

Fishery Management Report No. 13-49

**Upper Cook Inlet Commercial Fisheries Annual
Management Report, 2013**

by

Pat Shields

and

Aaron Dupuis

December 2013

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)		General		Mathematics, statistics	
centimeter	cm	Alaska Administrative		<i>all standard mathematical</i>	
deciliter	dL	Code	AAC	<i>signs, symbols and</i>	
gram	g	all commonly accepted		<i>abbreviations</i>	
hectare	ha	abbreviations	e.g., Mr., Mrs.,	alternate hypothesis	H _A
kilogram	kg		AM, PM, etc.	base of natural logarithm	<i>e</i>
kilometer	km	all commonly accepted		catch per unit effort	CPUE
liter	L	professional titles	e.g., Dr., Ph.D.,	coefficient of variation	CV
meter	m		R.N., etc.	common test statistics	(F, t, χ^2 , etc.)
milliliter	mL	at	@	confidence interval	CI
millimeter	mm	compass directions:		correlation coefficient	
		east	E	(multiple)	R
		north	N	correlation coefficient	
		south	S	(simple)	r
Weights and measures (English)		west	W	covariance	cov
cubic feet per second	ft ³ /s	copyright	©	degree (angular)	°
foot	ft	corporate suffixes:		degrees of freedom	df
gallon	gal	Company	Co.	expected value	<i>E</i>
inch	in	Corporation	Corp.	greater than	>
mile	mi	Incorporated	Inc.	greater than or equal to	≥
nautical mile	nmi	Limited	Ltd.	harvest per unit effort	HPUE
ounce	oz	District of Columbia	D.C.	less than	<
pound	lb	et alii (and others)	et al.	less than or equal to	≤
quart	qt	et cetera (and so forth)	etc.	logarithm (natural)	ln
yard	yd	exempli gratia		logarithm (base 10)	log
		(for example)	e.g.	logarithm (specify base)	log ₂ , etc.
Time and temperature		Federal Information		minute (angular)	'
day	d	Code	FIC	not significant	NS
degrees Celsius	°C	id est (that is)	i.e.	null hypothesis	H ₀
degrees Fahrenheit	°F	latitude or longitude	lat or long	percent	%
degrees kelvin	K	monetary symbols		probability	P
hour	h	(U.S.)	\$, ¢	probability of a type I error	
minute	min	months (tables and		(rejection of the null	
second	s	figures): first three		hypothesis when true)	α
		letters	Jan, ..., Dec	probability of a type II error	
Physics and chemistry		registered trademark	®	(acceptance of the null	
all atomic symbols		trademark	™	hypothesis when false)	β
alternating current	AC	United States		second (angular)	"
ampere	A	(adjective)	U.S.	standard deviation	SD
calorie	cal	United States of		standard error	SE
direct current	DC	America (noun)	USA	variance	
hertz	Hz	U.S.C.	United States	population	Var
horsepower	hp		Code	sample	var
hydrogen ion activity	pH	U.S. state			
(negative log of)			use two-letter		
parts per million	ppm		abbreviations		
parts per thousand	ppt,		(e.g., AK, WA)		
	‰				
volts	V				
watts	W				

FISHERY MANAGEMENT REPORT NO. 13-49

**UPPER COOK INLET COMMERCIAL FISHERIES
ANNUAL MANAGEMENT REPORT, 2013**

by

Pat Shields
and
Aaron Dupuis

Alaska Department of Fish and Game, Division of Commercial Fisheries, Soldotna

Alaska Department of Fish and Game
Division of Sport Fish, Research and Technical Services
333 Raspberry Road, Anchorage, Alaska, 99518-1565

December 2013

The Fishery Management Reports series was established in 1989 by the Division of Sport Fish for the publication of an overview of management activities and goals in a specific geographic area, and became a joint divisional series in 2004 with the Division of Commercial Fisheries. 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.adfg.alaska.gov/sf/publications/> This publication has undergone regional peer review.

*Pat Shields and Aaron Dupuis,
Alaska Department of Fish and Game, Division of Commercial Fisheries,
43961 Kalifornsky Beach Road, Suite B, Soldotna, AK 99669-8367, USA*

This document should be cited as:

Shields, P., and A. Dupuis. 2013. Upper Cook Inlet commercial fisheries annual management report, 2013. Alaska Department of Fish and Game, Fishery Management Report No. 13-49, Anchorage.

The Alaska Department of Fish and Game (ADF&G) administers all programs and activities free from discrimination based on race, color, national origin, age, sex, religion, marital status, pregnancy, parenthood, or disability. The department administers all programs and activities in compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, Title II of the Americans with Disabilities Act (ADA) of 1990, the Age Discrimination Act of 1975, and Title IX of the Education Amendments of 1972.

If you believe you have been discriminated against in any program, activity, or facility please write:

ADF&G ADA Coordinator, P.O. Box 115526, Juneau, AK 99811-5526

U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, MS 2042, Arlington, VA 22203

Office of Equal Opportunity, U.S. Department of the Interior, 1849 C Street NW MS 5230, Washington DC 20240

The department's ADA Coordinator can be reached via phone at the following numbers:

(VOICE) 907-465-6077, (Statewide Telecommunication Device for the Deaf) 1-800-478-3648,

(Juneau TDD) 907-465-3646, or (FAX) 907-465-6078

For information on alternative formats and questions on this publication, please contact:

ADF&G, Division of Sport Fish, Research and Technical Services, 333 Raspberry Rd, Anchorage AK 99518 (907) 267-2375

