Fishery Management Report No. 05-50

Southeast Alaska Pot Shrimp Fishery Management Plan, 2005

by

Bill Davidson

and

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

Symbols and Abbreviations

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

Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Measures (fisheries)

fork length	FL
mideye-to-fork	MEF
mideye-to-tail-fork	METF
standard length	SL
total length	TL

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

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by

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The Division of Sport Fish Fishery Management Reports series was established in 1989 for the publication of an overview of Division of Sport Fish management activities and goals in a specific geographic area. Since 2004, the Division of Commercial Fisheries has also used the Fishery Management Report series. Fishery Management Reports are intended for fishery and other technical professionals, as well as lay persons. Fishery Management Reports are available through the Alaska State Library and on the Internet: http://www.sf.adfg.state.ak.us/statewide/divreports/html/intersearch.cfm. This publication has undergone regional peer review.

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ABSTRACT

The Southeast Alaska pot gear, shrimp fishery will open on October 1, 2005 to harvest spot prawns *Pandalus platyceros* and Coonstripe shrimp *Pandalus hypsinotus*. For this limited entry fishery in 2004 there were 304 permits issued and 174 fishermen were active participants. The fishery will be managed by Alaska Department of Fish and Game staff to limit harvest amounts to Guideline Harvest Levels (GHL) in pounds of whole shrimp set for each of 18 separate management areas. The total poundage of shrimp targeted in this fishery during the 2005-06 season will be 937,000 lbs. Historical fishery information and information regarding the status of shrimp populations in the various districts is reviewed. Changes in GHLs from previous seasons is discussed. In 2005-06 GHLs to be changed from prior years include Districts 6 and Tenakee Inlet in District 12 which are increased, District 15 which is decreased, and District 16 which will remain closed for the season. Details describing management of the fishery and department research programs are presented. In cooperation with the Southeast Alaska Pot Shrimp Task Force a new, voluntary program to obtain size category information directly from catcher-processors on fish tickets will be implemented beginning this season in order to increase the information base upon which management decisions can be made.

Key words: Shrimp, spot prawns, coonstripe shrimp, pot gear, *Pandalus platyceros, Pandalus hypsinotus,* Octopus *dofleini,* Octopus *rubescens*, Guideline Harvest Level (GHL), commercial fishery

INTRODUCTION

The spot prawn *Pandalus platyceros* is the target species for most Southeast Alaska shrimp pot fisheries, with smaller quantities of coonstripe shrimp *Pandalus hypsinotus* also harvested. Both species are harvested from rocky habitats, with the greatest portion of the harvest taken in Districts 1, 3, and 7. Significant harvests also occur in Districts 2 and 6. More recently, harvests from Districts 8, 9, 10, 11, 12, 13, 14, and 15 are becoming more important.

Harvest records dating from 1962 indicate the pot shrimp fishery began with sporadic effort and low harvest through the mid-1970s when the pot shrimp fishery served as a supplemental source of income. Total Southeast harvest levels in the 1970s averaged 22,000 lbs per year. 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 fisheries. Total Southeast harvest levels in the 1980s averaged 250,000 pounds per year. From 1990/1991 through 1994/1995 the character of the fishery underwent radical changes with the number of permits fished as high as 248 and average annual harvest increased to 711,000 pounds. In October 1994, the first floating processor entered the fishery. Pot fishing efficiency and the pace of the fishery greatly increased during this time. From 1995/1996 through the 2004/2005 seasons, with new guideline harvest ranges (GHRs) implemented, the 10-year average annual harvest of spot shrimp has been 917,259 whole pounds of shrimp with a peak harvest of 1,073,202 lbs during the 2003/2004 season (Table 1). Harvests of coonstrip shrimp are much lower than spot shrimp with Districts 7, 11, 15, and 16 containing the majority (81%) of the harvest (Table 2). The recent 10-year average harvest of coonstripe shrimp of 71,848 lbs comprises 7% of the 1994/2004 average total shrimp harvest of 989,608 lbs region-wide.

In 1995 the Commercial Fisheries Entry Commission 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. The commission obtained and analyzed data concerning the fishery and held numerous public hearings throughout Southeast Alaska and announced in early November 1995 that they had adopted a limited entry program. In October 1996, the commission adopted a point system

for the fishery and by February of 1998, the commission began the process of issuing permits for the fishery.

There were a total of 304 active P91A permits issued in 2004. Of that total, 174 registered for the fishery.

The commercial pot shrimp fishery opens by regulation on October 1 each year. Management, since the 1995/1996 season, has been, and continues to be, focused on harvesting within GHRs that are established for each separate fishing area (Tables 3, 4). There are nineteen distinct pot shrimp fishing areas in Southeast Alaska: Districts 1 and 2, Section 3-A, Section 3-B/C, Districts 4–11, Tenakee Inlet, the remainder of District 12, Sections 13-C and 13-A/B, and Districts 14-16. Each of these pot shrimp area fisheries are discussed separately in this 2005 Southeast Alaska Pot Shrimp Fishery Management Plan.

CHANGES FOR 2005/2006 POT SHRIMP FISHERY

New Fish Tickets

A new statewide shrimp fish ticket has been issued with a space provided in the heading to record the number of pot lifts. Alaska Department of Fish and Game (ADF&G) is requiring that catcher-processors and direct marketers record the "Number of Pot Lifts" in the new heading box and also the number of "Days Fished (Gear in Water)," and not record this information in the effort column in the body of the ticket. This change was necessary for an accurate calculation of catch per unit effort (CPUE) by the department. CPUE in turn can be used to help determine the status of shrimp populations and fishing effects over time. Where fish tickets may be issued less frequently (for those who are not catcher processors or direct marketers) old series fish tickets may continue to be used.

Changes of Guideline Harvest Levels for specific areas

Changes in the guideline harvest levels (GHLs) will occur for District 6, Tenakee Inlet in Distsrict 12, District 15, and District 16. Changes to harvest levels were determined based on several key indicators taken from both fishery-dependent and fishery-independent data sources.

Key indicators that were considered included:

1. Trends in overall commercial catch rate among fishing seasons;
2. Daily commercial catch rate (catch per pot lift) within season;
3. Trends in season length;
4. Trends in effort, achievement of GHL;
5. Carapace length (CL) relative to average from survey data/dockside sampling/on-grounds sampling;
6. Proportion of shrimp >36mm from survey data, L50 (length that 50% of shrimp are female); and
7. Spatial distribution of commercial catch.

For most key indicators, minimum increments were established as guidelines for defining trends. For example, in general, a trend existed where a consistent increase or decrease was observed for 3 or more years. After key indicators were evaluated for each District or Section, a stock

status determination was made, which resulted in recommendations to increase, decrease or maintain harvest levels. In order to create meaningful, but not excessive changes, modifications to harvest levels were limited to a range of 20%-40% of the current level, for either increases or decreases.

We recommend that the modified GHLs be in place for a minimum of three seasons so that fishery and stock trends in response to these changes can be fully understood before additional manipulations occur.

District 6

GHL for 2005/2006 will be **increased** by 20% to 82,000 pounds of spot shrimp. The stock appears to be strong. It is expected that the additional 14,000 pounds added to the guideline will lengthen the season 4 to 5 days and it will close on about October 25. The 2004/2005 harvest was 65,487 pounds of spot shrimp and the season lasted 21 days.

The catch per pot on a daily basis is stable from about the beginning of the second week of the fishery to the end of the fishery. Characteristics of the fishery include:

1. The catch per pot on an annual basis is increasing;
2. The daily catch stays fairly consistent throughout the season during most years;
3. The season length has gotten shorter each year for the last five seasons while the effort has declined slightly over that time period; and
4. Spatial distribution of the harvest is very limited with over 80% of the shrimp coming from only one sub-district each of the past five seasons.

District 12–Tenakee Inlet

For 2005/2006 the GHL will be **increased** by 40% to 28,000 lbs of spot shrimp. The stock strength appears good, survey data shows increasing shrimp size and commercial catch rate is strong and increasing. The GHL increase is expected to add an additional day to what was a three day season in 2004/2005. The 2004/2005 harvest was 23,729 lbs of spot shrimp.

In District 12–Tenakee Inlet:

1. The catch per pot lift increases throughout the fishery;
2. The catch per pot lift has been increasing on an annual basis;
3. The season length has been decreasing with harvest consistently exceeding the 20,000 lbs GHL;
4. Survey data indicates an increase in average carapace length; and
5. Historically, the bulk of the harvest has come from one sub-district.

District 15

The GHL for the 2005/2006 season will be **reduced** from 20,000 to 15,000 lbs of coonstripe shrimp. The stock strength for this area is considered poor. Reasoning for the reduction in the GHL includes reduced catch rates (catch/pot/lift) in the district beginning with the 2003/2004 season and a decreasing trend in carapace length from samples collected from this fishery in recent years. The total 2004/2005 season harvest of approximately 4,800 lbs of coonstripe shrimp is 27% of the previous ten-year average harvest for this district. The 2004/2005 season

harvest is similar to the 2003/2004 season harvest indicating a reduction in the abundance of coonstripe shrimp in the district. Management actions have included closing Taiya Inlet and Lutak Inlet during the spring season in 2004, and closing Lutak Inlet during the spring season in 2005. These actions have resulted in reducing effort in the core fishing areas of the district. Landing and catch sampling information will continue to be collected and ADF&G may continue to close specific areas if needed to distribute effort and harvest.

District 16

District 16 will be **closed** for the 200/2006 season. The GHL was decreased last year by 25% from 20,000 to 15,000 lbs of coonstripe shrimp. The 2004/2005 harvest amount is confidential and the GHL was not achieved during a 226-day season. The stock appears to be declining and there are no positive trends for this fishery. In District 16:

1. The catch per boat day has decreased significantly over the past four seasons while effort has remained constant;
2. The season length has significantly increased;
3. Clear failure to achieve the GHL for coonstripe shrimp in three of the past four years;
4. No preseason assessment surveys are done in this district and very little if any dockside sampling data exists; and
5. The entire harvest comes from one small bay in the district.

Voluntary Catcher-Processor Logbook Program

Working cooperatively with the Southeast Alaska Pot Shrimp Task Force, ADF&G will implement a voluntary logbook pilot program with catcher-processors. The purpose of the program is to determine if size specific information on catch rates by fishing area can be collected that would enhance the department's ability to use commercial fishery data for monitoring stock status. All catcher-processors who are interested in participating in this program are encouraged to participate. ADF&G is asking participants to specify the gram-weight categories and numbers of shrimp for each size category for their specific market at the time of registration. When filling out fish tickets, either the daily tally of the number of boxes by size category, or the daily poundage by category, should be recorded in addition to other information required on fish tickets. This additional fish ticket information can then be converted to shrimp size distribution specific to areas and times harvested. This information may be useful to ADF&G when evaluating trends stock status and in setting appropriate GHLs to better manage the shrimp fishery. Such information may be especially important for areas where there is inadequate sampling data currently available.

Letters explaining this program were mailed out to all licensed catcher-processors and direct marketers on September 2, 2005. Included with the letters were registration forms, and examples of how fish tickets should be filled out with shrimp size information. These materials are included as **Appendices B–F** of this plan, and will also be available at the time of registration.

MANAGEMENT APPROACH

Management is based upon closed seasons to prevent fishing on major stocks during the egg hatch or growth and recruitment periods. Management tools also include restricting minimum mesh size, intended to capture and retain the larger size segment of the stock. Pot sizes are standardized to two sizes, with a maximum number of pots per vessel. Daily deployment and hauling times are restricted (8:00 a.m. to 4:00 p.m.) and a guideline harvest range (GHR) is set for each fishing district. Regulations have also been adopted for the permitting of shrimp floating processors, and reporting requirements are established for shrimp catcher-processors and for catcher-seller vessels.

The major problem ADF&G has faced in the last several years is the inability to accurately track catches from catcher-processors. The introduction of the catcher-processor vessel into the fishery is relatively new. During the early to mid-1990s, catcher-processors made up less than 20% of the fishing fleet. In more recent years, 50 to 70% of the fishing vessels in some districts are catcher-processors. The department, with the approval of the Alaska Board of Fisheries (BOF), has established reporting requirements for catcher-processors. Those requirements can be found in 5 AAC 31.143: *Reporting Requirements For Shrimp Catcher-Processor Vessels in Registration Area A.*

A catcher-processor vessel is a vessel that catches and processes product on board [5 AAC 31.143.(d)]. Observers are not required on catcher-processors. A catcher processor cannot buy or process shrimp from another fishing vessel or tender. The catcher-processor owner or operator shall complete separate fish tickets every day that shrimp are caught and processed on board the vessel. The requirement that fish tickets be turned in seven days after completion will be waived for this fishery for the current season. However, fish tickets must be submitted to an Alaska Department of Fish and Game office within seven days of the closure of a District or Section with a unique GHR if a shrimp catcher-processor fished in the area.

Catcher-processors must call and report the specified information between 8:00 a.m. and 4:30 p.m. to any Alaska Department of Fish and Game area office once per week by 12:00 noon Wednesday of every week fishing operations are conducted. For the 2005/2006 season, reporting requirements will start the week of October 2 in each District or Section with a unique GHR. Catcher-processors are advised that they should contact the office responsible for each area:

- Ketchikan for Districts 1–4;
- Petersburg or Wrangell for Districts 5, 6, 7, 8 and 10;
- Sitka for District 9 and 13;
- Juneau for District 11, 12, 14, and 16; and
- Haines for District 15.

Due to the rapid pace of the fishery, call-in requirements are being waived for Tenakee Inlet in District 12 and in Section 13-C.

The once per week reporting requirements allows shrimpers 2 ½ days at the start of each week to contact the local area office. For example, operators of catcher-processors fishing in District 10 will initially have to phone in the information listed below sometime between Monday, October 3 and noon, Wednesday, October 5 and each subsequent week thereafter.

Shrimpers are advised that these reporting requirements are in effect until further notice and may change during the fishing season. Notice of any changes will be announced in subsequent news releases. Reporting requirements for districts not specifically addressed above will be in accordance with 5 AAC 31.143 (a) and (c) until further notice.

The information required will be:

1. Callers name/permit holder name;
2. Vessel name;
3. Vessel ADF&G number;
4. Fish ticket number of each fish ticket made since last call in;
5. Date of landing on each fish ticket;
6. District and subdistrict on each fish ticket;
7. Numbers of pot lifts on each fish ticket;
8. Weight of spot shrimp and coon shrimp on each ticket – specify whole or tail weight; and
9. Date of last delivery.

Alaska Department of Fish and Game will furnish catcher-processors with pre-printed reporting forms to help facilitate the reporting requirements. Forms may be picked up at any Fish and Game office in Southeast Alaska. A copy of the reporting form is provided as Appendix A.

Once catcher-processors have stopped fishing in a District or a Section with a specific GHR they are required to call and report the above information prior to fishing in a new District or a Section with a specific GHR.

ADF&G will issue weekly news releases, usually on Thursday afternoons, which will update shrimpers on the progression of the fishery, by specific areas managed. A news release will list the GHL for districts and the harvest to date for the individual district. In addition to the weekly summary news releases, the department will issue other news releases as required to announce fishery closures or other important information regarding the fishery.

POT SHRIMP TASK FORCE

In January 2003, the Alaska Board of Fisheries approved a plan that formalized the Southeast Alaska Pot Shrimp Task Force, with designated seats similar to the king and tanner crab and Dungeness crab task forces. Previous task force meetings have been held on a relatively informal basis in communities where significant numbers of pot shrimp fishermen live and where jet service occurs. The task force concept is designed to obtain input from the industry and improve communications between the fleet and the department.

The second formal Southeast Alaska Pot Shrimp Task Force meeting was held in Ketchikan on January 24, 2005. A detailed meeting summary will be available prior to the next Task Force meeting with Alaska Department of Fish and Game. That meeting has not yet been scheduled.

OTHER ISSUES RELATED TO THE FISHERY

OCTOPUS BYCATCH

Marine invertebrates, including octopus, may be taken only under the authority of a permit issued by the commissioner or the commissioner's designee [5 AAC 38.062]. Shrimpers are advised that this applies to octopus they wish to retain for their own use [5 AAC 02.021].

Alaska Department of Fish and Game will issue permits under authority of 5 AAC 38.062 to allow retention of octopus captured as bycatch in commercial pot shrimp fisheries. Permits are available at Southeast Alaska area offices. Permit stipulations include a maximum octopus bycatch limit of 5% whole weight of total shrimp onboard a vessel, dates for which the permits are valid, and other stipulations.

Shrimpers are advised that by issuing these permits the Alaska Department of Fish and Game is not committing to doing so in the future. Should the level of interest and subsequent harvests exceed levels considered potentially detrimental to the resource, the department may consider invoking the High Impact Emerging Fisheries regulation [5 AAC 39.210] and close the fishery until an interim management plan can be developed and presented to the Alaska Board of Fisheries.

ADF&G is interested in obtaining as much biological information as possible from octopus retained in the commercial pot shrimp fishery. In addition to weight and numbers of individual octopus harvested in the fishery the department would like to obtain species composition, sex, and harvest distribution data. There are two species of octopus in Southeast Alaska, the giant Pacific octopus (*Octopus dofleini*) and the red octopus (*Octopus rubescens*). Male octopus have a modified third arm which is called the hectocotylus. The hectocotylus has a deep groove between the two rows of suckers. Shrimpers are advised that ADF&G staff may ask to sample octopus on an opportunistic basis during on-the-grounds sampling trips.

POT SHRIMP FISHING OFFSHORE

ADF&G has received several requests to initiate pot shrimp fisheries offshore (outside State waters, three miles or greater from shore). In various public meetings and individual telephone calls, department staff has agreed to consider these requests. After further investigation, it has become apparent that offshore commercial pot shrimp fisheries can be accommodated under existing regulations and guideline harvest levels. Given the absence of a Federal Fishery Management Plan for commercial pot shrimp fisheries in Federal waters the State of Alaska has management jurisdiction for this fishery [Magnusen Stevens Act SEC 306.104–297 (3)]. As these offshore waters are part of Registration Area A, Southeast Alaska, they are subject to limited entry. Shrimpers who wish to fish in these areas must have a Southeast Alaska commercial pot shrimp fishery card.

Offshore waters are included in Districts 4, 13, and 16, the boundary lines of which are described in 5 AAC 31.105 (d), (m), and (p). The offshore area includes the Exclusive Economic Zone (EEZ) of the United States. The EEZ extends to a distance of 200 nautical miles offshore of the defined fish districts (President Proclamation 5030). Shrimpers who wish to fish in outside waters may do so only if those districts are open. Shrimp harvested in these areas will be part of existing guideline harvest levels for those districts.

