9
2003/04	334.9	52.2	17.2	16.5	[a]	136.0	103.5	11.3	18.9	38.8	0.0	0.0	[a]
2004/05	478.8	192.8	[a]	[a]	[a]	76.8	125.8	5.2	6.4	15.5	Closed	Closed	981.8
2005/06	442.1	131.6	11.5	[a]	5.2	0.0	0.0	3.9	7.4	13.5	Closed	Closed	[a]
2006/07	[a]	19.7	[a]	0.0	[a]	0.0	0.0	1.4	1.3	20.8	Closed	Closed	130.2
2007/08	[a]	[a]	[a]	0.0	[a]	[a]	[a]	[a]	[a]	[a]	Closed	Closed	35.7
2008/09	[a]	[a]	[a]	[a]	[a]	[a]	4.3	4.5	4.4	26.1	Closed	Closed	76.3
2009/10	9.9	[a]	[a]	[a]	1.5	[a]	[a]	[a]	a	17.9	Closed	Closed	53.4
2010/11	16.8	[a]	5.8	[a]	0.0	[a]	[a]	[a]	29.7	46.8	Closed	Closed	120.9
2011/12	248.3	64.3	[a]	[a]	[a]	[a]	[a]	8.3	5.0	25.5	Closed	Closed	376.7
2012/13	174.5	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	14.0	Closed	Closed	225.9
2013/14	7.0	[a]	[a]	0.0	[a]	[a]	[a]	[a]	6.6	80.7	Closed	Closed	127.5
2014/15	[a]	[a]	0	[a]	[a]	[a]	[a]	52.5	74.7	131.1	Closed	Closed	325.2
2015/16	193.7	88.9	[a]	54.7	92.0	[a]	40.5	105.1	144.1	21.1	Closed	Closed	789.9
2016/17	186.0	99.7	[a]	132.8	86.8	[a]	27.6	58.9	144.7	124.2	Closed	Closed	972.1
2017/18	226.8	142.3	[a]	[a]	[a]	[a]	58.7	40.6	165.3	205.5	Closed	Closed	1,029.7
2018/19	345.2	167.1	[a]	153.1	98.8	119.9	66.4	117.6	259.9	92.5	Closed	Closed	[a]
2019/20	430.9	[a]	[a]	92.2	135.6	22.7	94.2	93.4	103.6	158.7	Closed	Closed	1,213.7
2020/21	197.1	129.5	[a]	[a]	7.4	[a]	3.4	7.9	12.7	23.5	Closed	Closed	407.9
2021/22	29.8	18.3	[a]	[a]	[a]	[a]	48.2	38.5	92.5	197.7	Closed	Closed	468.4
2022/23	211.7	112.3	[a]	[a]	[a]	[a]	70.8	67.4	20.1	159.3	Closed	Closed	802.8

[a] Fewer than 3 permits were fished; information is confidential.

Table 2.3–Registration Area A shrimp beam trawl fishery harvest in thousands of pounds by season and district, 1969/70 to 2022/23 seasons.

	Season											
District	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81	1981/82	1982/83	1983/84
1	0	[a]	[a]	[a]	1.6	0	[a]	[a]	[a]	[a]	[a]	[a]
2	0	0	1.3	0.1	0	0	0	1.5	0.0	0.0	0.0	0.0
3	[a]	0	0	[a]	[a]	0	0	[a]	[a]	[a]	[a]	0.0
4	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.3
5	0	0	0	[a]	0	0	0	[a]	0.0	0.0	0.0	0.0
6: Duncan	450.3	260	973.2	554.2	610.2	669.7	625	427.4	415.0	693.8	1199.6	1,015.4
6: Sumner	[a]	0	0	257.6	10.7	[a]	[a]	0.0	[a]	[a]	0.0	0.0
7: Eastern	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
7: Blake	35.7	48.7	10.4	14.6	29.2	40.3	140.1	109.8	77.9	31.5	11.8	138.6
8: Stikine	219.6	323.4	212.4	84.5	85.5	176.0	261.9	405.7	342.5	88.6	51.0	545.0
9	0	0	0	0	0	0	0	0.0	[a]	0.0	[a]	[a]
10: Thomas	89.9	[a]	[a]	[a]	27.9	[a]	3.4	2.8	0.0	0.0	[a]	26.3
10: Up. Fred	0	0	0	0	0	0	0	[a]	0.0	0.0	0.0	0.0
11	0	0	[a]	[a]	[a]	[a]	[a]	0.0	[a]	[a]	0.0	0.0
12	0	0	0	0	0	0	0	0.0	0.0	0.3	0.0	0.0
13	0	0	0	0	0	0	0	[a]	0.0	0.0	0.0	0.0
14	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
15	0	0	[a]	0	0	0	0	[a]	[a]	[a]	[a]	2.0
16	0	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0
Total	797.4	674.4	1,205.6	983.6	768.9	949.0	1,033.3	957.2	843.8	919.6	1,397.5	1,756.8

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Table 2.3.–Page 2 of 4.

	Season												
District	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
1	[a]	[a]	[a]	0.0	[a]	[a]	[a]	0.0	[a]	[a]	[a]	0.0	0.0
2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	[a]	[a]	Closed	Closed	Closed
3	0.0	0.0	0.0	0.0	0.0	0.0	80.1	21.4	126.1	18.7	31.6	19.2	69.9
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Closed	Closed	Closed
[a]	[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	[a]	0.0	[a]	182.0	74.2
6: Duncan	523.9	235.7	1,645.3	1,225.6	1,049.1	1,007.0	1,565.5	1,716.0	1,198.4	829.0	1,406.9	1,359.7	1,285.5
[a]	17.7	[a]	[a]	[a]	0.0	0.0	[a]	0.0	13.8	[a]	[a]	0.0	[a]
7: Eastern	0.0	0.0	0.0	0.0	[a]	17.5	55.5	74.1	42.4	[a]	232.2	168.1	114.2
7: Blake	101.3	30.1	100.6	76.2	15.9	70.5	40.3	101.1	60.0	50.7	0.0	3.6	8.4
8: Stikine	610.8	163.6	432.5	437.2	590.7	677.1	652.0	697.6	683.7	834.3	848.7	905.7	611.9
9	0.0	0.0	0.0	0.0	0.0	0.0	[a]	[a]	19.6	[a]	0.0	[a]	3.9
10: Thomas	33.8	[a]	[a]	[a]	[a]	[a]	[a]	321.3	148.7	219.7	241.7	240.0	280.9
10: Up. Fred	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	[a]	28.3
11	0.0	0.0	0.0	[a]	0.0	0.0	[a]	9.0	97.9	110.0	295.0	170.3	57.2
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	[a]	0.0	0.0	Closed	Closed	Closed
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	[a]	0.0	0.0	Closed	Closed	Closed
14	0.0	0.0	[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Closed	Closed	Closed
15	[a]	[a]	0.0	0.0	0.0	[a]	0.0	0.0	[a]	[a]	Closed	Closed	Closed
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	Closed	Closed	Closed
Total	1,298.3	432.6	2,204.1	1,762.8	1,676.4	1,814.9	2,494.8	2,945.6	2,395.3	2,135.8	3,224.2	3,057.5	2,537.2

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Table 2.3.–Page 3 of 4.

	Season												
District	1997/98	1998/99	1999/00	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
3	24.0	47.2	[a]	[a]	[a]	[a]	0.0	0.0	[a]	0.0	0.0	0.0	0.0
4	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
5	12.3	0.0	[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6: Duncan	1,263.8	989.1	838.8	585.9	218.0	99.9	62.5	484.1	302.7	[a]	0.0	0.0	0.0
6: Sumner	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7: Eastern	174.7	62.7	45.8	89.2	57.6	62.4	35.5	[a]	[a]	[a]	0.0	0.0	0.0
7: Blake	[a]	0.9	[a]	[a]	[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8: Stikine	1,349.5	817.9	703.6	560.2	577.4	785.0	565.3	463.3	296.4	117.6	35.2	74.0	49.1
9	0.0	[a]	[a]	[a]	5.9	[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10: Thomas	240.3	[a]	246.7	64.0	23.0	[a]	[a]	[a]	[a]	[a]	[a]	0.0	0.0
10: Up. Fred	16.9	[a]	[a]	[a]	[a]	[a]	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	13.9	[a]	25.9	81.8	[a]	0.0	0.0	0.0	0.0	0.0	0.0	[a]	[a]
12	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
13	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
14	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
15	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
16	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Total	3,097.8	2,267.8	1,894.8	1,409.6	892.3	1,089.9	[a]	981.8	616.9	130.2	[a]	[a]	[a]

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Table 2.3.–Page 4 of 4.

	Season												
District	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	[a]	0.0	0.0	0.0	0.0
2	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
3	0.0	0.0	0.0	0.0	0.0	[a]	0.0	0.0	0.0	0.0	0.0	0.0	[a]
4	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6: Duncan	0.0	[a]	[a]	0.0	[a]	303.7	565.5	364.5	724.1	682.6	302.7	[a]	[a]
6: Sumner	0.0	0.0	0.0	0.0	0.0	0.0	[a]	0.0	0.0	0.0	0.0	0.0	0.0
7: Eastern	0.0	0.0	0.0	0.0	0.0	[a]	[a]	0.0	4.9	[a]	[a]	[a]	[a]
7: Blake	0.0	0.0	0.0	0.0	0.0	[a]	0.0	0.0	0.0	0.0	[a]	[a]	0.0
8: Stikine	119.4	181.3	69.3	127.5	158.9	476.9	386.3	655.1	708.8	492.4	85.1	167.3	341.8
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10: Thomas	[a]	0.0	0.0	0.0	[a]	[a]	[a]	0.0	[a]	0.0	0.0	[a]	0.0
10: Up. Fred	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	[a]	0.0	[a]	0.0
11	[a]	[a]	0.0	0.0	0.0	[a]	10.9	[a]	[a]	[a]	[a]	[a]	[a]
12	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
13	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
14	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
15	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
16	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
Total	120.9	376.7	[a]	127.5	325.2	789.9	972.1	[a]	1,527.7	1,213.7	407.9	468.4	802.8

[a] Fewer than 3 permits were fished; information is confidential.

Table 2.4–Beam trawl fishing areas and associated statistical areas (districts and all associated statistical areas) for the harvest information from fish tickets for the 1991/92 to 2022/23 seasons.

Type	Management unit	Fishing area	Statistical areas
Traditional	District 6	Duncan Canal	106-42, 43, 44
	District 7	Eastern Channel	107-45
	District 8	Stikine Flats	108-10, 20, 30, 40, 41, 45, 50, 60
	District 10	Thomas and Farragut Bays	110-11, 12, 13, 14, 15, 16
Nontraditional	District 6	South Zarembo	106-10, 20, 21, 22, 25, 30
		Sumner Straits	106-41
	District 7	Blake Channel	107-10, 20, 30, 35, 40
	District 10	Upper Frederick Sound	110-17, 21, 22, 23, 24, 31, 32, 33, 34
	Districts 3, 5, 9		All statistical areas
	Sections 11-A, 11-B, 11-C, 11-D		All statistical areas