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	iii
LIST OF FIGURES.....	iii
LIST OF APPENDICES.....	iv
ABSTRACT.....	1
INTRODUCTION.....	1
Salmon.....	1
Herring.....	2
Smelt.....	3
Razor Clams.....	4
2013 COMMERCIAL SALMON FISHERY.....	4
Regulatory Changes.....	6
Chinook Salmon.....	6
Northern District.....	6
Upper Subdistrict.....	8
Sockeye Salmon.....	8
Big River.....	11
Western Subdistrict.....	11
Northern District.....	12
Upper Subdistrict Set Gillnet and Central District Drift Gillnet.....	13
Kalgin Island Subdistrict.....	20
Coho Salmon.....	20
Pink Salmon.....	21
Chum Salmon.....	21
Price, Average Weight, and Participation.....	21
Salmon Enhancement.....	23
Stock Status and Outlook.....	24
Sockeye Salmon.....	24
Susitna River.....	25
Crescent River.....	29
Fish Creek.....	29
2014 Sockeye Salmon Outlook.....	30
Pink Salmon.....	32
Chum Salmon.....	33
Coho Salmon.....	33
Northern District.....	34
Kenai River.....	35
Chinook Salmon.....	36
Northern District.....	36
Deshka River.....	37
Kenai River.....	38
COMMERCIAL HERRING FISHERY.....	40
COMMERCIAL SMELT FISHERY.....	41
COMMERCIAL RAZOR CLAM FISHERY.....	42

TABLE OF CONTENTS (Continued)

	Page
SUBSISTENCE AND PERSONAL USE FISHERIES.....	42
Tyonek Subsistence Salmon Fishery	43
Upper Yentna River Subsistence Salmon Fishery	43
EDUCATIONAL FISHERIES	43
Central District Educational Fisheries	44
Northern District Educational Fisheries	45
PERSONAL USE SALMON FISHERY.....	45
Kasilof River Gillnet	46
Kasilof River Dip Net.....	47
Kenai River Dip Net.....	47
Fish Creek Dip Net Fishery	47
Beluga River Senior Citizen Dip Net Fishery.....	48
ACKNOWLEDGEMENTS.....	48
REFERENCES CITED	49
FIGURES	53
APPENDIX A: 2013 SEASON DATA	69
APPENDIX B: HISTORICAL DATA	141
APPENDIX C: SALMON OUTLOOK AND FORECAST	177
APPENDIX D: COMMERCIAL SMELT AND HERRING	195

LIST OF TABLES

Table		Page
1.	Upper Cook Inlet sockeye salmon escapement goals and passage estimates, 2013.	5
2.	Chinook salmon harvest during the directed fishery in the Northern District, 1986–2013.	7
3.	2013 Upper Cook Inlet sockeye salmon forecast and return.	10
4.	Upper Subdistrict set gillnet fishing hours, 2013.	16
5.	Production of sockeye salmon in Big Lake, 1997–2013.	24
6.	Upper Cook Inlet sockeye salmon run, 2013.	24
7.	Crescent Lake sockeye salmon average escapement, harvest and run, 1976–2013.	29
8.	Upper Cook Inlet pink salmon commercial harvests and Deshka River escapements, 1996–2013.	32
9.	Coho salmon escapement and enumeration, 1996–2013.	35
10.	Deshka River Chinook salmon passage, 1995–2013.	38
11.	Commercial smelt harvest, 1978, 1980, 1998–1999, and 2006–2013.	41

LIST OF FIGURES

Figure		Page
1.	Major tributaries of the Cook Inlet basin.	54
2.	Upper Cook Inlet commercial fisheries subdistrict fishing boundaries.	55
3.	Upper Cook Inlet commercial set gillnet statistical areas.	56
4.	Upper Cook Inlet commercial drift gillnet statistical areas.	57
5.	Map of the Expanded Kenai and Expanded Kasilof Sections with waypoint descriptions.	58
6.	Map of the Kenai and Kasilof Sections with waypoint descriptions.	59
7.	Hours fished in the Upper Subdistrict set gillnet fishery, 2013.	60
8.	Drift gillnet boundaries for fishing areas 1 and 2.	64
9.	Map of drift gillnet areas 3 and 4.	65
10.	Chinook salmon average weight (all fish) and percentage of the harvest comprised of ocean-age-2 or less fish in the Upper Subdistrict set gillnet commercial fishery, 1987–2013.	66
11.	Length frequency of razor clam shells sampled from the 2013 Polly Creek commercial razor clam fishery.	67

