

**Fishery Management Report No. 15-17**

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**Chignik Management Area Commercial Salmon  
Fishery Harvest Strategy, 2015**

by

**Dawn M. Wilburn**

April 2015

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Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



## Symbols and Abbreviations

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<b>Weights and measures (metric)</b>		<b>General</b>		<b>Mathematics, statistics</b>	
centimeter	cm	Alaska Administrative Code	AAC	<i>all standard mathematical signs, symbols and abbreviations</i>	
deciliter	dL	all commonly accepted abbreviations	e.g., Mr., Mrs., AM, PM, etc.	alternate hypothesis	$H_A$
gram	g	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	$e$
hectare	ha	at	@	catch per unit effort	CPUE
kilogram	kg	compass directions:		coefficient of variation	CV
kilometer	km	east	E	common test statistics	(F, t, $\chi^2$ , etc.)
liter	L	north	N	confidence interval	CI
meter	m	south	S	correlation coefficient (multiple)	R
milliliter	mL	west	W	correlation coefficient (simple)	r
millimeter	mm	copyright	©	covariance	cov
		corporate suffixes:		degree (angular)	$^\circ$
<b>Weights and measures (English)</b>		Company	Co.	degrees of freedom	df
cubic feet per second	ft <sup>3</sup> /s	Corporation	Corp.	expected value	$E$
foot	ft	Incorporated	Inc.	greater than	>
gallon	gal	Limited	Ltd.	greater than or equal to	$\geq$
inch	in	District of Columbia	D.C.	harvest per unit effort	HPUE
mile	mi	et alii (and others)	et al.	less than	<
nautical mile	nmi	et cetera (and so forth)	etc.	less than or equal to	$\leq$
ounce	oz	exempli gratia (for example)	e.g.	logarithm (natural)	ln
pound	lb	Federal Information Code	FIC	logarithm (base 10)	log
quart	qt	id est (that is)	i.e.	logarithm (specify base)	log <sub>2</sub> , etc.
yard	yd	latitude or longitude	lat or long	minute (angular)	'
		monetary symbols (U.S.)	\$, ¢	not significant	NS
<b>Time and temperature</b>		months (tables and figures): first three letters	Jan, ..., Dec	null hypothesis	$H_0$
day	d	registered trademark	®	percent	%
degrees Celsius	°C	trademark	™	probability	P
degrees Fahrenheit	°F	United States (adjective)	U.S.	probability of a type I error (rejection of the null hypothesis when true)	$\alpha$
degrees kelvin	K	United States of America (noun)	USA	probability of a type II error (acceptance of the null hypothesis when false)	$\beta$
hour	h	U.S.C.	United States Code	second (angular)	"
minute	min	U.S. state	use two-letter abbreviations (e.g., AK, WA)	standard deviation	SD
second	s			standard error	SE
<b>Physics and chemistry</b>				variance	
all atomic symbols				population	Var
alternating current	AC			sample	var
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				

***FISHERY MANAGEMENT REPORT NO. 15-17***

**CHIGNIK MANAGEMENT AREA COMMERCIAL SALMON FISHERY  
HARVEST STRATEGY, 2015**

by

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## ABSTRACT

This document provides stakeholders with general information regarding how the Alaska Department of Fish and Game (ADF&G) will manage the 2015 Chignik Management Area (CMA) commercial salmon fishery. The 2015 total sockeye salmon *Oncorhynchus nerka* forecasted run for the Chignik River watershed is 2,536,000 fish. Approximately 1,588,000 sockeye salmon are expected to be harvested in CMA. The first commercial fishing period in the Chignik Bay, Central, and Eastern districts and the Inner Castle Cape Subsection of the Western District may occur after approximately 20,000 sockeye salmon have passed the Chignik River weir. Two fishing periods of up to 48 hours in length, separated by at least 48 hours, may occur in the Western District concurrent with the Chignik Bay and Central districts during June and early July. All subsequent Western District fishing periods and the first commercial fishing period in the Perryville District may occur on July 6, as long as Chignik River sockeye salmon interim escapement objectives are expected to be met. From the end of the transition period (approximately June 26–July 8) until the end of the fishing season, ADF&G shall manage CMA based on its evaluation of the local pink *O. gorbuscha*, chum *O. keta*, and coho *O. kisutch* salmon runs, as well as the Chignik watershed late-run sockeye salmon escapement.

Key words: Chignik, sockeye salmon, *Oncorhynchus nerka*, Chinook, *O. tshawytscha*, pink, *O. gorbuscha*, chum, *O. keta*, coho, *O. kisutch*, Chignik Management Area, CMA, 2014 management plan, subsistence fishing, commercial fishery, SEG, FMR.

## INTRODUCTION

This document provides stakeholders with the basic framework of how the Alaska Department of Fish and Game (ADF&G) will manage the 2015 Chignik Management Area (CMA; Area L) commercial salmon fishery. CMA encompasses all coastal waters and inland drainages of the northwest Gulf of Alaska between Kilokak Rocks and Kupreanof Point (Figure 1). For management purposes, CMA is divided into five fishing districts: Eastern, Central, Chignik Bay, Western, and Perryville. Each district is further divided into statistical reporting areas (Figure 2).

The 2015 CMA commercial salmon fishery will be managed by ADF&G in accordance with the guidelines established in the Chignik Salmon Management Plan (5 AAC 15.357). The goal of this management plan is to allow commercial fisheries on CMA salmon stocks and to achieve escapement goals for early-run (Black Lake) and late-run (Chignik Lake) sockeye salmon *Oncorhynchus nerka* as well as local stocks of pink *O. gorbuscha*, chum *O. keta*, coho *O. kisutch*, and Chinook salmon *O. tshawytscha*. Complete details of this plan are found in the 2014–2017 *Chignik and Kodiak Areas Commercial Salmon Fishing Regulations* booklet (ADF&G 2014) available from regional Alaska Department of Fish and Game offices, or online at: <http://www.adfg.alaska.gov/index.cfm?adfg=fishregulations.commercial> (accessed January 2015).

## GEAR DESCRIPTION

Purse and hand purse seines are the only legal commercial salmon fishing gear within CMA. Legal seine gear must be between 100 and 125 fathoms in length in the Chignik Bay District and between 100 and 225 fathoms in length in all other districts. No seine may be less than three fathoms nor more than 375 meshes in depth. Up to 25 meshes of chafing gear with a maximum mesh size of seven inches may be used. Additionally, no lead may be more than 75 fathoms in length. Complete seine specifications are listed in 5 AAC 15.332.

## **CLOSED WATERS**

Closed water areas within CMA are described in 5 AAC 15.350 and determined using the global positioning system (GPS; 5 AAC 15.206). Where regulatory markers are posted, it is illegal to take salmon for commercial purposes on the streamward side of the markers (5 AAC 39.290 (b)).

## **REPORTING REQUIREMENTS**

Tender and processor reporting requirements are detailed in the CMA commercial fishing regulations (5 AAC 15.355). Processors are required to report the previous day's commercial harvest information to ADF&G staff by 10:00 AM daily, by e-mail, telephone, or radio (SSB or VHF). The preferred method of catch reporting is to e-mail an Excel spreadsheet (template provided by ADF&G) to the Chignik area management biologist ([dawn.wilburn@alaska.gov](mailto:dawn.wilburn@alaska.gov)) and assistant Chignik area management biologist ([lucas.stumpf@alaska.gov](mailto:lucas.stumpf@alaska.gov)). It is the responsibility of the processor to contact ADF&G for proper catch-reporting protocols. Failure to report daily catch information in a timely manner is a violation of commercial fishing regulations (5 AAC 15.355).

Commercial fishermen or tenders operating in the Eastern District during June and early July are strongly encouraged to contact the Chignik weir to report the prior day's catch information. Timely and accurate catch information allows for informed and consistent management actions in the outlying fishing districts. Information needs, reporting formats, and timetables will be discussed in detail at the preseason stakeholders meeting held during early June and/or obtained by contacting the management staff at the Chignik weir.

Commercial fishermen are reminded that all salmon caught must be reported on an ADF&G fish ticket. Fishermen may retain finfish from lawfully taken commercial catch for personal use (home pack), including for use as bait in a commercial fishery (5 AAC 39.010). However, commercially caught salmon retained for personal use must be recorded on the fish ticket and may not be sold or bartered. Fishermen are reminded that it is their responsibility to secure a market for all of their catch before harvesting fish. Discarding commercially caught salmon is prohibited by Alaska Statute (AS 16.05.831), and this rule will be strictly enforced.

## **EMERGENCY ORDERS AND NEWS RELEASES**

Fishing periods will be established by emergency order (EO) when salmon abundance is expected to exceed escapement requirements. News releases will be issued prior to fishery openings to notify the fishermen and processors. When possible, a 24-hour notice will be given before opening or closing commercial fishing periods. News releases will be broadcast over VHF channel 6. If you wish to receive news releases by e-mail or fax, please access the centralized ADF&G News Release System at <http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main> (accessed January 2015) and subscribe to the Chignik salmon seine fishery. Detailed instructions are located in Appendix A of this document. Catch, escapement, and other fishery information will be broadcast over VHF channel 6 at 9:15 AM and 6:15 PM daily. The Chignik Weir Report e-mail (catch, escapement, and other fishery data) will be sent out daily during the commercial salmon fishing season. Please contact ADF&G staff by e-mail ([dawn.wilburn@alaska.gov](mailto:dawn.wilburn@alaska.gov)) or by phone (845-2243 or 486-1830) to be placed on the e-mail distribution list.