KETCHIKAN AREA FISHERIES

INTRODUCTION

The Ketchikan fishery management area encompasses Districts 1, 2, 3, and 4. The shrimp fishery is managed for spot prawns since there is a very limited harvest of coonstripe shrimp. District 3 is divided into smaller management areas with a separate GHR for Section 3-A and a combined GHR for Sections 3-B and 3-C. Section 3-A is the largest producer of spot prawns in the region followed by District 1. District 2 is the fourth largest district in Southeast Alaska. Shrimp harvests in District 4 are very limited.

District 1

District 1 includes

> All waters east and north of a line from the southernmost tip of Caamano Point to 54º40' N. latitude, 131º45' W. longitude, and waters north of a line running from 54º40' N. latitude, 131º45' W. longitude to 54º42.48' W. longitude, 130º36.92' W. longitude (5 AAC 31.100).

The major shrimp fishing areas include Behm Canal, George and Carroll inlets, Boca de Quadra, and Portland Canal.

Prior to the 1983/1984 season the District 1 fishery was restricted by Alaska Board of Fisheries action to a September 1 through April 30 season. This was an allocation for shrimpers who traditionally used District 1 as a supplemental income source during the fall and winter months. The closure during the summer provided an important biological benefit of allowing stock recruitment to occur through molting and growth process.

From the 1986/1987 season through the 1994/1995 season District 1 was open only from October 1 through February 28. This season was established for a combination of egg hatch closure, growth, and as an allocation for a fall/winter fishery.

Beginning in the late 1980s and continuing into the early 1990s, the character of the fishery underwent radical changes. Effort levels greatly increased, and harvests changed from less than 50,000 lbs of whole shrimp per season to harvests exceeding 150,000 lbs. The introduction of floating processors and catcher-processors in this and other districts also greatly accelerated the growth of the fishery.

A GHR was imposed on District 1 starting with the 1995/1996 season. The GHR was set using the baseline harvest from the 1990/1991 through the 1994/1995 seasons. The District 1 GHR was set at 0 to 145,000 lbs. That was modified to 0 to 164,000 whole lbs of shrimp when Alaska Department of Fish and Game revised the tail weight to whole weight ratio from 1.67 to 2.0.

Since the start of the GHR the length of the District 1 season has been reduced (from approximately 150 days prior to the GHR, to as few as 37 days in 1996-1997). The average seasonal harvest and effort levels since the 1995/1996 season have been 166,000 lbs of whole shrimp, with an average of 49 boats participating in the fishery.

For the 2005/2006 season District 1 will be managed for a GHL of 164,000 pounds of whole shrimp.

Alaska Department of Fish and Game anticipates the pace of the fishery will be similar to the past three seasons, when the fishery averaged 60 days. The district was opened for 80 days during the 2004/2005 season.

The department continues to be concerned about local depletion especially in areas close to larger towns, where there can be more gear than in more remote areas. During the 1999-2000 season portions of Behm Canal and George and Carroll Inlets were closed because of a decline in catch-per-unit-of-effort and in the size of the shrimp. ADF&G will pay close attention to these areas in the future and may take management actions if concerns for these local stocks persist.

The Alaska Board of Fisheries during the 2000 meeting closed the following waters (Figure 2) to commercial shrimp fishing in District 1 (5 AAC 31.136):

> The waters east of a line from Indian Point at 55º36.85' N. latitude, 131º42.02' W. longitude, to the northeasternmost tip of Betton Island at 55º31.95' N. latitude, 131º46.37' W. longitude, to the southeastern most tip of Betton Island at 55º29.90' N. latitude, 131º48.18' W. longitude, to Survey Point at 55º28.07' N. latitude, 131º49.87' W. longitude.

District 2

District 2 includes:

> All waters south of a line running from the easternmost tip of Narrow Point to the northernmost tip of Lemesurier Point, waters west of a line running from Caamano Point to 54º40' N. latitude, 131º45' W. longitude, and waters east of a line running from Point Marsh Light to 54º40' N. latitude, 132º17.50' W. longitude (5 AAC 31.105).

The major shrimp fishing areas include Moira Sound, Cholmondeley Sound, and Kasaan Bay.

Prior to the 1983/1984 season the District 2 fishery was restricted by Alaska Board of Fisheries action to a September 1 through April 30 season. This was an allocation for shrimpers who traditionally used District 1 as a supplemental income source during the fall and winter months. The closure during the summer provided an important biological benefit, allowing stock recruitment to occur through the molting and growth process.

From the 1986/1987 season through the 1994/1995 season District 2 was open only from October 1 through February 28. The season was established for a combination of egg hatch closure, growth, and allocation for a fall/winter fishery.

Beginning in the late 1980s and early 1990s the character of the fishery underwent radical changes with much larger effort levels, and harvests going from less than 30,000 pounds of whole shrimp per season to over 80,000 pounds. Also, the introduction of floating processors and catcher-processors in this and other districts greatly accelerated the growth of the fishery.

A GHR was imposed on the district starting with the 1995/1996 season. The GHR was set using the baseline harvest from the 1990/1991 through the 1994/1995 seasons. The District 2 GHR was set at 0 to 65,000 pounds. That was modified to 0 to 86,000 whole pounds of shrimp when the department revised the tail weight to whole weight ratio from 1.67 to 2.0.

Since the start of the GHR the length of the District 2 season has been reduced from approximately 150 days prior to the GHR to as few as 13 days in 2004/2005. The average

seasonal harvest and effort levels have been 91,000 pounds of whole shrimp and 24 boats since the 1995/1996 season.

For the 2005/2006 season District 2 will be managed for a GHL of 86,000 whole pounds of shrimp.

Alaska Department of Fish and Game anticipates the pace of the fishery will be similar to the past three seasons when the fishery averaged 21 days. The district was opened for 13 days during the 2004/2005 season.

During the 2000 meeting, the BOF closed the following waters to commercial shrimp fishing in District 2 (5 AAC 31.136):

> The waters of Twelve-mile Arm west of a line from Prince of Wales Island at 55º29.07' N. latitude, 132º37.60' W. longitude, to the northeasternmost tip of Loy Island at 55º29.07' N. latitude, 132º36.70' W. longitude, to the easternmost tip of Cat Island at 55º27.80' N. latitude, 132º39.08' W. longitude, to Prince of Wales Island at 55º27.80' N. latitude, 132º40.93' W. longitude, including the waters nearest Hollis Anchorage.

District 3

District 3 is divided into three sections. Section 3-A is managed for a separate GHR of 0 to 264,000 whole lbs, and Sections 3-B and 3-C are managed for a combined GHR of 0 to 50,000 whole lbs.

Prior to the 1983/1984 season the District 3 fishery was restricted by Alaska Board of Fisheries action to a September 1 through April 30 season. This was an allocation for shrimpers who traditionally used District 1 as a supplemental income source during the fall and winter months. The closure during the summer provided an important biological benefit of allowing stock recruitment to occur through the molting and growth process.

From the 1986/1987 season through the 1994/1995 season District 3 was 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 fishery.

Beginning in the late 1980s and early 1990s the character of the fishery underwent radical changes with much larger effort levels, and harvests going from approximately 40,000 lbs of whole shrimp per season to well over 200,000 lbs. Also, the introduction of floating processors and catcher-processors in this and other districts greatly accelerated the growth of the fishery. Approximately 75 % of the harvest came from the Section 3-A area (Cordova Bay).

A GHR was imposed on the district starting with the 1995/1996 season. The GHR was set using the baseline harvest from the 1990/1991 through the 1994/1995 seasons. The total District 3 GHR was set at 0 to 200,000 pounds.

During the 2000 Board of Fisheries meeting, the BOF adopted for Section 3-A a separate GHR of 0 to 264,000 whole pounds and adopted a combined GHR of 0 to 50,000 whole pounds for Sections 3-B and 3-C.

Section 3-A

Section 3-A includes those waters of the District south of 55º15' N. latitude, excluding waters of Meares Passage.

Since the start of the GHR the length of the District 3 season has been reduced from approximately 150 days prior to the GHR to as few as 9 days in 1997/1998. Average seasonal harvest and effort levels have been approximately 240,000 lbs of whole shrimp and 50 boats since the 1995-1996 season.

The GHL for Section 3-A was changed to 198,000 lbs of spot shrimp for the 2004/2005 season due to a consistent decrease in the average survey shrimp size and fishery catch rate. While the catch rate in Section 3-A for the 2004/2005 season was up compared to historical averages, the survey indicated that shrimp size remained well below average. The 2004/2005 harvest was 256,000 lbs with a season of 21 days.

For the 2005/2006 season Section 3-A will continue to be managed for a GHL of 198,000 pounds of spot shrimp.

The stock strength remains poor.

The pace of the fishery has changed over recent years, and it is difficult to anticipate the number of days the Section will be open. During 2001/2002 season the Section 3-A fishery lasted for 28 days, in 2002/2003 the season lasted 41 days, in 2003/2004 the season lasted 47 days, and in 2004/2005 the season lasted 20 days.

Sections 3-B and 3-C

Sections 3-B and 3-C include those waters of the District north of 55º15' N. latitude and south of Aneskett Point located at 56º08.83' N. latitude and east of a line from Point Arboleda to the northernmost tip of Point San Roque to the southernmost tip of Cape Ulitka to the northeasternmost tip of Cape Lynch to the southwest entrance point of Halibut Harbor located on Kosciusko Island.

Prior to the 2000/2001 season Sections 3-B and 3-C were managed in conjunction with 3-A. During the 2000 Board of Fisheries meeting, a separate GHR of 0 to 50,000 whole pounds of shrimp was established for 3-B and 3-C. The GHR is for both sections. The department will manage the sections as one area and not attempt to split the GHR evenly between the two areas.

For the 2005/2006 season Sections 3-B and 3-C will be managed to harvest a total GHL of 50,000 whole pounds of shrimp.

These Sections were open for 15 days during the 2000/2001 season, 46 days during the 2001/2002 season, 21 days during the 2002/2003 season, and 14 days during the 2003/2004 and 2004/2005 seasons. While it is not possible to judge the amount of time the Sections will be open, it is possible that the GHL level will be taken in a relatively short amount of time and shrimpers should keep in contact with department personnel in order to know when the sections will close.

District 4

District 4 includes those waters north of Cape Muzon, west of District 3, and south of a line from Helm Point on Coronation Island to Cape Lynch, including offshore waters. The offshore area of District 4 includes the waters of the EEZ.

While the District 4 fishery has only had small, sporadic effort over the years, the GHL of 20,000 lbs was taken during the 2003/2004 and 2004/2005 seasons. The GHR for the district is 0 to 20,000 whole lbs. Since the introduction of individual district GHLs, the District 4 GHL has

been reached in only five of those years. The average annual harvest in the district since the 1995-1996 has been 17,000 whole pounds.

Alaska Department of Fish and Game will continue to manage District 4 for a 20,000 whole pound GHL for the 2005/2006 season.

PETERSBURG-WRANGELL AREA FISHERIES

INTRODUCTION

The Petersburg-Wrangell fishery management area encompasses Districts 5, 6, 7, 8, 9-B, and 10. District 9 is managed with a single GHR and encompasses waters within both the Petersburg (Section 9-B) and the Sitka (Section 9-A) management areas. With significant harvests occurring in both management areas, responsibility for managing the District 9 fishery has been shared between the Petersburg and Sitka area offices. The District 9 fishery will be managed out of the Sitka office during the 2005/2006 season. Historically, Districts 7, 6, and 10 have been the third, fifth, and seventh largest producers of spot shrimp in the region, respectively. Districts 5, 8, 9 produce smaller amounts of spot shrimp. District 8 has small but at times significant landings of coonstripe shrimp. District 7 is usually the largest producer of coonstripe shrimp in the region. Between 15 and 30% of the District 7 harvest has been comprised of coonstripe shrimp.

District 5

District 5 includes the waters of Sumner Strait west of Point Baker. Fishing primarily takes place in the bays along the Kuiu Island shoreline and southern Rocky Pass. Prior to statehood and through the 1981/1982 season there were no season or quota restrictions in District 5. During the 1982/1983 season the fishery had the first egg hatch closure occurring in May and June. An egg hatch closure occurred in March and April during the 1984/1985 season. Closures occurred on March 13 during the 1995/1996 season and on December 27 in the 1996/1997 season. During the 1997/1998 season the fishery was open for 12 months with no egg hatch closure. For the 1998/1999 season the fishery was opened from October 1 through February 28 with a summer season from May 1 through August 31. Starting with the 1999/2000 season the fishery has had a winter season from October 1 through February 28 and the summer season was shortened to May 15 through July 31.

The first GHR was established in District 5 starting with the 1995/1996 season. Districts such as District 5 where no strong fishery had developed were assigned a GHR of 0 to 20,000 pounds.

The District 5 fishery has had consistent but usually fairly low effort since the GHR was established. The upper end of the GHR has only been taken during the 1995/1996, 1996/1997 and 2004/2005 seasons. The average harvest of spot shrimp since the GHR was established is 15,700 pounds and the effort level has varied between 5 and 14 boats. Catches are usually dominated by catcher-processors. In the 2004/2005 season, catcher-processors landed 99% of the catch and 89% of the catch was landed as whole shrimp. The average coonstripe harvest in the fishery since establishment of the GHR is approximately 450 pounds.

The 2004/2005 season closed by regulation on February 28 after 8 vessels harvested 12,397 pounds. The fishery reopened on May 15 and the season was closed on July 22, a little more than a week before the regulatory closure would have occurred on July 31. During the summer season, an additional 9,101 pounds were taken by four shrimpers. The seasonal harvest of 21,498 pounds was the largest harvest since the 1995/1996 season.

For the 2005/2006 season, District 5 will be managed for a GHL of 20,000 pounds of spot shrimp.

It is anticipated the District 5 will close on February 28, 2006. Because of the very low effort, extensive season, and lack of spatial distribution of harvest within the district the strength of the stock is uncertain. It is expected that a summer fishery will occur again in 2006.

District 6

District 6 includes the waters of Sumner Strait east of Point Baker and west of Low Point and the waters of Clarence Strait north of Narrow Point to Lemesurier Point and Stikine Strait south of Round Point. Fishing primarily occurs in the northern waters of Clarence Strait. Prior to statehood, season restrictions occasionally corresponded to the beam trawl fishery season with the pot fishery opening in mid-April or early-May and closing between late-January and late-February. The first two decades following statehood there were no season or quota restrictions in District 6. During the 1982/1983 season the fishery had the first egg hatch closure, which occurred in May and June. During the 1984/1985 season the egg hatch closure occurred during March and April and it remained that way until it was expanded through May 14 starting in the 1999/2000 season. The first closure to reduce harvest occurred on June 13 during the 1994/1995 season. Since then closures have occurred prior to March 1 each season.

The first GHR was established for the 1984/1985 season when District 6 together with Districts 4, 5, and 8 had a combined GHR of 0 to 55,000 pounds. From the 1985/1986 season through the 1996/1997 season it was changed to a combined GHR of 75,000–100,000 pounds for District 6 and District 8. Beginning with the 1997/1998 season, two separate GHRs were established for Districts 6 and 8 using the baseline historic harvests from the 1990/1991 through 1994/1995 seasons. The District 6 GHR was set at 0 to 65,000 pounds of shrimp. This was modified to 0 to 68,000 pounds of spot shrimp when ADF&G revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was to raise the GHR by about another 2,000 pounds. The average harvest of spot shrimp since the start of the 1995/1996 season is 70,400 pounds. The average harvest of coonstripe shrimp during that same period was 1,400 pounds. Effort in the district has been between 11 and 23 boats fishing since the 1995/1996 season. The season length has varied between 21 and 137 days during that period. Harvests have been dominated by catcher-processors the past six seasons. In the 2004/2005 season, catcher-processors landed 92% of the harvest and 98% of the catch was landed as whole shrimp.

During the 2004/2005 season, the fishery closed on October 21, the shortest season on record. Eleven shrimp fishermen harvested 65,487 pounds of spot shrimp and 37 pounds of coonstripe shrimp.

The District 6 GHL for 2005/2006 season will be increased 20% to 82,000 pounds of spot shrimp.

The stock appears to be strong. There are a number of positive trends in the fishery. The catch per pot on a daily basis is stable from about the beginning of the second week of the fishery to the end of the fishery. The catch per pot on an annual basis is increasing. The daily catch stays consistent throughout the season during most years. The season length has gotten shorter each year for the last five seasons while the effort has declined slightly over that period.

Spatial distribution of the harvest is very limited with over 80% of the shrimp coming from only one sub-district each of the past five seasons. While no survey is conducted in this district, there is a good time series of dockside sampling data. This data shows that shrimp size was slightly below average in 2004.

It is expected that the additional 14,000 pounds added to the guideline will lengthen the season by 4 to 5 days and it will close on about October 25.

District 7

District 7 includes the waters of Ernest Sound, Bradfield Canal, southern Zimovia Strait, Eastern Passage, and Blake Channel. Fishing is concentrated in Ernest Sound. Prior to statehood and through the 1981/1982 season there were no season or quota restrictions in District 7. During the 1982/1983 season the fishery had the first egg hatch closure, which occurred in May and June. During the 1984/1985 season the egg hatch closure occurred during March and April and it remained that way until it was expanded through May 14 for the 1999/2000 season. The first closure to reduce harvest occurred on June 30 during the 1984/1985 season. For the next 10 seasons, District 7 was closed from March through September. Since then closures have occurred prior to March 1 each season.

The first GHR was established for the 1984/1985 season when District 7 together with Districts 1, 2 and 3 had a combined GHR of 0 to 125,000 pounds. The first separate GHR for District 7 of 0 to 100,000 pounds of shrimp was set starting with the 1995/1996 season using the baseline harvest from the 1990/1991 season through the 1994/1995 season. This was modified to 0 to 104,000 pounds of spot shrimp when the department revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was to raise the GHR by between 11,000 and 25,000 lbs. The average harvest of spot shrimp since the start of the 1995/1996 season is 93,000 lbs. The average harvest of coonstripe shrimp during that same period was 22,000 lbs. Effort in the district has varied between 19 and 44 boats fishing during that same period. The season length has varied between 20 and 113 days. Catches during the past five seasons were dominated by catcher-processors. In the 2004/2005 season, catcher- processors landed 93% of the spot shrimp catch and 89% of the catch was landed as whole shrimp. During the 2004/2005 season, the closure occurred on November 6. A total of 80,072 lbs of spot shrimp and 10,899 lbs of coonstripe shrimp were harvested.

The District 7 GHL for 2005–2006 will be 78,000 lbs of spot shrimp.