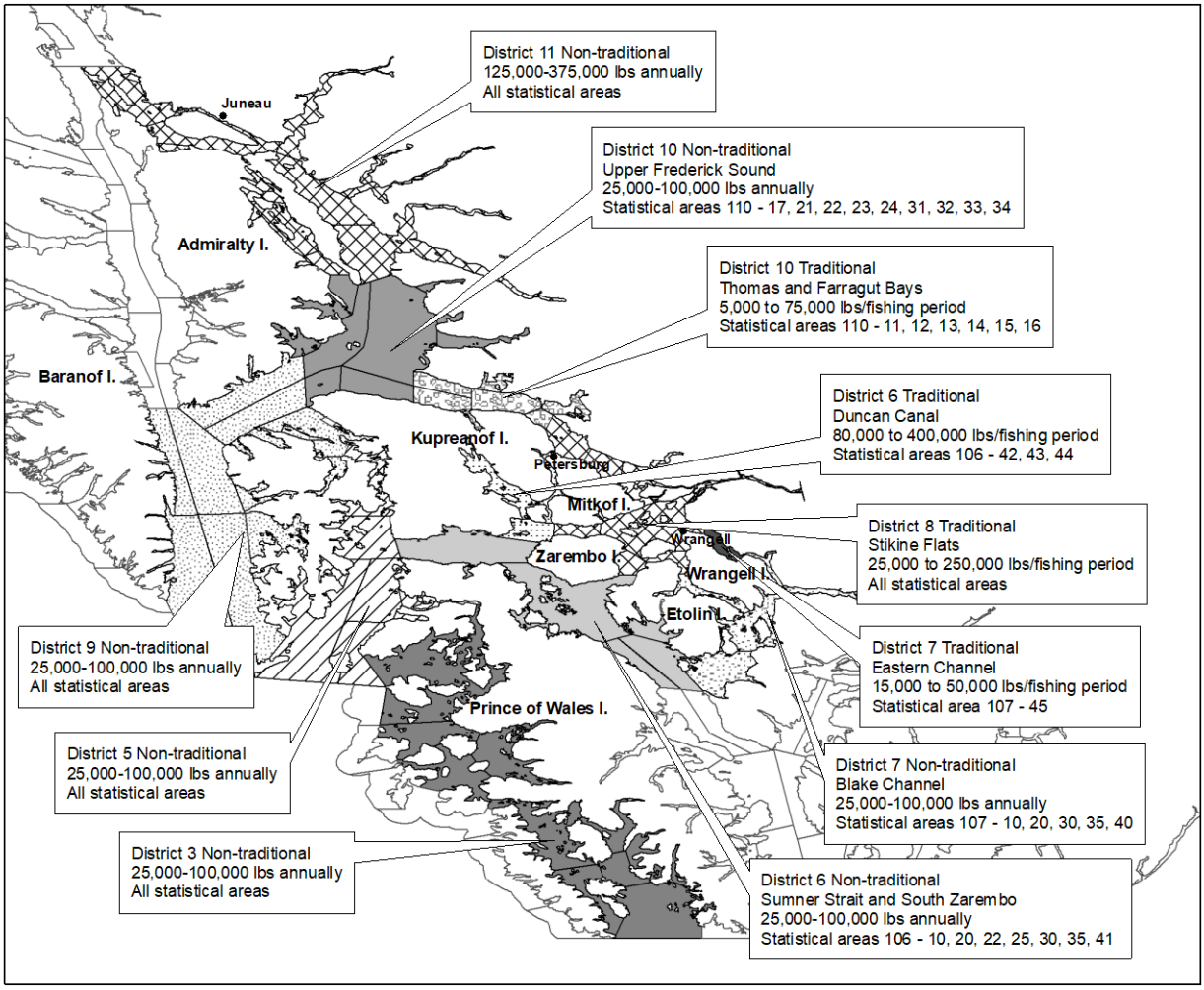

Figure 2.1–Beam trawl shrimp fishery areas and fishing period guideline harvest ranges for Southeast Alaska.

CHAPTER 3: SOUTHEAST POT SHRIMP FISHERY

INTRODUCTION

Life History

Spot shrimp *Pandalus platyceros*, the target species for the pot shrimp fishery in Southeast Alaska, are widely distributed within the North Pacific Ocean. They occur from the intertidal to depths of greater than 1,500 ft, from the Korea Strait to the Sea of Japan, along the Siberian east coast, and from Unalaska to San Diego, California (Butler 1964).

Life history information on spot shrimp in Southeast Alaska is limited. Thus, much must be inferred from studies in Prince William Sound and British Columbia.

Spot shrimp have a complex life cycle, hatching from eggs carried on the female's abdomen and progressing through planktonic five larval stages (Price and Chew 1972) before settling to the benthos as juveniles. Five juvenile stages occur prior to maturation to a functional, adult male (Berkeley 1930; Haynes 1985).

There is an ontogenetic change in the habitat of spot shrimp. Juvenile spot shrimp utilize shallow water eelgrass and *Laminarium* or *Agarum* spp. kelp habitats, until they grow to approximately 20 mm in carapace length. Then they migrate to rocky habitats including reefs, glass sponge reefs, and corals (Chew et al. 1974; Marliave and Roth 1995).

Adult spot shrimp are benthic scavengers as well as predators and undergo diurnal feeding migrations, moving shoreward along the bottom into shallower waters at night and back to deeper waters during the day (Butler 1970).

All pandalid shrimp are protandric hermaphrodites; they mature and spawn first as males, and subsequently transition to females and spawn as females for the remainder of their lives. Southeast Alaska specific maturation timing is not known, but in British Columbia spot shrimp are thought to mature sexually after 1.5 years and reproduce as males for an additional 1 to 3 seasons (Butler 1964). The transition from male to female occurs during the second or third year of life. As females, shrimp produce a single clutch of eggs per year (Levy et al. 2020). The eggs are extruded in July and August in Southeast Alaska and hold through the winter until hatching in April and May. The size at which shrimp make this transition is measured as the length at which 50% are female (L50), and varies with environmental and population stresses, thus making a useful metric to gauge population health.

Disagreement exists on spot shrimp longevity. Fishery managers in British Columbia manage based on the assumption that shrimp live to a maximum of 5 years (Butler 1964). Studies done in Prince William Sound found a maximum age of 8–10 years or greater (Armstrong et al 1995; Kimker et al. 1996).

The concept of metapopulations may apply to spot shrimp. Larvae are planktonic and may be widely transported by currents, while juveniles and adults are relatively sedentary. Tagged adults remain within a mile or two of their release location (Kimker et al. 1996). Larval transport into bays and fjords in Southeast Alaska may depend on oceanographic conditions such as prevailing wind patterns, tidal currents, freshwater influence, and differential flow dynamics. Larvae in some inshore waters may experience very small-scale entrainment patterns. Thus, depleted waters could be repopulated by a distant larval source, or areas of good habitat may not get adequate larval supply to support a viable population.

Commercial Fishery

Two species of shrimp, spot shrimp *Pandalus platyceros* and coonstripe shrimp *P. hypsinotus*, are harvested in the pot shrimp fishery of Southeast Alaska. Most districts are managed to target spot shrimp; however, GHLs in Districts 15 and 16 are based on coonstripe shrimp, and the GHL in District 11 is based on spot and coonstripe shrimp combined. Generally, there has been a progressive increase in harvest from the 1970s when harvests averaged only 21,500 pounds, to 285,000 pounds in the 1980s, 876,000 in the 1990s, 919,000 in the 2000s, and 537,000 during the 2010s (Table 3.1). The greatest portion of the harvest is taken in Districts 1, 2, 3, and 7, which represent 62% of the most recent 10-year average harvests (Table 3.2). Smaller but significant historical harvests have also occurred in Districts 6, 10, and 13, which represent 18% of the most recent 10-year average harvests. Nineteen distinct areas including districts or portions of districts are managed to achieve GHLs.

Vessels used in the pot shrimp fishery range from smaller style gillnet or troll vessels to limit purse seiners. Catcher–processors in the 60-foot keel length range also participate. Gear is standardized by regulation to large or small pots with associated definitions based on pot base perimeter. Regulations limit pots to 100 large or 140 small pots, and a minimum mesh size to allow passage of a 7/8-inch diameter wooden dowel. Pot gear is generally longlined and pot construction varies in size, shape, weight, and configuration. Gear designs have rapidly changed to increase fishing efficiency. Cone style pots are most commonly used today. Cone pots are constructed using 2 or 3 stainless steel rings, the top ring smaller than the bottom, with vertical bars welded between the rings forming 6 sides, at least 3 of which contain tunnels. These cone pots are also constructed of either rubber wrapped or "dipped" mild steel. Pots have webbing tightly drawn in on the top with a permanent closure. The bottom web is drawn in with a "pucker string," which is opened during baiting and used to empty harvested shrimp from the pot.

The fishing season is May 15 through July 31 with a provision for reopening for a fall and winter season of October 1 through February 28 in management areas where the GHL is not taken during the regular season. The current fishing season was instituted by proposals based by the board at the 2022 Southeast Shellfish and Finfish meeting in Anchorage. Before then, the season was October 1 through February 28, with a provision for reopening for a summer season of May 15 through July 31. This change was made to improve stock productivity by fishing on the stock only after eggs have hatched and before the increased female mortality period of molting, mating, and extruding eggs. In productive management areas, most of the harvest occurs in the first month or week of the fishery. Over the most recent 10-year period (prior to the switch to a spring season), 79% of seasonal harvests have occurred by the end of October (Table 3.3). Product type has changed over recent seasons from primarily hand packed frozen-at-sea whole shrimp for the Japanese sushi market to a domestic tailed product. There has been some experimentation with the live shrimp market.

The basis of current management includes the following key features and objectives: (1) a closed season to prevent fishing on major stocks during the egg-hatch or growth and recruitment periods, (2) maintenance of multiple age classes of shrimp, (3) maintenance of adequate brood stock for rebuilding, (4) minimum mesh size restrictions intended to only capture and retain the larger size segment of the stock, (5) pot standardization of 2 sizes, (6) a maximum number of pots per vessel, (7) hauling hour restrictions, (8) a GHL for each fishing district, and (9) reporting requirements to ensure timely harvest monitoring and closures.

Regulations have also been adopted for permitting of shrimp floating processors, including reporting and fish ticket requirements for shrimp catcher–processors and catcher–seller vessels. Harvest is recorded and summarized through the department's fish ticket system. In addition to fish ticket data from commercial landings, the department collects biological information to support management of the fishery from a variety of sources. Preseason surveys, onboard sampling, and dockside sampling are conducted annually; major areas are surveyed and sampled; lesser areas may have sampling only, and minor areas may not be sampled at all. Onboard observing has also been conducted in some years. Details of the pot shrimp stock assessment survey program are described in Smith (2018a). The department provides detailed information on the pot shrimp fishery, management activities, and research program for all districts of Southeast Alaska in the form of this triennial report to the board.

FISHERY DEVELOPMENT AND HISTORY

Harvest records dating from 1962 indicate that the pot shrimp fishery began with sporadic effort and low harvests through the late 1970s when the pot shrimp fishery served as a supplemental source of income to other fisheries. Harvests and effort increased through the 1980s and peaked in the mid-1990s with harvest of almost 1.14 million pounds caught during the 1994/95 season. The maximum number of permits fished was 352 during the 1995/96 season (Table 3.1). During the past several years, harvest as well as effort has declined from a peak period during the early 2000s.

Through the mid-1980s, most of the product was sold over the dock to private individuals, restaurants, or other markets without passing through the traditional system of processors established for other fish and shellfish species. Vessels conducting business in this manner are termed *catcher–sellers*. Shrimp tails were primarily sold, and exvessel prices were dependent upon the size of the tails or count of tails per pound with larger shrimp commanding the highest price. Because the fishery was supported by relatively low volumes with moderate prices the fishery remained slow paced. Harvests in the 1980s averaged 285,000 pounds per year from 84 permits (Table 3.1).

From 1990/91 through the 1994/95 fishing seasons, the character of the fishery changed. Through these years the number of permits increased to 248 and harvests totaled over 1.1 million pounds. In October 1994, the first floating processor entered the fishery, and the market product began to change towards unsorted, whole shrimp with a moderate increase in value. This change in market product meant that fishers no longer had to spend time sorting shrimp by size and removing heads on the ground, running to and from markets, or selling their own shrimp, effectively allowing them to spend more time setting and retrieving gear. Many fishers began to rely on this fishery as a significant source of their fishing income. Pot efficiency during this period and the pace of the fishery increased. The first inseason EO was issued in the 1994/95 season to close District 13 in mid-March of 1995. GHLs were first assigned to all districts for fisheries beginning October 1, 1995. Following this change, inseason EOs were issued when GHLs were reached, closing Districts 1, 3, 6, 7, and 8. Historic effort in the fishery peaked in the 1995/96 season at 352 permits. The rapid escalation of effort and harvest evoked petitions for limited entry, which was adopted by the CFEC in November 1995. CFEC established the maximum number of permits in the fishery as 332, based on participation during the 1995 calendar year.