Beginning on June 1 a Record-a-Phone line (907-845-2235) will be activated at the Chignik weir. This automated information line will allow callers to retrieve recent escapement and harvest information as well as any current news releases.

## **2015 SALMON FORECASTS**

### **SOCKEYE SALMON**

Preseason salmon forecasts provide fishermen and processors with the expected run strength of Chignik River watershed sockeye salmon for planning purposes. ADF&G also uses these forecasts to formulate a preseason management strategy; however, the fishery is primarily managed based on inseason indicators of actual run strength as they become available.

#### **Total Run**

The 2015 total sockeye salmon run for the Chignik River watershed is forecasted to be 2,536,000 fish (Appendix B1; Munro 2015). The total projected commercial harvest for 2015 is 1,936,000 sockeye salmon, of which 1,588,000 are expected to be harvested in CMA.

#### **Early Run (Black Lake)**

The total early-run forecast is approximately 1,320,000 sockeye salmon (Appendix B1; Munro 2015). The Chignik early-run harvest is projected to be 970,000 fish. The early-run biological escapement goal (BEG) range is 350,000–450,000 sockeye salmon (Table 1; Sagalkin et al. 2013). The early run typically peaks in late June and returns primarily to Black Lake and its tributaries.

#### **Late Run (Chignik Lake)**

The total late-run forecast is approximately 1,217,000 sockeye salmon (Appendix B1; Munro 2015). The Chignik late-run harvest is projected to be 967,000 fish. The late-run sustainable escapement goal (SEG) range is 200,000–400,000 sockeye salmon. To increase the opportunity for inriver subsistence harvest, an additional 50,000 sockeye salmon (25,000 sockeye salmon in August and 25,000 in September) is added to the lower bound of the late-run goal, resulting in a total late-run escapement goal range of 250,000–400,000 sockeye salmon (Table 1; Sagalkin et al. 2013). The late run typically peaks in late July and returns primarily to Chignik Lake and its tributaries.

### **OTHER SALMON SPECIES**

#### **Chinook Salmon**

The 2015 CMA projected Chinook salmon commercial harvest is 7,000 fish (Munro 2015). Chinook salmon harvest in CMA is mostly dependent upon the amount of commercial fishing time for sockeye salmon in July, because there is no targeted Chinook salmon harvest in the CMA. The Chignik River watershed's Chinook salmon lower bound escapement goal is 1,300 spawning fish above the Chignik River weir (Sagalkin et. al. 2013).

#### **Coho Salmon**

The 2015 CMA projected coho salmon commercial harvest is 87,000 fish (Munro 2015). The coho salmon commercial harvest may vary depending on the commercial fishing effort directed on local pink salmon and chum salmon runs in the Eastern, Central, Western, and Perryville

districts. Market conditions late in the season may also limit commercial salmon fishing effort when coho salmon are prevalent in Chignik Lagoon.

### **Pink Salmon**

The 2015 CMA projected pink salmon commercial harvest is 551,000 fish (Munro 2015). Historically, the Western District has provided the largest proportion of the commercial harvest. The magnitude of the Chignik sockeye salmon run and market interest in pink salmon from the outside districts may affect directed pink salmon harvest effort in the CMA.

The CMA odd-year areawide SEG range is 500,000–800,000 pink salmon (Sagalkin et al. 2013). The areawide goal represents a sum of district-wide objectives that have been established based on index stream objectives. In season, pink salmon escapements are managed to achieve these district objectives due to the variability in pink salmon returns to streams. The current odd-year district management objectives for pink salmon escapement are listed in Table 2.

### **Chum Salmon**

The 2015 CMA projected chum salmon commercial harvest is 246,000 fish (Munro 2015). Historically, the Central and Western districts provided the largest proportion of the commercial harvest. Market interest in late-season chum salmon may affect commercial harvest totals in 2015.

The CMA escapement goal for chum salmon is the lower bound of the areawide SEG of 57,400 fish (Sagalkin et al. 2013). This threshold is considered to be the minimum number necessary to escape in order to sustain the population. In season, the CMA chum salmon stocks are managed to achieve district objectives based on the sum of stream objectives for each district (Nelson and Lloyd 2001; Sagalkin et al. 2013). The current district management objectives for chum salmon escapement are listed in Table 3.

## **2015 CHIGNIK SALMON MANAGEMENT**

### **JUNE**

By regulation, the first commercial salmon fishing period may occur when 20,000 sockeye salmon have escaped past the Chignik River weir. However, if it is determined that a strong buildup of sockeye salmon exists in Chignik Lagoon and 20,000 sockeye salmon are expected to escape into the Chignik River, a commercial fishery may occur before 20,000 sockeye salmon have passed the weir (5 AAC 15.357 (b)(1)). The purpose of this regulation is to allow subsistence fishing opportunity prior to the commercial fishing season and to avoid a large buildup of salmon in the lagoon.

During June, commercial salmon fishing may occur in the Chignik Bay, Central, and Eastern districts, and the Inner Castle Cape Subsection of the Western District (Figure 2). Through approximately June 26, the Chignik Bay, Central, and Eastern districts and the Inner Castle Cape Subsection (273-93) of the Western District (Figure 3) open and close concurrently by regulation (5 AAC 15.357 (c)(1)) and are based upon achieving the early-run interim escapement objectives (Table 1). In addition, the entire Western District may open for two fishing periods of up to 48 hours in length separated by a minimum closure of 48 hours. Both fishing periods in the Western District shall be opened concurrently with fishing periods in the Chignik Bay, Central, and Eastern districts (5 AAC 15.357 (e)).

Within Chignik Lagoon, ADF&G will primarily use the Humes Point and the Mensis Point markers to designate closed waters (Figure 4). Alternating between Humes and Mensis Point allows ADF&G to control escapement of sockeye salmon entering the Chignik River. The Pillar Rock and Chignik River weir markers may be used during periods of high escapement and/or limited harvest capacity by the fleet (Figure 4). If estimated cumulative sockeye salmon escapement is projected to exceed the upper bound of the early-run escapement goal, closed waters may be reduced in the Mallard Duck Bay and Schooner Bay areas of Chignik Lagoon during the month of June to provide additional opportunities to target sockeye salmon.

ADF&G test fishing will probably begin on or about June 2 to assess any salmon buildup in Chignik Lagoon. Test fishing may occur on several days in early June depending on test fish vessel catch rates and escapement levels (Wilburn 2015). Subsequent commercial fishing periods during June will be based on the evaluation of interim escapement objectives (Table 1), commercial and subsistence catches, and additional test fishing results.

## **TRANSITION PERIOD**

Prior to 2004, scale pattern analysis (SPA) was used to differentiate stock composition during the transition from the early- to late-run sockeye salmon, and the fishery was managed based on the results of this analysis (Witteveen and Botz 2004). Although the program was discontinued in 2004 due to funding constraints, ADF&G staff determined that July 4 was the best average approximation of a separation date between the early and late runs, based on historical SPA data. Thus, from 2005 to 2013 the fishery was managed such that through July 4, fishing periods were based on achieving the early-run interim escapement objectives, and beginning July 5 cumulative escapement was reset to zero and subsequent fishing periods were based on achieving the late-run interim escapement objectives.

From 2010 to 2013 ADF&G collected genetic samples from sockeye salmon escapement at the Chignik weir during the period of transition between the two sockeye salmon runs. Stock composition information was available inseason in both 2012 and 2013, which assisted in managing the escapement estimates simultaneously for both sockeye salmon runs, although escapement was reset to zero on July 4. The four years of early- and late-run stock proportions highlight the variable nature of the timing of entry into Chignik River and demonstrate how a set separation date (i.e., July 4) can often underestimate or overestimate respective stock-specific escapement (Foster 2013).

During the transition period for the 2014 season, the Chignik Bay and Central districts, as well as the Inner Castle Cape Subsection, were managed based on newly established interim escapement objectives for both runs during the period of transition (Table 1). Genetic samples were collected at the weir every 3 or 4 days from approximately June 25 to July 15, and estimated escapement was apportioned to both runs allowing for more biologically sound escapement-based management of Chignik River watershed sockeye salmon. The management strategy during the 2015 transition period for these areas will be similar to 2014.

The inseason transition of early to late run will be estimated by fitting the stock proportion data to the common logistic equation adapted from Quinn and Deriso 1999. Because sample size is large, the normal approximation of the multinomial distribution and a nonlinear weighted least squares optimizing scheme will be used in Excel to estimate the transition. The model assumes the late run is 0% on June 1 and 100% on July 31. After the first two genetics sample results are analyzed, the department will fit the model and attribute the escapement between early and late

run on approximately July 3 or 4, after which additional samples will build on and refine the transition and escapement apportionment.