The guideline harvest limit was decreased from 104,000 lbs beginning with the 2004/2005 season and most of the harvest trends for the stock remain negative. The season is expected to close on about November 5.

District 8

District 8 includes the waters of the eastern portion of Frederick Sound on the north side of the Stikine Flats and Chichagof Pass and the northern portions of Stikine and Zimovia Straits on the south side of the Stikine Flats. Fishing primarily occurs in those waters within about 10 miles of Wrangell. Prior to statehood, season restrictions occasionally corresponded to the beam trawl fishery season with the fishery opening in mid-April or early-May and closing between late-January and late-February. The first two decades following statehood there were no season or quota restrictions in District 8. During the 1982/1983 season the fishery had the first egg hatch

closure, which occurred in May and June. During the 1984/1985 season the egg hatch closure occurred during March and April and it remained that way until it was expanded through May 14 for the 1999/2000 season.

The first closure to reduce harvest occurred on November 13 during the 1995/1996 season. Since then closures have occurred prior to March 1 each season. The first GHR was established for the 1984/1985 season when District 8 together with Districts 4, 5, and 6 had a combined GHR of 0 to 55,000 lbs. From the 1985/1986 season through the 1996/1997 season it was changed to a combined GHR of 75,000–100,000 lbs for District 6 and District 8. When these two districts were assigned separate GHRs for the 1997/1998 season the GHR was set using the baseline harvest from the 1990/1991 season through the 1994/1995 season. The District GHR was set at 0 to 20,000 lbs of shrimp. This was no change in the GHR when ADF&G revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season because shrimp landed from District 8 were almost all landed in the round. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was to raise the GHR by about another 2,000–3,000 lbs. The average harvest of spot shrimp since the start of the 1995/1996 season is 19,000 lbs. The average harvest of coonstripe shrimp during that same period was 2,400 lbs. Effort in the district has varied between 6 and 20 boats fishing during that same period. The season has lasted between 18 and 37 days since the 1995/1996 season. Day boats land the majority of the catches as whole shrimp. In the 2004/2005 season, 96% of the catch was landed as whole shrimp. The 2004/2005 season was opened for 37 days, the longest season length since the 1995–96 season. The effort has been consistently low the last six seasons. Effort in 2004–2005 was the lowest in more than a dozen years. The catch included 18,935 lbs of spot shrimp and 913 lbs of coonstripe shrimp.

District 8 will be managed for a GHL of 20,000 lbs of spot shrimp for the 2005/2006 season.

The stock appears to be stable. It is anticipated the fishery will close around October 30.

District 10

District 10 includes the waters of the central portion of Frederick Sound and the southern portion of Stephens Passage. Fishing is concentrated along the mainland shoreline north of Cape Fanshaw and in the bays along the Admiralty shoreline. Prior to statehood, the fishing season east of Cape Fanshaw occasionally corresponded to the beam trawl fishery season with the fishery opening in mid-April or early May and closing between late January and late February. The first three and a half decades following statehood there were no season or quota restrictions in District 10. Each season since then, closures have occurred prior to March 1. The first GHR for District 10 of 0 to 30,000 lbs of shrimp was set in the 1995/1996 season using the baseline harvest from the 1990/1991 season through the 1994/1995 season. This was modified to 0 to 36,000 lbs of spot shrimp when the department revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was minimal since the harvest of coonstripe shrimp has been less than 2,000 lbs since the GHR was initiated. The average harvest of spot shrimp since the start of the 1995/1996 season is 45,000 lbs. The average harvest of coonstripe shrimp during that same period was 1,400 lbs. Effort in the district has varied between 14 and 49 boats fishing during that same period. The season length has varied considerably, between 11 and 98 days. For the 2004/2005 season, catcher-processors landed 41% of the catch and 37% of the catch was landed as whole shrimp. During the 2004/2005 season, the

fishery was opened for 11 days, the shortest season on record. Fourteen s caught 51,592 lbs of spot shrimp and no coonstripe shrimp.

The District 10 GHL for 2005–2006 will be 48,000 lbs of spot shrimp.

The guideline was increased from 36,000 lbs beginning with the 2004–2005 season. The stock strength appears moderate. Although limited sampling data indicate a declining shrimp size, commercial catch rate trends remain positive. The season is expected to close on about October 10.

SITKA AREA FISHERIES

INTRODUCTION

The Sitka fishery management area includes all waters of District 13, Section 9-A, and Statistical Areas 112-11, 112-21, and 12-22 of District 12. For the pot shrimp fishery District 13 has been divided into two areas, each managed with separate GHRs. One area consists of all waters of Section 13-C (Hoonah Sound and Peril Strait) and the other area consists of all waters of Sections 13-A and 13-B (outer coastal area of District 13). The offshore areas of Sections 13-A and 13-B include the waters of the EEZ. District 13 is unique since the BOF has adopted a customary and traditional finding for shrimp. The BOF also has closed the Sitka Sound special use area (5 AAC 31.136 (3)) to the commercial harvest of shrimp. District 9 is managed with a single GHL and encompasses waters within both the Petersburg and the Sitka management areas. With significant harvests occurring in both management areas, responsibility for managing the District 9 fishery has been shared between ADF&G Petersburg and Sitka area offices. The District 9 fishery will be managed by the Sitka area office during the 2005/2006 season. The District 12 fishery is managed out of the Juneau area office since relatively little effort occurs within the Sitka management area.

DISTRICT 9

District 9 includes waters of Chatham Strait north of Cape Decision to Coronation Island to Cape Ommaney, south of the latitude of Point Gardner, and in waters of Frederick Sound and Rocky Pass west of Point Macartney to Elliott Island and north and west of Point Camden to Salt Point. Fishing is concentrated in a small number of bays along the southern Admiralty shoreline and eastern Baranof shoreline. The more important fishing subdistricts include 109-10, 109-20, and 109-30. Since significant catch occurs in both Section 9-A and 9-B, management responsibility has shifted between the Sitka and Petersburg area offices on alternate years.

Prior to statehood and through the 1994/1995 season there were no season or quota restrictions in District 9. The GHR for District 9 was set at 15,000 lbs of shrimp in the 1995/1996 season using the baseline harvest from the 1990/1991 season through the 1994/1995 season. This was modified to 0 to 18,000 lbs of spot shrimp when the department revised the tail weight to whole weight ratio of 1.67 to 2.0 for the 2000/2001 season. The catch of coonstripe shrimp was no longer included in the GHR starting in the 2000/2001 season. The effect of removing that catch was minimal since the harvest of coonstripe shrimp has totaled less than 2,000 lbs since the GHR was initiated. The average harvest of spot shrimp since the start of the 1995/1996 season is 19,200 lbs. The average harvest of coonstripe shrimp during that same period was 170 lbs. Effort in the district has varied between 5 and 16 boats. In the 2004/2005 season, catcher-processors landed 83% of the catch and 54% of the catch was landed as whole shrimp. During the 2004/2005 season, the fishery was opened for 30 days. Five vessels landed 17,911 lbs of spot shrimp and no coonstripe shrimp.

To manage the fishery in 2005/06 department area staff will rely primarily on fish tickets and reporting by catcher-processors, and may also survey and sample the fishery from the grounds as scheduling and budgets allow. In the latter case, a field announcement of a closure is possible. District 9 will be managed for a GHL of 18,000 lbs of spot shrimp for the 2005/2006 season. The stock strength is be uncertain. It is anticipated that the 2005 season will close around October 30.

District 13

Section 13-C

Section 13-C consists of waters of Hoonah Sound and Peril Strait west of a line from Point Hayes to Point Thatcher and north of Pogibshi Point.

The waters of Section 13-C contain the most productive pot shrimping grounds in the Sitka management area. This area has been the focus of the Sitka area pot shrimp fishery throughout the fishery's development. The first commercial landings of pot shrimp from Section 13-C occurred during the 1977/1978 fishing season with minimal harvest through the 1980/1981 season. For the next thirteen years, from the 1981/1982 through the 1993/1994 fishing seasons, effort and harvest steadily increased with 6 to 19 boats participating and landing between 10,000 and 40,000 lbs whole weight. During this period, the Section 13-C fishery was open year round with landings occurring year round.

The 1994/1995 season was pivotal in the history of the fishery. During that season, a floating processor moved into Section 13-C in response to a strong Japanese market for frozen whole shrimp. This resulted in a substantial increase of harvest in Section 13-C. Concerned with rapidly increasing harvest and having little information on stock size and productivity the department closed all of District 13 by emergency order. This was the first ever pot shrimp fishery emergency order closure in Southeast Alaska. The total 1994/1995-season harvest in Section 13-C was 81,000 lbs whole weight, double any previous year's harvest. Other productive areas throughout Southeast Alaska had seen similar trends prompting the department to establish GHRs for all districts in the region. For districts with a relatively consistent harvest history, the upper end of the GHR was based on the average harvest over the previous five seasons. The high harvest of the 1994/1995 season was not included in the calculation and the resultant 1995/1996 GHR for District 13 was 40,000 lbs whole weight. In 1996/1997 Section 13-C was allocated a GHR of 25,000 lbs whole weight and Sections 13-A and 13-B together were allocated 15,000 lbs whole weight consistent with historical harvests from each area. The GHR for 13-C was increased to 30,000 lbs for the 2000/2001 fishing season as a result of using a more appropriate conversion factor of tail weight to whole weight. This change did not result in any real change to the amount of shrimp available for harvest in 13-C. In the Hoonah Sound area of Section 13-C, there is a significant but unaccounted subsistence harvest that occurs year round.

Since the establishment of a GHR, the harvest and the number of vessels participating in the Section 13-C fishery has remained relatively stable. However, with increased value and management to limit harvest to the upper end of the GHR, the fishery has greatly intensified resulting in shorter and shorter seasons. For the past four seasons the 13-C fishery has been managed by conducting an over-flight shortly after the fishery opens to determine the effort level and set distribution, followed by on-the-grounds monitoring and skipper interviews to determine catch rates and to collect catch samples. During the 2003/2004 fishing season, 18 vessels harvested 42,308 lbs whole weight shrimp and the fishery was open only five days. This harvest

exceeded the 30,000-pound GHR by 40% and was higher than the 2002/2003 season harvest of 38,340 lbs also taken in a 5-day fishery. The Section 13-C GHL for the 2004/2005 season increased 40% from the 2003–2004 season to 42,000 lbs of spot shrimp. This increase in GHL was based on positive trends in both fishery-dependent and fishery-independent data sources. The 2004/2005 harvest was 34,270 lbs of shrimp, which was taken in 5 days. The GHL for 13-C was not achieved during the 2004/2005 due to inclement weather on the day of the closure forcing fishermen to quit before the closure time. Both survey and sampling data with good sample sizes are available for this section and both indicate a declining shrimp size; however, fishery catch rate remains strong. Thus, stock strength is considered moderate.

As a general policy the department has recommended that either increases or decreases in GHL's remain in place for at least three seasons before consideration of further changes.

The 2005/2006 season for Section 13-C will be the second season with the newly established 42,000 lbs GHL.

Shrimpers can expect the 2005/2006 season to last approximately five days, similar to last season. Department managers will make a field announcement of closure time over the VHF radio. The department attempts to give as much notice as possible before a closure but closure announcements may provide as little as 24-hour notice. Catcher-processors will be exempt from weekly reporting requirements for this fishery due to the short duration of the Section 13-C fishery.

Sections 13-A and 13-B

The pattern of fishery development in Sections 13-A and 13-B was similar to that of Section 13-C. The first reported commercial harvest of pot shrimp occurred during the 1978/1979 fishing season and harvests remained below 5,000 lbs whole weight through the 1989/1990 fishing season. From the 1990/1991 through the 2001/2002 fishing season, harvests have ranged from 9,500 lbs to 30,000 lbs, averaging 16,300 lbs whole weight. A GHR of 15,000 lbs whole weight has been established for the Section 13-A and Section 13-B fishery since the 1996/1997 fishing season. Since the establishment of the GHR for Section 13-A and Section 13-B, the fishery has shown a trend in season length opposite to the more productive areas in the region. During the first season the GHR was in place, the season lasted 56 days, the following season lasted 69 days, and the past five seasons have remained open until the regulatory closure of February 28 or 151 days. During each of the past four seasons around 15,000 lbs whole weight have been harvested. With demand for product currently at high levels, this trend is indicative of generally low productivity of shrimp in the outer coastal areas. Almost all of the harvest comes from the bays and inlets and the department is concerned that localized depletion may be occurring in some areas.

During the 2003/2004 season, 14,008 lbs, whole weight, of shrimp were landed by eleven vessels and the fishery remained open until February 28, 2004. The 2004/2005 season lasted 65 days during which 18,666 lbs were harvested. This was the shortest season since 1996. Four of the previous five seasons remained open until the winter season closure on February 28 or 152 days. There is no survey and has been very limited biological sampling of shrimp from Sections 13-A/B. However, fishery performance data suggests that the stock strength is moderate. Since most of the harvest is generally from a few specific bays on the West Coast of Baranof Island, localized depletion effects are of concern but not substantiated.

The GHL for Sections 13-A and 13-B 2005/2006 will remain at 15,000 lbs of spot shrimp. For the 2005/2006 fishing season, harvesters can expect a season length similar to the 2004/2005 fishing season. Shrimpers are advised that the department will be monitoring catch rates as an indicator of stock strength. If a pattern of reduced catch rates is evident it may be necessary to close the fishery or specific areas before the upper end of the GHR has been harvested to protect the resource from localized depletion as well as to provide for subsistence use of the resource. Catcher-processors participating in the Section 13-A and Section 13-B fishery will be required to report their catch and effort information to the department on a weekly basis beginning October 5, 2005.

JUNEAU/HAINES AREA FISHERIES

INTRODUCTION

The Juneau/Haines fishery management area encompasses Districts 11, 12, 14, 15, and 16. The pot shrimp fishery is managed for spot prawns in Districts 12 and 14, where spot prawns typically comprise over 95% of the shrimp harvest. Districts 15 and 16 are managed for coonstripe shrimp, which typically comprise 75–100% of the harvests in those districts. District 11 is managed for a combined spot and coonstripe GHR since the two species have contributed similar amounts to historical harvests in the district.

District 11

District 11 includes those waters of Stephens Passage north of a line from Point League to Point Hugh, waters of Seymour Canal north of 57°37' N. latitude and waters that are south of the latitude of Little Island Light and east of a line running from Little Island Light to Point Retreat Light. Major shrimp fishing areas in the district include Seymour Canal, Endicott Arm, and Port Snettisham.

Prior to the 1995/1996 season the district was open year-around to commercial pot shrimp fishing. Between the 1990/1991 and 1994/1995 seasons, harvests averaged 2,000 lbs of shrimp. A GHR of 0 to 20,000 lbs of shrimp was established for the district starting with the 1995/1996 fishing season. Effort levels and harvests increased substantially beginning that season. The 1995/1996 season was closed by emergency order in June 1996, and the 1996/1997 season was closed in May 1997 when the GHL was reached. The shortest fishing season in District 11 was the 2004/2005 season when the fishery closed by emergency order on November 12, 2004 with 21,763 lbs of spot and coonstripe shrimp harvested. The Southeast Alaska Pot Shrimp Management Plan passed by the BOF in January 2000 specifies a GHR of 0–20,000 lbs of combined coonstripe and spot shrimp for District 11.

The department intends to manage District 11 for a GHL of 20,000 lbs of whole coonstripe/spot shrimp in the 2005–2006 season.

Weekly catch reporting requirements for catcher-processors will be in place for the entire season.

District 12

District 12 includes those waters of Lynn Canal and Chatham Strait south of the latitude of Little Island Light, north of the latitude of Point Gardner, west of a line running from Little Island Light to Point Retreat, east of a line running from Point Couverden to Point Augusta, and east of a line running from Point Hayes to Point Thatcher. The district crosses management areas, with those waters along the western shoreline of Chatham Strait south of Point Hayes being located in

the Sitka management area. Because most of the harvest occurs in the Juneau portion of the district, District 12 is managed by the ADF&G Juneau area office with assistance from the Sitka office as needed.

Prior to the 1995/1996 season, the district was open year-around to pot shrimping. GHR was established at 0–20,000 lbs for the district starting with the 1995/1996 fishing season. Annual catches during the 1990/1991 to 1993/1994 seasons averaged 22,400 lbs, 93% of which was spot shrimp. The harvest increased dramatically to 58,900 lbs during the 1994/1995 season when a floating processor operated in the district. The season steadily shortened from 127 days during the 1995/1996 season to 7 days for the 2000/2001 season.

Since the 2001/2002 season, District 12 has been managed as two separate fisheries. Prior to this season, effort continued to concentrate in Tenakee Inlet accelerating the pace of the fishery. During the 2000/2001 season, 100% of the District 12 20,000 pound GHR was taken from the waters of Tenakee Inlet in just 7 days, forgoing known opportunity existing in the remainder of the district. For the 2001/2002 season, a 20,000 pound GHR for Tenakee Inlet was established, and a 15,000 pound GHR was established for the remainder of the District.

During the 2004–2005 season, Tenakee Inlet closed by emergency order on October 3, 2004, after only three days of fishing with a harvest of 23,279 lbs of spot shrimp. The remainder of District 12 closed by emergency order on October 23, 2004, with a harvest of 17,663 lbs of spot shrimp.

For the 2005/2006 season, the District 12 GHL for Tenakee Inlet will increase 40% to 28,000 lbs of spot shrimp.

The stock appears to be strong with a number of positive trends in the fishery. In recent years, the catch per pot lift has increased throughout the season, the catch per pot lift has been increasing on an annual basis, the season length has been decreasing with harvest consistently exceeding the 20,000 lb GHL, survey data indicates an increase in the average carapace length, and the harvest has come mainly from one of the four shrimp producing subdistricts in Tenakee Inlet. The department will manage the remainder of District 12 for the upper end of the 15,000 pound spot shrimp GHR. Weekly catch reporting requirements for catcher-processors will be in place for the entire season.

Due to the rapidity of the Tenakee Inlet fishery, Alaska Department of Fish and Game will monitor catch and effort levels and announce the closure on the grounds. The department anticipates the pace of the fishery in Tenakee Inlet will be similar to the last three seasons when the fishery lasted between 3 and 6 days. Catcher-processor weekly call-in requirements will be waived for the Tenakee fishery.

District 14

District 14 includes those waters of Icy Strait west of a line from the southernmost tip of Point Couverden to Point Augusta Light, east of a line running from the southernmost tip of Cape Spencer through Yakobi Rock, and ending at Yakobi Island, and waters that are north of a line running from the northernmost point of Soapstone Point to the westernmost point of Column Point. Federal regulations prohibit all shrimp fishing in those waters of Glacier Bay proper (north of a line from Point Carolus to Point Gustavus).