Harvest and effort in the pot shrimp fishery decreased moderately following implementation of limited entry in 1998, then increased again as many participants switched to onboard processing in order to capitalize on high prices for sorted, boxed, whole shrimp frozen-at-sea for the Japanese

markets. With so many inexperienced catcher–processors delivering inconsistent quality product, the Alaskan frozen-at-sea markets declined in value for a few years following the 1999/2000 season, although harvests subsequently regained previous high levels. The percentage of overall harvest landed by catcher–processors peaked at 72% for the 2006/07 season. The Japanese market for whole frozen shrimp declined sharply during the 2007/08 season, leading to increased harvest of shrimp as tailed product for the domestic market. The whole frozen market recovered in the mid-2010s, but then declined again in the late 2010s.

REGULATION DEVELOPMENT

Throughout most of the development of the pot shrimp fishery, management has been passive with only fish ticket data available to assist managers. As the intensity of the fishery increased over the years, additional regulations have been implemented to provide a manageable and sustainable fishery. Seasons have been set to prevent harvesting during the egg hatch period and mesh restrictions were set to allow the escapement of shrimp below approximately 32 mm in carapace length. Standardization of pots sizes and numbers, as well as adoption of limited entry by CFEC, have helped to provide a more orderly fishery and to derive information on area-specific harvest rates. The GHRs currently in regulation for each area originated as GHLs based on historical harvests and were initially established to prevent uncontrolled expansion of the fishery. They were not based on information describing stock abundance or stock condition. Current research aims to develop a biologically based index of abundance, which the department reviews each year as a basis to adjust GHLs to provide for sustainable harvest. Some history on the development of regulations for the pot shrimp fishery is provided in the following sections.

Fishing Seasons

Prior to 1970, pot shrimp fishing was allowed only during periods when the shrimp trawl fishery was open, roughly May 1 through February 14. In 1970, pot fishing was allowed throughout the year; this liberal opening existed through the 1981/82 fishing season. During the 1982/83 season, fishing was not allowed during May and June in Districts 1 through 8. This closure was intended to protect fecund, female shrimp from exploitation during the egg-hatch period to maximize stock reproduction potential. The actual range of the egg-hatch period probably varies by location throughout the region but likely occurs sometime between late February through mid-May.

For the 1983/84 season, the District 1 fishery was restricted by the board to a September 1 through April 30 season. This restriction was an allocation for fishers who traditionally used District 1 as a supplemental income source during the fall and winter months. The closure during the late spring and summer provided the important biological benefits of allowing stock recruitment to occur through molting and growth processes.

By the 1986/87 season, major areas (Districts 1, 2, 3, and 7) were open only from October 1 through February 28, which was established for a combination of egg-hatch closure, growth, and allocation for a fall/winter fishing season. The minor areas (Districts 6 and 8) were open from May 1 through February 28, with only an egg-hatch closure in place. All other areas (Districts 4, 5, and 9–16) remained open throughout the year without an egg-hatch closure.

In 1997, the board adopted a regulatory opening of October 1 and closure of February 28 for all districts. In 2000, the board implemented a regulation providing for reopening during a summer season from May 15–July 31 in districts where the GHL is not achieved. This continued the egg

hatch closure, allows a regulatory closure of 2 months prior to the October opening, and allowed for some areas to be fished during the summer growth period.

At the 2022 meeting, the board adopted a regulatory opening of May 15 and closure of July 31 for all districts, with a provision for reopening of districts where the GHL is not achieved for a fall and winter season from October 1–February 28. This change was made to improve stock productivity by fishing on the stock only after eggs have hatched and before the increased female mortality period of molting, mating, and extruding eggs. The change also aligned the Southeast Alaska fishery season with those of the Prince William Sound, British Columbia, and Washington state fisheries.

Size Restrictions

The board policy on small shrimp (79-46-FB), primarily developed for the trawl fisheries, also applies to the pot shrimp fishery; however, specific regulations concerning a minimum legal shrimp size have not been developed. A mesh restriction specifying 1.75-inch stretch mesh was established in 1986 and modified to the current requirement of allowing a 7/8-inch dowel to pass through the mesh on its own weight in 1989. These restrictions assist in the escapement of shrimp less than 30 mm in carapace length and reduce the potential for growth overfishing. This minimum mesh size is similar to that recommended for the Canadian west coast shrimp trap fisheries (Boutillier 1984) and should provide for some protection for at least 2 year-classes of small shrimp. Pot shrimp must be entirely covered with net webbing or rigid mesh. The waters of Lituya Bay in District 16 are an exception, however, and have no mesh restriction.

Fishing hours of 8:00 AM to 4:00 PM are currently in regulation to slow the pace of the shrimp fishery and to allow mesh restrictions time to allow small shrimp to escape the pot. Mesh restrictions have not been totally effective at protecting small shrimp because current regulations do not restrict fishers from picking sets more than once during the daily 8:00 AM to 4:00 PM fishing period. Longer soak periods would allow the regulatory mesh size more time to passively sort small shrimp but could lead to other impacts on the dynamics or economics of the fishery.

Quotas and Guideline Harvest Levels

Prior to the 1983/84 season, a GHL of 125,000 pounds was established for each of Districts 1, 2, 3, and 7, and a GHL of 55,000 pounds for each of Districts 6 and 8. By the 1986/87 season, a GHR for Districts 6 and 8 was set to a range of 75,000 to 100,000 pounds, and dropped entirely for all other districts. These harvest levels persisted until October 1, 1995, when the department implemented GHLs for each district by EO. This action was taken in response to an ongoing trend of increasing harvests and was implemented to maintain the fishery at a sustainable harvest level. For districts with a consistent harvest history, GHLs were set based on the average harvest for the previous 5 fishing seasons, 1990/91 through 1994/95. The District 13 GHL was set based on harvests from only 4 years since harvests in 1994/95 were nearly double any previous year. For districts with low and intermittent harvests, GHLs were arbitrarily set at 20,000 pounds. In January of 1997, the board adopted regulatory GHRs for each district. Those GHRs were the same as the levels imposed by EO beginning with the 1995/96 season, with the lower end of each range set to zero.

In 2000, the board adopted the Pot Shrimp Fishery Management Plan. This plan addressed GHLs in several ways. First, it specified that the upper range of the existing GHRs be modified to use a more accurate tail to whole weight conversion factor of 2.0 based on data from shrimp collected

during the research surveys in Southeast Alaska. The previous conversion factor of 1.67 was developed for sidestripe shrimp *Pandalopsis dispar* from Cook Inlet. This higher conversion factor resulted in increased upper limits of the GHR in those districts where historical harvest had been primarily of tails. The new GHRs were implemented beginning with the 2000/01 season following a major effort by the department to verify, correct, and apply the new conversion to the historic fish ticket database.

The management plan further specified that for each of Districts 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 13, and 14, GHRs would be for spot shrimp; whereas GHRs for Districts 15 and 16 would refer to coonstripe shrimp, and GHRs for District 11 would be for both spot and coonstripe shrimp. This effectively raised the upper level of the GHR for each district by the proportion of historic harvest that was made up of the other species. In most districts, this was relatively insignificant; however, in District 7, it amounted to a 20,000–30,000 pound increase.

The Pot Shrimp Management Plan split District 3 into 2 management areas: Section 3-A, and Sections 3-B and 3-C combined. The GHR for Section 3-A was set at 0–264,000 pounds. Sections 3-B/C were provided a GHR of 0–50,000 pounds. These ranges were based upon the perception that shrimp populations in District 3 could support a higher harvest than the historical average. For the spot shrimp districts, no specific GHRs for coonstripe shrimp were set, but it was stated that the 'allowable harvest' would be based on the average catch during 1995/96 through 1999/2000 seasons.

GHRs were again addressed at the 2006 board meeting in Ketchikan. The department had increased some annual GHLs above the upper end of the GHR in regulation based on good stock performance, and lowered GHLs in other areas. The Pot Shrimp Task Force was concerned that the department needed greater flexibility to adjust GHLs up as well as down, but within the regulatory GHR. GHRs in regulation were increased in District 2, Section 3-B/C, Districts 4, 6, 8, 10, Tenakee Inlet, and Section 13-C. GHRs were changed in areas where the department had already increased GHLs by EO and in areas where the department considered that there was some future potential to increase GHLs above then existing GHRs.

Most recently, GHRs were modified at the 2018 board meeting in Sitka. Portions of Districts 6, 8, and 10 were combined into 4 new management areas. This was done because the geography of the areas, originally designed for salmon management, did not make biological sense for shrimp populations. The new management areas and associated GHRs are as follows: Sections 6-B, C, and D (0–60,000 lb); Sections 6-A and 8-B (0–25,000 lb); Sections 8-A and 10-C (0–20,000 lb); and Sections 10-A and B (0–50,000 lb).

Gear Restrictions

With the exception of minimum mesh size, no gear restrictions were implemented until the 1976/77 season when a pot limit of 150 pots per vessel was established for Districts 1 through 15. Until October of 1997, the 150-pot limit applied to all portions of Registration Area A. Regulations were also developed concerning a maximum tunnel perimeter (15 inch); pot marking requirements; prohibitions against simultaneously fishing pot shrimp and any other type of commercial, sport, or personal use pot; escape mechanisms; and some clarification of mesh requirements.

Enforcement problems repeatedly demonstrated the need for clearer definitions of pot shrimp gear. It was also thought that a reduction in pot sizes would slow the fishery and could provide more useful CPUE data to the department if gear was standardized and a tiered pot system under

consideration by CFEC was implemented. Coupled with the implementation of limited entry, in January 1997, the board adopted gear regulations providing for phased implementation of standardized pots. Through September 30, 1998, the number of pot shrimp s that could be operated from a registered shrimp fishing vessel was 140 small pots or 100 pots larger than a small pot. If any pot operated from a vessel was larger than a small pot, the total number of pots that could be operated from that vessel was 100 pots.

Effective in October of 1998, a "small pot" was defined as having a bottom perimeter of no more than 124 inches and a "large pot" was defined as having a bottom perimeter of more than 124 inches, but not more than 153 inches. Perimeter measurements were selected over diameter measurements to facilitate enforcement. Further, all pots on board a vessel or operated from a vessel had to be of the same type and of the same size.

Pots may not have more than 1 bottom, a vertical height of more than 24 inches, or more than 4 tunnel eye openings which individually do not exceed 15 inches in perimeter. The sides of the pot may only be at a right angle to the plane of the bottom of the pot or slanted inward toward the center of the pot in a straight line from the bottom to the top.

Other pot shrimp regulations adopted in 1997 included time limitations for deployment and retrieval of gear from 8:00 AM until 4:00 PM each day; restrictions dictating that only the owner of the pot gear could carry it; and the issuance of unique pot identification tags for each pot. Unique pot identification tags were issued for a few seasons; however, this requirement was made optional in 2003. Pot tags have not been issued since that time.

At the 2006 board meeting in Ketchikan, pot marking requirements were modified to provide marked buoys on each end of a longline with more than 5 pots. This regulation is intended to prevent gear entanglement and loss in congested fishing areas. In 2006, a new regulation prevented simultaneous registration for the pot shrimp and beam trawl shrimp fisheries.

Floating Processors

Floating processors entered the fishery in 1994, and new practices immediately followed which changed the character of the fishery in several ways. Small fishing boats could deliver on the grounds without factoring in round-trip travel to shore-based plants. The "floaters" could store and transport pots for fishing vessels, and could purchase unsorted, live shrimp. Along with good prices, the pace of the fishery was greatly accelerated. Arrangements for communications between processing vessels and department staff needed to be developed to monitor harvests. Fishing in areas of proximity to processors created more potential for localized depletion of shrimp stocks.

Fleet testimony at the 1997 board meeting indicated that significant amounts of small shrimp were being discarded at floating processors. The requirement for mandatory observer coverage implemented at this meeting was, in part, required to document possible discards as well as to verify fish ticket information.

In 1997, the board eliminated the ability of floating processors to transport pots for fishing vessels and implemented requirements that included reporting the following: (1) processor location and any changes in location, (2) projected dates of operation, (3) and daily production. The only practical way for the department to have verification of daily reporting or to monitor reported discards of small shrimp size classes was to implement mandatory observer coverage, the cost of which is borne by the processor. The last season that a floating processor participated in this fishery was 1998.