The Eastern District will probably be closed until the strength of the Chignik River watershed sockeye salmon late run can be determined. With the exception of the Inner Castle Cape Subsection of the Western District, the remainder of the Western and Perryville districts will probably remain closed during the transition period.

## **JULY**

During July, the Chignik Bay and Central districts (Figure 2) will be managed primarily based on Chignik River watershed sockeye salmon run strength. The department may, however, adjust closed waters in Chignik Lagoon based on Chignik River watershed Chinook salmon escapement goals (1,300–2,700 fish; Sagalkin et al. 2013). If Chinook salmon escapement during early July is weak and the escapement goal is unlikely to be met, waters upstream of the Humes Point markers may be closed to improve escapement by removing commercial fishing pressure from areas where Chinook salmon hold before entering the Chignik River (5 AAC 15.357(b)(3); Figure 4). If necessary, the commercial salmon fleet may be required to return Chinook salmon greater than 28 inches in length to the water unharmed in the Chignik Lagoon District.

The Eastern District (Figure 2) will be primarily managed for pink and chum salmon during July. The first commercial salmon fishing period after the transition period in the Eastern District can occur as early as July 9 and is likely to be at least 48 hours in duration. Extensions to this fishing period will depend on pink and chum salmon fishery harvest as compared to historical catch records, local pink and chum salmon escapements, and Chignik River watershed sockeye salmon escapement levels. The entire district will be opened to commercial salmon fishing only if Chignik River watershed sockeye salmon interim escapement objectives are expected to be met and a harvestable surplus of sockeye salmon is anticipated.

If the Chignik late-run sockeye salmon escapement is lower than expected, fishing periods in terminal areas in the Eastern District may be announced via EO to target pink and chum salmon. In these cases, the commercial salmon fishery in the Eastern District may close on short notice if substantial numbers of sockeye salmon are harvested. Closed waters may be expanded around individual streams if pink and chum salmon escapements are not sufficient in those areas.

With the exception of the Inner Castle Cape Subsection (Figure 3), which opens concurrently with the Chignik Bay and Central districts, commercial fishing periods in the Western and Perryville districts (Figure 2) may be allowed beginning July 6 if Chignik River interim escapement objectives are expected to be met and surplus Chignik River sockeye salmon are available for harvest. Depending on expected Chignik River sockeye salmon run strength, those portions of the Chignik Bay and Central districts known as “Jack’s Box” may also be opened concurrently with the Western and Perryville districts (Figure 5). The first commercial salmon fishing period in these districts is likely to be 48 hours in duration. Extensions will depend on pink and chum salmon fishery harvest as compared to historical catch records, local pink and chum salmon escapements, and Chignik River watershed sockeye salmon escapement levels.

If surplus Chignik River sockeye salmon are not expected to be available for harvest, the commercial fisheries in the Western and Perryville districts will likely occur north of the Cape Itki line beginning in mid-July to target local pink and chum salmon while avoiding Chignik River-bound sockeye salmon (Figure 6). In these cases, the commercial salmon fishery in the

Western and Perryville districts may close on short notice if substantial numbers of sockeye salmon are harvested. Closed waters may be expanded around individual streams if pink and chum salmon escapements are not sufficient in those areas.

## **AUGUST AND SEPTEMBER**

In August and September, the Chignik Bay and Central districts and the Inner Castle Cape Subsection of the Western District (Figure 2) will be managed based on Chignik River watershed sockeye salmon run strength. CMA will be managed to meet the lower end escapement objectives for the month of August (75,000 fish total) and from September 1–15 (25,000 sockeye salmon; Table 1).

Due to budget cuts, the Chignik River weir will be removed in the beginning of August. After this point, the commercial fishery will probably be managed by reduced commercial weekly fishing periods with possible extensions based on the results of several methods of escapement assessment. The following methods may be used to assess Chignik River sockeye salmon escapements:

- sonar escapement estimates, if available;
- time series analysis of total run to project post-weir run magnitude;
- comparison of aerial survey data in the sockeye salmon spawning areas in the Chignik River watershed to aerial survey estimates from previous years;
- interviews of commercial and subsistence users regarding the late-season sockeye salmon run strength, as well as collections of samples from the commercial harvest; and
- commercial and subsistence harvest and effort data.

Beginning September 15, commercial fishing periods in the Chignik Bay and Central districts are limited to a maximum of 48 hours per week and will be based on the evaluation of the sockeye salmon run strength and the Chignik Lake late-season sockeye salmon subsistence needs (5 AAC 15.357(b)(4)). After September 14, management options include:

- allowing the maximum fishing time of 48 hours per week to be divided into one, two, three, or four commercial fishing periods, depending upon estimated sockeye and/or coho salmon escapements. For example, the fishing time could be distributed over 4 days with 12-hour fishing periods per day within a floating 7-day period;
- a weekly fishing schedule of less than 48 hours, if the sockeye and or coho salmon run strength is determined to be weak; and
- a complete closure.

During August and September, the Eastern District (Figure 2) will be managed based on local pink, chum, and coho salmon abundance (5 AAC 15.357(c)(3)). Fishing times and areas will be based on the actual escapement estimates of local streams. Specific areas may be opened to directed fisheries if pink and chum salmon abundance is sufficient to warrant fisheries in those areas. However, district-wide openings will not be allowed unless Chignik River sockeye salmon interim escapement objectives are expected to be met and overall pink and chum salmon abundance is sufficient to meet Eastern District escapement objectives.

Until approximately August 20, fishing periods in the Western and Perryville districts (Figure 2) will be based on pink and chum salmon escapement counts to local streams (5 AAC 15.357(d)(2)). Specific areas may be opened to directed fisheries if pink and chum salmon abundance is sufficient to warrant fisheries in those areas. District-wide openings will not be allowed unless Chignik River sockeye salmon interim escapement objectives are expected to be met and overall pink and chum salmon abundance is sufficient to meet Western and Perryville district's escapement objectives. After August 20, fishing time in the Western and Perryville districts will be based on Chignik River sockeye salmon escapement and local pink, chum, and coho salmon abundance.

## **2015 SUBSISTENCE SALMON FISHERY**

All subsistence salmon fishermen must obtain a subsistence salmon permit for the 2015 season (5 AAC 01.015; Appendix C1). The permits will be available at the Chignik Weir Field Office and from several local vendors. Catch information obtained from subsistence permits is compiled annually and used to assess regional subsistence salmon fisheries.

An Alaskan resident who obtains a state subsistence permit and who does not hold a commercial salmon fishing license (CFEC permit or those with a 2015 crewmember license) may subsistence fish for salmon at any time. Commercial salmon license holders may subsistence fish for salmon during the commercial fishing season at any time except for 12 hours before and 12 hours after a commercial salmon fishing period (5 AAC 01.485).

Subsistence salmon fishing is permitted in the Chignik River. However, salmon may not be taken upstream from the weir to the outlet of Chignik Lake from July 1 to August 31 (5 AAC 01.475(1)). Subsistence fishing in this area is prohibited to protect spawning Chinook salmon. The Chignik River, beginning 100 yards below the weir, is open to subsistence salmon fishing year round. All fishing is prohibited 100 yards upstream and downstream of the weir while it is operational.

The Chignik Lake tributaries of Clark River and Home Creek, starting from their confluence with Chignik Lake upstream one mile, are open to subsistence salmon fishing (5 AAC 01.475(2)). The Alaska Board of Fisheries amended the subsistence regulations to include these tributaries for the purposes of providing additional harvest opportunities for subsistence users.

Subsistence users are reminded that purse seine gear is not allowed for taking of subsistence salmon in Chignik Lake (5 AAC 01.470(a)). Additionally, any gillnet that is fixed, anchored, or otherwise held in place may not obstruct more than one half of the width of any stream open to subsistence fishing. All subsistence salmon fishing gear must be marked with a buoy listing the first initial, last name, and address of the person operating the gear (5 AAC 01.010 (h)). Subsistence users must carry their subsistence fishing permit with them while fishing. The adipose fin must be removed from all subsistence-caught salmon immediately after harvest.

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## **TABLES AND FIGURES**

Table 1.–Chignik River sockeye salmon interim escapement objectives, in numbers of fish, 2015.