The District 14 fishery had small, sporadic effort until the 1994/1995 season. With an increase in effort between the 1994/1995 and the 1999/2000 seasons, spot shrimp harvests in the district increased to average just over 7,000 lbs annually. Since the 2000/2001 season, with additional effort and efficiency, the average harvest in District 14 has increased to 20,500 lbs of spot shrimp. For the 2004/2005 season, District 14 closed by emergency order on December 7, 2004, with a harvest of 21,282 lbs of spot shrimp. It is expected the season length will continue to shorten in future fisheries.

The department will manage District 14 for a GHL of 20,000 lbs whole spot shrimp for the 2005/2006 season.

Weekly catch reporting requirements for catcher-processors will be in place for the entire season.

District 15

District 15 includes those waters of Lynn Canal north of the latitude of Little Island Light. The District 15 pot shrimp fishery is managed out of the Haines area office. The majority of the pot shrimp harvest in Lynn Canal is composed of coonstripe shrimp. Harvest areas include Lutak Inlet, Chilkoot Inlet, Taiya Inlet, and Chilkat Inlet.

Prior to the 1996/1997 season the district was open year-around to commercial pot shrimp fishing. The average harvest between the 1990/1991–1994/1995 seasons was 3,200 lbs, 75% of which was coonstripe shrimp. A 0 to 20,000 pound GHR was established for the district starting with the 1995/1996 fishing season. Effort and harvests have rapidly increased from the 1996/1997 season through the 2002/2003 season, averaging over 20,000 lbs, 99% of which was coonstripe shrimp. The fishery has closed early by emergency order during the 1995/1996 through the 2002/2003 seasons. Harvests of shrimp from catcher-processors have increased during these years. Harvests from catcher-processors have made up over 50% of the total harvest during these years. The 2003/2004 and 2004/2005 season closed at the end of the regulatory season on July 31, with a harvest of 6,900 lbs and 4,838 lbs of shrimp, respectively. Lutak Inlet was not opened to commercial shrimp fishing north of the latitude of Tanini Point during the spring/summer fishery in 2004 and Lutak Inlet was closed north of a line from Tanini Point to Taiya Point during the 2005 spring/summer fishery. This action was based on;

1. Catch rate (CPUE) and carapace length have been in decline since the 2002/2003 season in statistical areas 115-33 (Lutak Inlet) and upper 115-34 (upper Taiya Inlet).
2. Very little effort observed in Lutak Inlet beginning in 2003/2004 season.
3. Continued below average catch rates (CPUE) and carapace length during the 2004/05 season.

The Southeast Alaska Pot Shrimp Management Plan specifies a 0 to 20,000 pound GHR for coonstripe shrimp in Lynn Canal.

Alaska Department of Fish and Game will manage District 15 in 2005/2006 for a GHL of 15,000 lbs of coonstripe shrimp.

This limit is established because of the poor fishery performance described above, instead of the upper bound of the GHR of 20,000 lbs of coonstripe shrimp. Catcher-processor reporting requirements will be in place for the entire season for District 15.

The department will continue to monitor catch rates and effort levels in Lutak Inlet and Taiya Inlet and implement actions similar to the 2004 and 2005 spring/summer opening if catch rates (CPUE) and average weight and carapace length of shrimp continue to indicate a downward trend.

District 16

District 16 includes those waters that are north of a line running west from the southernmost tip of Cape Spencer and south of a line running southwest from the westernmost tip of Cape Fairweather. The offshore area of District 16 includes the waters of the EEZ. The major shrimp fishing area in District 16 is Lituya Bay and coonstripe shrimp typically dominate the harvest.

Shrimp harvests in District 16 averaged 2,900 lbs during the year-around seasons between 1990/1991–1994/1995, with spot shrimp comprising 58% of the harvest. The 0 to 20,000 pound GHR for coonstripe shrimp was established for the district starting with the 1995/1996 fishing season. Coonstripe shrimp harvests in the district appeared to be stable from 1996/1997 through 2001/2002 with an average harvest of 17,000 lbs. Season length declined during this period with constant effort and a relatively stable harvest level. Following the 2001/2002 season, the trend for this population appears to be declining. In 2004/2005, the GHL was reduced to 15,000 lbs of coonstripe shrimp due to steadily decreasing harvest and CPUE levels, and increasing season length with stable effort levels. Since the 1996/1997 season the entire harvest has come from one small bay in the district. The District 16 harvest for the 2004/2005 season is confidential, but was significantly below all harvests since the 1996/1997 season. District 16 was open for the summer season in 2005 with Lituya Bay closed due to interest in offshore grounds, but no effort was reported. Because of the significant drop in harvest level and no positive trends in the fishery,

District 16 will be closed for the 2005/2006 season.

POT SHRIMP RESEARCH

The pot shrimp fishery for spot and coonstripe shrimp in Southeast Alaska has seen a 10-fold increase in participating vessels since 1960 and associated increases in harvest levels and fishery intensity. This has led to effort restrictions and to season length reductions, including limited entry in 1996. It became clear that in order to provide adequate information to manage for sustained harvest, a program of monitoring and sampling of commercial harvests and fishery independent surveys was needed. Thus, over the past 8 years a diverse program of stock assessment information collection has been developed. Dockside samples are collected in ports of Ketchikan, Wrangell, Sitka, Petersburg, Haines, and Juneau. Observers have sampled aboard vessels in important commercial Districts 1 and 2. Inseason management census have been conducted on the grounds in order to sample commercial catches, determine effort levels and catch rates, and monitor progress towards the GHL thus providing timely closures. Most importantly, fishery independent surveys have been developed. As this latter tool is the most representative and consistently collected information available for assessment of stock status, we will describe some of the results here.

ADF&G initiated the survey program in 1996 with objectives of obtaining an index of abundance, size composition, sex ratios, and size at first spawning of spot and coonstripe shrimp in each district surveyed. The first survey, with the objective of testing methods and protocols, was conducted in 1996 in Ernest Sound (District 7). A variety of setting styles, pot types, and mesh sizes were tested. These included singly set pyramid pots with a 4 by 4 foot base, and two

types of longlined cone pots; one 42 inches in diameter with 1 1/8– inch mesh and four tunnels, the other 42 inches in diameter with 1 ¾–inch mesh and three tunnels. The large, singly set pyramid pots were time-consuming to set and retrieve and did not fish well. The result was that fewer pots could be fished. The longlined cone pots proved easier to set and retrieve. Mesh size comparisons indicated that conical pots with 1 ¾–inch mesh also provided the greatest power to detect differences in the relative abundance of commercially recruited shrimp. In order to facilitate comparison with commercial gear, a spacing of 10 fathoms between longlined pots was established. Based on comparisons of catch rates, this pot spacing seemed to be adequate to minimize effects of adjacent pots attracting shrimp from one another, thus providing discrete samples of shrimp within the fished habitat for any given pot within a string.

The preseason survey program was subsequently expanded, first to the Cordova Bay area (Section 3-A) in 1997, followed by Hoonah Sound (Section 13-C) beginning in 1999 and Tenakee Inlet (District 12) in 2000. Survey effort distribution is described in Table 5.

In order to minimize variability in catch rates and provide more accuracy when conducting analyses, index set locations and standardized methods were established; these began in 1998 for District 3, in 1999 for District 7 and 13, and in 2000 in District 12. Locations of statistical areas of Districts 3, (Section 3-A), 7 (Ernest Sound), 12 (Tenakee Inlet) and Section 13-C (Hoonah Sound) in which standardized pot shrimp surveys have been conducted in Southeast Alaska are shown in Figure 3.

Postseason surveys were initiated following the 1998 fishery for District 3 and in 2001 for District 7. The primary objective of the postseason surveys is to obtain a harvest rate estimate by comparing the ratio of pre to postseason size-specific abundance. While removals by the fishery are quite evident between pre and postseason surveys (Figure 4), interpretation of results collected using this method has been somewhat complicated by shrimp behavior and gear fishing characteristics. Specifically, it appears that size-specific gear selectivity curves for shrimp may be a function of the size composition of shrimp available and appear to be influenced by pot soak times. In other words, abundant smaller shrimp appear to saturate a pot, reducing the catch of larger shrimp captured in pots soaked for short periods, but also may leave pots soaked for longer periods. Thus, before pre and postseason survey information can be used to obtain an accurate harvest rate estimate for shrimp, soak time experiments must be conducted and their results analyzed. This work was conducted during the 2001 and 2002 postseason surveys of District 3.

Preseason surveys of Districts 3, 7, 12, and 13 are planned for September 2005, however postseason surveys have been discontinued because of budget constraints. A summary of the catch data collected to date for pre and postseason surveys of Districts 3, 7, 12, and 13 is presented in Tables 5–9. Figures 4–7 show survey trends in spot shrimp size frequency. These results are summarized in the following paragraphs.

DISTRICT 3, SECTION 3-A

CATCH RATES

While the 2004 catch rate was lower in terms of both weight and numbers for both mesh sizes than for 2003, and 2002 no consistent long-term trends in catch rate are apparent during preseason surveys in District 3 (Table 6). Preseason survey catch rates were generally greater than postseason survey catch rates in terms of number and weight for small and large mesh pots.

The overall variability around the mean number and weight of shrimp caught was greater for small mesh as compared to large mesh pots. Variability in catch rate in terms of weight was generally greater for post than preseason surveys while the reverse was true of variability in terms of numbers.

SIZE COMPOSITION

The 2004 mean carapace length in pre and postseason surveys is below the long-term average for small and large mesh pots in both Nutkwa Inlet (103-23) and Hetta Inlet (103-25) (Table 7). The L50% or length at which half of the shrimp have transitioned from male to female is 37 – 39 mm CL in this district (Love and Bishop 2005).

Over the period 1998 – 2004 the contribution of the 41 – 45 mm female size modes has diminished (Figures 4 and 5). This is particularly apparent in Subdistrict 103-25 which has historically had a larger size distribution and has a more complete time series of information. As a result, the size composition of the survey catch in both areas is becoming more unimodal and the relative catch of smaller size classes has increased resulting in a shift of the mode to a smaller size. This is particularly evident in small mesh pots. Preseason spot shrimp survey catches from 1998 to 2004 consisted of more large shrimp than postseason (Figures 4 and 5). However, the catch rate of small shrimp post season increased relative to preseason in some cases. This is likely a result of increased postseason catchability following the removal of large shrimp. This observation suggests that the multi-year trend of increases in catches of small shrimp is not due to a recruitment event but instead a result of increases in their catchability as the abundance of larger year classes of female shrimp declines.

DISTRICT 7

CATCH RATES

There are no consistent long-term trends in catch rates evident for preseason surveys in District 7 (Table 8). Postseason surveys in District 7 were conducted during 2001 and 2002. Postseason mean catch rates, district-wide for all years of the survey, were approximately half what was caught during preseason surveys by both weight and number. Variability in catch rates was also slightly higher for preseason surveys as compared to postseason by both weight and number (Table 8). Mean catch and variability about the mean by weight and number was very similar between 107-10 and 107-20 during 2004 (Table 8).

SIZE COMPOSITION

Spot shrimp carapace length is slightly below the long-term average in Subdistrict 107-20, but very near average in Subdistrict 107-10 (Table 9). There are no observable consistent trends. Average spot shrimp carapace lengths in District 7 are substantially higher than in District 3. The L50% is 42 to 43.5 mm CL in this district (Love and Bishop 2005) so most shrimp above this size are female.

Only in Subdistrict 107-20 of District 7 are sample sizes and survey history sufficient to permit detection of size trends. As in District 3, these length frequencies show a trend of increasing predominance of smaller size classes, and a tendency for the size distribution to become increasingly unimodal as the contribution of larger female size classes diminishes (Figure 6).

DISTRICT 12, TENAKEE INLET

CATCH RATES

Survey catch rates in District 12 are well above average in terms of both numbers and weight and there is a consistent trend of increasing catch rate for both mesh sizes over the period 2000–2004 (Table 10). Small mesh pots caught more than large mesh pots in terms of both weight and numbers. No postseason surveys have been conducted in District 12. The variability in catch rate has increased over the survey period and small mesh pots are slightly more variable than large mesh pots in terms of numbers.

SIZE COMPOSITION

Spot shrimp average carapace length in District 12 from the 2004 survey has increased and is very similar to the long-term average in most subdistricts for both mesh sizes (Table 11). The L50% is 43 to 44 mm CL in this district (Love and Bishop 2005).

In Prince William Sound, average spot shrimp growth between the size of 28.5 and 42.5 mm CL averages 3.2 mm CL per year (Kimker et al. 1996). Thus, examination of the length frequency histograms indicates that the strong size class of small (35 mm) male shrimp present in the 2003 survey grew and accounted for much of the 2004 survey catch (Figure 7). As in other survey areas, the length frequencies in this area are exhibiting a tendency to become unimodal for both large and small mesh pots but the mode has increased from 2003. Nonetheless, the contribution of larger, female size classes has decreased for this area also.

DISTRICT 13, SECTION 13-C

CATCH RATES

Survey catch rates by weight and number decreased slightly in terms of both weight and number during the 2004 survey but were still above average (Table 10). No postseason surveys have been conducted in District 13.

SIZE COMPOSITION

Carapace length measured during the 2004 survey was slightly below average for all subdistricts and mesh sizes (Table 12). Section 13-C Spot shrimp are slightly larger on average than District 3 and similar in size to Districts 7 and 12. The L50% is 41 to 43.5 mm CL in this district (Love and Bishop 2005).

Length frequency histograms for 1999–2004 preseason surveys in District 13 show a trend of slight decreasing contribution of the larger female size classes and a tendency to become more unimodal (Figure 8) however there has not been a shift of the mode to a dramatically smaller size as observed in District 3.

RESEARCH SUMMARY

Stock assessment surveys are one piece of the picture considered in Southeast Alaska Pot Shrimp Management. Commercial harvest, and dockside and onboard shrimp sampling data are also used in setting annual GHLs. However, given the proven ability of fishers to maintain stable catch rates while population sizes are decreasing (Orensanz et al. 1998), fishery independent surveys provide an important additional view of stock status. As only a portion of the important

commercial pot shrimp grounds are currently surveyed, continuing to improve the usefulness of sampling and fishery data must also be a focus.

Preliminary analyses suggest the possibility of recruitment and growth over fishing (Boutillier and Bond 1999) in Districts 3 and 7, and healthy populations in Districts 12 and District 13. It is recommended that the GHL reduction for Districts 3 and 7 implemented in 2004 be continued for at least an additional 2 seasons, that the District 12, Tenakee Inlet GHL be increased, and that the increase for District 13, Section 13-C be continued. Management recommendations for unsurveyed districts, which are made above, are the result of thorough examination of fishery, port sampling, and management cruise data. A priority for the 2006 season will be determination of a 'spawner index' to permit better detection of trends in the survey catch rate of females.

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TABLES AND FIGURES

Table 1.–Historical harvest of spot shrimp (whole weight) in the Southeast Alaska commercial pot shrimp fishery by District/Section, 1971-2005.

Season	101	102	3-A	3-B/C	104	105	106	107	108
Oct 1971-Sep 1972	1,408							212	
Oct 1972-Sep 1973								625	
Oct 1973-Sep 1974		7,274							
Oct 1974-Sep 1975	2,692	1,250							
Oct 1975-Sep 1976	6,346	11,478	490						
Oct 1976-Sep 1977	1,940	9,582		926				3,268	
Oct 1977-Sep 1978	4,897	14,141				732		3,815	
Oct 1978-Sep 1979	4,163	6,703	1,570		1,280			2,167	
Oct 1979-Sep 1980	15,079	12,014	6,289					16,622	227
Oct 1980-Sep 1981	15,210	13,821	24,552	435	368		493	16,637	358
Oct 1981-Sep 1982	25,278	17,531	53,101	3,574			7,168	14,943	1,583
Oct 1982-Sep 1983	28,778	34,720	83,885	565	772		7,464	71,384	2,657
Oct 1983-Sep 1984	40,550	22,427	30,192	6,191	480	1,050	7,589	82,364	15,062
Oct 1984-Sep 1985	68,871	50,421	17,985	556	34	244	6,133	80,020	8,582
Oct 1985-Sep 1986	35,282	37,105	70,936	212	878	104	5,373	21,212	1,702
Oct 1986-Sep 1987	60,044	136,456	45,624	3,243		1,132	1,379	37,996	1,266
Oct 1987-Sep 1988	116,204	79,769	27,432	30	100	1,686	483	49,094	2,357
Oct 1988-Sep 1989	196,834	62,683	15,029	4,664	714	3,876	6,742	60,009	796
Oct 1989-Sep 1990	151,758	68,515	19,850	6,972	2,696		7,290	42,020	17,272
Oct 1990-Sep 1991	178,471	78,428	49,214	11,744	11,288		9,038	93,881	12,654
Oct 1991-Sep 1992	161,643	81,481	269,507	4,828	438	706	19,484	112,191	13,482
Oct 1992-Sep 1993	157,056	70,100	218,043	3,244	4,674	846	23,830	57,822	17,884
Oct 1993-Sep 1994	146,094	119,300	272,916	14,716	5,398	1,884	39,044	105,566	19,141
Oct 1994-Sep 1995	156,742	76,498	214,955	16,515	1,002	21,628	129,327	169,926	23,211
Oct 1995-Sep 1996	173,137	89,724	196,607	48,493	23,135	34,614	73,577	100,675	8,074
Oct 1996-Sep 1997	165,991	82,303	232,547	48,100	20,513	23,174	77,642	102,594	25,294
Oct 1997-Sep 1998	138,759	83,000	222,132	5,878	10,217	5,931	70,182	96,932	17,233
Oct 1998-Sep 1999	158,348	76,207	205,818	7,960	6,071	5,471	64,010	63,870	15,797
Oct 1999-Sep 2000	154,980	76,091	226,900	7,076	16,612	11,719	67,005	75,868	20,816
Oct 2000-Sep 2001	159,316	121,953	266,837	36,508	20,343	13,791	77,318	100,768	21,708
Oct 2001-Sep 2002	169,312	103,774	255,370	62,721	10,337	7,857	70,919	103,328	17,464
Oct 2002-Sep 2003	152,022	89,581	264,653	53,553	22,153	19,049	68,293	99,250	22,105
Oct 2003-Sep 2004	170,113	96,687	284,808	64,839	20,364	15,667	69,808	104,394	20,867
Oct 2004-Sep 2005	169,476	88,524	256,392	46,497	19,296	21,498	65,487	80,072	18,935
Average 1994/95–2004/05	**161,145**	**90,784**	**241,206**	**38,163**	**16,904**	**15,877**	**70,424**	**92,775**	**18,829**

-continued-

Table 1.–Page 2 of 2.