Catcher–Processor Reporting

A catcher–processor is defined as a vessel that catches and processes their own product on board. Catcher–processors cannot buy or process shrimp from another fishing vessel or act as a tender, so observers are not required. Reporting requirements for shrimp catcher–processors were first established at the 2000 board meeting and revised in 2003, 2006, and 2009. With such a large proportion of the fleet acting in the dual role both as fishers and processors (and therefore issuing their own fish tickets), it became necessary to regulate harvest reporting to support inseason management and prevent overharvesting in any of the 19 areas being managed. Under statewide general provisions, fish tickets are not required to be delivered to the department until 7 days after each landing of product, making the tracking of harvests with fish tickets impractical for management purposes. Reporting requirements now allow the department to track inseason harvest from shore-based processors, catcher–processors, and catcher–sellers.

Regulations adopted in 2003 allowed the department to specify information to be reported during weekly call-in periods by EO. Regulations were modified in 2006 so that the department would not need to specify what information would be required by EO each year. Catcher–processors were also required to report harvests to department managers within 72 hours of the closure of a fishing area and contact the department before fishing in a new fishing area. Regulations require catcher–processors to report harvest on fish tickets for each day fished and for each area fished. Fish tickets are due to the department within 7 days of the closure of an area where the catcher–processor has fished.

In 2009, reporting requirements were changed and clarified to further improve and more accurately track harvests inseason. The requirement to report fishing activity was shortened to within 2 business days of deploying gear or within 2 business days of ceasing to fish in a district and was extended to apply to all vessels (not just to catcher–processors). Weekly reporting by noon Wednesday each week was also extended to include catcher–sellers (in addition to catcher–processors). In 2015, the board accepted a proposal to require all catcher–processors to complete daily logbooks. This has provided the department with detailed size data on the catch

Catcher–Sellers

Catcher–sellers are vessels that sell unprocessed shrimp to persons not licensed to process shrimp. Regulations require that catcher–sellers issue a fish ticket for the weight of all shrimp on board the vessel before shrimp are removed from the vessel.

LIMITED ENTRY

In April 1995, CFEC received petitions from more than 70 people from Wrangell, Ketchikan, Craig, and the Tenakee Springs Fish and Game Advisory Committee requesting limitations to the number of participants in the southeast pot shrimp fishery. After CFEC obtained and analyzed data concerning the fishery, their proposed regulations were consistent with what the petitioners had suggested: that 1995 should not be included in the eligibility time frame. This would have capped the number of limited entry permit holders at 186, which was the highest participation level in any of the 4 years prior to the original qualification date. CFEC held numerous public hearings throughout Southeast Alaska and announced in early November 1995, while fishing was in progress, that they had adopted a limited entry program that would include participation during 1995 towards qualification. At the time, the effort level had increased to 234 fishers. Finally, by law, the commission was required to revise upward to the maximum number of permits to 332 that

legally participated in calendar year 1995. In October 1996, the commission adopted a point system for the fishery. By February 1998, CFEC began the process of issuing and denying permits for this fishery. A total of 329 permits was granted, including 311 permanent and 18 interim entry permits. Of these, 234 remain active and eligible to participate in the fishery, but only 100 permits fished during the 2023/24 season. The average permit value was $32,100 in 2023, a substantial increase from the low of $18,700 seen in 2020.

STOCK ASSESSMENT

The assessment program for spot shrimp was initiated in 1996, and consists of pot surveys in some management units, commercial catch sampling from 4 different sample site types, fish tickets, and voluntary logbooks. The current spatial and temporal data coverage is inconsistent; coverage has increased incrementally as programs have been introduced, funding has become available, and as the fishery product form and gear has evolved.

Stock Assessment Survey

A preseason pot shrimp pilot survey was conducted in September 1996 in Ernest Sound. Subsequently, additional areas were added: Cordova Bay (1997), Hoonah Sound (1999), Tenakee Inlet (2000), Kasaan Bay (2011), Cholmondeley Sound (2011), and Back and West Behm Canals (2011; Figure 3.2). To minimize variability in catch rates and provide more accuracy when conducting analyses, index set locations and standardized methods were established. The objectives of these surveys are to obtain information on shrimp abundance; define trap selectivity and associated behavior of shrimp attracted to pot gear; develop a survey-based index of abundance; define the size composition of stocks from a variety of areas; and to determine sex ratios, size at first spawning, and female fecundity for both spot and coonstripe shrimp (Love and Bishop 2005; Bishop et al. 2009; Smith 2018b).

On-The-Grounds Sampling

On-the-grounds sampling began in 1998, with dual objectives of obtaining catch rate information to accurately target GHLs during season and to collect sampling data from unsorted shrimp obtained directly from fishing vessels. Districts 1 and 2; Sections 3-A and 3-B/C; Districts 6, 7, 8, 9, and 10; Tenakee; Section 13-C; and District 15 have been sampled in this way. Recent trips have focused on Districts 1 and 2; Section 3-A; and Districts 6, 7, 10, and 15.

Logbook Program

A voluntary logbook program was initiated in 2005 with the objective of collecting size-specific spot shrimp CPUE data from catcher–processors. These logbooks were made mandatory prior to the 2015/16 season. Logbooks provide the department with definitions of operation-specific size categories at the beginning of the season, and inseason records of harvest information by shrimp size category on daily fish tickets. This information is used for analysis of interannual trends in CPUE by size and for modeling to determine harvest rates. The quality and utility of logbook data varies with market conditions, because the data only has utility when the shrimp are sold in a strictly size-graded form.

Dockside Sampling

Dockside sampling first began in 1997 in Districts 1, 6, 7, 14, and 16, and gradually expanded into Districts 3, 4, 8, 10, 11 and 15. However, dockside deliveries dwindled as the proportion of the harvest which was processed on board increased until by 2002; only Districts 6, 7, 8, 11, 14 and

15 were regularly being sampled dockside. By 2007, dockside deliveries had decreased further to Districts 6, 7, and 8 only, due to shifting or declining harvests in Districts 11, 14, and 15 (Bishop et al. 2009). By 2010, only catches from part of District 6 were sampled. The dockside program was revitalized for the 2011/12 season to maximize the availability of this important data; however, it quickly dropped off again, primarily due to the lack of unsorted product available for sampling.

Stock Assessment Regionwide Overview

In general, data availability for spot shrimp stocks in Southeast Alaska is inadequate to estimate shrimp absolute abundance, creating uncertainty about sustainability of harvest rates. The relatively low level of data reduces reliability in predicting stock changes over time and increases the potential risk for overharvesting; thus, conservative management must be used. The recommendations for GHL changes are based on designated stock status categories through standardized stock health scores, and confidence levels (percentage of possible data sources available for the area; Table 3.6). A "Poor" designation is associated with a 40% reduction in the GHL or district closure; a "Below Average" designation can range from a 20–40% reduction; a "Moderate" designation is a 0–20% reduction; an "Above Average" designation is a 0–20% increase; and a "Healthy" designation is a 0–40% increase. Decreases in GHLs need to be large enough to be effective, and increases not so large as to produce future declines.

RECENT SEASONS

2020/21 Season Summary

A season-opening news release announcement was issued on August 28, 2020, detailing fishing seasons, fishing periods, lawful gear, vessel registration, GHLs, anticipated management actions, catcher–processor reporting requirements, fish ticket requirements, logbooks, and other information. The fishery opened on October 1, 2020, targeting a regional GHL of 495,200 pounds.

An experimental inseason management system was implemented in Sections B, C, and D of District 6 and District 7, beginning with the 2012/13 season. The data used to make inseason harvest adjustments includes the commercial fishery data, daily harvest rates from catcher–processors, harvest rates of size extra-large or larger shrimp (>40 grams) from catcher–processor logbook data, and carapace length data derived from sampling on the grounds. The department analyzes the harvest information from the first 7 to 10 days of the fishery. Adjustments to the GHL are made according to how harvest data compares to prior years. Inseason adjustments will not exceed 40% of the initial GHL, and the department may close the fishery before the inseason revised GHL is reached if it becomes evident that fishery performance is below historical levels for healthy stocks. The inseason management criteria for Sections B, C, and D of District 6 resulted in a net decrease of 30%, decreasing the GHL from 42,900 to 30,000 pounds of spot shrimp; and for District 7, the net increase was 10%, increasing the GHL from 74,300 to 82,000 pounds of spot shrimp. The adjusted total GHL was 490,000 pounds.

Total landings for the season were 569,171 pounds, 116% of the total GHL (Table 3.1). The average pounds per landing was 666, and the average pounds per permit was 5,134. Total fishery value is estimated as $4,807,067 for the 2020/21 season.

2021/22 Season Summary

A season-opening news release announcement was issued on August 17, 2021, detailing fishing seasons, fishing periods, lawful gear, vessel registration, GHLs, anticipated management actions,

catcher–processor reporting requirements, fish ticket requirements, logbooks, and other information. The fishery opened on October 1, 2021, targeting a region wide GHL of 457,300 pounds.

Due to poor stock health metrics in sections B, C, and D of District 6, no inseason GHL change program was utilized. Using the same experimental inseason management criteria as in the 2020/21 season in District 7, inseason metrics showed no GHL change was warranted.

The total pounds landed for the season was 477,394, which was 104% of the GHL. The average landing was 638 pounds, and the average pounds per permit was 4,759. Total fishery value is estimated as $4,428,923 for the 2021/22 season.

2023/24 Season Summary

The 2023/24 season was the first under the new season opening and closing dates adopted by the board at the 2022 meeting. The change of dates caused the fishery opening to be delayed from October 2022 to May 2023; thus, making it the 2023/24 rather than the 2022/23 season. A season-opening news release announcement was issued on April 12, 2023, detailing fishing seasons, fishing periods, lawful gear, vessel registration, GHLs, anticipated management actions, catcher–processor reporting requirements, fish ticket requirements, logbooks, and other information. The fishery opened on May 15, 2023, targeting a regionwide GHL of 466,800 pounds.

Catch rates started off generally lower than in previous October openings but increased as the fishery progressed. Many participants reported shrimp in different locations and depths than in the fall fishery. The total pounds landed for the season was 427,715, or 92% of the preseason GHL. The average pounds per landing was 408, and the average pounds per permit was 4,052.

2024/25 Season Outlook

The 2024/25 Southeast pot shrimp fishery began on May 15, 2024. A season-opening news release was issued on April 17, 2024, announcing fishing seasons, fishing periods, lawful gear, vessel registration, GHLs, catcher–processor reporting requirements, fish ticket requirements, logbook program, and other information. The fishery is targeting a GHL of 438,300 pounds.

MANAGEMENT CONCERNS

The Southeastern Alaska pot shrimp fishery has a long history. The fishery is well regulated, yet management concerns continue. Based on an annual review of the available harvest and stock assessment information, there is evidence that many shrimp management areas are moderately and steadily declining. The department has responded by reducing historically determined GHLs or implementing fishery closures for many of the 24 areas managed over the past 8-year period (Table 3.4). Regionally combined GHLs have been reduced from 1,010,000 pounds in 2003/04 to 457,300 pounds in 2021/22. In response, harvests over this period have declined from 1,132,721 pounds in 2003/04 to 477,394 pounds in 2021/22. The department intends to manage this resource conservatively to ensure an ongoing and sustainable fishery, and has identified the following management concerns:

1. Declining harvests, decreased GHLs, and biological evaluations of specific populations all support the conclusion that many shrimp populations in the region are in decline compared to recent decades. The ability to react to changing resource levels will be important to provide a sustainable fishery.

2. The fishery is affected by changing markets and product types which can lead to discrepancies in data available for management of the fishery. In addition, there were 228 active limited entry and interim permits issued in 2023, yet only 100 permits made landings in that year. Many of the 128 latent permits are transferable, and effort in the fishery may be expected to increase when shrimp stocks or economic factors change.
3. The department has maintained 5 fishery-independent detailed stock assessment surveys in Districts 1, 2, 7, and 12-Tenakee, and Sections 3-A and 13-C. Additional surveys or stock assessment data sources may be needed in the future.
4. Subsistence fishery harvests in Districts 7, 8, 13, and Section 15-A, personal use fisheries in all other districts, and sport harvests throughout the region have only recently started to be monitored. Current harvests and future trends in harvests may represent a significant component of overall harvests, especially in areas near larger communities.
5. Southeast Alaska specific biological data for pot shrimp is limited. Basic life history parameters such as lifespan, multiple spawning potential, and spawn success are unknown in the region. If basic life history were better understood it would increase understanding of the resource and improve fishery management.