Date <sup>a</sup>	Black Lake		Chignik Lake		Date	Chignik Lake	
	Lower	Upper	Lower	Upper		Lower	Upper
June 2	2,000	– 3,500			August 1	160,000	– 297,000
June 4	7,000	– 9,000			August 3	167,000	– 306,000
June 6	14,000	– 19,000			August 5	173,000	– 314,000
June 8	25,000	– 33,000			August 7	179,000	– 321,000
June 10	40,000	– 51,000			August 9	184,000	– 327,000
June 12	54,000	– 70,000			August 11	189,000	– 332,000
June 14	71,000	– 92,000			August 13	194,000	– 337,000
June 16	97,000	– 124,000			August 15	199,000	– 343,000
June 18	126,000	– 162,000			August 17	204,000	– 348,000
June 20	155,000	– 200,000	1,000	– 2,000	August 19	207,000	– 350,000
June 22	183,000	– 235,000	1,500	– 3,500	August 21	211,000	– 358,000
June 24	209,000	– 268,000	3,000	– 6,000	August 23	214,000	– 362,000
June 26	242,000	– 311,000	5,500	– 10,000	August 25	217,000	– 366,000
June 28	268,000	– 344,000	8,000	– 16,000	August 27	220,000	– 369,000
June 30	285,000	– 365,000	11,500	– 22,000	August 29	223,000	– 373,000
July 2	300,000	– 385,000	16,000	– 30,000	August 31	225,000	– 375,000
July 4	312,000	– 401,000	21,000	– 40,000			
July 6	321,000	– 413,000	27,000	– 51,000	September 3	228,000	– 378,000
July 8	329,000	– 422,000	34,000	– 65,000	September 5	231,000	– 381,000
July 10	334,000	– 430,000	43,000	– 81,000	September 7	235,000	– 385,000
July 12	340,000	– 436,000	53,000	– 98,000	September 9	239,000	– 389,000
July 14	343,000	– 440,000	63,000	– 118,000	September 11	243,000	– 393,000
July 16	345,000	– 443,000	75,000	– 142,000	September 13	247,000	– 397,000
July 18	347,000	– 446,000	88,000	– 168,000	September 15	250,000	– 400,000
July 20	348,000	– 448,000	100,000	– 192,000			
July 22	349,000	– 449,000	113,000	– 212,000			
July 24	349,000	– 449,000	123,000	– 230,000			
July 26	349,000	– 449,000	134,000	– 251,000			
July 28	349,000	– 449,000	143,000	– 269,000			
July 30	350,000	– 450,000	151,000	– 284,000			
					<b>Escapement Goals</b>		
					<b>Black Lake</b>	<b>350,000</b>	<b>– 450,000</b>
					<b>Chignik Lake</b>	<b>250,000</b>	<b>– 400,000</b> <sup>b</sup>

<sup>a</sup> From approximately June 25 to July 15, genetic samples will be collected at the Chignik River weir and estimated daily escapement will be apportioned to both Chignik Lake and Black Lake runs.

<sup>b</sup> The late-run escapement objective includes the late-run sockeye salmon sustainable escapement goal (SEG; 200,000–400,000) plus an additional 50,000 sockeye salmon inriver run goal (25,000 in August and 25,000 in September) to meet late-season subsistence needs. This results in an escapement of at least 75,000 sockeye salmon in August and a management target of 25,000 sockeye salmon from September 1–15.

Table 2.–Chignik Management Area pink salmon escapement objectives by district, 2015.

District	Number of fish	
	Lower	Upper
Eastern	260,000	416,000
Central	80,000	128,000
Chignik Bay	5,000	8,000
Western	60,000	96,000
Perryville	95,000	152,000

Table 3.–Chignik Management Area chum salmon escapement objectives by district, 2015.

District	Number of Fish
Eastern	93,700
Central	39,500
Chignik Bay	2,000
Western	59,000
Perryville	14,350

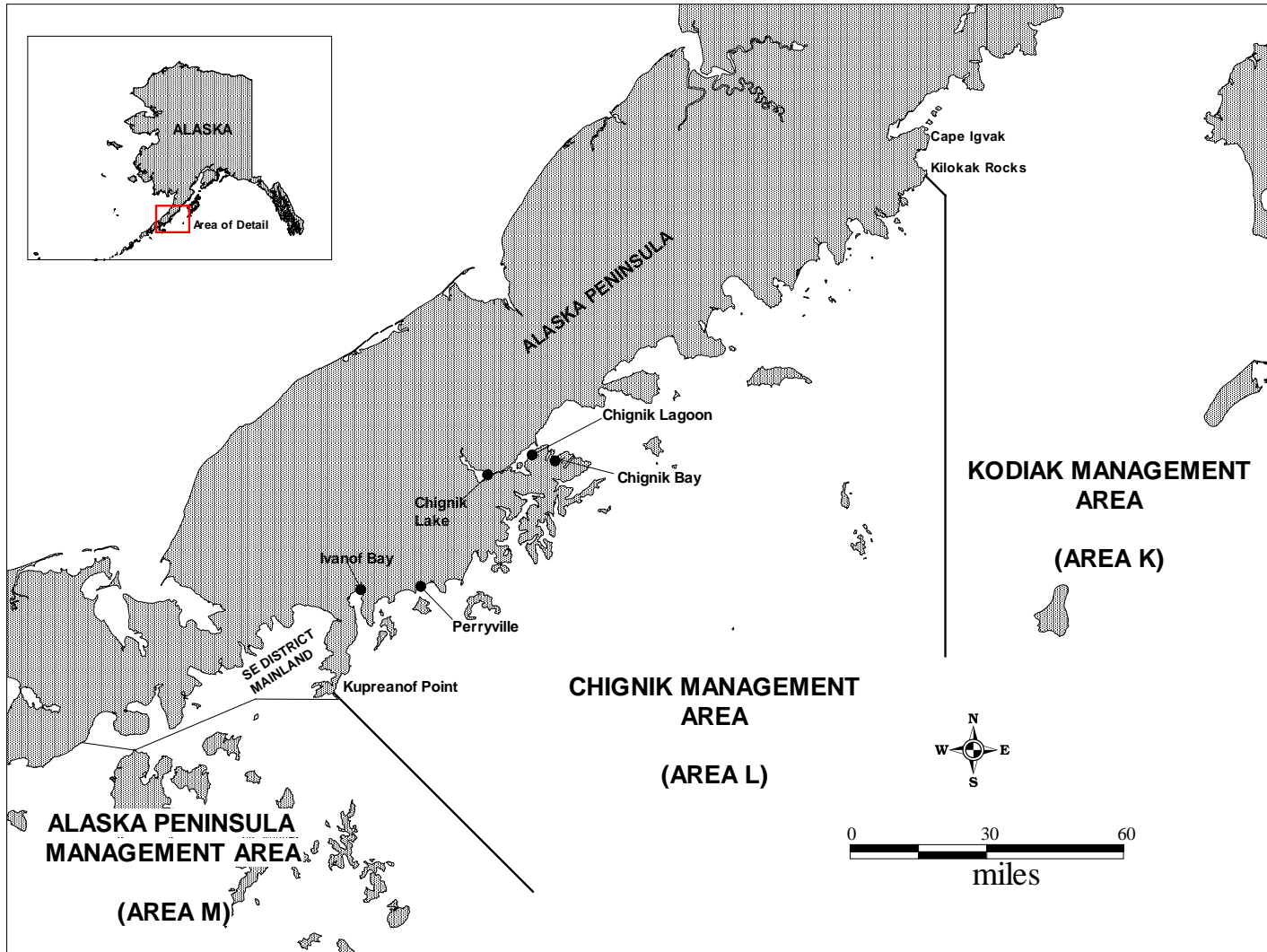


Figure 1.—Map of the Alaska Peninsula and the relative locations of the Chignik, Kodiak, and Alaska Peninsula Management Areas.