LIST OF APPENDICES

Appendix	Page
A1. Offshore test fish sockeye salmon catch results and environmental data, 2013.....	70
A2. Upper Cook Inlet sockeye salmon enumeration by watershed and date, 2013.....	71
A3. Commercial Chinook salmon catch by area and date, Upper Cook Inlet, 2013.....	75
A4. Commercial sockeye salmon catch by area and date, Upper Cook Inlet, 2013.....	82
A5. Commercial coho salmon catch by area and date, Upper Cook Inlet, 2013.....	89
A6. Commercial pink salmon catch by area and date, Upper Cook Inlet, 2013.....	96
A7. Commercial chum salmon catch by area and date, Upper Cook Inlet, 2013.....	103
A8. Commercial salmon catch by gear, statistical area and species, Upper Cook Inlet, 2013.....	110
A9. Commercial salmon catch per permit by statistical area, Upper Cook Inlet, 2013.....	111
A10. Commercial fishing emergency orders issued during the 2013 Upper Cook Inlet fishing season.....	112
A11. Commercial salmon fishing periods, Upper Cook Inlet, 2013.....	118
A12. Susitna River sockeye salmon studies, 2006–2013.....	121
A13. Age composition (in percent) of sockeye salmon escapements, Upper Cook Inlet, 2013.....	121
A14. Upper Cook Inlet salmon average weights (in pounds) by area, 2013.....	122
A15. Age composition of Chinook salmon harvested in the Upper Subdistrict set gillnet fishery, Upper Cook Inlet, Alaska, 1987–2013.....	124
A16. Major buyers and processors of Upper Cook Inlet fishery products, 2013.....	125
A17. Number of salmon harvested by gear, area, and species in personal use fisheries, Upper Cook Inlet, 2013.....	126
A18. Personal use sockeye salmon harvest by day, 2013.....	127
A19. Age, weight, sex, and size distribution of Pacific herring sampled by gillnet in Upper Cook Inlet, 2013.....	129
A20. Age, sex, and size distribution of eulachon (smelt) from Upper Cook Inlet commercial dip net fishery, 2006–2013.....	133
A21. Seldovia District tide tables, May through August, 2013.....	135
A22. Total sockeye salmon harvest from all sources in Upper Cook Inlet, 1996–2013.....	139
A23. Daily commercial harvest of razor clams, Upper Cook Inlet, 2013.....	140
B1. Upper Cook Inlet commercial Chinook salmon harvest by gear type and area, 1966–2013.....	142
B2. Upper Cook Inlet commercial sockeye salmon harvest by gear type and area, 1966–2013.....	144
B3. Upper Cook Inlet commercial coho salmon harvest by gear type and area, 1966–2013.....	146
B4. Upper Cook Inlet commercial pink salmon harvest by gear type and area, 1966–2013.....	148
B5. Upper Cook Inlet commercial chum salmon harvest by gear type and area, 1966–2013.....	150
B6. Upper Cook Inlet commercial salmon harvest by species, 1966–2013.....	152
B7. Approximate exvessel value of Upper Cook Inlet commercial salmon harvest by species, 1960–2013.....	154
B8. Commercial herring harvest by fishery, Upper Cook Inlet, 1973–2013.....	156
B9. Commercial harvest of razor clams in Upper Cook Inlet, 1919–2013.....	157
B10. Enumeration goals and counts of sockeye salmon in selected streams of Upper Cook Inlet, 1978–2013.....	158
B11. Average price paid for commercially-harvested salmon, Upper Cook Inlet, 1970–2013.....	160
B12. Average weight (pounds) of commercially-harvested salmon, Upper Cook Inlet, 1970–2013.....	161
B13. Registered units of gillnet fishing effort by gear type in Cook Inlet, 1974–2012.....	162
B14. Forecast and projected commercial harvests of salmon by species, Upper Cook Inlet, 1985–2013.....	163
B15. Upper Cook Inlet subsistence fisheries salmon harvest, 1980–2013.....	164
B16. Upper Cook Inlet educational fisheries salmon harvest, 1994–2013.....	166
B17. Effort and harvest in Upper Cook Inlet personal use salmon fisheries, 1996–2013.....	172
C1. Upper Cook Inlet 2013 outlook for commercial salmon fishing.....	178
C2. 2014 Upper Cook Inlet sockeye salmon forecast.....	190
D1. 2013 Upper Cook Inlet commercial smelt (hooligan) and herring fishing seasons.....	196

ABSTRACT

The 2013 Upper Cook Inlet (UCI) area management report describes commercial fishing activities monitored by the Alaska Department of Fish and Game, Division of Commercial Fisheries, in Soldotna. The UCI management area consists of that portion of Cook Inlet north of the latitude of Anchor Point and is divided into the Central and Northern districts. The Central District is comprised of 6 subdistricts, while the Northern District includes 2 subdistricts. At present, 5 species of Pacific salmon (sockeye *Oncorhynchus nerka*, Chinook *O. tshawytscha*, chum *O. keta*, coho *O. kisutch*, and pink *O. gorbuscha*), razor clams (*Siliqua patula*), Pacific herring (*Clupea pallasii*), and eulachon or smelt (*Thaleichthys pacificus*) are subject to commercial harvest in UCI. The 2013 UCI harvest of 3.1 million salmon was approximately 24% less than the 1966–2012 average annual harvest of 4.1 million fish, while the commercial sockeye salmon harvest of 2.7 million fish was approximately 7% less than the 1966–2012 average annual harvest of 2.9 million fish. The 2013 estimated exvessel value of \$40.2 million was 57% more than the 2003–2012 average annual exvessel value of \$25.6 million, and approximately 56% more than the 1966–2012 average annual exvessel value of \$25.8 million. For the 2013 season, one of six monitored sockeye salmon systems fell within its established escapement goal range; three systems exceeded the maximum target and two failed to achieve the minimum target. The timing of the 2013 sockeye salmon run was estimated to be on time. Due to a high number of missed fishing days, data from the offshore test fish project were not able to be used in estimating sockeye salmon run timing in 2013.

Key words: sockeye *Oncorhynchus nerka*, Chinook *Oncorhynchus tshawytscha*, chum *Oncorhynchus keta*, coho *Oncorhynchus kisutch*, pink *Oncorhynchus gorbuscha*, salmon, Pacific herring *Clupea pallasii*, smelt, eulachon *Thaleichthys pacificus*, razor clam *Siliqua patula*, commercial fishery, personal use fishery, gillnet, escapement, Upper Cook Inlet, Annual Management Report, AMR

INTRODUCTION

The Upper Cook Inlet (UCI) commercial fisheries management area consists of that portion of Cook Inlet north of the latitude of the Anchor Point Light (59° 46.15' N lat) and is divided into the Central and Northern districts (Figures 1 and 2). The Central District is approximately 75 miles long, averages 32 miles in width, and is divided into 6 subdistricts. The Northern District is 50 miles long, averages 20 miles in width and is divided into two subdistricts. At present, 5 species of Pacific salmon (*Oncorhynchus* spp.), razor clams (*Siliqua patula*), Pacific herring (*Clupea pallasii*), and eulachon or smelt (*Thaleichthys pacificus*) are subject to commercial harvest in UCI. Harvest statistics are gathered and reported by 5-digit statistical areas and subareas (Figures 3 and 4).

SALMON

Since the inception of a commercial fishery in 1882, many gear types, including fish traps, gillnets, and seines have been employed with varying degrees of success to harvest salmon in UCI. Currently, set (fixed) gillnets are the only gear permitted in the Northern District, while both set and drift gillnets are used in the Central District. The use of seine gear is restricted to the Chinitna Bay Subdistrict, where they have been employed sporadically. The run timing and migration routes used by all species overlap to such a degree that the commercial fishery is mostly mixed-stock and mixed-species in nature. Typically, the UCI salmon harvest represents approximately 5% of the statewide catch. Nearly 10% of all salmon permits issued statewide are for the Cook Inlet area.