CHAPTER 3: TABLES AND FIGURES

Table 3.1–Registration Area A (Southeast Alaska) pot shrimp fishery harvest, number of landings, and CPUE, 1983/84 season to present. Reported catches include both tailed and whole product of all species captured, expressed in terms of whole pounds with a conversion factor of 2.0.

Season	Harvest spot shrimp	Harvest coonstripe shrimp	Permits	Landings	Pounds per landing	Pounds per permit
1983/84	245,531	10,672	93	653	392	4,583
1984/85	292,492	6,180	117	781	382	2,755
1985/86	199,820	8,847	81	498	419	2,553
1986/87	345,404	7,901	83	608	581	2,576
1987/88	362,677	6,351	96	688	536	4,257
1988/89	431,973	8,470	121	812	542	3,844
1989/90	402,801	10,781	110	816	507	3,640
1990/91	548,221	14,101	138	1,100	511	3,760
1991/92	794,727	28,487	177	1,561	527	4,075
1992/93	659,601	17,970	150	1,266	535	4,651
1993/94	877,369	41,970	183	1,625	566	4,517
1994/95	1,076,467	67,315	248	2,718	421	5,024
1995/96	924,154	65,245	352	2,854	347	4,612
1996/97	944,695	94,261	203	1,996	521	2,811
1997/98	802,673	92,361	200	1,766	507	5,118
1998/99	761,485	95,659	185	1,839	466	4,475
1999/00	790,783	83,100	154	1,378	634	4,633
2000/01	1,002,467	67,538	160	1,311	816	5,675
2001/02	977,846	79,413	169	2,450	432	6,688
2002/03	1,004,004	60,989	151	2,695	395	6,256
2003/04	1,079,319	57,989	156	2,801	406	7,053
2004/05	966,339	36,788	149	2,499	401	7,290
2005/06	946,891	31,148	143	2,320	422	6,732
2006/07	920,791	21,865	136	2,029	465	6,839
2007/08	706,629	21,269	110	1,609	452	6,931
2008/09	564,357	19,567	95	1,451	402	6,617
2009/10	637,265	19,235	109	1,609	408	6,147
2010/11	530,721	26,093	109	1,176	473	6,023
2011/12	546,096	18,397	110	1,005	562	5,108
2012/13	586,626	28,651	106	1,152	534	5,132
2013/14	537,627	24,819	109	1,144	492	5,805
2014/15	521,740	23,382	103	1,091	500	5,160
2015/16	498,396	12,103	95	1,129	452	5,292
2016/17	566,523	16,177	108	976	597	5,374
2017/18	560,974	11,968	105	939	610	5,457
2018/19	474,678	14,587	106	980	499	4,616
2019/20	547,983	13,436	97	871	645	5,788
2020/21	554,424	14,747	108	833	666	5,134
2021/22	461,647	15,747	97	724	638	4,759
2023/24[a]	405,209	22,506	100	993	408	4,052
Average: 1970–1979	21,545	[b]	7	38	567	3,078
Average: 1980–1989	276,810	7,479	84	580	490	3,376
Average: 1990–1999	818,018	60,047	199	1,810	503	4,559
Average: 2000–2009	880.591	41,580	138	2,078	460	6,658
Average: 2010–2019	537,136	18,961	105	1,046	536	5,376

[a] The season start date shifted from Oct 2022 to May 2023.

[b] No data available.

Table 3.2–Registration Area A (Southeast Alaska) pot shrimp fishery harvest in thousands of pounds by district, 1970/71 season to present. Note: Harvest based on 2.0 conversion tail to whole weight and corrected fish tickets.

	District															
Season	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1970/71	3.7	[a]	–	–	–	–	–	[a]	–	[a]	–	–	–	–	–	–
1971/72	10.6	14.8	–	–	–	–	[a]	–	[a]	[a]	–	–	–	–	–	–
1972/73	–	[a]	–	–	–	–	[a]	–	–	–	–	–	–	–	–	–
1973/74	[a]	[a]	–	–	–	–	–	–	–	–	–	–	–	–	–	–
1974/75	4.1	[a]	[a]	–	–	–	–	–	–	–	–	–	–	–	–	–
1975/76	7.2	11.5	[a]	–	–	–	–	–	–	–	–	–	–	–	–	–
1976/77	[a]	9.6	[a]	–	–	–	3.3	–	–	–	–	–	–	–	–	–
1977/78	5.6	14.1	–	–	[a]	–	[a]	–	–	–	–		[a]	–	–	–
1978/79	4.2	6.7	[a]	[a]	–	–	3.6	–	–	–	–	[a]	[a]	–	–	–
1979/80	19.0	12.8	[a]	–	–	–	18.3	[a]	–	–	–	–	[a]	[a]	–	–
1980/81	15.4	14.8	25.0	[a]	–	[a]	16.6	[a]	[a]	[a]	–	[a]	[a]	–	–	–
1981/82	26.3	17.5	57.1	–	–	9.4	15.6	2.0	4.9	[a]	[a]	[a]	14.6	[a]	–	4.7
1982/83	31.0	36.5	84.8	[a]	–	7.8	73.9	2.7	9.6	3.9	–	[a]	14.9	[a]	–	[a]
1983/84	41.1	22.5	36.6	[a]	[a]	7.7	87.2	16.5	[a]	14.2	[a]	3.3	21.1	–	–	[a]
1984/85	69.1	50.6	18.5	[a]	[a]	6.2	85.4	8.7	[a]	33.5	[a]	[a]	17.1	0.5	–	[a]
1985/86	36.7	37.5	71.1	[a]	[a]	6.0	23.1	2.8	1.7	13.4	[a]	0.4	11.1	[a]	[a]	[a]
1986/87	60.9	137.3	48.9	–	[a]	2.2	40.6	2.0	5.2	33.1	2.3	3.9	11.0	[a]	[a]	[a]
1988/89	200.8	62.8	19.8	[a]	[a]	8.0	61.5	0.9	6.6	36.4	0.6	10.7	26.8	[a]	–	[a]
1989/90	155.3	68.6	27.0	2.7	–	8.4	44.2	18.7	[a]	47.9	[a]	6.6	30.5	–	–	[a]
1990/91	181.3	78.9	61.8	11.4	–	10.2	97.6	13.6	5.2	42.8	1.5	16.8	39.8	–	[a]	0.8
1991/92	168.6	83.5	274.4	[a]	[a]	21.2	123.4	15.3	2.9	49.7	[a]	12.3	61.2	–	3.3	4.5
1992/93	160.1	70.0	221.9	4.7	[a]	24.4	64.5	20.1	9.6	30.5	[a]	26.8	40.4	–	1.2	[a]
1993/94	147.0	120.5	288.6	5.4	[a]	41.2	120.5	25.3	27.0	36.0	2.1	33.5	61.7	[a]	1.8	[a]
1994/95	159.9	76.9	232.0	1.0	21.6	130.2	199.6	30.4	12.1	88.5	3.1	58.9	110.8	2.4	8.9	5.9
1995/96	179.4	90.5	245.1	23.3	34.9	76.0	120.2	9.2	25.9	48.8	23.4	28.3	49.2	17.7	10.1	7.7

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Table 3.2.–Page 2 of 2.

Season	District															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1996/97	171.9	82.5	280.9	20.8	24.2	79.0	128.2	29.8	19.5	53.0	20.5	28.6	48.8	4.3	22.2	[a]
1997/98	142.7	83.0	228.0	10.2	5.9	72.6	127.2	20.0	21.0	39.6	18.3	25.5	41.1	12.2	21.9	[a]
1998/99	163.2	76.5	225.7	6.1	5.5	68.3	101.9	20.5	18.1	31.8	8.9	30.1	66.8	6.6	22.8	17.6
1999/00	158.6	76.1	237.8	16.6	11.8	70.0	100.9	23.5	18.3	37.9	8.6	26.0	48.0	[a]	24.7	[a]
2000/01	161.3	122.0	305.6	20.3	14.3	79.4	116.2	23.5	20.8	46.2	19.8	25.6	47.8	16.5	24.2	[a]
2001/02	174.2	103.7	320.7	10.4	7.9	71.0	128.8	19.6	18.5	38.4	24.1	36.7	42.3	21.9	18.9	[a]
2002/03	157.4	89.6	320.8	22.2	19.6	68.3	114.0	24.3	15.9	54.7	19.5	41.8	55.6	19.9	19.6	23.3
2003/04	182.4	96.7	350.1	20.4	17.7	70.0	122.1	22.7	18.2	61.7	22.0	54.4	58.5	19.6	6.9	16.2
2004/05	169.5	88.5	302.9	19.3	21.6	66.5	91.0	19.8	17.9	51.6	21.9	41.4	52.9	21.3	6.3	[a]
2005/06	176.3	83.1	258.5	18.6	19.3	82.4	87.9	24.9	20.3	53.3	23.6	50.0	57.7	15.8	4.2	Closed
2006/07	154.0	99.1	252.7	15.1	10.2	80.7	87.3	23.5	24.1	51.4	23.5	48.6	53.6	13.3	Closed	Closed
2007/08	97.7	91.0	226.8	[a]	0.0	37.8	84.8	17.0	17.4	44.2	20.7	35.5	44.5	13.1	Closed	Closed
2008/09	56.1	88.4	149.6	0.0	8.0	33.9	58.1	8.7	18.1	55.7	20.2	26.3	45.0	7.7	Closed	[a]
2009/10	50.8	65.2	184.1	20.9	16.7	54.9	87.1	20.7	19.0	53.5	27.4	22.6	37.6	Closed	10.4	Closed
2010/11	39.5	69.2	118.3	[a]	10.7	36.4	49.9	14.0	21.9	56.8	24.2	23.1	46.9	Closed	9.3	[a]
2011/12	55.9	76.2	138.7	[a]	8.6	31.8	62.4	12.9	10.8	52.7	21.3	8.3	53.6	Closed	14.8	Closed
2012/13	71.7	74.8	140.8	[a]	[a]	37.7	82.9	12.9	16.5	40.3	30.3	Closed	43.4	8.8	15.8	[a]
2013/14	56.8	62.3	150.0	12.6	3.0	35.1	97.0	12.4	15.3	35.6	21.6	Closed	46.4	Closed	14.6	Closed
2014/15	68.6	50.9	144.5	18.1	3.7	22.0	77.5	8.8	18.5	35.7	18.5	Closed	44.1	Closed	14.8	14.7
2015/16	63.3	39.2	146.7	19.6	4.9	28.0	81.7	10.2	12.2	33.7	18.1	5.1	40.3	Closed	7.7	Closed
2016/17	74.9	30.6	174.2	18.3	1.3	41.1	87.8	11.6	12.8	41.9	18.1	Closed	47.6	6.8	5.6	[a]
2017/18	74.1	27.8	165.5	18.4	7.7	55.9	95.9	14.0	10.8	43.9	16.3	Closed	33.3	Closed	5.5	Closed
2018/19	57.9	31.3	127.7	14.4	1.7	39.9	77.5	20.0	5.4	45.5	16.0	[a]	26.9	5.5	8.0	[a]
2019/20	58.0	42.5	151.9	18.0	[a]	32.3	86.1	28.0	11.3	66.2	9.3	22.4	29.8	Closed	10.6	Closed
2020/21	55.6	53.6	160.0	17.3	2.1	32.6	90.9	24.4	[a]	70.2	Closed	11.8	19.7	8.5	12.3	0
2021/22	53.7	33.6	152.5	14.9	0.5	6.1	92.5	17.2	11.1	62.0	Closed	5.7	15.3	Closed	12.4	Closed
2023/24[b]	40.4	40.0	120.4	13.2	4.8	19.4	71.7	16.8	7.8	43.3	4.4	Closed	15.5	6.1	[a]	[a]
10-year Average: 2013/14–2023/24	60.0	41.0	149.4	16.6	3.0	31.1	86.3	15.9	11.7[c]	47.5	15.3	11.2[c]	31.7	6.7	10.5[c]	10.3
Average %	10.9	7.5	27.3	3.0	0.5	5.7	15.7	2.9	2.1	8.7	2.8	2.0	5.8	1.2	1.9	1.9

Note: An en dash indicates that no data were collected.