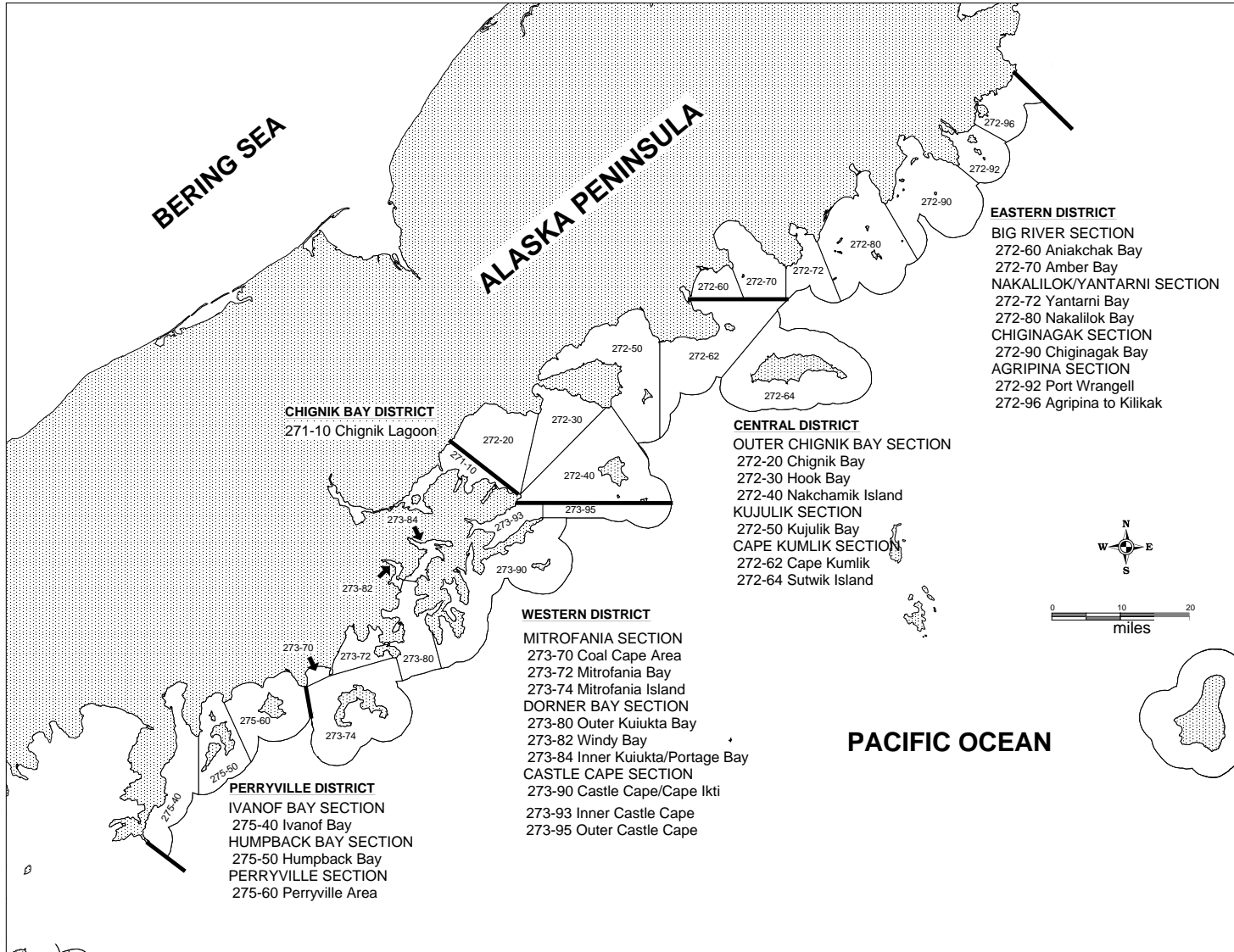


Figure 2.—Map of the Chignik Management Area commercial fishing district boundaries and statistical areas.

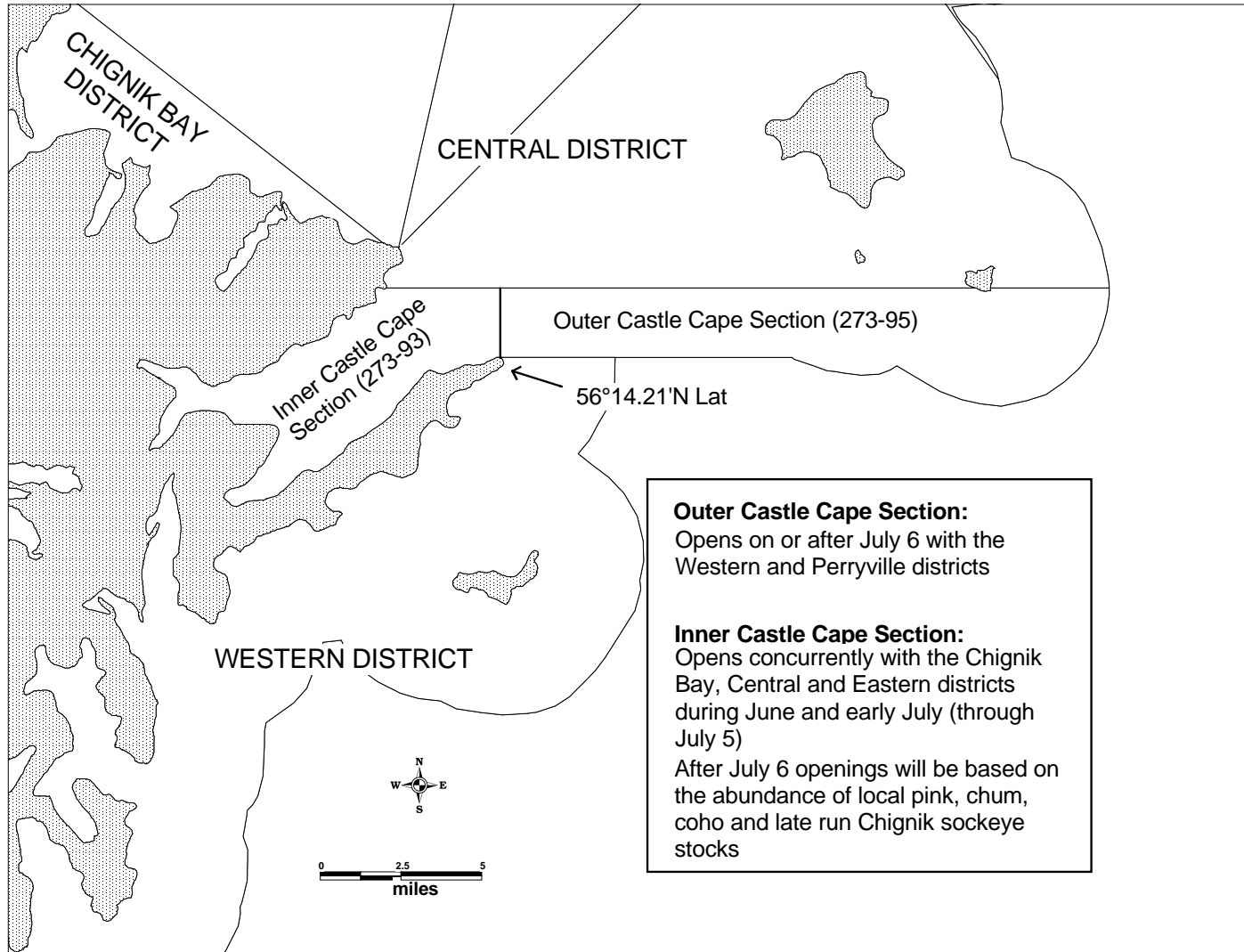


Figure 3.—Map of the Inner (273-93) and Outer Castle Cape (273-95) subsections of the Western District.

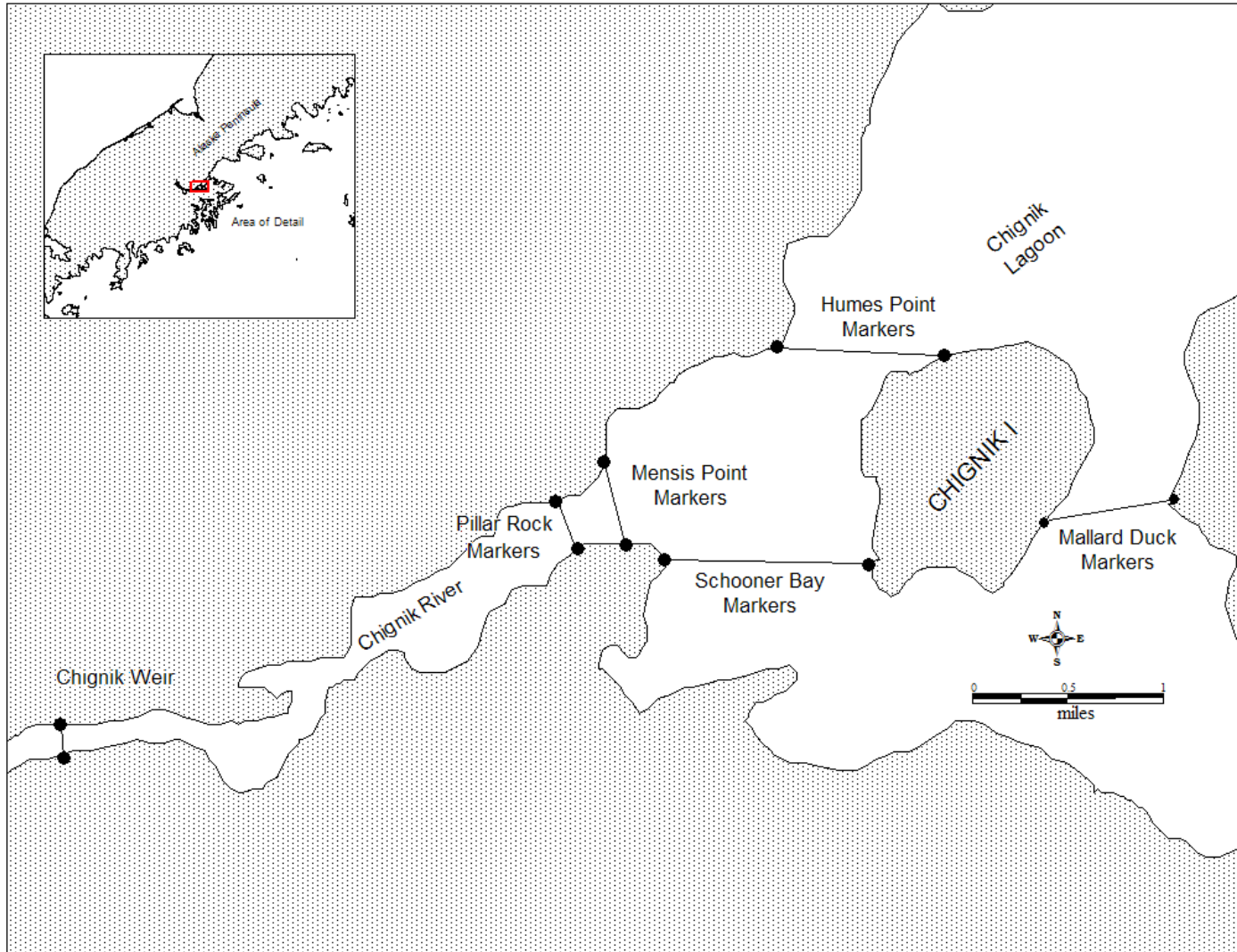


Figure 4.—Map of upper Chignik Lagoon and the location of Pillar Rock, Mensis Point, Humes Point, Mallard Duck, and Schooner Bay marker locations and the location of the Chignik weir.