Season	109	110	111	Tenakee	112	13-A/B	13-C	114	115	116	Total
Oct 1971–Sep 1972											1,620
Oct 1972–Sep 1973											625
Oct 1973–Sep 1974											7,274
Oct 1974–Sep 1975											3,942
Oct 1975–Sep 1976											18,314
Oct 1976–Sep 1977											15,716
Oct 1977–Sep 1978							347				23,932
Oct 1978–Sep 1979					1,166	50	63				17,162
Oct 1979–Sep 1980						8	645	270			51,154
Oct 1980–Sep 1981	4,292	2,148			380	98	414				79,206
Oct 1981–Sep 1982	4,309	6	1,004		2,250	1,388	12,730	1,716		2,466	149,047
Oct 1982–Sep 1983	9,386	3,708			440	4,817	10,011	108		450	259,145
Oct 1983–Sep 1984	1,643	14,188	66		3,070	674	19,389			596	245,531
Oct 1984–Sep 1985	2,351	33,342	1,129		1,920	120	16,816	328		3,640	292,492
Oct 1985–Sep 1986	1,643	13,400	255		371		10,953	97	293		199,816
Oct 1986–Sep 1987	4,962	31,974	2,282	1,574	1,746		10,825	159	1,212	3,530	345,404
Oct 1987–Sep 1988	18,234	28,587	2,342	8,071	5,270		21,170	1,716	34	98	362,677
Oct 1988–Sep 1989	6,616	36,302	618	6,122	4,626	3,878	22,417	12			431,938
Oct 1989–Sep 1990	310	47,875	564	1,864	4,710	3,180	26,873			1,052	402,801
Oct 1990–Sep 1991	5,234	42,439		7,004	8,714	11,048	28,560			504	548,221
Oct 1991–Sep 1992	2,866	48,427	1,901	9,804	2,450	23,614	36,417		2,501	2,918	794,658
Oct 1992–Sep 1993	8,893	29,456	8	21,770	4,253	9,506	30,901		834	240	659,360
Oct 1993–Sep 1994	23,702	35,229	1,920	23,516	6,029	20,705	38,938		92	1,432	875,622
Oct 1994–Sep 1995	11,557	85,149	2,403	45,939	12,437	22,173	79,924	2,267	301	3,082	1,075,036
Oct 1995–Sep 1996	25,485	42,180	11,116	25,749	2,158	9,849	38,195	17,154	491	2,664	923,077
Oct 1996–Sep 1997	19,500	51,889	8,919	16,028	12,366	13,156	32,607	4,309	384	3,917	941,233
Oct 1997–Sep 1998	20,836	37,474	7,577	20,291	5,131	12,843	27,336	12,191	125	3,390	797,458
Oct 1998–Sep 1999	17,781	30,182	4,138	28,583	1,390	13,924	50,391	6,651	54	2,169	758,815
Oct 1999–Sep 2000	18,284	36,976	3,091	21,850	1,589	14,114	30,569	240		11,706	795,486
Oct 2000–Sep 2001	20,765	46,099	17,051	25,613		12,914	33,001	17,639	97	3,965	995,686
Oct 2001–Sep 2002	18,286	38,156	14,985	19,777	14,175	13,878	25,822	25,004	24	1,464	972,653
Oct 2002–Sep 2003	15,713	54,706	19,126	21,558	16,904	14,066	38,318	19,903	2	6,763	997,718
Oct 2003–Sep 2004	17,904	61,631	18,852	30,494	19,605	13,606	42,240	19,517	43	1,763	1,073,202
Oct 2004–Sep 2005	17,911	51,592	20,833	23,729	17,627	18,666	34,270	21,282		2,631	974,718
Average 1994/95 – 2004/05	**18,547**	**48,730**	**11,645**	**25,419**	**10,338**	**14,472**	**39,334**	**13,287**	**169**	**3,956**	**936,826**

Table 2.–Historical harvest of coonstripe shrimp (whole weight) in the Southeast Alaska commercial pot shrimp fishery by District/Section, 1975-2005.

Season	101	102	3-A	3-B/C	104	105	106	107	108
Oct 1975–Sep 1976		35							
Oct 1979–Sep 1980								168	257
Oct 1980–Sep 1981		900			54		5		
Oct 1981–Sep 1982	1,050						2,148	554	427
Oct 1982–Sep 1983	1,550		60				305	2,494	19
Oct 1983–Sep 1984	240	39	130	38			139	4,648	851
Oct 1984–Sep 1985	185	81			50		28	5,261	134
Oct 1985–Sep 1986	1,366	436					668	1,829	1,040
Oct 1986–Sep 1987	865	840					792	2,619	744
Oct 1987–Sep 1988	2,360	186					94	1,104	478
Oct 1988–Sep 1989	3,892	92			20		1,252	1,540	56
Oct 1989–Sep 1990	3,521	110		114			1,094	2,176	1,426
Oct 1990–Sep 1991	2,742	456	12	796	76		1,206	3,706	914
Oct 1991–Sep 1992	6,977	2,096	10	96			1,673	11,233	1,807
Oct 1992–Sep 1993	3,042			602			524	6,414	2,183
Oct 1993–Sep 1994	1,839	1,314		1,000			2,164	14,759	6,032
Oct 1994–Sep 1995	3,163	475	56	706			921	29,630	7,217
Oct 1995–Sep 1996	6,126	807		40	148	278	2,216	18,589	1,110
Oct 1996–Sep 1997	5,802	200		317	300	1,066	1,381	25,652	4,465
Oct 1997–Sep 1998	3,925	8					2,373	30,268	2,776
Oct 1998–Sep 1999	4,842	317	141	12		25	2,914	35,975	4,101
Oct 1999–Sep 2000	3,609		5	90	1	120	3,069	24,673	2,687
Oct 2000–Sep 2001	1,961	10				540	2,124	14,881	1,828
Oct 2001–Sep 2002	4,904			230			116	24,804	2,111
Oct 2002–Sep 2003	5,371			621		514	38	14,262	2,223
Oct 2003– Sep 2004	12,260	24	60	370		4	218	17,268	1,867
Oct 2004– Sep 2005	10,242	266				86	37	10,899	913
Average 1994/95–2004/05	**5,655**	**263**	**66**	**298**	**150**	**329**	**1,401**	**22,446**	**2,845**

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Table 2.–Page 2 of 2.

Season	109	110	111	Tenakee	112	13-A/B	13-C	114	115	116	Total
Oct 1975–Sep 1976											35
Oct 1979–Sep 1980											425
Oct 1980–Sep 1981	533										1,492
Oct 1981–Sep 1982	600	6			260		70	80		2,220	7,415
Oct 1982–Sep 1983	226	172								1,850	6,676
Oct 1983–Sep 1984	16				200		1,007			3,364	10,672
Oct 1984–Sep 1985		150					109	182			6,180
Oct 1985–Sep 1986	34		58				80			3,336	8,847
Oct 1986–Sep 1987	190	440	25	410			206			770	7,901
Oct 1987–Sep 1988	534	434		509			320	332			6,351
Oct 1988–Sep 1989		157				16	527			918	8,470
Oct 1989–Sep 1990	14	29	1,828			251	218				10,781
Oct 1990–Sep 1991		297	1,546		1,112	70	171		664	333	14,101
Oct 1991–Sep 1992	26	1,184				1,068	64		759	1,480	28,473
Oct 1992–Sep 1993	700	1,237	1,250	568		40			378	122	17,060
Oct 1993–Sep 1994	3,273	854	200	3,704	164	1,934	942	378	1,660	1,748	41,965
Oct 1994–Sep 1995	525	3,333	669	476	40	7,952	178	96	8,609	2,795	66,841
Oct 1995–Sep 1996	444	6,662	12,214	150		1,188		348	9,519	5,012	64,851
Oct 1996–Sep 1997	10	1,130	11,580	221		2,964	968	2	21,772	16,008	93,838
Oct 1997–Sep 1998	185	2,125	10,307	77		804	84	55	21,833	17,334	92,154
Oct 1998–Sep 1999	275	1,607	4,791	116		1,107	214		22,704	15,415	94,556
Oct 1999–Sep 2000		945	5,057	4		891	28		24,668	7,327	73,174
Oct 2000–Sep 2001	66	145	2,792	14		636			24,119	17,867	66,983
Oct 2001–Sep 2002	196	286	8,366			450	54	16	18,918	18,490	78,941
Oct 2002–Sep 2003	222	4	334		144	802	22		19,559	16,504	60,620
Oct 2003–Sep 2004	304	22	3,162			402	68		6,873	14,476	57,378
Oct 2004–Sep 2005	0	0	930			0	0			6,612	40,994
Average 1994/95–2004/05	**223**	**1,478**	**5,473**	**151**	**92**	**1,563**	**180**	**103**	**17,857**	**12,531**	**71,848**

Table 3.–Historical seasonal closure dates and days fished by District/Section for the Southeast Alaska commercial pot shrimp fishery, 1995/1996 through 2004/2005.

Area	2004/2005 Closure Date	Days Fished	2003/2004 Closure Date	Days Fished	2002/03 Closure Date	Days Fished	2001/02 Closure Date[d]	Days Fished	2000/01 Closure Date[a]	Days Fished	1999/00 Closure Date[b]	Days Fished	1998/99 Closure Date[c]	Days Fished
1	20 Dec 04	80	19 Nov 03	49	21 Nov 02	52	19 Nov 01	50	10 Nov 00	41	7 Feb 00	130	5 Jan 99	97
2	14 Oct 04	13	22 Oct 03	21	30 Oct 02	30	28 Oct 01	28	29 Oct 00	29	3 Nov 99	34	5 Jan 99	97
3-A	21 Oct 04	20	17 Nov 03	47	9 Nov 02	41	28 Oct 01	28	10 Oct 00; 4 Nov 00	14	12 Oct 99	12	Oct 9 98, Oct 26-30 98	14
3-B/C	15 Oct 04	14	15 Oct 03	14	21 Oct 02	21	15 Nov 01	46	15 Oct 00	15	-	-	-	-
4	28 Feb 05	150	16 Jul 04	213	28 Feb 03	151	31 Jul 02	229	16 Jul 01	213	31 Jul 00	230	31 Aug 99	335
5	22 Jul 05	222	31 Jul 04	229	31 Jul 03	228	31 Jul 02	229	31 Jul 01	229	31 Jul 00	230	31 Aug 99	335
6	21 Oct 04	21	24 Oct 03	24	26 Oct 02	26	27 Oct 01	27	11 Nov 00; 17 Dec 00	51	14 Feb 00	137	14 Feb 99	137
7	6 Nov 04	37	21 Jan 04	113	8 Nov 03	39	8 Nov 01, 10 Dec 01[e]	71	3 Nov 00	34	24 Nov 99	55	31 Dec 98	92
8	6 Nov 04	37	18 Oct 03	18	31 Oct 02	31	4 Nov 01	35	23 Oct 00	23	22 Oct 99	22	19 Oct 98; 2 Nov 98; 13 Nov 98[f]	29
9	30 Oct 04	30	24 Oct 03	24	1 Nov 02	32	25 Oct 01	25	1 Nov 00	32	26 Nov 99	57	2 Dec 98	63
10	11 Oct 04	11	12 Oct 03	12	16 Oct 02	16	14 Oct 01	14	26 Oct 00	26	30 Oct 99	30	20 Nov 98	51
11	12 Nov 04	43	17 Nov 03	48	12 Dec 02	73	24 Jan 02	116	10 Feb 01	133	31 Jul 00	230	31 Aug 99	335
Tenakee	3 Oct 04	3	6 Oct 03	37	6 Oct 02	6	6 Oct 01	6	7 Oct 00	7	9 Oct 99	9	15 Oct 98	15
Rest of 12	23 Oct 04	23	6 Nov 03	6	31 Oct 02	31	29 Dec 01	90						
13-C	5 Oct 04	5	5 Oct 03	5	5 Oct 02	5	4 Oct 01	4	5-Oct-00	5	5 Oct 99	5	7 Oct 98	7
13-A/B	28 Feb 04	152	28 Feb 04	152	5 Jan 03	97	28 Feb 02	151	28 Feb 01	151	29 Feb 00	152	28 Feb 99	151
14	7 Dec 04	68	15 Jan 04	107	18 Jan 03	110	27 Jun 02	194	31 Jul 01	229	31 Jul 00	230	31 Aug 99	335
15	30 Jul 05	226	31 Jul 04	230	6 Feb 03	129	28 May 02	163	12 Dec 01	73	10 Jun 00	178	21 May 99	264
16	28 Feb 05	151	28 Feb 04	152	28 Feb 02	151	5 Dec 01	66	20 Nov 01	51	15 Dec 99	76	1 Dec 98	62

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District /Section	1997/98 [c] Closure Date(s)	Days Fished	1996/97 Closure Date	Days Fished	1995/96 Closure Date[f]	Days Fished
1	7 Nov 97	38	6 Nov 96	37	2 Jan 96	94
2	22 Oct 97	22	30 Oct 96	30	10 Jan 96	102
3-A	9 Oct 97	9	14 Oct 96	14	13 Nov 95	44
3-B, C	-	-	-	-	-	-
4	31 Aug 98	335	29 Aug 97	333	8 May 96	220
5	31 Aug 98	335	27 Dec 96	88	13 Mar 96	164
6	3 Nov 97	34	1 Nov 96	32	5 Nov 95	36
7	24 Oct 97	24	20 Oct 96	20	5 Nov 95	36
8	23, 26, 29Oct 97[h]	27	1 Nov 96	32	5 Nov 95	36
9	9 Dec 97	70	27 Dec 96	88	11 Mar 96	162
10	3 Nov 97	34	29 Nov 96	60	6 Jan 96	98
11	31 Aug 98	335	18 May 97	230	23 Jun 96	266
12	31 Oct 97	31	18 Nov 96	49	4 Feb 96	127
13-C	10 Oct 97	10	18 Oct 96	18	16 Jan 96	16[i]
Remainder D13	8 Dec 97	69	25 Nov 96	56	16 Jan 96	16[i]
14	31 Aug 98	335	30 Sep 97	365	30 Sep 96	365
15	26 Jun 98	269	30 Sep 97	365	30 Sep 96	365
16	8 Dec 97	69	26 Feb 97	149	30 Sep 96	365

[a] During the 2000/2001 season District 6 was open from October 1 to November 14 and December 9 to 17. Section 3-A was open from October 1 to 10 and from November 1 to 4.

[b] During the 1999/2000 season Districts 4, 5, 11, 14, and 15 were closed from March 1 through May 14.

[c] During the 1997/1998 season District 8 was open October 1 to 20 and October 26 to 29. During the 1997/1998 shrimp pot fishery, gear operation was restricted to daylight hours only, 8 a.m. to 4 p.m. Several districts were closed August 31, 1998 for re-registration and issuing of pot tags.

[d] During the 2001/2002 season, District 7 was open October 1 to November 8 and November 25 to December 10.

[e] During the 1998/1999 season District 8 closed October 19, reopened October 30 through November 2, and then reopened from November 8 through 13. During the 1998/1999 season Districts 4, 5, 11, 14, and 15 were closed from March 1 through April 30.

[f] During the 1995/1996 season, District 13 did not open October 1, 1995, but opened January 1, 1996.

Table 4.–Guideline harvest levels for the 2005/2006 Southeast Alaska commercial pot shrimp fishery by District or Section and GHLs for the 2004/2005 season compared to actual harvests.

District/Section	Guideline Harvest Level 2005/2006 (whole pounds)	Guideline Harvest Level 2004/2005 (whole pounds)	Actual Harvest in 2004/2005 Season
1	164,000	164,000	169,476
2	86,000	86,000	88,524
3-A	198,000	198,000	256,392
3-B/C	50,000	50,000	46,497
4	20,000	20,000	19,296
5	20,000	20,000	21,498
6	**82,000**	68,000	69,808
7	78,000	78,000	80,072
8	20,000	20,000	18,935
9	18,000	18,000	17,911
10	48,000	48,000	51,592
11	20,000	20,000	21,931[a]
Tenakee Inlet	**28,000**	20,000	23,729
12 (other than Tenakee Inlet)	15,000	15,000	17,627
13-A/B	15,000	15,000	18,666
13-C	42,000	42,000	34,270
14	20,000	20,000	21,175
15	**15,000**	20,000	19,559[b]
16	**Closed**	15,000	6,612[b]
Total	**937,000**	**1,010,000**	**1,027,350**

Note: Spot shrimp only unless otherwise noted.

[a] Spot and coonstripe shrimp combined.

[b] Coonstripe shrimp only.

Table 5.–Total number of longlined cone pots fished by district, subdistrict, and year of survey during 1996, and 1997 preseason pilot surveys, and 1998–2004 preseason and 1998–2002 postseason surveys.

			Year									Grand
Project	**District**	**Subdistrict**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**Total**
Preseason	3	103-21		165								165
		103-23		150	120	120	120	120	30		120	780
		103-25		270	120	120	120	120	30	120	120	1,020
		103-30		165								165
		103-40		180								180
	District 3 Total			**930**	**240**	**240**	**240**	**240**	**60**	**120**	**240**	**2,310**
	7	107-10	50							120	120	290
		107-20	112			180	180	110	150	150	120	1,002
		107-30					30		30			60
		107-40	30			30	30		30			120
	District 7 Total		**192**			**210**	**240**	**110**	**210**	**270**	**240**	**1,472**
	12	112-41					60		40	40	30	170
		112-42					20		20	20	40	100
		112-45					120		132	130	150	532
		112-48					60		57	60	60	237
	District 12 Total						**260**		**249**	**250**	**280**	**1,039**
		113-55				60	80		70	70	80	360
	13	113-57				60	70	60	70	70	80	410
		113-58				120	110	60	100	100	110	600
	District 13 Total					**240**	**260**	**120**	**240**	**240**	**270**	**1,370**
Preseason Total			**192**	**930**	**240**	**690**	**1,000**	**470**	**759**	**880**	**1,030**	**6,190**
Postseason	3	103-23				120	120		30			270
		103-25				120	120	119	30			389
	District 3 Total					**240**	**240**	**119**	**60**			**659**
		107-20						120	150			270
	7	107-30						30	30			60
		107-40						60	60			120
	District 7 Total							**210**	**240**			**450**
Postseason Total						**240**	**240**	**329**	**300**			**1,109**
Grand Total			**192**	**930**	**240**	**930**	**1,240**	**799**	**1,059**	**880**	**1,030**	**7,299**

Table 6.–Mean and standard deviation (SD) of soak time, and catch rate in terms of weight and numbers per pot for spot shrimp, and total number of pots sampled for small and large mesh pots in pre- and postseason pot shrimp surveys in District 3, 1997–2004.