[a] Fewer than 3 permits were fished; information is confidential.

[b] The season start date shifted from Oct 2022 to May 2023.

[c] Does not include confidential data.

Table 3.3–Registration Area A (Southeast Alaska) pot shrimp fishery harvest in thousands of pounds by month, 1970/71 season to present.

Season	Month												Total harvest	Landings	Permits
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep			
1970/71	[a]	[a]	3.2	[a]	3.5	[a]	–	–	–	–	–	[a]	13	27	5
1971/72	[a]	[a]	[a]	[a]	[a]	4.5	11.3	3.8	1.8	–	[a]	–	27	49	6
1972/73	[a]	–	–	–	–	[a]	[a]	–	[a]	–	–	–	[a]	[a]	[a]
1973/74	–	–	[a]	–	[a]	[a]	[a]	–	[a]	–	–	–	[a]	[a]	[a]
1974/75	[a]	[a]	[a]	[a]	[a]	[a]	[a]	–	–	[a]	–	–	8	16	7
1975/76	–	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	–	19	29	5
1976/77	–	[a]	[a]	[a]	–	[a]	[a]	–	–	[a]	–	[a]	16	16	6
1977/78	[a]	[a]	–	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	25	76	10
1978/79	[a]	[a]	[a]	–	–	–	[a]	5.1	[a]	[a]	[a]	[a]	21	35	9
1979/80	–	[a]	–	[a]	1.5	3.0	2.7	16.5	8.3	7.9	[a]	9.1	58	123	19
1980/81	10.0	3.1	[a]	[a]	[a]	4.2	8.1	6.5	7.2	22.0	9.9	5.9	81	192	32
1981/82	11.4	3.8	5.5	2.7	6.3	14.6	11.7	3.4	6.3	34.4	36.2	20.3	158	381	49
1982/83	25.3	11.7	22.3	13.9	26.5	11.4	[a]	7.9	3.4	51.5	51.6	39.6	269	373	58
1983/84	44.2	32.4	15.0	13.3	21.3	22.9	24.3	32.5	31.7	8.7	5.9	4.1	257	653	93
1984/85	35.3	34.6	26.5	30.3	40.5	9.9	9.7	31.7	21.1	17.0	20.0	22.2	299	780	117
1985/86	20.3	30.3	25.2	34.7	33.1	31.1	11.1	2.3	4.3	7.3	6.3	2.6	209	498	81
1986/87	54.6	55.6	45.7	55.3	70.1	30.4	12.3	7.0	3.6	7.6	5.0	6.0	354	608	83
1988/89	86.6	97.3	68.9	56.1	62.3	23.4	12.3	2.5	5.8	8.1	9.9	7.1	441	836	121
1989/90	87.9	70.7	51.9	53.8	48.6	41.8	11.6	11.1	7.7	10.8	8.8	8.9	416	816	110
1990/91	129.4	76.0	65.1	81.3	105.6	28.5	20.9	3.9	12.6	16.6	12.1	10.4	563	1,100	138
1991/92	226.2	166.0	110.3	104.9	79.4	54.2	18.4	14.3	12.7	10.8	16.8	8.8	823	1,560	177
1992/93	140.5	105.7	91.5	101.8	124.7	34.9	15.4	22.8	8.5	11.3	10.6	8.3	677	1,291	150
1993/94	174.3	194.6	99.2	131.1	130.5	44.5	22.4	25.0	23.2	20.4	26.3	24.4	916	1,650	182
1994/95	184.8	140.4	104.6	179.1	182.4	61.0	30.6	118.2	63.6	19.3	25.1	29.9	1,140	2,687	246
1995/96	463.0	205.3	119.1	73.3	41.4	38.8	8.3	11.3	9.4	6.9	8.4	1.4	987	2,843	351
1996/97	795.3	129.7	23.7	18.3	20.7	7.8	4.7	6.0	3.5	3.7	4.5	4.6	1,023	1,988	202
1997/98	757.0	57.9	30.9	3.7	6.8	5.6	7.5	9.4	10.1	[a]	[a]	0	868	1,759	198

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Table 3.3.–Page 2 of 2.

Season	Month												Total harvest	Landings	Permits
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep			
1998/99	618.9	128.6	47.8	19.9	25.6	[a]	0	16.3	4.1	2.1	3.8	2.9	861	1,833	185
1999/00	639.8	96.9	39.0	33.3	24.5	Closed	Closed	18.0	8.2	12.2	Closed	[a]	870	1,373	157
2000/01	816.3	153.3	39.4	18.1	13.6	Closed	Closed	11.7	6.2	4.1	Closed	[a]	1,057	1,302	161
2001/02	841.2	120.9	26.3	17.9	17.3	Closed	Closed	11.8	9.4	5.3	Closed	[a]	1,047	2,440	172
2002/03	814.4	163.2	34.4	8.6	24.6	Closed	Closed	6.4	7.5	[a]	Closed	6.9	1,066	2,709	155
2003/04	918.1	154.5	12.4	16.7	8.4	Closed	Closed	8.4	5.7	8.5	Closed	Closed	1,133	2,801	156
2004/05	840.9	112.3	17.4	8.7	11.0	Closed	Closed	4.3	[a]	3.8	Closed	Closed	1,001	2,499	149
2005/06	800.2	114.0	21.9	13.1	16.8	Closed	Closed	2.7	[a]	[a]	Closed	Closed	976	2,320	143
2006/07	830.9	78.8	4.1	5.3	8.4	Closed	Closed	[a]	[a]	[a]	Closed	Closed	943	2,029	136
2007/08	518.4	91.8	16.1	34.4	30.7	Closed	Closed	16.9	11.6	5.1	Closed	Closed	728	1,614	108
2008/09	378.0	87.5	27.6	46.6	40.2	Closed	Closed	[a]	4.1	[a]	Closed	Closed	585	1,440	99
2009/10	543.8	58.2	18.0	16.1	12.1	Closed	Closed	[a]	[a]	[a]	Closed	Closed	656	1,609	109
2010/11	466.1	43.7	19.3	15.2	8.5	Closed	Closed	[a]	[a]	[a]	Closed	Closed	557	1,175	108
2011/12	533.4	14.5	[a]	[a]	3.7	Closed	Closed	[a]	[a]	0	Closed	Closed	565	1,005	110
2012/13	564.7	25.1	6.1	5.7	6.8	Closed	Closed	3.7	3.1	0	Closed	Closed	615	1,152	106
2013/14	542.1	12.1	[a]	[a]	[a]	Closed	Closed	1.9	[a]	0	Closed	Closed	563	1,144	109
2014/15	522.3	5.7	[a]	[a]	5.8	Closed	Closed	3.7	[a]	[a]	Closed	Closed	546	1,093	104
2015/16	485.8	4.4	4.6	[a]	[a]	Closed	Closed	9.0	4.8	[a]	Closed	Closed	510	1,129	95
2016/17	562.0	1.7	0	[a]	4.7	Closed	Closed	5.7	2.3	[a]	Closed	Closed	582	976	108
2017/18	548.0	[a]	[a]	4.6	8.5	Closed	Closed	4.8	2.7	[a]	Closed	Closed	573	939	105
2018/19	469.3	2.1	[a]	[a]	[a]	Closed	Closed	6.3	2.3	[a]	Closed	Closed	489	980	106
2019/20	534.9	2.5	[a]	7.9	4.6	Closed	Closed	6.0	9.0	3.3	Closed	Closed	561	871	97
2020/21	544.9	[a]	0	[a]	[a]	Closed	Closed	7.3	7.6	[a]	Closed	Closed	569	833	108
2021/22	461.2	0	0	[a]	[a]	Closed	Closed	8.7	[a]	0	Closed	Closed	447	724	97
2023/24[b]	[a]	[a]	[a]	[a]	[a]	Closed	Closed	378.2	34.6	11.4	Closed	Closed	428	993	100
10-year Average 2012/13–2021/22[c]	517.5	3.6	0.8	3.4	4.2	Closed	Closed	6.3	3.4	1.5	Closed	Closed	556	1,046	105
Average %	95.7	0.7	0.1	0.6	0.8	Closed	Closed	1.2	0.6	0.3	Closed	Closed	NA	NA	NA

Note: Harvest based on 2.0 conversion tail to whole weight and corrected fish tickets. En dash = no known harvest.

[a] Fewer than 3 permits were fished; information is confidential.

[b] The season start date shifted from Oct 2022 to May 2023.

[c] Does not include 2023/24 harvest.

Table 3.4–Guideline harvest levels (GHL) for the Southeast Alaska commercial pot shrimp fishery by area, in pounds of whole shrimp, 2009/10 to present.

	GHL													
Area	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2023/24[d]
1	**50,000**	50,000	50,000	50,000	50,000	50,000	**64,000**	64,000	64,000	64,000	**50,000**	50,000	50,000	50,000
2	**65,000**	65,000	65,000	65,000	65,000	**52,000**	**42,000**	**30,000**	30,000	**29,400**	**30,000**	40,000	40,000	40,000
3-A	158,400	**95,000**	95,000	95,000	95,000	95,000	**114,000**	114,000	114,000	114,000	114,000	114,000	114,000	114,000
3-B/C	40,000	**30,000**	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	**20,000**	20,000
4	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
5	20,000	20,000	20,000	20,000	20,000	20,000	**12,000**	12,000	12,000	12,000	12,000	12,000	12,000	12,000
6[a]	68,000	68,000	**24,000**	**38,400**	**36,800**	**20,800**	**32,000**	**44,800**	**51,480**	[a]	[a]	[a]	[a]	[a]
6-B/C/D[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	**34,300**	**30,000**	**30,000**	**15,000**	15,000
7	78,000	**54,600**	54,600	80,900	**77,500**	**70,000**	**74,300**	**81,730**	**96,590**	**74,300**	74,300	**82,000**	74,300	74,300
8	20,000	**15,000**	15,000	15,000	15,000	10,500	10,500	10,500	10,500	[a]	[a]	[a]	[a]	[a]
8-B and 6-A[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	**15,000**	15,000	15,000	15,000	15,000
8-A and 10-C[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	**12,000**	12,000	12,000	12,000	12,000
9	18,000	18,000	**14,000**	14,000	14,000	14,000	**11,000**	11,000	11,000	**6,500**	6,500	6,500	6,500	**10,000**
10[a]	48,000	48,000	48,000	48,000	36,000	36,000	36,000	**29,000**	29,000	[a]	[a]	[a]	[a]	[a]
10-A/B[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	**35,000**	35,000	35,000	35,000	35,000
11-Seymour[b]	[b]	[b]	[b]	**Exp**[c]	15,000	**12,000**	12,000	12,000	12,000	12,000	10,000	Closed	Closed	Closed
11-Remainder	20,000	20,000	20,000	**7,500**	7,500	7,500	7,500	7,500	**4,000**	4,000	Closed	Closed	Closed	4,000
12-Tenakee	17,000	**10,000**	**Closed**	Closed	Closed	Closed	Closed	Closed	Closed	**7,500**	7,500	**10,000**	**10,000**	**Closed**
12-Remainder	10,000	10,000	10,000	**Closed**	Closed	Closed	**7,500**	**Closed**	Closed	Closed	**7,500**	Closed	7,500	Closed
13-A/B	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
13-C	30,000	30,000	30,000	**26,000**	26,000	26,000	26,000	26,000	**21,000**	**16,000**	16,000	**Closed**	Closed	Closed
14	**Closed**	Closed	Closed	10,000	Closed	Closed	Closed	**7,500**	Closed	7,500	Closed	7,500	Closed	7,500
15	**15,000**	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	11,000	11,000	11,000	11,000	11,000
16	**Closed**	15,000	Closed	15,000	Closed	15,000	Closed	15,000	Closed	15,000	Closed	Closed	Closed	12,000
Total	**692,400**	**598,600**	**535,600**	**564,800**	**537,800**	**508,800**	**528,800**	**545,030**	**535,570**	**534,500**	**495,800**	**490,000**	**457,300**	**466,800**

Note: The year when the GHL was changed is highlighted in bold type.