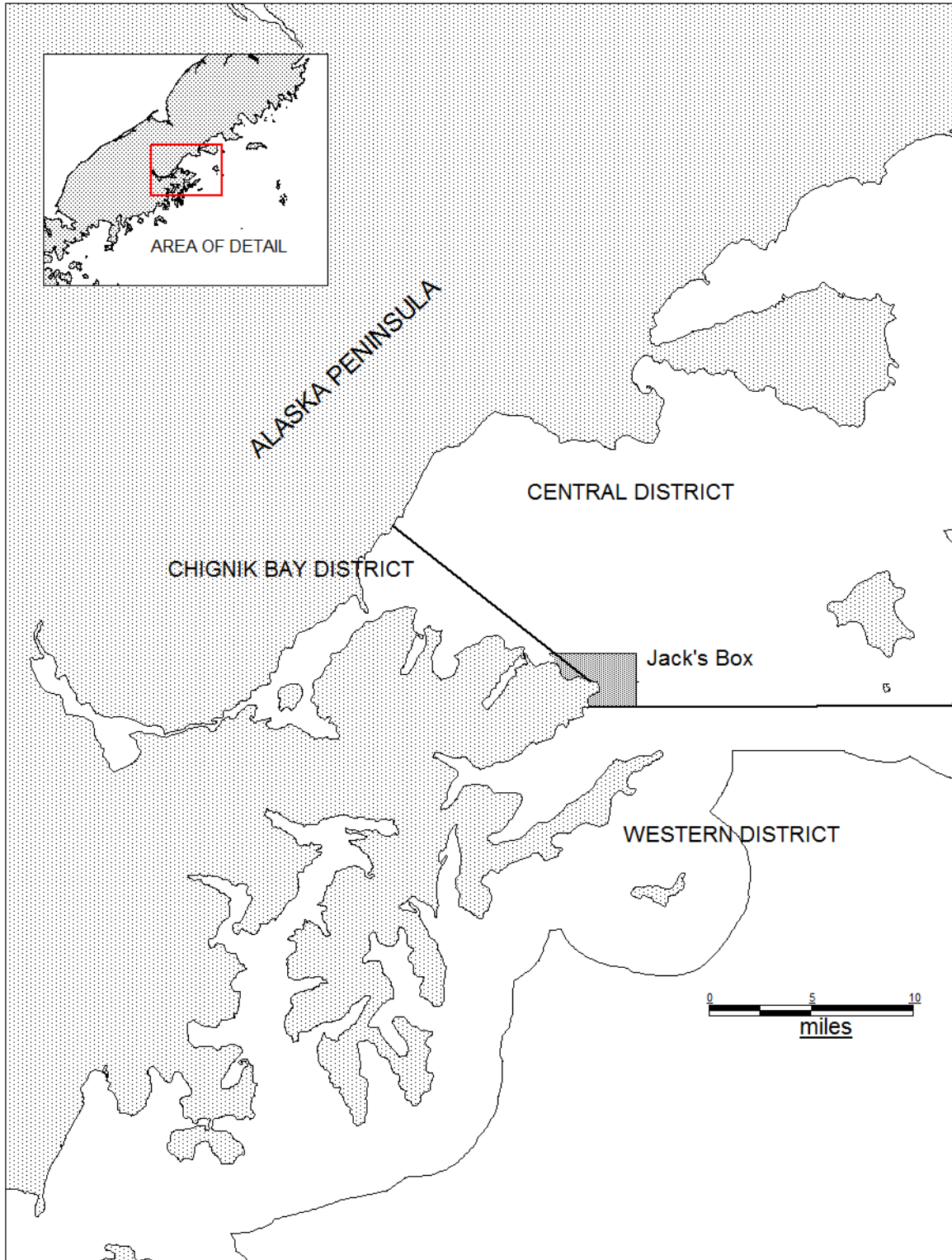


Figure 5.—Map of “Jack’s Box” in the Chignik Bay and Central districts.



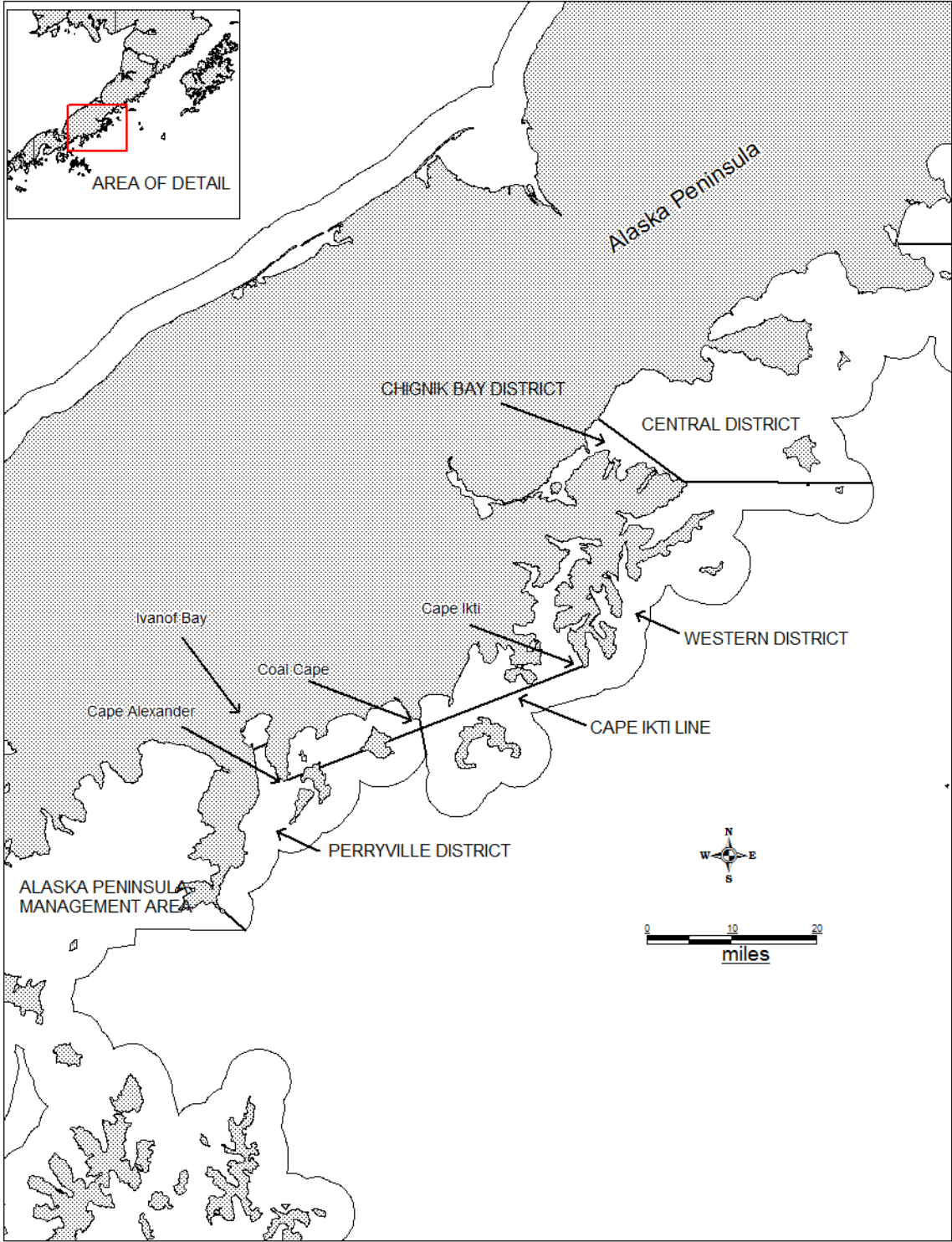


Figure 6.—Map of the “Cape Ikti Line” in the Western and Perryville districts.



## **APPENDIX A. NEWS RELEASE INSTRUCTIONS**

Appendix A1.–User instructions for new Division of Commercial Fisheries fishery announcements news release system.

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**USER INSTRUCTIONS FOR NEW DIVISION OF COMMERCIAL FISHERIES  
FISHERY ANNOUNCEMENTS NEWS RELEASE SYSTEM**

May 23, 2011



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On May 23, 2011, a new system for publishing news releases announcing commercial fishery openings, closings, fishing areas, times, etc. became available on the Alaska Department of Fish and Game website. This system also publishes non-regulatory fishery updates that convey information about specific fisheries, and allows users to find announcements about subsistence fishing and those personal use fisheries managed by the Division of Commercial Fisheries.

The new system replaces several older systems used by the division to publish fishing announcements and fishery updates to the web and allows a single entry portal for state-wide searching and the creation of e-mail subscriptions.

As of May 31, 2011, all news releases are not issued through this single system. The public may now subscribe to electronic notification via e-mail for specific fisheries that may be of interest. All fishery news releases and announcements from that date forward will appear in the system as they are issued. If the public has subscribed to any news those news releases are delivered to the user's e-mail inbox as they are issued.