Project	Mesh	Year	Avg. Wt., (Kg.)	SD Avg. Wt.	Average Number	SD Avg. Number	Avg. Soak, (Hrs.)	SD Avg. Soak	Number Pots Sampled
Pre	1.125	1997			147.5	91.7	22.2	2.2	106
		1998			196.4	112.0	21.3	3.3	72
		1999			240.0	140.1	22.1	3.9	67
		2000	4.8	4.32	185.6	168.7	22.4	4.2	87
		2001	3.0	4.09	141.3	175.7	21.0	4.3	120
		2002	7.8	2.58	328.8	115.2	25.3	1.3	25
		2003	5.7	2.90	238.6	126.6	25.8	2.1	60
		2004	3.7	3.3	178.4	155.4	19.5	2.4	118
		Avg.	3.1	2.1	207.1	135.7	22.4	3.0	82
	1.75	1997			86.8	72.9	22.2	2.2	200
		1998			135.2	93.8	21.3	3.3	71
		1999			146.3	83.6	22.1	3.9	66
		2000	4.1	4.01	133.2	123.6	22.4	4.2	88
		2001	2.3	2.94	78.3	98.0	20.8	4.1	118
		2002	6.8	2.31	217.8	79.1	25.3	1.3	28
		2003	5.1	2.05	170.8	66.8	25.8	2.1	60
		2004	2.6	2.5	99.8	90.1	19.5	2.4	118
		Avg.	2.6	1.7	133.5	88.5	22.4	2.9	94
Post	1.125	1999			150.4	97.6	20.2	5.7	72
		2000	5.8	3.88	239.6	159	21.4	3.8	73
		2001	3.5	3.51	152.0	152.5	25.4	14.2	141
		2002	4.6	2.01	227.1	105.8	29.4	11.3	40
		Avg.	4.6	3.13	192.3	128.7	24.1	8.8	82
	1.75	1999			99.6	59.5	20.2	6.0	68
		2000	4.4	3.19	146.6	101.0	21.3	3.8	69
		2001	2.8	2.76	93.5	90.9	25.4	14.2	140
		2002	3.1	1.43	120.6	50.9	29.4	11.2	50
		Avg.	3.4	2.46	115.1	75.6	24.1	8.8	82

Table 7.–Mean and standard deviation (SD) of average carapace length (CL) by mesh size in preseason pot shrimp surveys in subdistricts of District 3, 1997–2004.

Mesh size	Subdistrict	Year	Avg. CL (mm.)	SD of Avg. CL
1.125	103-21	1997	34.1	2.8
	103-23	1997	32.4	2.2
		1998	33.7	2.0
		1999	34.6	2.2
		2000	34.3	3.4
		2001	30.8	5.6
		2002	31.7	1.8
		2004	31.0	1.6
		Avg.	32.6	2.7
	103-25	1997	38.5	2.0
		1998	37.0	1.9
		1999	38.3	1.7
		2000	37.0	2.1
		2001	34.3	1.6
		2002	33.8	0.6
		2003	34.6	1.3
		2004	33.7	1.7
		Avg.	35.9	1.6
	103-30	1997	33.4	2.1
	103-40	1997	34.2	1.9
1.75	103-21	1997	37.2	1.9
	103-23	1997	37.0	1.7
		1998	36.9	1.2
		1999	36.8	1.3
		2000	36.4	1.4
		2001	34.7	1.9
		2002	35.9	1.2
		2004	35.0	1.5
		Avg.	36.1	1.5
	103-25	1997	40.3	1.8
		1998	38.7	1.3
		1999	40.0	1.8
		2000	38.2	2.2
		2001	36.3	1.5
		2002	36.8	0.9
		2003	36.6	1.7
		2004	36.6	1.2
		Avg.	37.9	1.6
	103-30	1997	37.0	1.8
	103-40	1997	37.0	2.1

Table 8.–Preseason pot shrimp surveys in sudistricts of District 7, 1996, 1999, and 2000–2004, with mean and standard deviation (SD) of soak time and catch rate in terms of weight and numbers per pot for spot shrimp, and total number of pots sampled by mesh size.

Mesh	Subdistrict	Year	Avg. weight (kg.)	SD Avg. Wt.	Avg. Number	SD Avg. Number	Avg. Soak, (hrs)	SD Avg. Soak	Number Pots Sampled
1.125	107-10	1996			121.9	92.7	18.6	1.6	10
		2003	2.3	1.8	128.5	122.6	19.0	2.8	57
		2004	1.6	1.3	86.0	64.5	19.6	1.9	57
		Avg.	2.0	1.5	112.1	93.3	19.1	2.1	41
	107-20	1996			23.5	20.3	23.7	3.5	39
		1999	0.3	0.4	17.6	20.2	18.0	2.5	59
		2000	0.9	1.0	28.7	31.3	18.5	1.8	86
		2001	2.2	2.1	69.1	81.4	20.4	2.2	59
		2002	1.3	1.9	47.7	90.3	17.9	2.1	75
		2003	1.4	1.7	46.3	62.9	19.3	2.8	72
		2004	1.6	1.6	60.8	65.9	18.0	2.1	54
		Avg.	1.3	1.4	42.0	53.2	19.4	2.4	63
	107-30	2000	1.7	1.6	48.5	49.7	19.3	0.6	15
		2001	0.9	1.4	23.6	38.5	15.5	0.8	15
		2002	1.5	1.1	41.8	31.3	20.3	1.7	15
		Avg.	1.4	1.4	38.0	39.8	18.4	1.0	15.0
	107-40	1996			14.8	11.2	20.9	0.9	4
		1999			13.3	15.7	16.2	0.0	3
		2000	0.2	0.3	4.1	6.1	16.5	0.2	15
		2001	0.4	0.5	6.5	8.5	16.9	0.8	30
		2002	0.1	0.2	1.4	2.6	16.2	0.6	30
		Avg.	0.2	0.3	8.0	8.8	17.3	0.5	16.4
1.75	107-10	1996			60.4	55.0	18.6	1.5	40
		2003	1.2	0.7	45.9	28.8	18.9	2.9	60
		2004	1.0	0.8	32.3	24.5	19.6	1.9	60
		Avg.	1.1	0.8	46.2	36.1	19.0	2.1	53
	107-20	1996			26.7	21.3	21.8	4.6	54
		1999	0.3	0.5	15.3	16.4	18.0	2.5	56
		2000	1.0	1.1	26.0	30.3	18.5	1.8	84
		2001	1.7	1.9	46.3	52.4	20.4	2.2	60
		2002	1.1	1.3	30.2	37.7	17.9	2.1	75
		2003	1.1	1.4	33.0	43.4	19.2	2.7	74
		2004	1.3	1.5	39.6	44.6	17.9	2.1	58
		Avg.	1.1	1.3	31.0	35.2	19.1	2.5	66
	107-30	2000	1.9	1.4	51.1	39.4	19.3	0.6	15
		2001	0.8	0.9	21.7	23.9	15.5	0.8	15
		2002	1.3	0.8	34.4	23.1	20.3	1.7	15
		Avg.	1.3	1.0	35.7	28.8	18.4	1.0	15
	107-40	1996			27.6	45.3	20.9	0.6	15
		1999			8.1	15.1	16.4	0.2	7
		2000	0.3	0.8	7.6	17.8	16.5	0.2	14
		2001	0.3	0.4	5.6	7.2	16.9	0.8	30
		2002	0.1	0.2	2.3	3.5	16.2	0.6	30
		Avg.	0.2	0.5	10.2	17.8	17.4	0.5	19

Table 9.–Preseason pot shrimp surveys in subdistricts of District 7, 1996, 1999, and 2000–2004 with mean and standard deviation (SD) of average carapace length (CL) by mesh size.

Mesh size	Subdistrict	Year	Avg. CL (mm)	SD of Avg. CL
1.125	107-10	1996	32.5	2.9
		2003	30.8	2.5
		2004	31.4	2.5
		Avg.	31.6	2.6
	107-20	1996	38.8	3.6
		1999	35.5	4.1
		2000	37.6	3.6
		2001	39.1	3.2
		2002	37.8	4.2
		2003	37.3	4.6
		2004	36.1	4.6
		Avg.	37.5	4.0
	107-30	2000	38.5	2.9
		2002	39.1	1.6
	107-40	1996	38.5	2.8
		1999	40.5	1.8
		2000	40.2	1.9
		2002	44.3	5.3
		Avg.	40.9	3.0
1.75	107-10	1996	35.8	2.9
		2003	34.7	2.1
		2004	35.9	2.4
		Avg.	35.5	2.5
	107-20	1996	40.2	2.5
		1999	37.1	3.3
		2000	38.6	2.7
		2001	39.9	2.6
		2002	39.6	3.4
		2003	39.4	3.5
		2004	38.1	3.9
		Avg.	39.0	3.1
	107-30	2000	39.0	2.3
		2002	40.1	1.5
	107-40	1996	41.6	2.4
		1999	40.8	6.7
		2000	41.0	2.9
		2002	43.4	4.9
		Avg.	41.7	4.2

Table 10.–Preseason pot shrimp surveys District 12 in 2000, and 2002–2004 and District 13 in 1999–2004, with mean and standard deviation (SD) of soak time and catch rate in terms of weight and numbers per pot for spot shrimp, and total number of pots sampled by mesh size.

District	Mesh	Year	Avg. Wt(kg.)	SD Avg. Wt.	Avg. Number	SD. Avg. Number	Avg. Soak Time (hrs).	SD Avg. Soak	Number Pots Sampled
12	1.125	2000	2.6	2.6	95.9	66.4	20.4	2.7	72
		2002	6.0	3.2	179.8	93.7	19.8	5.5	129
		2003	7.5	3.4	219.3	127.6	17.9	3.2	123
		2004	8.2	4.0	222.6	101.3	19.9	2.5	120
		Avg.	6.1	3.3	179.4	97.3	19.5	3.5	111
	1.75	2000	2.5	2.6	83.7	56.4	20.4	2.7	72
		2002	5.0	3.1	121.4	63.0	19.5	5.5	113
		2003	6.2	3.4	153.5	81.4	18.1	3.3	126
		2004	7.4	4.1	177.6	93.6	19.9	2.5	120
		Avg.	5.3	3.3	134.0	73.6	19.5	3.5	108
13	1.125	1999			85.4	76.8	24.6	10.3	78
		2000	3.7	4.1	97.7	103.3	19.8	1.7	56
		2001	3.5	2.9	91.0	81.3	21.3	3.6	99
		2002	4.3	3.4	146.6	117.5	18.8	3.0	132
		2003	5.1	3.9	183.3	135.5	18.7	3.1	120
		2004	4.6	4.3	160.5	146.5	19.0	2.6	118
		Avg.	3.5	3.1	127.4	110.1	20.4	4.0	101
	1.75	1999			71.5	58.1	25.7	10.8	76
		2000	3.0	3.3	75.2	76.2	19.7	1.7	55
		2001	3.2	2.6	74.3	64.4	21.4	3.6	97
		2002	3.2	2.4	89.0	65.1	18.8	2.9	117
		2003	4.3	3.14	124.7	86.3	18.7	3.1	117
		2004	3.8	3.4	103.5	84.7	19.0	2.7	114
		Avg.	**2.9**	**2.5**	**89.7**	**72.5**	**20.6**	**4.1**	**96**

Table 11.–Preseason pot shrimp surveys subdistricts of District 12, 2000, and 2002–2004 with mean and standard deviation (SD) of average carapace length (CL) by mesh size.

Mesh size	Subdistrict	Year	Avg. CL (mm)	SD of Avg. CL
1.125	112-41	2000	33.0	4.0
		2002	37.0	3.0
		2003	35.4	1.7
		2004	35.5	2.2
		Avg.	35.2	2.7
	112-42	2000	36.0	2.7
		2002	34.1	2.6
		2003	34.3	0.8
		2004	33.1	1.8
		Avg.	34.4	2.0
	112-45	2000	41.2	3.0
		2002	38.7	2.3
		2003	37.5	1.5
		2004	39.0	1.4
		Avg.	39.1	2.1
	112-48	2000	40.8	1.5
		2002	35.5	2.9
		2003	36.9	1.1
		2004	40.3	0.9
		Avg.	38.4	1.6
1.75	112-41	2000	38.1	3.9
		2002	38.2	3.1
		2003	38.1	1.5
		2004	38.9	2.0
		Avg.	38.3	2.6
	112-42	2000	38.8	1.1
		2002	37.6	1.3
		2003	37.5	1.4
		2004	37.4	1.0
		Avg.	37.8	1.2
	112-45	2000	41.6	1.9
		2002	40.4	3.2
		2003	38.4	1.4
		2004	40.0	1.0
		Avg.	40.1	1.9
	112-48	2000	41.1	1.3
		2002	37.1	1.7
		2003	37.9	0.7
		2004	40.9	0.6
		Avg.	39.3	1.1

Table 12.–Preseason pot shrimp surveys subdistricts of District 13, 1999–2004 with mean and standard deviation (SD) of average carapace length (CL) by mesh size.

Mesh size	Subdistrict	Year	Avg. CL (mm)	SD of Avg. CL
1.125	113-55	1999	35.7	3.1
		2000	36.2	3.2
		2001	35.6	3.3
		2002	34.4	2.4
		2003	34.7	2.0
		2004	32.2	3.7
		Avg.	34.8	3.0
	113-57	1999	39.8	1.7
		2000	39.6	2.0
		2001	37.7	3.3
		2002	37.5	2.3
		2003	36.5	1.7
		2004	36.2	2.3
		Avg.	37.9	2.2
	113-58	1999	37.3	3.5
		2000	38.9	2.9
		2001	36.0	2.8
		2002	35.8	2.4
		2003	35.7	2.5
		2004	35.4	2.2
		Avg.	36.5	2.7
1.75	113-55	1999	37.2	1.4
		2000	38.5	2.1
		2001	39.3	1.5
		2002	37.4	1.5
		2003	36.6	2.0
		2004	36.5	2.5
		Avg.	37.6	1.8
	113-57	1999	40.4	1.4
		2000	39.0	0.7
		2001	39.7	2.1
		2002	37.4	1.5
		2003	36.6	2.0
		2004	37.8	2.0
		Avg.	38.5	1.6
	113-58	1999	38.6	1.9
		2000	39.8	2.1
		2001	37.9	2.1
		2002	38.3	1.5
		2003	38.6	1.8
		2004	37.9	1.3
		Avg.	38.5	1.8

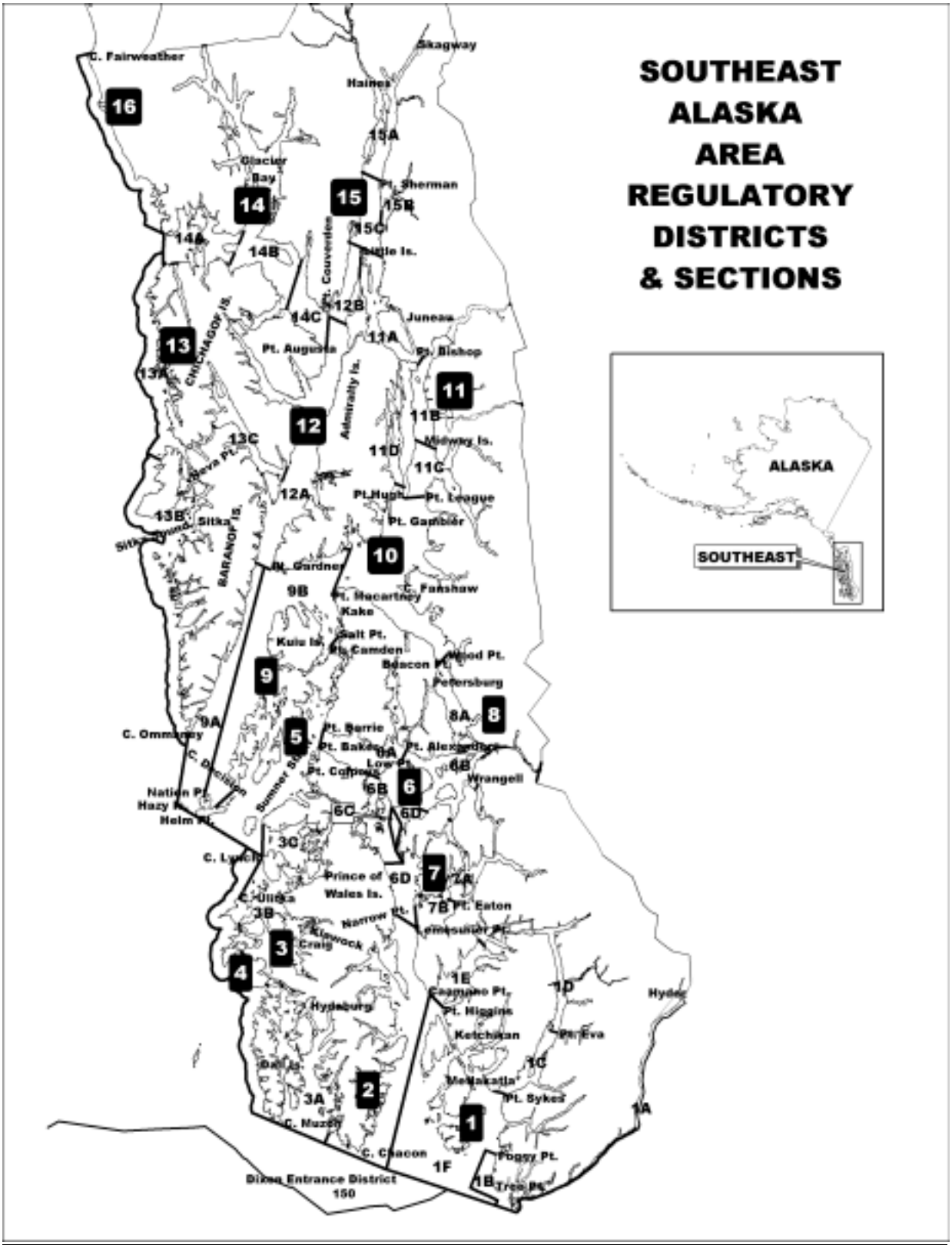

Figure 1.–Southeast Alaska commercial fishing regulatory sections.