Detailed commercial salmon harvest statistics for UCI specific to gear type and area are available only back to 1966 (Appendices B1–B6). Since 1966, drift gillnets have accounted for approximately 6% of the average annual harvest of Chinook salmon (*O. tshawytscha*), as well as 56% of sockeye (*O. nerka*), 47% of coho (*O. kisutch*), 44% of pink (*O. gorbuscha*), and 88% of chum salmon (*O. keta*) (Appendices B1–B5); set gillnets have harvested virtually all of the

remainder. However, in the last 10 years (2003–2012), the proportion of the total annual coho, pink, and chum salmon harvest taken by drift gillnets has increased, while the average annual drift gillnet harvest (proportion of the total harvest) of sockeye salmon has decreased. For Chinook salmon, the average annual harvest during the last 10 years has remained fairly stable between commercial gear types. In terms of their recent economic value, sockeye salmon are the most important component of the UCI commercial salmon harvest, followed by coho, Chinook, chum, and pink salmon (Appendix B7).

HERRING

Commercial herring fishing began in UCI in 1973 (Flagg 1974) with a modest harvest of bait-quality fish along the east side of the Central District, which was expanded in the late 1970s to include small-scale sac roe fisheries in Chinitna and Tuxedni Bays (Appendix B8). Beginning in 1988, significant decreases in herring abundance were observed in Tuxedni Bay, as well as a shift towards older herring, resulting in the closure of Tuxedni Bay to commercial herring fishing prior to the 1992 season. In Chinitna Bay and along the eastside beaches, similar declines began to materialize after the 1990 season.

As a result of these declines, the Alaska Department of Fish and Game (ADF&G) submitted a proposal to the Alaska Board of Fisheries (BOF) to open the UCI herring fishery by emergency order (EO) only. This proposal passed and became regulation for the 1993 season, ending a long period with fixed opening dates of April 15 on the east side, and April 22 on the west side of Cook Inlet. This action effectively closed these fisheries to provide time for herring stocks to recover.

In 1998, the Upper Subdistrict of the Central District and the Eastern Subdistrict of the Northern District were opened to commercial herring fishing to assess the status of the herring population. The herring fisheries on the west side of Cook Inlet remained closed until the status of the east side stocks was determined. Prior to the 1999 season, ADF&G again submitted proposals to the BOF, seeking to restructure the herring fishery to two 30-hour periods per week on Mondays and Thursdays. These proposals included the condition that fishermen register their intent to participate in the fishery prior to April 10; as well as the requirement that they report their harvests within 12 hours of the closure of a fishing period.

The proposals were passed in the form of a management plan, 5 AAC 27.409 *Central District Herring Recovery Management Plan*, which became active prior to the 1999 season, and limited herring fishing in UCI to the waters of the Upper, Western, and Chinitna Bay subdistricts. In the Upper Subdistrict, fishing for herring is not allowed closer than 600 feet of the mean high tide mark on the Kenai Peninsula in order to reduce the incidental harvest of salmon. The management plan was amended by the BOF prior to the 2002 fishing season, extending the closing date for the fishery from May 20 to May 31.

In 2001, samples of herring were collected in Chinitna and Tuxedni bays. Age, sex, and size distribution of the samples revealed that the years of closed fishing in these areas had resulted in an increase of younger-aged fish being recruited into the population. As a result of these analyses, and in accordance with the herring recovery management plan, the commercial fishery was reopened in 2002 in both the Chinitna Bay and Western Subdistrict. The management plan allows for a very conservative harvest quota, not to exceed 40 tons in Chinitna Bay and 50 tons in the Western Subdistrict. There has been very little participation in either fishery since they were reopened (Appendix B8).

The herring management plan was further modified by the BOF in 2005 and 2008. The Kalgin Island Subdistrict was included in legal waters in 2005, and fishing periods in the Upper Subdistrict were expanded to 108 hours per week, or from Monday at 6:00 a.m. until Friday at 6:00 p.m. Additionally, in 2005, the mesh size for herring gillnets was modified to no smaller than 2.0 inches or no greater than 2.5 inches. In 2008, the 108-hour weekly fishing period went into effect for all areas open to herring fishing and the registration deadline of April 10 was amended to state that fishermen must register any time prior to fishing.

Because the glacial waters of UCI preclude the use of aerial surveys to estimate the biomass of herring stocks, management of these fisheries has departed from the standard techniques employed in the more traditional herring fisheries. Gillnets are the only legal gear allowed in the UCI herring fisheries, with set gillnets being used almost exclusively. This gear type is significantly less efficient at capturing herring than purse seines. Moreover, conservative guideline harvest levels have been set, which provide for a low-level commercial fishery on these stocks. In the Upper Subdistrict, harvests are generally concentrated in the Clam Gulch area, with very little or no participation in either the Western Subdistrict (Tuxedni Bay), Chinitna Bay, or Kalgin Island subdistricts.

SMELT

Smelt return to many of the larger river systems in UCI, with particularly large runs to the Susitna and Kenai rivers. Both longfin smelt *Spirinchus thaleichthys* and eulachon *Thaleichthys pacificus* (referred to as smelt in this report, while often identified in local vernacular as hooligan) are documented in Cook Inlet. Smelt begin returning to spawning areas in Cook Inlet generally from mid-May to mid-June and return in quantities large enough to support a limited commercial fishery. Longfin smelt return to Cook Inlet in the fall of the year and are not targeted because of their small run size.

Prior to adoption of 5 AAC 39.212 *Forage Fish Management Plan*, the entire UCI area was open to smelt fishing from October 1 to June 1 (Shields 2005). The only documented commercial harvests of smelt occurred in 1978 (300 pounds), 1980 (4,000 pounds), 1998 (18,900 pounds), and 1999 (100,000 pounds). Prior to 1998, fishermen were mistakenly advised that gillnets were the only legal gear for the harvest of smelt. Because primary markets at the time required undamaged fish for bait or marine mammal food, this harvest method was unacceptable. When the interpretation of the regulation was reviewed in 1998, and subsequently changed to allow dip nets to be used, the 1999 harvest increased to 100,000 pounds, which was the harvest cap at the time. All harvests occurred in salt water near the Susitna River. There has been no quantitative assessment of the Susitna River smelt stocks.