This system can be located on the Alaska Department of Fish and Game website, a visitor to the site should look for the "News and Events" icon which can be found by clicking on the "Home" or "Fishing" menus at the top of any webpage on the site. A "News and Events" icon is located on these pages and clicking on this icon takes the user to the "News and Events" page. By clicking "Regulation Announcements, News Releases, Emergency Orders" and then the "Commercial Fishing" icon, the user can also go directly to this application by copying the following link into their browser. It might be a good idea to bookmark this link for ease of returning to the site for subsequent visits.

<http://www.adfg.alaska.gov/index.cfm?adfg=cfnews.main>

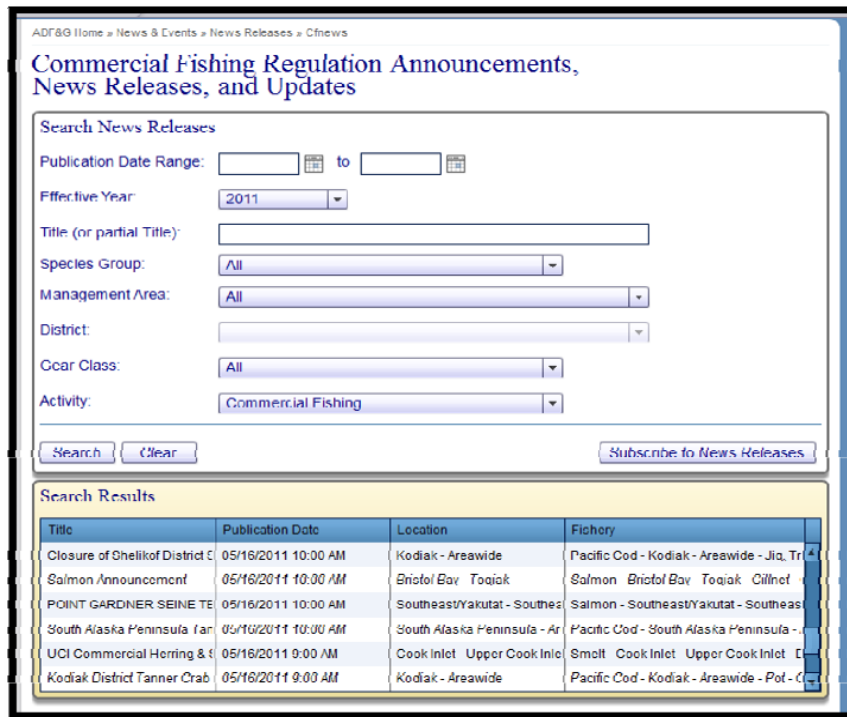


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**USING THE NEW SYSTEM – Searching for News Releases:**

The new Commercial Fishing Regulation Announcements, News Release, and Updates web page allows you to select the news releases of interest by using the search screen. Drop down menus are available for all selection categories, to assist in filtering the search of News Releases. Using the drop down menus, you can narrow your search and the results of that search.

It is possible to view a list of all releases issued by the commercial fisheries division in an entire year or, as is usually the case, search for a specific fishery, like the Bristol Bay salmon fishery or Kodiak black rockfish fishery. To select the entire set of releases, every drop down menu should have “all” selected, except for year, which should be set for the current year, 2011. Press the “Search” button and the results will be displayed within the “Search Results” box. The following screen shot shows the selection criteria and search results for all news releases and updates.



To search for news releases specific to the Bristol Bay salmon fishery, the user selects 2011 as the year, salmon as the species, Bristol Bay as the management area, all for district, and activity as commercial fishing. Then push the “Search” button and the results are displayed in the “Search Results.” A screen print of this selection is provided below. It would also be possible to search for a specific district in Bristol Bay by also selecting one of the “District” options within a specific management area.

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To view a particular news release that is displayed in the Search Results section, the user will double click on that item in the list and it will open as a PDF document. The user will need to have Acrobat Reader installed on your computer to display and print the document.

ADF&G Home » News & Events » News Releases » CNews

### Commercial Fishing Regulation Announcements, News Releases, and Updates

**Search News Releases**

Publication Date Range:  to

Effective Year:

Title (or partial Title):

Species Group:

Management Area:

District:

Gear Class:

Activity:

**Search Results**

Title	Publication Date	Location	Fishery
Bristol Bay Eastside # 1	05/17/2011 9:30 AM	Bristol Bay - Egegik	Salmon - Bristol Bay - Egegik - Gillnet - C
BB TEST 8	05/17/2011 8:40 AM	Bristol Bay - Egegik	Salmon - Bristol Bay - Egegik - Gillnet - C
BB eastside	05/17/2011 7:35 AM	Bristol Bay - Egegik	Salmon - Bristol Bay - Egegik - Gillnet - C
BB east side test	05/17/2011 7:32 AM	Bristol Bay - Egegik	Salmon - Bristol Bay - Egegik - Gillnet - C
BB east side # 2	05/17/2011 7:24 AM	Bristol Bay - Egegik	Salmon - Bristol Bay - Egegik - Gillnet - C
BB eastside # Xx	05/17/2011 7:12 AM	Bristol Bay - Egegik	Salmon - Bristol Bay - Egegik - Gillnet - C

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### Subscribing to News Releases:

After making a news release selection, it is possible to subscribe and receive, via e-mail, future news releases for the specific fishery selected, by pushing the “Subscribe to News Releases” button at the right lower corner of the search screen. The subscription web page will display, as shown below.

The screenshot shows a web form titled "Subscribe to News Releases Via Email". At the top left, there is a breadcrumb trail: "ADF&G Home > News & Events > News Releases > Cfnews". The main heading is "Commercial Fishing Regulation Announcements, News Releases, and Updates". Below the heading is the form title "Subscribe to News Releases Via Email". A red asterisk indicates a required field. The form contains the following fields:

- Species Group: Dropdown menu with "Salmon" selected.
- Gear Class: Dropdown menu with "All" selected.
- Activity: Dropdown menu with "Commercial Fishing" selected.
- Management Area: Dropdown menu with "Bristol Bay" selected.
- District: Dropdown menu with "All" selected.
- Email Format: Dropdown menu with "HTML with PDF" selected.
- Email Address: Text input field with an asterisk indicating it is required.
- Confirm Email Address: Text input field with an asterisk indicating it is required.

At the bottom of the form, there are three buttons: "Subscribe", "Clear", and "Search for News Releases".

Simply type in an e-mail address in the box provided and then confirm this e-mail address in the box provided for confirming e-mail addresses, push the “Subscribe” button, and the subscription process is finished. News releases for the fisheries selected by the user will begin to appear in the user’s mailbox as they are published by ADF&G staff.

The user may return to the search screen by pushing the “Search for News Releases” button in the lower right hand corner of the subscription screen. When you subscribe to all News Releases for a specific category, as defined by the drop down menu, this subscription is limited to the selection you created. If you wish to subscribe to news releases for other fisheries you will need to repeat the process described above for each subscription desired.

A user may unsubscribe to any subscription by clicking on the link “Unsubscribe” that is included within each e-mail sent to a subscriber.



**APPENDIX B. 2015 CHIGNIK SOCKEYE  
SALMON FORECAST**

**Forecast Area: Chignik**

**Species: Sockeye Salmon**

**Preliminary Forecast of the 2015 Run**

		Forecast Estimate (thousands)	Forecast Range (thousands)
Total Production			
Early Run (Black Lake)	Total Run Estimate	1,320	308–2,331
	Escapement Goal <sup>a</sup>	350	350–450
	Harvest Estimate <sup>b</sup>	970	
Late Run (Chignik Lake)	Total Run Estimate	1,217	658–1,775
	Escapement Goal <sup>a</sup>	250	250–400
	Harvest Estimate <sup>b</sup>	967	
Total Chignik System	Total Run Estimate	2,536	966–4,106
	Harvest Estimate <sup>b</sup>	1,936	
	Chignik Area	1,588	
	SEDM Area	113	
	Cape Igvak Section	235	

*Note:* Column numbers may not total or correspond exactly with numbers in text due to rounding.

<sup>a</sup> Targeted escapement and range are the lower bound and range of the 2015 escapement goals for early (350,000–450,000 fish) and late (200,000–400,000 fish) runs. An inriver run goal of 50,000 sockeye salmon is added to the lower bound of the late-run escapement goal.

<sup>b</sup> Includes anticipated harvests of Chignik-bound fish in Southeastern District Mainland and Cape Igvak fisheries.

**Forecast Methods**

Simple and multiple linear regressions models using age-class relationships and parent escapement data were used to forecast the 2015 early- and late- Chignik sockeye salmon runs. Each regression model was assessed with standard regression diagnostic procedures. Prediction intervals (80%) for the regression estimates were calculated using the variances of the regression models. Age classes that could not be estimated with one of these models were estimated using pooled medians, and the 10th and 90th percentiles of the data were used to calculate the prediction interval of the median estimates.