[a] Districts 6, 8, and 10 were split into 4 GHLs at the 2018 BOF meeting.

[b] After the 2012 Alaska Board of Fisheries (BOF) meeting, Seymour Canal GHL was split from the remainder of District 11.

[c] The 2012/13 season in Seymour Canal was experimentally managed based on the Canadian Spawner Index system, this experiment was terminated when it became apparent it was going to overharvest the stock.

[d] The season start date shifted from Oct 2022 to May 2023.

Table 3.5–Historical number of days open by area for the Southeast Alaska commercial pot shrimp fishery, 2009/10 to present.

Area	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23[c]
1	38	38	26	21	14	14	19	13	13	15	14	11	15	16
2	34	33	20	15	19	17	26	13	15	11	12	9	15	12
3-A	32	30	19	16	13	10	14	13	11	10	15	11	11	12
3-B/C	68	22	23	29	19	16	18	14	18	19	28	26	28	28
4	218	125	229	229	151	151	151	229	229	229	229	229	229	229
5	151	229	229	229	229	229	229	229	229	229	229	229	229	229
Northern Clarence Strait	84	92	10	11	21	19	23	18	19	19	19	17	8	12
7	84	34	12	17	17	14	12	12	13	12	12	9	10	13
Sumner Strait	81	75	53	43	40	23	35	34	29	49	66	11	13	78
9	24	49	10	11	11	10	8	8	9	10	10	7	5	6
Southern Frederick Sound[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	[a]	26	21	13	13	78
Northern Frederick Sound	9	8	7	9	10	14	16	14	9	8	9	6	8	8
11-Seymour[b]	[b]	[b]	[b]	8	8	12	11	9	9	8	8	Closed	Closed	Closed
11-Remainder	10	10	6	143	19	21	35	151	19	30	Closed	Closed	Closed	19
12-Tenakee	3	2	Closed	Closed	Closed	Closed	Closed	Closed	Closed	2	2	2	Closed	Closed
12-Remainder	10	19	42	Closed	Closed	Closed	9	Closed	Closed	Closed	17	Closed	8	Closed
13-A/B	151	229	64	229	56	32	30	15	3	13	13	7	7	25
13-C	4	6	4	4	4	4	5	5	3	6	7	Closed	Closed	Closed
14	Closed	Closed	Closed	54	Closed	Closed	Closed	11	Closed	151	Closed	16	Closed	229
15-E	151	151	28	99	39	34	151	229	229	64	37	19	22	18
15-Remainder	151	151	256	192	151	180	151	229	229	229	208	195	41	24
16	Closed	54	Closed	72	Closed	72	Closed	151	Closed	151	Closed	Closed	Closed	34

Note: For recent years, the fall season (Oct 1–Feb 28) is 151 days. The summer season (May 15–Jul 31) plus the fall season is generally 229 days.

[a] After the 2018 Alaska Board of Fisheries (BOF) meeting, portions of Districts 8 and 10 were split and combined into Southern Frederick Sound. Due to this recombination season lengths are not comparable before and after the 2018/19 season

[b] After the 2012 BOF meeting, Seymour Canal GHL was split from the remainder of District 11.

[c] The season start date shifted from Oct 2022 to May 2023.

Table 3.6–Stock status, confidence information, and standardized scores for the 2021/22 season.

Management unit	Stock status	Confidence	Standard score
District 1	Moderate	0.35	-0.10
District 2	Below average	0.48	-0.25
Section 3A	Moderate	0.54	-0.01
Sections 3-B&C	Poor	0.18	-0.63
District 4	Above average	0.20	0.43
District 5	Moderate	0.07	0.00
Northern Clarence	Poor	0.18	-0.60
District 7	Above average	0.60	0.23
Sumner Strait	Good	0.18	0.67
District 9	Moderate	0.19	0.09
Southern Frederick Sound	Moderate	0.20	-0.16
Northern Frederick Sound	Below average	0.32	-0.21
Seymour	Closed	0.00	0.00
Remainder of District 11	Closed	0.00	NA
Tenakee	Below average	0.30	-0.39
Remainder of District 12	Poor	0.13	-0.86
Sections 13-A/B	Moderate	0.18	0.00
Section 13-C	Closed	0.27	0.76
District 14	Closed	0.00	NA
District 15 East	Above average	0.13	0.33
Remainder of District 15	Moderate	0.18	0.00
District 16	Closed	0.00	NA

Note: Standardized scores are used to compare among districts and range from +1 to -1. The standardized score is calculated as the score divided by the total possible score for a given management unit.

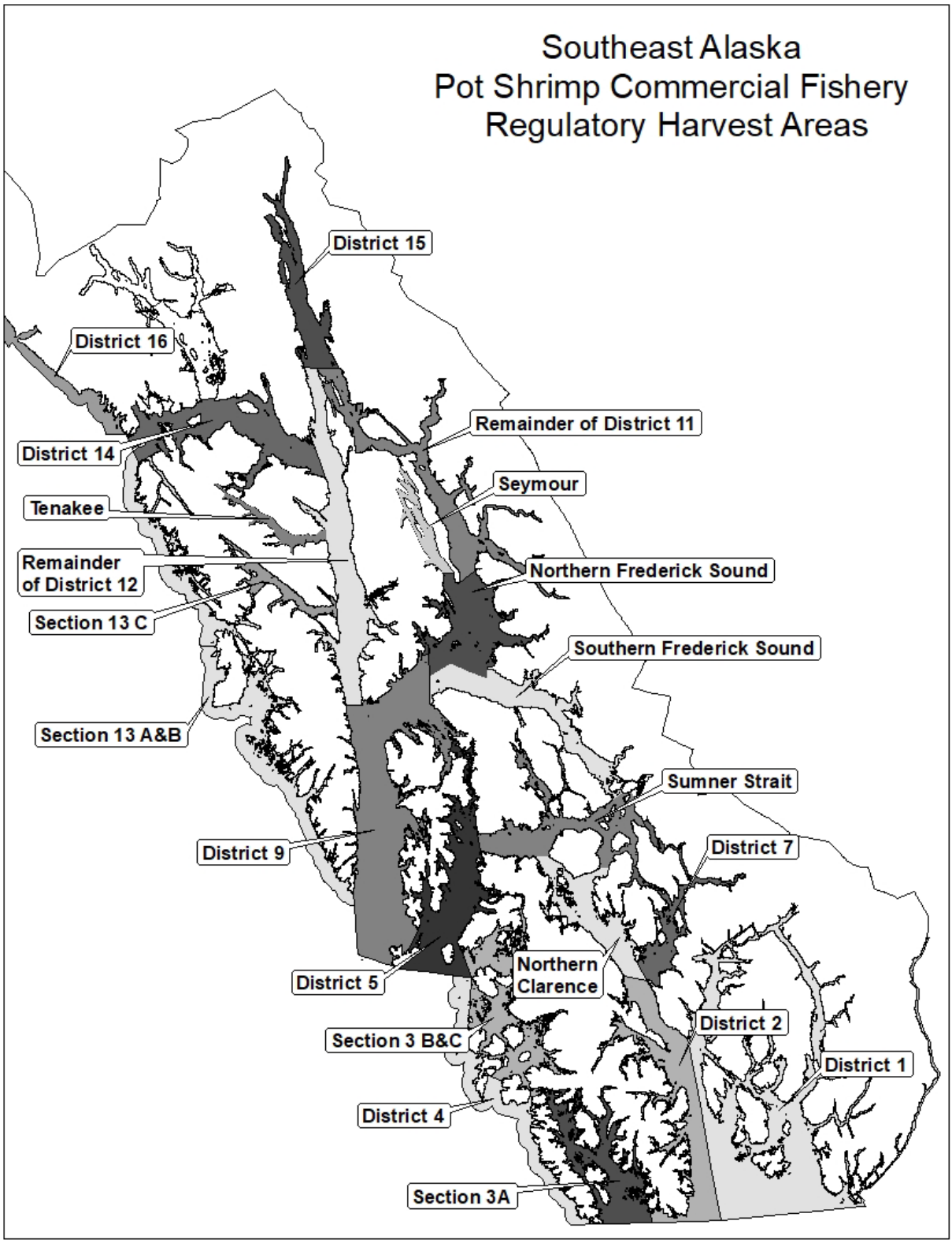


Figure 3.1–Pot shrimp fishery management units in Registration Area A, Southeast Alaska.

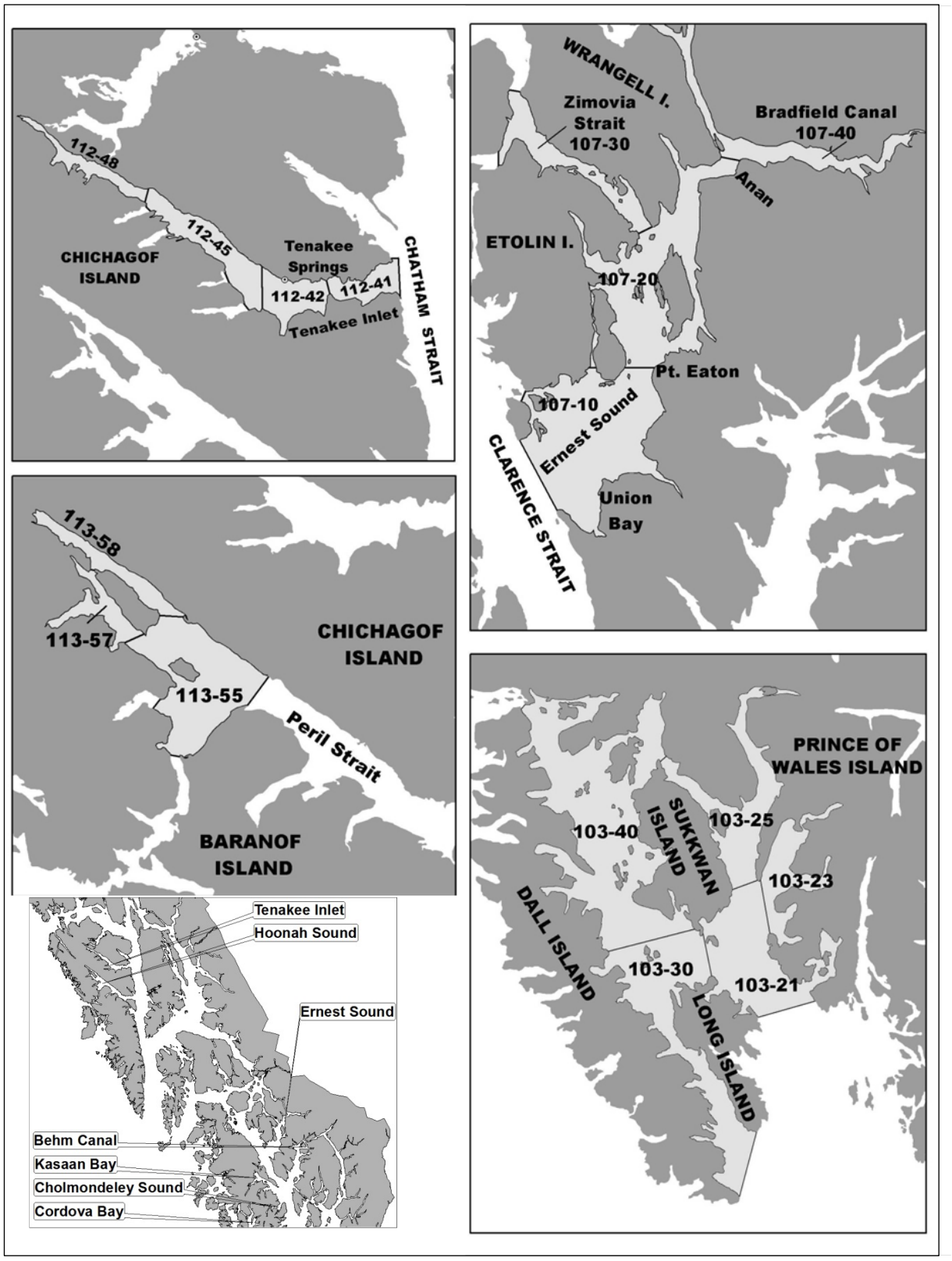
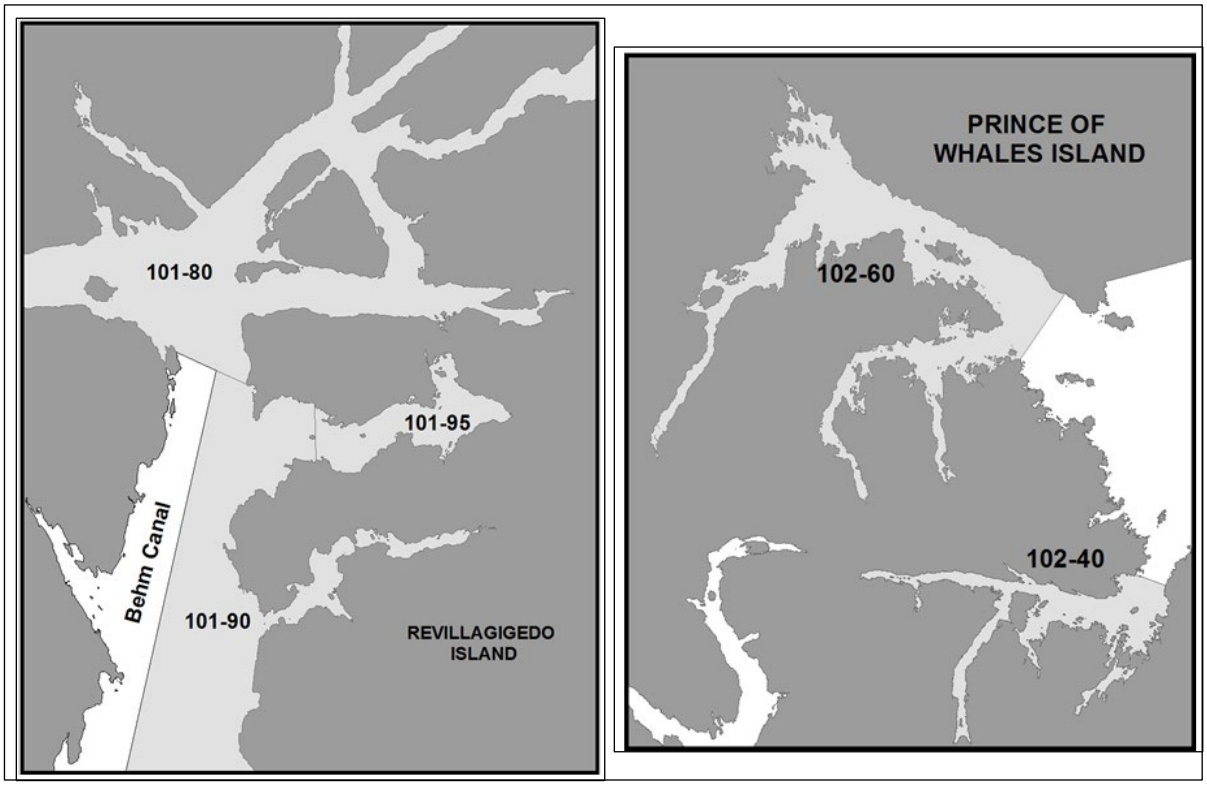