At the 1998 BOF meeting, the commercial smelt fishery was closed, but the regulation did not take effect until after the 1999 season. In 2000, as part of its draft *Forage Fish Management Plan*, ADF&G recommended that smelt fishing be restricted to the General Subdistrict of the Northern District. Legal gear would be dip nets only, which had the benefit of eliminating the harvest of non-target species. The area opened to fishing was designed to target Susitna River smelt stocks. In this draft policy, ADF&G recommended that active forage fish fisheries be allowed to take place in a tightly controlled and closely monitored manner through the use of a commissioner's permit, while not allowing any "new" fisheries to develop. The intent was to allow an active, low-level fishery to continue; however, when the BOF adopted the current *Forage Fish Management Plan*, they chose to close the entire commercial smelt fishery. At the

2005 BOF meeting, proposals were submitted to reopen the fishery, which the BOF accepted, authorizing a commercial smelt fishery beginning with the 2005 season. The fishery is conducted under 5 AAC 21.505 *Cook Inlet Smelt Fishery Management Plan* (Appendix D1). This fishery is allowed in salt water only, from May 1 to June 30, specifically in that area of Cook Inlet from the Chuitna River to the Little Susitna River and in the Susitna River south of 61° 21.50' N. latitude. Legal gear for the fishery is limited to a hand-operated dip net, as defined in 5 AAC 39.105, with the total harvest not to exceed 100 tons of smelt. Any salmon caught during the fishery are to be immediately returned to the water unharmed. To participate in this fishery, a miscellaneous finfish permit is required, as well as a commissioner's permit, which can be obtained from the ADF&G office in Soldotna.

RAZOR CLAMS

The commercial harvest of razor clams from UCI beaches dates back to 1919 (Appendix B9). Harvest levels have fluctuated from no fishery to production in excess of a half-million pounds. The sporadic nature of the fishery was more a function of limited market opportunities than limited availability of the resource. Razor clams are present in many areas of Cook Inlet, with particularly dense concentrations occurring near Polly Creek on the western shore and from Clam Gulch to Ninilchik on the eastern shore (Nickerson 1975). The eastern shoreline has been set aside for sport harvest exclusively since 1959, and all commercial harvests since that time have come from the west shore; principally from the Polly Creek and Crescent River sandbar areas. A large portion of the Polly Creek beach is approved by the Alaska Department of Environmental Conservation for the harvest of clams for the human food market. Within this approved area, a limit of 10% shell breakage is allowed, with broken-shelled clams required to be dyed prior to being sold as bait clams. No overall commercial harvest limits are in place for any area in regulation; however, ADF&G manages the commercial razor clam fishery to achieve a harvest of no more than 350,000 to 400,000 pounds (in the shell) annually. Virtually all of the commercial harvest has come by hand-digging, although regulations prior to 1990 allowed the use of mechanical harvesters (dredges) south of Spring Point, or within a one-mile section of the Polly Creek beach. Numerous attempts to develop feasible dredging operations were largely unsuccessful due to excessive shell breakage or the limited availability of clams in the area open to this gear. Mechanical means of harvesting is no longer permitted in any area of Cook Inlet.

2013 COMMERCIAL SALMON FISHERY

The 2013 UCI commercial harvest of 3.1 million salmon was approximately 24% less than the 1966–2012 average annual harvest of 4.1 million fish (Appendix B6). The 2013 sockeye salmon harvest estimate of 2.7 million fish was 7% less than the 1966–2012 average annual harvest of 2.9 million fish. Sockeye salmon harvested in test and cost recovery fisheries are not included in commercial harvest statistics; other sources of sockeye salmon harvest occur in sport, personal use, educational, and subsistence fisheries (Appendix A22). The estimated exvessel value of the 2013 UCI commercial fishery of \$40.2 million dollars was approximately 57% more than the average annual exvessel value of \$25.6 million dollars from the previous 10 years (2003–2012), and approximately 56% more than the 1966–2012 average annual exvessel value of \$25.8 million dollars (Appendix B7).

The average price paid per pound for UCI salmon has remained fairly stable in recent years (Appendix B11). Determining an average annual price per pound for each species has become increasingly difficult to estimate, especially in recent years, because more fishermen are selling

some or all of their catch to niche markets, where they often receive higher prices. In addition, a trend observed for the past few seasons has continued, that is, early-season pricing for Chinook and sockeye salmon is much higher than what is paid later in the season. Estimates of price per pound of the five species of salmon harvest in UCI can be found in Appendix B11. The price paid for sockeye salmon increased by about 75 cents over 2012 prices (Appendix B11). This increase in price contributed significantly to the higher than average exvessel value of the 2013 UCI commercial salmon harvest.

In 2013, one of six monitored sockeye salmon systems fell within established escapement goal ranges. It is anticipated that the Kenai River will be within the escapement goal range when the 2013 sport harvest is included. Three systems exceeded the maximum target, and two systems failed to achieve the minimum target (Table 1, Appendix A2, and Appendix B10). This marked the 5th year that sockeye salmon escapement in the Susitna River was not assessed via sonar in the Yentna River. Recent studies revealed that sockeye salmon species apportionment (using the proportion of salmon captured in fish wheels to apportion sonar counts) provided an unreliable estimate of daily and annual passage for this species (for a more detailed description, see the stock status section of this report). While studies continue in the Yentna River, with an important objective being to quantify fish wheel species selectivity, sockeye salmon escapement goals have been established on two lakes in the Yentna River drainage (Chelatna and Judd lakes) and one lake in the Susitna River drainage (Larson Lake which drains into the Talkeetna River). These lakes are the major producers of sockeye salmon in the Susitna watershed. Escapements were monitored at these lakes with weirs operated by ADF&G. Sockeye salmon escapement was monitored at Packers Lake on Kalgin Island using a remote camera system, but a recording malfunction prevented a complete enumeration of the run in 2013.

Table 1.—Upper Cook Inlet sockeye salmon escapement goals and passage estimates, 2013.