For the early run, simple linear regression was used to predict ocean-age-3 sockeye salmon from prior year ocean-age-2 returns using data from the 1992 outmigration year to the present. Remaining age-class components of the run were predicted by calculating median returns since the 1985 outmigration year (14% of the run). The 2015 late run was predicted using parent escapement, ocean-age-class, and sibling relationships. Age-1.3 sockeye salmon were predicted by simple linear regression from prior year age-1.2 returns from 1959 to the present using natural log-transformed values and back-transforming the prediction. Age-2.3 sockeye salmon were predicted by simple linear regression from prior year age-2.2 returns from 1984 to the present, excluding 1989. Ocean-age-1,-2, and -4 sockeye salmon were predicted by calculating median returns since the 1985 outmigration year. Remaining age-class components of the run were predicted by calculating median returns since the 1985 outmigration year (<2% of the run).

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The early- and late-run regression and median estimates were summed to estimate the total Chignik River sockeye salmon run for 2015. The range was estimated as the overall 80% prediction intervals and calculated as the square root of the sum of the squared 80% prediction intervals for each age class forecasted. The combined early- and late-run 80% prediction interval was calculated by summing the lower prediction bounds and upper prediction bounds of the two runs.

### **Forecast Discussion**

The 2015 Chignik sockeye salmon early run is forecasted to be 1.32 million fish, which is 31,000 fish more than the 10-year average of 1.29 million and 909,000 fish more than the 2014 early run of 410,000 fish. The early run is predicted to comprise 87% ocean-age-3 fish, 13% ocean-age-2 fish, and < 1% of remaining age-class components. The late run is forecasted to be 1.22 million fish, which is 190,000 fish more than the 10-year average of 1.03 million fish and 355,000 fish more than the 2014 late run of 862,000 fish. The 2015 late run is predicted to comprise < 1% ocean-age-1, 12% ocean-age-2, 87% ocean-age-3 (22% age-1.3 and 64% age-2.3), and < 1% ocean-age-4 fish. The total Chignik sockeye salmon run is expected to be 2.54 million fish, which is approximately 219,000 fish more than the 10-year average of 2.32 million and 1.26 million fish more than the 2014 total run of 1.27 million.

Inseason genetic estimates of each run were used to manage the fishery for the first time in 2014 and will continue to be used in 2015. The projected early-run harvest estimate of 970,000 fish is based on achievement of the lower end of the early-run escapement goal range of 350,000 fish. The projected late-run harvest estimate of 967,000 fish is based on achieving the lower end of the late-run goal of 200,000 sockeye salmon plus the inriver run goal of 50,000 fish. Sockeye salmon harvest estimates for both runs include fish harvested in the Chignik Management Area, Chignik-bound fish harvested in the Cape Igvak Section of the Kodiak Management Area, and in the Southeastern District Mainland of the Alaska Peninsula Management Area.

The 2015 forecast for the early run approximates the most recent 10-year average run size, while the late-run forecast is larger than the most recent 10-year average run size. Predicting future runs of salmon is always difficult, and the wide confidence interval around the point estimate of the 2015 forecasts is due to the substantial uncertainty included within each of forecast models. The magnitude of the early run is typically more variable than the late run, resulting in wider confidence intervals for the early run. When reviewed over the most recent 10 years, the average deviation of the early run prediction from the actual run is about 485,000 fish, heavily influenced by the extremely large early run in 2011. The average deviation of late-run prediction from the actual run is approximately 249,000 fish. Exploratory analysis using other sibling relationships, smolt outmigration data, and environmental variables yielded results similar to this formal forecast. Similar methods have been used for forecasting the early and late runs since 2004. Due to the range of variation in the relationships used in these forecasts and their historical accuracy, our confidence in them is fair to good.

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Mary Beth Loewen

Finfish Research Biologist, Alaska Peninsula




**APPENDIX C. CHIGNIK SALMON SUBSISTENCE PERMIT**

Appendix C1.-Sample Chignik salmon subsistence permit.

**2013 CHIGNIK AREA SUBSISTENCE SALMON FISHING PERMIT**

Permit expires December 31, 2013



This permit is valid in the Chignik Management Area Only.

**Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

I hereby certify that I am an Alaska resident, and any fish taken will be used for subsistence purposes only.

Permittee signature \_\_\_\_\_ Date \_\_\_\_\_

Additional members of same household to be included on permit (Residents Only):

\_\_\_\_\_

\_\_\_\_\_

Email address: \_\_\_\_\_ Renew permit for next year:

The catch report table below must be filled out (even if the permit was not used) and returned to a local Alaska Department of Fish and Game office prior to December 31, 2013. Failure to return the permit could result in future permits being denied (5 AAC 01.015 (C)).

**SUBSISTENCE SALMON HARVEST REPORT**

Number of salmon by species:

DATE	SPECIFIC LOCATION	KING	SOCKEYE	COHO	PINK	CHUM

- ALL PERSONS MUST HAVE A VALID SUBSISTENCE PERMIT IN POSSESSION WHILE TAKING OR ATTEMPTING TO TAKE SUBSISTENCE SALMON.
- COMPLETE THE SUBSISTENCE HARVEST REPORTS IMMEDIATELY UPON LANDING SALMON. UNSUCCESSFUL TRIPS SHOULD ALSO BE RECORDED.
- THE LIMIT IS **250** SALMON PER PERMIT. ADDITIONAL PERMITS MAY BE ISSUED IF ADDITIONAL SALMON ARE NEEDED FOR SUBSISTENCE.

**REFER TO THE CURRENT SUBSISTENCE REGULATION BOOK FOR COMPLETE REGULATIONS**

Return permit to: Chignik Salmon Management, ADF&G, 351 Research Court, Kodiak, AK 99615 by December 31, 2013.

Department representative \_\_\_\_\_ Date \_\_\_\_\_

(SEE OPPOSITE SIDE FOR SUBSISTENCE REGULATIONS)

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**SELECTED SUBSISTENCE REGULATIONS**

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These listed regulations are not inclusive of all the regulations that apply to subsistence salmon fishing in the Chignik Area.

**5 AAC 01.015. SUBSISTENCE FISHING PERMITS AND REPORTS.** (b)(3) Permits must be retained in the possession of the permittee and be readily available for inspection while taking fish. A person who transports subsistence-taken fish shall have a subsistence fishing permit in their possession.

**5 AAC 01.460. FISHING SEASONS.** Fish, other than rainbow trout and steelhead trout, may be taken at any time, except as may be specified by a subsistence fishing permit. Rainbow trout and steelhead trout, taken incidental in other subsistence finfish net fisheries, are lawfully taken and may be retained for subsistence purposes.

**5 AAC 01.470. LAWFUL GEAR AND GEAR SPECIFICATIONS.** (a) Salmon may be taken by seines and gillnets, or with gear specified by a subsistence fishing permit, except that salmon in Chignik Lake may not be taken with purse seines. A gillnet may not be set while staked, anchored, or otherwise fixed in a stream while it obstructs more than one-half of the width of the waterway.

**5 AAC 01.475: WATERS CLOSED TO SUBSISTENCE FISHING.** Salmon may not be taken (1) from July 1 through August 31, in the Chignik River from a point 300 feet upstream from the Chignik weir to Chignik Lake; (2) in Black Lake or any tributary to Black Lake or tributary to Chignik Lake except in the Clark River and Home Creek from their confluence with Chignik Lake upstream one mile.

**AAC 01.480. SUBSISTENCE FISHING PERMITS.**

- a. Salmon, trout and char may only be taken under the authority of a subsistence fishing permit.
- b. Not more than 250 salmon may be taken for subsistence purposes unless otherwise specified on the subsistence fishing permit.
- c. A record of subsistence-caught fish must be kept on this permit. The record must be completed immediately upon taking subsistence-caught fish and must be returned to the local representative of the department no later than Dec 31 of the year issued.

**5 AAC 01.485. RESTRICTIONS ON COMMERCIAL FISHERMAN.** (a) In the Chignik Area, a commercial salmon fishing license holder may not subsistence fish for salmon during the 12 hours before the first commercial salmon fishing period and the 12 hours following the closure of a commercial salmon fishing period. However, a commercial salmon fishing license holder may subsistence fish for salmon during a commercial salmon fishing period.

**SPECIAL PERMIT PROVISIONS**

1. The adipose fin must be removed from all subsistence-caught salmon immediately upon capture.
2. A commercial license holder may not fish for both subsistence and commercial salmon at the same time. Further, a commercial salmon vessel may not carry both the subsistence and commercially caught salmon at the same time.
3. A commercial fishing vessel may not simultaneously carry both commercial seine and subsistence gillnet gear.
4. Commercial fisherman may always remove salmon from their commercial catch for home pack. Record the number of salmon taken by species for home pack use on your fish ticket.
5. This permit can be withdrawn at any time.

**NOTICE TO FISHERMAN:**

Before you fish, be sure you know whose land you are on and check the regulations: State regulations apply on all state, private, and federal lands where authorized. Private landowners may restrict entry on their land. Federal lands may be closed to fishing except by certain rural residents. Persons standing on state or private lands should be sure their fishing activities are legal under state regulations. If you have questions regarding the federal subsistence fisheries, please contact the Federal Office of Subsistence Management at (800) 478-1456.