Figure 3.2–Areas currently surveyed for stock assessment (shaded) of the pot shrimp fishery in Registration Area A, Southeast Alaska. (*Note*: Figure 3.2 is continued on the next page.)

Figure 3.2–Page 2 of 2.



CHAPTER 4: YAKUTAT POT SHRIMP FISHERY

INTRODUCTION

Commercial Fishery

Both spot and coonstripe shrimp are harvested primarily from rocky habitat located in Yakutat Bay using pot gear, which is either longlined or fished singly from vessels ranging from small skiffs up to about 40 ft in length. In a longline system, each pot is attached to the groundline with a snap, similar to that used on groundfish gear. Pot construction is extremely varied in size, shape, weight, and configuration, so it is difficult to describe a *standard* pot.

Management of the commercial pot shrimp fishery in the Yakutat Area is largely passive. Regulations are limited to a closure during the egg-hatch period from March 1 to April 30, the requirement of mesh large enough to pass a ¾-inch diameter dowel, a pot limit of 30 pots per participant when fishing in Yakutat Bay, and prohibition of trawling in productive areas heavily utilized by the pot fishery. Fish ticket data assists tracking major trends or changes in stock status.

FISHERY DEVELOPMENT AND HISTORY

The first reported landings occurred in the Yakutat Area during the 1969/70 fishing season. For the next 10 seasons, landings occurred during only 2 seasons. Participation and landings have been consistent since the 1982/83 fishing season, with a peak landing of 29,830 pounds occurring during that season. The peak effort level of 15 permits occurred during the 1995/96 season when 13,418 pounds were landed. Average landings over the past 10 seasons were 1,800 pounds by 2 vessels per season (Table 5.1). Generally, tailed product is sold to private individuals, restaurants, or other specialty markets without passing through traditional processors. This is a low volume fishery with a relatively high exvessel value. The average price paid for tails has been between $10 and $12 per pound during recent seasons.

Peak effort and harvests normally occur during May and June; however, activity in this fishery can be highly variable. For example, the peak harvest during the 1982/83 season occurred during the month of September.

REGULATION DEVELOPMENT

In 1996, in response to increasing effort and higher harvest rates for Yakutat Bay, a GHL of 10,000 pounds for the May through September period was established. The GHL was based on historical harvest data and not on information describing stock abundance or stock condition. In 1997, the board adopted separate monthly GHLs for 2 portions of Yakutat Bay for each month the fishery is open. By doing so, the total seasonal harvest potential was effectively doubled to 20,000 pounds.

Fishing Seasons

Prior to 1985, the Yakutat area was open throughout the year. In 1985, a May 1 through February 28 season was established for Yakutat Bay. The closed period coincided with the major egg-hatch period, which was assumed to be similar to that of Southeast Alaska for spot shrimp. In 1997, separate fishing periods were adopted for portions of Yakutat Bay. The season runs from October 1 through February 28 in the waters running east of a line from the northernmost point of Khantaak Island to Logan Bluff, and east of a line from the northernmost point of Khantaak Island to the northernmost point of Doggie Island. The remaining waters of Yakutat Bay east of a line from the westernmost tip of Ocean Cape to the westernmost tip of Point Manby are open May 1

through February 28. The remainder of the Yakutat area outside the bay remains open throughout the year.

Size Restriction

The board policy on small shrimp discourages harvest of shrimp less than 2 years of age. A mesh size restriction is used in lieu of specific regulations for a minimum legal size to reduce the harvests of small shrimp. The mesh size assumes passive sorting through webbing minimizes the retention of smaller shrimp.

Gear Restriction

A mesh restriction specifying 1.5-inch stretch measure was established in 1986 for all pots used in Yakutat Bay to reduce the potential for recruitment overfishing in this area. This regulation provided some protection to approximately 1- or 2-year classes of small shrimp. Prior to 1997, only a portion of the pot was required to have the minimum mesh panels. Current regulations require that the pot be entirely covered with webbing or rigid mesh. At least 2 opposing sides of the pot must have a webbed panel of 1.5-inch stretch mesh if a permit holder is fishing inside Yakutat Bay. The 1.5-inch minimum mesh size allows the retention of smaller shrimp, compared to the Southeast Alaska fishery.

A limit of 75 pots per vessel was established in 1985 for Yakutat Bay. Even with the relatively stable number of permit holders up until the 1995/96 season, fleet members considered the allowable pots more than the fishery could withstand. Current regulations allow for a limit of 30 pots per vessel inside Yakutat Bay. Along with the pot reduction adopted in 1997, trawling is prohibited within all waters of Yakutat Bay.

There are no pot limits, mesh restrictions, or other harvest-limiting gear regulations for all waters in the Yakutat Registration Area outside of Yakutat Bay. Additional regulatory requirements for commercial pot shrimp gear include maximum tunnel perimeters (15-inch), buoy markings, and escape mechanisms.

Guideline Harvest Levels

In the mid-1990s, several larger southeast pot shrimp vessels and a floating processor entered the fishery in Yakutat Bay. Although their presence was transitory, it did lead to closure of the commercial fishery in the bay, changing inseason starting and ending dates, and implementing a GHL for the commercial harvest.

During the 1996/97 season, a GHL of 10,000 pounds was set for Yakutat Bay, north and east of a line from Ocean Cape to Point Manby, for the period between May through September. The harvest level for the winter fishery from October 1 through February 28 was unrestricted because potential effort was less in winter than in summer. The GHL capped the harvest at a level commensurate with those historically reported for this fishery and provided some protection against possible local depletion. The summer GHL represented a higher harvest than the prior 10-year seasonal average but was lower than the maximum historical harvests in the early 1980s.

In 1997, separate monthly GHLs were established for 2 portions of Yakutat Bay. The monthly GHL is 2,000 pounds for each month the fishery is open in waters of Yakutat Bay east of a line running from the northernmost point of Khantaak Island to Logan Bluff, and the waters east of line running from the northernmost point of Khantaak Island to the northernmost point of Doggie Island. This provides a potential season total of about 10,000 pounds. For the remaining waters of

Yakutat Bay that are east of a line running from the westernmost tip of Ocean Cape to the westernmost tip of Point Manby, the monthly GHL is 1,000 pounds for a potential seasonal total of 10,000 pounds.

RECENT SEASONS

Recent seasons have been characterized by continued low participation and harvest. In the 2017/18 season, 3 participants made 58 landings of 3,903 pounds of whole shrimp (Table 5.1). All seasons since then have had less than 3 participants and catch data is confidential.

CHAPTER 4: TABLES AND FIGURES

Table 4.1–Registration Area D (Yakutat) pot shrimp fishery harvest, number of landings, and CPUE, 1981/82 to present.

Season	Harvest (lb)	Number of permits fished	Number of landings	Pounds per landing	Pounds per permit
1981/82	[a]	[a]	[a]	[a]	[a]
1982/83	29,830	4	63	473	7,458
1983/84	13,938	8	33	422	1,742
1984/85	2,475	6	35	70	413
1985/86	6,910	5	33	209	1,382
1986/87	2,421	5	10	242	484
1987/88	2,945	8	45	65	368
1988/89	2,995	6	16	187	499
1989/90	7,148	5	72	99	1,430
1990/91	10,711	7	70	153	1,530
1991/92	7,316	12	78	93	610
1992/93	2,999	4	40	74	750
1993/94	5,916	6	55	107	986
1994/95	5,738	6	64	89	956
1995/96	13,418	15	103	123	848
1996/97	20,862	14	218	96	1,490
1997/98	9,546	10	135	71	955
1998/99	11,833	14	127	93	845
1999/00	4,107	8	76	54	513
2000/01	28,674	13	167	172	2,206
2001/02	16,746	13	152	110	1,288
2002/03	11,943	12	143	84	995
2003/04	4,514	8	57	79	564
2004/05	2,280	5	28	81	456
2005/06	7,397	6	74	100	1,233
2006/07	752	4	17	44	188
2007/08	[a]	[a]	[a]	[a]	[a]
2008/09	[a]	[a]	[a]	[a]	[a]
2009/10	3,026	3	30	101	1,008
2010/11	[a]	[a]	[a]	[a]	[a]
2011/12	[a]	[a]	[a]	[a]	[a]
2012/13	3,638	4	78	47	909
2013/14	[a]	[a]	[a]	[a]	[a]
2014/15	[a]	[a]	[a]	[a]	[a]
2015/16	[a]	[a]	[a]	[a]	[a]
2016/17	[a]	[a]	[a]	[a]	[a]
2017/18	3,903	3	58	67	1,301
2018/19	[a]	[a]	[a]	[a]	[a]
2019/20	[a]	[a]	[a]	[a]	[a]
2020/21	[a]	[a]	[a]	[a]	[a]
2021/22	[a]	[a]	[a]	[a]	[a]
2022/23	[a]	[a]	[a]	[a]	[a]
10-season Average	2,415	2	78	31	1,208

[a] Fewer than 3 permits were fished; information is confidential.

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