System	Goal Type	Goal Range		2013 Passage Estimates
		Lower	Upper	
Crescent River	BEG	30,000	70,000	ND
Fish Creek	SEG	20,000	70,000	18,912
Kasilof River	OEG	160,000	390,000	489,654
Kenai River	Inriver	1,000,000	1,200,000	1,359,893
Larson Lake	SEG	15,000	50,000	21,821
Chelatna Lake	SEG	20,000	65,000	70,555
Judd Lake	SEG	25,000	55,000	14,088
Packers Creek	SEG	15,000	30,000	ND

Note: Passage estimates do not account for any harvest above counting sites. BEG=biological escapement goal; SEG=sustainable escapement goal; and OEG=optimal escapement goal.

UCI commercial catch statistics refined to gear type, area, and date are available back to 1966. All commercially-harvested salmon, whether sold or kept for home use, are legally required to be recorded on fish tickets (5 AAC 39.130), which are then entered into the statewide fish ticket database. The 2013 commercial catch by species, gear type, area, and date can be found in Appendices A3–A7. Total harvest by statistical area and average catch per permit are reported in

Appendices A8 and A9. A summary of EOs issued in 2013 can be found in Appendix A10, and a summary of fishing periods by gear type and area can be found in Appendix A11.

REGULATORY CHANGES

The most recent BOF regular triennial meeting to deliberate UCI finfish proposals occurred in Anchorage from February 20 through March 5, 2011. There were many regulatory changes that occurred at this meeting that affected the UCI commercial salmon fishery. For a detailed description of BOF these changes, see Shields and Dupuis (2012).

At the BOF work session in October, 2012, a task force was created to identify a set of recommended adjustments to the *Kenai River Late-Run King Salmon Management Plan* (5 AAC 21.359) that would result in the best mix of inriver (sport, guided sport, and personal use) and Upper Subdistrict set gillnet fishing opportunity, while providing the best means of attaining the escapement goal for Kenai River late-run Chinook salmon during times of low abundance. The task force met three times during the winter of 2012–2013 and developed a list of discussion points for the full BOF to address at the March 2013 Statewide Finfish BOF meeting. After much deliberation, the BOF voted to keep the Chinook salmon management plan unchanged, other than accepting the new escapement goal developed by ADF&G. The new sustainable escapement goal (SEG) for Kenai River Late-Run Chinook salmon was changed from 17,800–35,700 to 15,000–30,000 fish.

CHINOOK SALMON

The 2013 UCI harvest of 5,398 Chinook salmon was the fifth smallest since 1966 and was approximately 63% less than the previous 10-year (2003–2012) average annual harvest of 14,450 fish (Appendices A3, B1, and B6). The exvessel value for UCI Chinook salmon in 2013 was estimated at \$210,600 dollars, which represented approximately 0.5% of the total exvessel value for all salmon (Appendix B7).

The two fisheries where Chinook salmon are harvested in appreciable numbers are the set gillnet fisheries in the Northern District and in the Upper Subdistrict of the Central District. The decline in Chinook salmon harvest observed during the 2013 season was likely caused by a decreased abundance of Chinook salmon in UCI and subsequent restrictions placed upon commercial fisheries for the conservation of this species.

Northern District

The *Northern District King Salmon Management Plan* (5 AAC 21.366) was created by the BOF in 1986 and most recently modified in 2011. This plan provides direction to ADF&G regarding management of the Northern District of UCI for the commercial harvest of Chinook salmon. The fishing season opens on the first Monday on or after May 25 and remains open for all Mondays through June 24. The most productive waters for harvesting Chinook salmon, which occur from one mile south of the Theodore River to the mouth of the Susitna River, are open to fishing for the second regular Monday period only; however, if the Theodore, Ivan, or Lewis rivers are closed to sport fishing, the area from 1 mile south of the Theodore River to the Susitna River will be closed to commercial fishing. The plan further specifies that if the Chuitna River is closed to sport fishing, commercial fishing shall close for the remainder of the directed Chinook salmon fishery in that portion of the Northern District from a point at the wood chip dock (located approximately 2 miles south of Tyonek), to the Susitna River. Finally, if the Deshka

River is closed to sport fishing, the Chinook salmon fishery in the entire Northern District will close for all periods provided for under this plan.

Each permit holder is allowed to fish only one 35-fathom set gillnet, with a minimum separation of 1,200 feet between nets, which is twice the normal separation between nets. The commercial fishery is also limited to an annual harvest not to exceed 12,500 Chinook salmon. Fishing periods are 12 hours per day, or from 7:00 a.m. to 7:00 p.m.

At the 2011 BOF meeting, Chuitna River Chinook salmon were found to be a stock of management concern, resulting in the closure of the sport fishery on this river for the 2011–2013 seasons. In compliance with the *Northern District King Salmon Management Plan*, the Northern District set gillnet fishery must close from the wood chip dock to the Susitna River. In 2011, this area was closed for all fishing periods. In 2012, ADF&G took even more restrictive actions by reducing all 12-hour fishing periods to 6 hours in duration. Then, in 2013, the area closure beginning at the wood chip dock was implemented, fishing periods were reduced to 6 hours and because preseason projections anticipated poor Chinook salmon runs throughout the Northern District, EO No. 1 closed commercial fishing in the Northern District on Monday, May 27, 2013. The fishing periods affected by this announcement were those on June 3, June 10, June 17, and June 24, 2013.

Forty commercial permit holders participated in the 2013 Northern District Chinook salmon fishery, with an estimated harvest of 1,134 fish (Table 2 and Appendix A3). This was the third smallest harvest in this fishery since its inception in 1986. The number of permit holders participating in this fishery rapidly declined beginning in 1993, which is the year that set gillnet fishermen were required to register (prior to fishing) to fish in one of three areas (Northern District, Upper Subdistrict, or Greater Cook Inlet) for the entire year. The registration requirement served to eliminate a common practice of fishing in multiple areas in UCI in the same year.

Table 2.–Chinook salmon harvest during the directed fishery in the Northern District, 1986–2013.