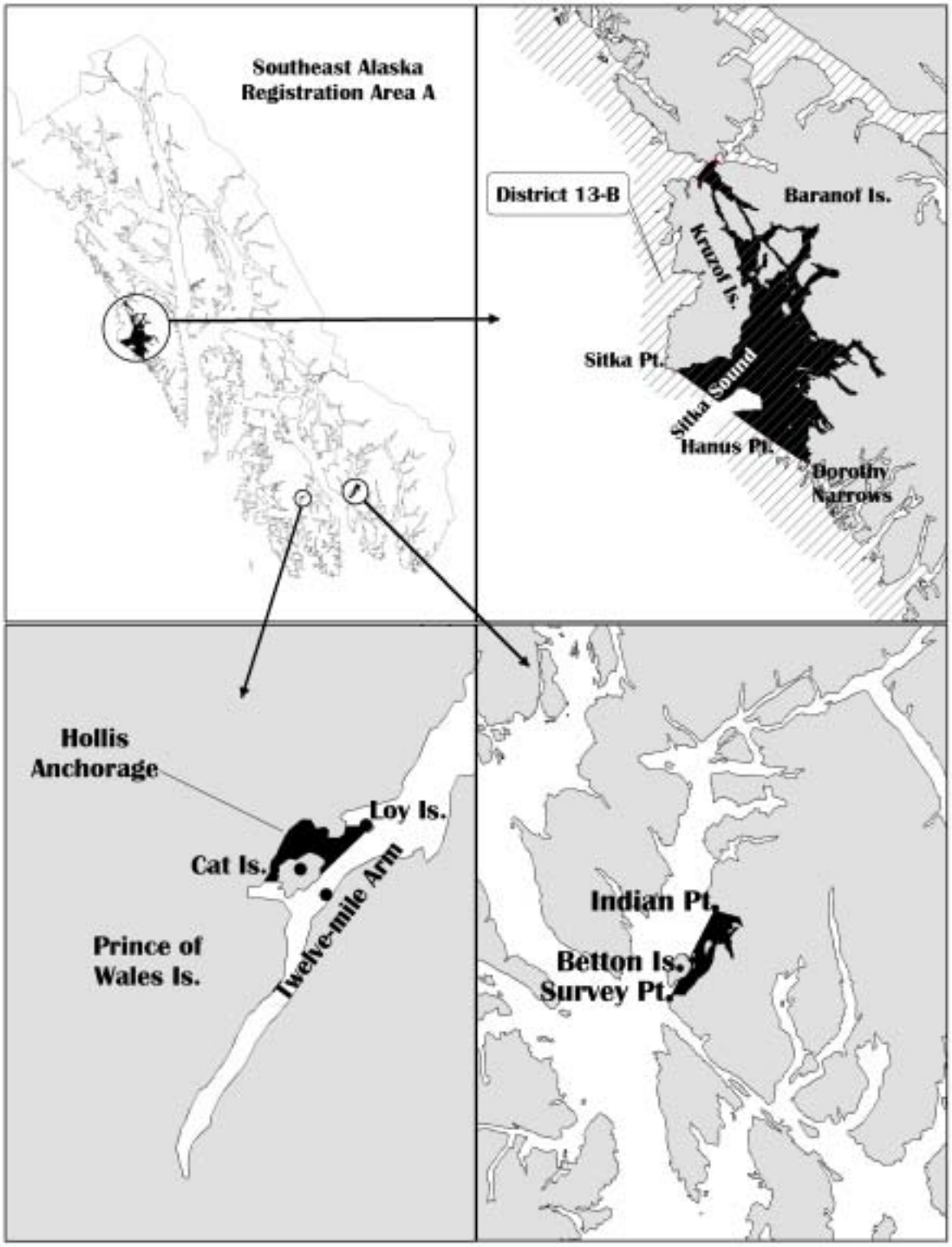

Figure 2.–Closed waters for pot shrimping in Registration Area A.

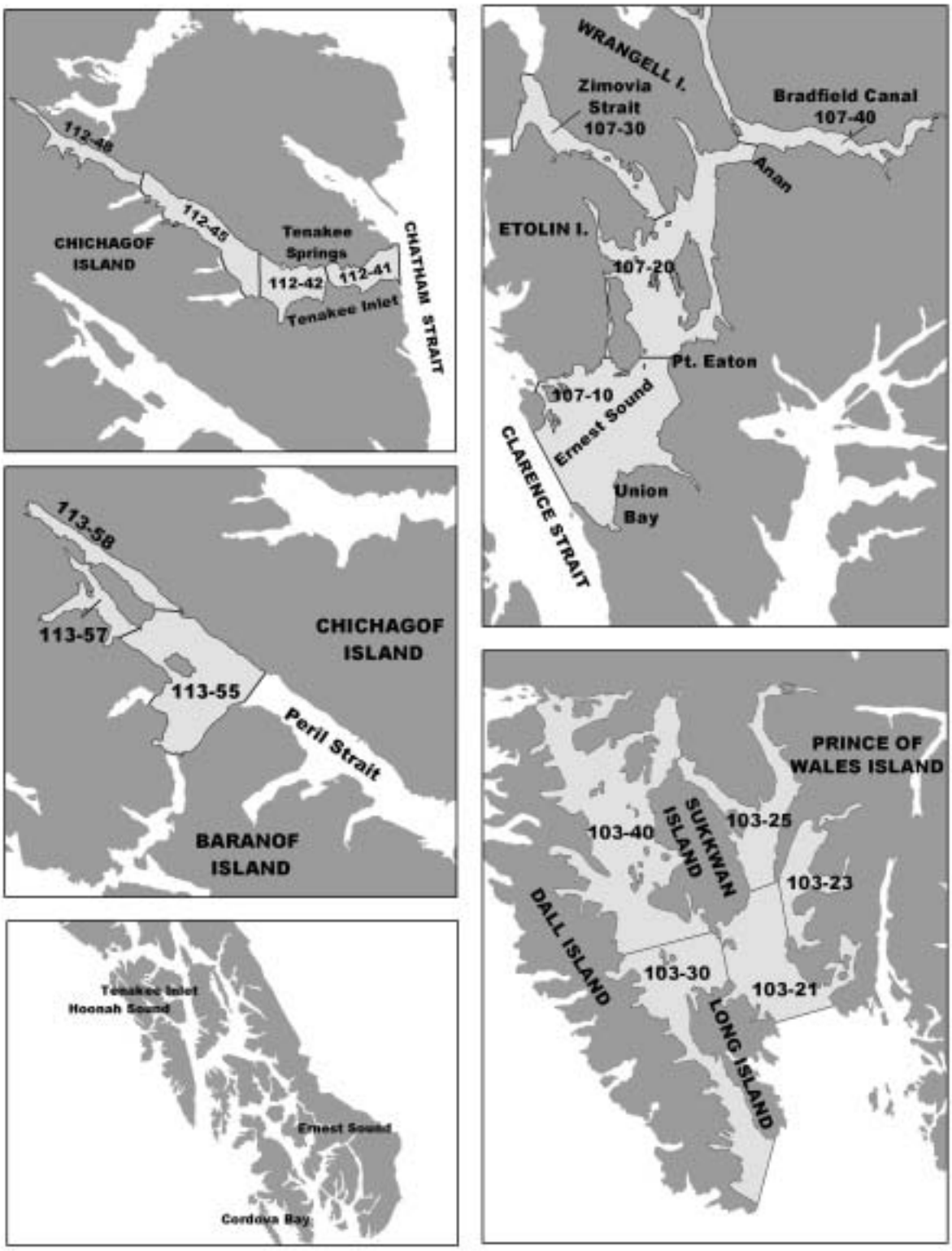

Figure 3.–Pot shrimp survey locations; Districts 3 (Cordova Bay), 7 (Ernest Sound), 12 (Tenakee Inlet) and 13 (Hoonah Sound) in southeastern Alaska.

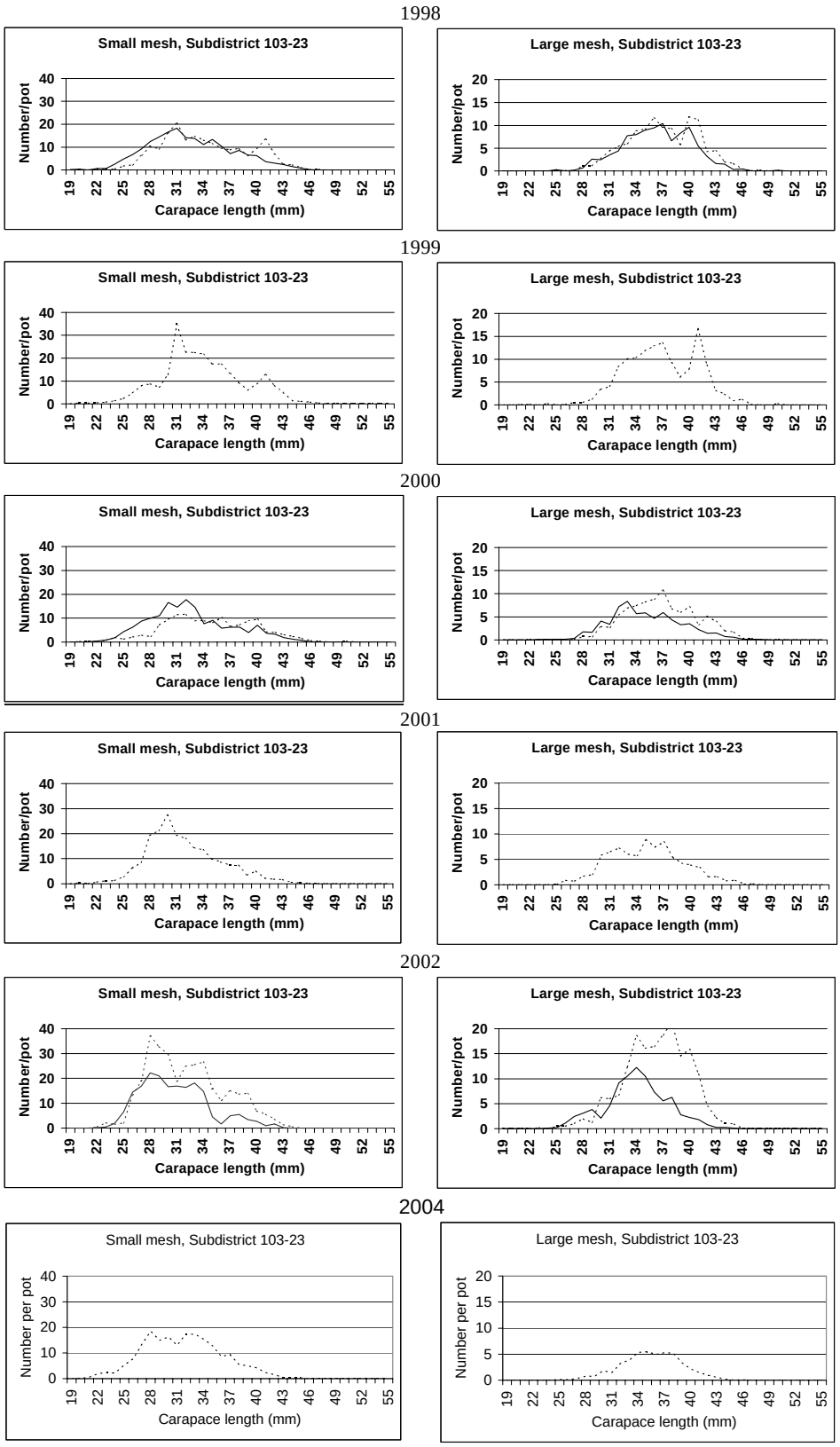

Figure 4.–Catch rate by size of spot shrimp in small and large mesh pots fished 16–36 hours in subdistrict 103-23 of District 3 during 1998–2002, and 2004 preseason and postseason surveys. Dotted line is preseason and solid postseason survey.

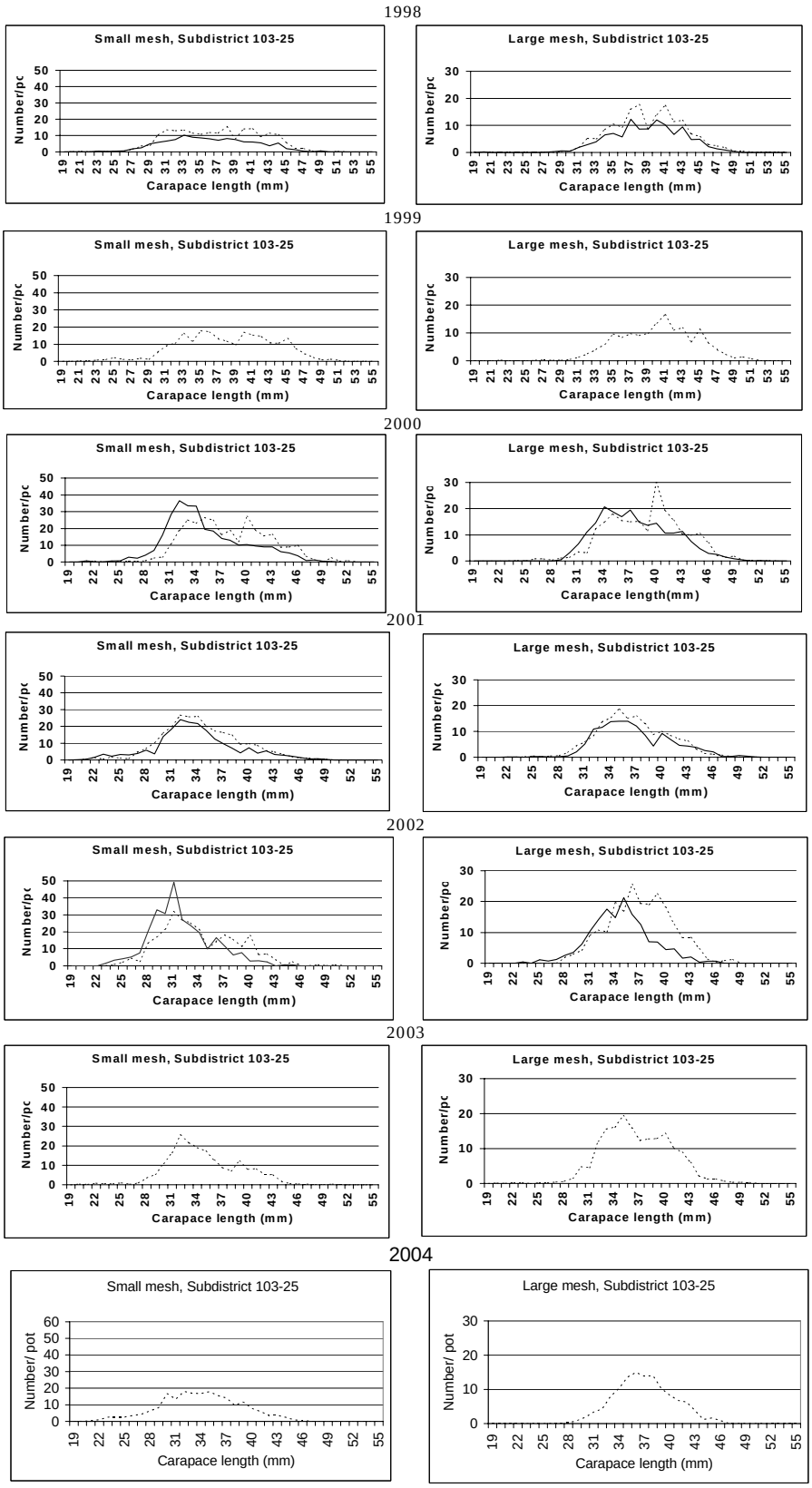

Figure 5.–Catch rate by size of spot shrimp in small and large mesh pots fished for 16–36 hours in Subdistrict 103-25 of District 3, during 1998–2004 preseason and postseason surveys. Dotted line is preseason and solid postseason survey.

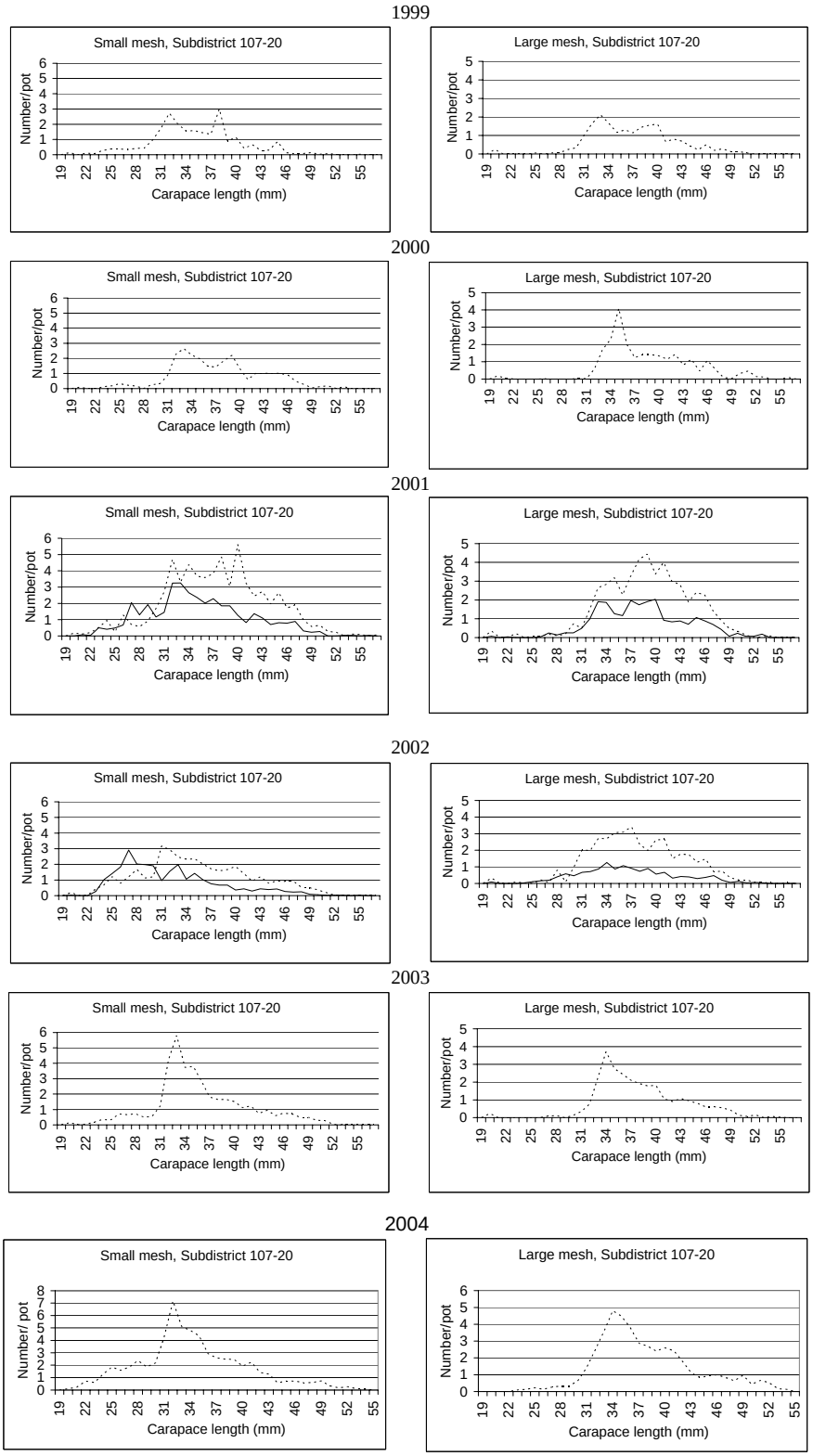

Figure 6.-Catch rate by size of spot shrimp, in small and large mesh pots fished 16–36 hours in Subdistrict 107-20 of District 7 during 1999–2004 pre and postseason surveys. Dotted line is preseason and solid postseason survey.