Year	Chinook	Permits	Periods	Year	Chinook	Permits	Periods
1986	13,771	135	3	2000	2,046	47	3
1987	11,541	129	4	2001	1,616	43	3
1988	11,122	142	3	2002	1,747	36	3
1989	11,068	137	3	2003	1,172	29	3
1990	8,072	130	3	2004	1,819	44	3
1991	6,305	140	4	2005	3,144	52	3
1992	3,918	137	3	2006	3,849	59	3
1993	3,072	80	4	2007	3,132	64	3
1994	3,014	73	2	2008	3,855	74	4
1995	3,837	65	1	2009	1,266	55	3
1996	1,690	45	1	2010	1,674	51	4
1997	894	51	2	2011	2,187	61	4
1998	2,240	56	2	2012	1,030	38	4
1999	2,259	51	2	2013	1,134	40	4

Note: For the total annual Chinook salmon harvest in the Northern District, see Appendices A3 and B1.

Upper Subdistrict

Approximately 55% of UCI Chinook salmon commercial harvest in 2013 occurred in the Upper Subdistrict set gillnet fishery (Appendix B1). The estimated harvest of 2,988 Chinook salmon was the second smallest recorded harvest in this fishery since 1966. The 1966–2012 average Chinook salmon harvest in this fishery was 9,748 fish (Appendix B1).

Following the 2012 season, ADF&G revised the Kenai River late-run Chinook salmon escapement goal and recommended that a dual-frequency identification sonar (DIDSON) based interim SEG of 15,000–30,000 fish be adopted for the 2013 season (Fleischman and McKinley 2013). This interim goal was approved by the BOF and became the primary management target for 2013. However, the five abundance indices that were utilized in 2012 were also employed in 2013 to corroborate DIDSON counts. The five indices of abundance were 1) DIDSON cumulative passage estimates; 2) net-apportioned DIDSON estimates; 3) catch per unit effort (CPUE) of gillnets drifted at the Chinook salmon sonar site; 4) CPUE of sport anglers interviewed in the lower river creel survey; and 5) harvest of Chinook salmon in the Upper Subdistrict set gillnet fishery (Eskelin and Miller 2010; R. Begich, Sport Fish Biologist, ADF&G, Soldotna, personal communication).

The 2013 preseason outlook for Kenai River Chinook salmon indicated that runs would be below average. Approximately 29,000 late-run Kenai River Chinook salmon were expected for 2013; if realized this run would provide for spawning escapement and a fairly normal prosecution of both the sport and commercial fisheries. However if the forecasted run was not realized, conservative management would likely be needed to achieve adequate spawning escapements. The Kenai River early-run Chinook salmon return in 2013 was possibly the lowest run on record, as indicated by DIDSON counts and indices of abundance. This resulted in restrictions and a closure of the early-run sport fishery in the Kenai River and the personal use set gillnet fishery at the mouth of the Kasilof River. Because of the poor performance of the early-run and a below average outlook, the Kenai River late-run Chinook salmon sport fishery began conservatively with a restriction on the use of bait. Throughout most of July, the DIDSON estimates and inseason projections of run strength for late-run Chinook salmon indicated that it was well below average, but the escapement objective would likely be met; however, by late July, inseason projections indicated that the run would likely not meet its minimum escapement target, if further restrictions were not implemented. This led to additional restrictive actions, and finally to a closure of the late-run sport fishery from July 28 to July 31 (EO 2-KS-1-45-13). Restrictive measures were also implemented in the Upper Subdistrict set gillnet fishery to conserve Kenai River late-run Chinook salmon. Restrictions in the set gillnet fishery are discussed in detail in the sockeye salmon section that immediately follows this discussion.

SOCKEYE SALMON

Management of the UCI sockeye salmon fishery integrates information received from a variety of programs, which together provide an inseason model of the actual annual run. These programs include: offshore test fishing (OTF); escapement enumeration by sonar, weir, remote camera, and various mark–recapture studies (Shields and Dupuis 2012); comparative analyses of historical commercial harvest and effort levels; genetic stock identification (GSI); and age composition studies. Beginning in 2005, a comprehensive sampling program was initiated to estimate the stock composition of sockeye salmon harvested in UCI commercial fisheries using improved GSI analyses. For a complete review of the GSI data, see Habicht et al. (2007), which summarized the

UCI sockeye salmon catch allocation from 2005 to 2007; Barclay et al. (2010a) updated the 2005 to 2007 report and also included analyses of data collected in 2008; and Barclay et al. (2010b), which summarized the GSI analysis of the 2009 UCI commercial harvest.

A chartered gillnet vessel was employed by the OTF program to fish six fixed stations along a transect crossing Cook Inlet from Anchor Point to the Red River delta (Shields et al. 2013). The program provides an inseason estimate of sockeye salmon run strength by determining the passage rate, which is an estimate of the number of sockeye salmon that enter the district per index point or CPUE. The cumulative CPUE curve is then compared to historical run timing profiles so that an estimate can be made of the final CPUE; which in turn, provides for an inseason estimate of the total run to UCI. The timing of the 2013 sockeye salmon run was estimated to be approximately on time (M. Willette, Commercial Fisheries Biologist, ADF&G, Soldotna, personal communication). Data from the OTF Anchor Point transect line were not able to be used for this estimated due to the high number of missed fishing days. Daily sockeye salmon catch data from the test fish vessel can be found in Appendix A1. An additional OTF transect was fished in 2013 as well. The Kalgin Island transect line is further north in the inlet and its purpose is to gather sockeye salmon and coho salmon tissue samples for GSI analysis (Dupuis and Willette *In prep*).

Hydroacoustic technology is used to quantify sockeye salmon escapement into glacial rivers and was first employed in UCI in the Kenai and Kasilof rivers in 1968, then expanded to the Susitna River in 1978 and Crescent River in 1979 (Westerman and Willette 2011). In recent years, ADF&G has been transitioning escapement monitoring projects from older Bendix sonar system to DIDSON (Westerman and Willette 2011). DIDSON is currently used at escapement monitoring projects on the Kenai and Kasilof rivers. The Crescent River sonar project, which had been operational since 1979, was discontinued in 2013 due to a lack of funding.