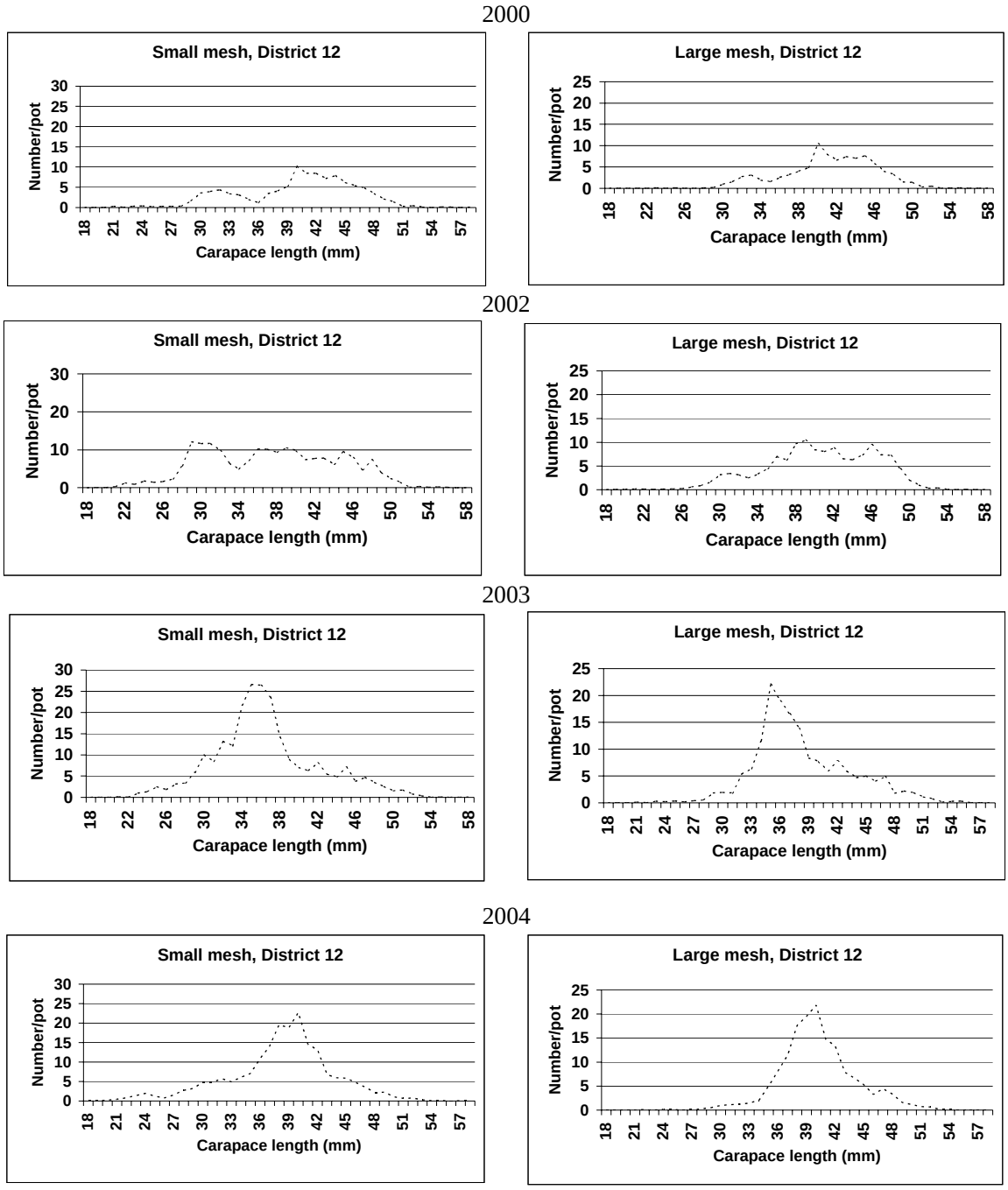

Figure 7.–Catch rate by size of spot shrimp, for small and large mesh pots fished for 16–36 hours in District 12 during 2000–2004 preseason surveys.

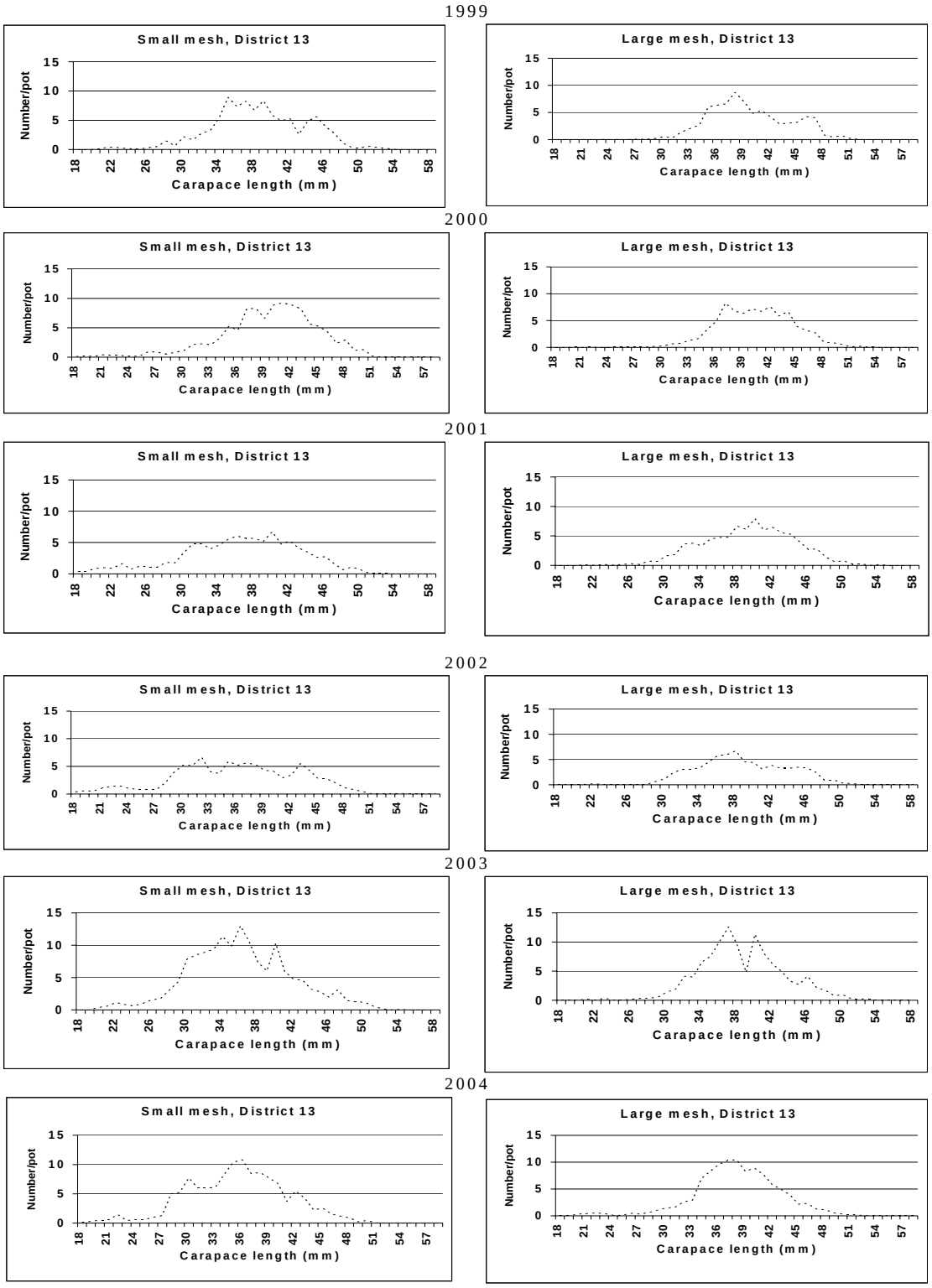

Figure 8.–Catch rate by size of spot shrimp, for small and large mesh pots fished 16-36 hours in District 13 during 1999–2004 preseason surveys.

APPENDICES

Appendix A. –Pot Shrimp catcher-processor weekly call-in reporting form for Southeast Alaska.

SE Alaska Catcher-Processor Pot Shrimp Reporting Form

Date: _____ **Time:** _____ **ADF&G Rep:** _____

Caller's Name: _____ **Vessel Name:** _____ **ADF&G #:** _____

Total Harvest Since Last Call In: Spots: _____ **Coons:** _____ **Date of Last Delivery:** _____

Are you planning on fishing in a different district by next week?: Y / N If YES, which district? _____

What are the names of other vessels that you are aware of that have either quit for the season or left the district? _____

_____ **Comments:** _____

Fish Ticket #	Date of Landing	District	Sub-District	# of pot lifts	Spot Tail Wt.	Spot Whole Wt.	Coon Tail Wt.	Coon Whole Wt.	Comments

Appendix B. –September 2, 2005 letter to Region Pot Shrimp Catcher-Processors and Direct Marketers, notifying of changes to shrimp fish tickets, and size categories.

STATE OF ALASKA

DEPARTMENT OF FISH & GAME

SOUTHEAST REGIONAL OFFICE

FRANK H. MURKOWSKI, GOVERNOR

COMMERCIAL FISHERIES DIVISION
802 3rd STREET
P.O. BOX 240020
DOUGLAS, ALASKA 99824-0020
PHONE: (907) 465-4250
FAX: (907) 465-4944

September 2, 2005

To Southeast Region Pot Shrimp Catcher-Processors and Direct Marketers,

The purpose of this letter is to notify you of a change on the shrimp fish ticket and to encourage you to participate in a voluntary program to help the department gather shrimp size data.

The shrimp fish tickets have been changed to enable the department to accurately calculate daily catch per unit of effort. The 2005 series shrimp fish tickets (see enclosed samples) have a box near the top that is labeled "number of pot lifts." Be sure to write in the total number of pot lifts in this box and not in the effort column in the body of the ticket. Please bring any shrimp ticket books that you have with you when you come to your local ADF&G office to register for the pot shrimp fishery. We will exchange your old books for the 2005 ticket stock. Also, remember to write the number of days fished (gear in water) on the appropriate line at the top of the ticket!

On January 24, 2005 at the Pot Shrimp Task Force meeting in Ketchikan, ADF&G made a commitment to industry to collect and analyze size data from shrimp harvested by catcher-processors in the Region I pot shrimp fishery. ADF&G's current sampling program provides biological information on about half of the districts in which shrimp are now harvested. Additional information will provide valuable insight into the condition of the shrimp resource, especially in areas for which there are no sampling data.

The industry is opposed to a mandatory logbook program at this time, which would need to be implemented through Board of Fisheries action, because of additional paper work. However, a voluntary logbook program would be acceptable. This year's voluntary logbook program will only include spot shrimp. Fishermen who are willing to participate in the program are asked to fill out a form (enclosed) when they register for the fishery that includes vessel name, vessel ADF&G number, CFEC permit number, name, phone number, pot size (large or small), mesh size, and whether or not a specific size range of spot shrimp will be targeted this season. Fishermen are also asked to provide information on their market's size categories that will be used during the season, including the minimum and maximum size in grams and minimum and maximum counts per category. The information provided at registration will be used to interpret the data on the fish tickets, which should be given in pounds or one kilogram boxes by size category. It is important to clearly identify your size category information as pounds or boxes (see sample fish tickets). Remember that the entire harvest by species must always be reported in pounds on each ticket. The registration information will be used to convert the fish ticket data into numbers of spot shrimp in various size classes.

Please consider taking part in the voluntary log book program. To do so, fill out the log book form at registration (or bring a completed form with you) and continue to note your harvest by pounds and boxes on your fish tickets. Your efforts will help ADF&G to better determine the health of spot shrimp stocks and whether or not changes to guideline harvest levels are appropriate to best manage the spot shrimp resource.

Sincerely,

Bill Davidson, Regional Management Coordinator
Commercial Fisheries, Region I

Enclosures: Voluntary Pot Shrimp Logbook Registration form, fish ticket examples (2)

Appendix C. –Sample ADF&G Voluntary Pot Shrimp Logbook Registration Form (Blank).

Voluntary Pot Shrimp Logbook Registration Form

Year	2005				
Season	05-06				
Species	965				
Vessel Name & ADFG No.					
CFEC Permit Number					
Permit Holder's name					
Permit Holder's phone number					
Number of Pots					
Pot Size (large or small)					
Mesh Size					
Target Specific Size Range (e.g. medium)					
Size Information					
		Size / Grams.		Number	
Whole or Tails	Category	Min.	Max.	Min.	Max.

Appendix D. –Sample ADF&G Voluntary Pot Shrimp Logbook Registration Form (Completed).

Voluntary Pot Shrimp Logbook Registration Form

Year	2005				
Season	05-06				
Species	965				
Vessel Name & ADFG No.	Dog Gone It 12345				
CFEC Permit Number	P41A000007E				
Permit Holder's name	John Doe				
Permit Holder's phone number	586 - 0000				
Number of Pots	140				
Pot Size (large or small)	Small				
Mesh Size	1.25 inch				
Target Specific Size Range (e.g. medium)	XL				
Size Information					
		Size / Grams.		Number	
Whole or Tails	Category	Min.	Max.	Min.	Max.
Whole	SS	70		14	
	S	50	70	15	19
	XL	40	50	20	24
	L	35	40	25	30
	M	25	35	31	40
Tails / pound	U15				
	16 - 20				
	21 - 30				
	31 - 40				

Appendix E. –Sample ADF&G Shrimp Ticket filled out with Boxes.

PLACE WRAPAROUND COVER UNDER GOLDENROD COPY
WHITE - PURCHASER YELLOW - FISH & GAME PINK - SELLER GOLDENROD - PURCHASER

ALASKA DEPARTMENT OF FISH & GAME
SHRIMP TICKET

PURCHASER

DO NOT WRITE IN THIS SPACE

Vessel Name: Dog Gone It
Fishery
Name: John Doe
Permit Number: P91A000002

ADF&G NO.: 12345
Date Fishing Began: 10/2/05

DO NOT WRITE IN THIS SPACE: S05
Number of pots fished: 140
Port of Landing or offshore operations type: Ket
Type of Gear used:

PARTIAL DELIVERY
Ticket No.
Processor

Proc. Code: F0000
Company: Dog Gone Stds.
Date Landed: 10/5/05
Days Fished (Gear in Water): 1

SPECIES	CODE	STAT AREA	EFFORT	POUNDS	DELIV CODE	PRICE	AMOUNT
Northern (Pink) Shrimp	961						
(deadloss)	961				79		
Sidestripped Shrimp	962						
(deadloss)	962				79		
Coonstriped Shrimp	964						
(deadloss)	964				79		

SPECIES	CODE	STAT AREA	EFFORT	POUNDS	DELIV CODE	PRICE	AMOUNT
Spot Shrimp	965	101-44		220.2	01		
			Boxes				
		SJ	27		01		
		J	23		|		
		XL	16		|		
		L	18		|		
		M	7		|		
(deadloss)	~~965~~				~~79~~		
Humpy Shrimp	967	U15		20	78		
		16-20		3	|		
		21-30		12	|		
		31-40		5	|		
				40	75		
(deadloss)	967				79		
Octopus	870						
Discards/Personal Use/Not Sold: Species, Disposition and Pounds							

DELIVERY CODES	
Whole Animal - 01	Deadloss - 79
Tails - 78	Discard at Sea - 98
Personal Use - 90	Discard on Shore - 99

UNITS OF EFFORT	
Dregs/Dredges	- No. tows
Pot	- No. pot lifts

ADF&G USE
Interview
Observer
Logbook

Appendix F.–Sample ADF&G Shrimp Ticket filled out with Pounds.

PLACE WRAPAROUND COVER UNDER GOLDENROD COPY
WHITE – PURCHASER YELLOW – FISH & GAME PINK – SELLER GOLDENROD – PURCHASER

ALASKA DEPARTMENT OF FISH & GAME
SHRIMP TICKET

PURCHASER

Vessel Name: Dog Gone It
Fishery
Name: John Doe
Permit Number: P91A000007

ADF&G NO.: 12345
Date Fishing Began (Gear in Water): 10/2/05

DO NOT WRITE IN THIS SPACE: S05
Number of pot lifts: 140
Port of Landing or off-shore operations type: Ket
Type of Gear used

Proc. Code: F0000
Company: Dog Gone Seds.
Date Landed: 10/5/05
Days Fished (Gear in Water): 3

PARTIAL DELIVERY
Ticket No.
Processor

SPECIES	CODE	STAT AREA	EFFORT	POUNDS	DELIV CODE	PRICE	AMOUNT
Northern (Pink) Shrimp	951						
(dead loss)	961				79		
Sidestriped Shrimp	952						
(dead loss)	961				79		
Coonstriped Shrimp	954						
(dead loss)	961				79		

SPECIES	CODE	STAT AREA	EFFORT	POUNDS	DELIV CODE	PRICE	AMOUNT
Spot Shrimp	956	101-44		222.2	01		
		SJ		81.4	01		
		J		50.6			
		XL		35.2			
		L		39.6			
		M		15.4			
~~(deadloss)~~	~~961~~	U15		20	~~79~~ 78		
Flumpy Shrimp	963	16-20		3			
		21-30		12			
		31-40		5			
				40	78		
(deadloss)	961				79		
Octopus	870						
Discards/Personal Use/Not Sold: Species, Disposition and Pounds							

DELIVERY CODES	
Whole Animal – 01	Deadloss – 79
Tails – 78	Discard at Sea – 98
Personal Use – 95	Discard on Shore – 99

UNITS OF EFFORT	
Drag/Dredge	– No. tows
Pot	– No. pot lifts

ADF&G USE
Interview
Observer
Logbook