A DIDSON system is also being used to enumerate sockeye salmon in the Yentna River as part of an ongoing research project; however, a comprehensive sockeye salmon mark–recapture study in the Susitna River drainage verified that sockeye salmon passage estimates in the Yentna River were biased low (Appendix A12; Yanusz et al. 2007). The likely cause for the biased sonar counts was fish wheel species selectivity. Because of this, in 2009, the Yentna River SEG was replaced with three lake-based SEGs monitored via weir at Chelatna Lake (20,000–65,000 fish) and Judd Lake (25,000–55,000 fish), in the Yentna River drainage, and Larson Lake (15,000–50,000 fish), in the Susitna River drainage (Fair et al. 2009). Please see the stock status section of this report for a detailed description of these changes.

In addition to the three weirs in the Susitna River drainage, an adult salmon weir was operated by the Division of Sport Fish at Fish Creek (Knik Arm) and provided daily sockeye salmon escapement counts. Historically, a counting weir has also been employed at the outlet of Packers Lake (on Kalgin Island), but has since been replaced by a remote video camera system (Appendix B10; Shields and Dupuis 2012). The camera system has been in operation from 2005 to 2006 and 2009 to 2012. However, in 2006, an electronic malfunction did not allow for a complete census of the escapement. From 2010–2013, technical difficulties prevented retrieval of data.

Inseason analyses of the age composition of sockeye salmon escapement into the principal watersheds of UCI provides information necessary for estimating the stock contribution in various commercial fisheries by comparing age and size data in the escapement with that in the

commercial harvest (Tobias and Tarbox 1999). There were 20,171 sockeye salmon examined for age, length, and sex determination from catch and escapement samples in 2013 (Wendy Gist, Commercial Fisheries Biologist, ADF&G, Soldotna, personal communication). The age composition of adult sockeye salmon returning to monitored systems is provided in Appendix A13.

For the 2013 season, approximately 6.7 million sockeye salmon were expected to return to UCI (Table 3; Appendix C1). The actual run estimate totaled 5.8 million fish, which was 13% less than the preseason projection. It should be noted that at the time this report was published, harvest data from the 2013 sport fisheries were not available; therefore, sport fishery harvests were estimated by comparing previous year's catches from similar sized runs. Of the expected run of 6.7 million sockeye salmon, approximately 1.8 million fish were required for escapement objectives, which left 4.9 million sockeye salmon available for harvest to all users. Assuming that sport and personal use harvests in 2013 would be similar in proportion to that observed in 2012 (because of similar sized runs), the commercial catch in 2013 was projected to be approximately 3.8 million sockeye salmon. The commercial sockeye salmon harvest 2.7 million fish was 29% less than preseason expectations. Drift gillnet fishermen accounted for approximately 62% of the 2013 commercial sockeye salmon harvest, or 1.7 million fish, while set gillnet fishermen caught 38% of the commercial harvest, or 1 million fish (Appendix B2). The 2013 run was allocated to river system inseason using a weighted age-composition catch allocation method, as described by Tobias and Tarbox (1999). GSI samples were collected from the 2013 commercial harvest and will be analyzed at a later date. The last reported commercial fishing activity in any area of UCI in 2013 was September 12.

Table 3.–2013 Upper Cook Inlet sockeye salmon forecast and return.

System	Forecast	Actual ^a	Difference
Crescent River ^b	110,000	80,300	-27%
Fish Creek	61,000	25,000	-59%
Kasilof River	903,000	1,106,700	23%
Kenai River	4,374,000	3,519,000	-20%
Susitna River	363,000	467,000	29%
Minor Systems	872,000	599,000	-31%
All Systems	6,683,000	5,797,000	-13%

^a These results are preliminary and will change when GSI information is available.

^b Crescent River sonar program was not operation in 2013.

In 2013, the total sockeye salmon harvest from commercial, sport, personal use, subsistence, and educational fisheries was estimated at 3.5 million fish (Appendix A22). This amount was approximately 11% less than the 1996–2012 average annual harvest of 3.7 million fish (for the Kenai River, these data include late-run sockeye salmon only) and 29% less than preseason expectations (Appendix B14). The 2013 sport harvests were estimated based on harvests from similar sized runs. The annual statewide harvest survey report for 2013 that details harvest results for sport harvest of all salmon will not be finalized until later in 2014 (Jennings et al. 2011). The 2013 personal use harvest estimate of approximately 450,000 sockeye salmon was nearly 40% greater than the average annual harvest of 320,500 fish from 1996 to 2012. For more

details on the specifics of personal use harvests, including demographics, see Reimer and Sigurdsson (2004), Dunker and Lafferty (2007), and Dunker (2010).

Sockeye salmon prices increased throughout the 2013 season. The price paid per pound seemed to stabilize at \$2.25/lb by about mid-July. The estimated average price paid per pound for UCI salmon in 2013 can be found in Appendix B11. Based on these estimates, the 2013 UCI sockeye salmon exvessel value of \$37.8 million was approximately 65% greater than the previous 10-year (2003–2012) average annual value of \$22.9 million (Appendix B7). The 2013 sockeye salmon estimated exvessel value represented 94% of the total exvessel value for all UCI salmon.

Big River

The first commercial sockeye salmon fishery to open in UCI in 2013 was the Big River fishery, which is managed under the *Big River Sockeye Salmon Management Plan* (5 AAC 21.368). This plan was adopted in 1989 and allows for a small set gillnet fishery in the northwest corner of the Central District. At the 2005 BOF meeting, the plan was modified by expanding the area open to fishing to include the waters along the west side of Kalgin Island. Between June 1 and June 24, fishing is allowed each Monday, Wednesday, and Friday from 7:00 a.m. to 7:00 p.m. Permit holders are limited to a single 35-fathom set gillnet and the minimum distance between nets is 1,800 feet, which is three times the normal separation of gear. While targeting an early run of sockeye salmon returning to Big River, this fishery also encounters Chinook salmon migrating through the area. The management plan limits the harvest of Chinook salmon to no more than 1,000 fish per year. Since 2005, when the management plan was changed, the average annual Chinook salmon harvest has been 510 fish; well below the 1,000 fish cap. The average annual sockeye salmon harvest since 2005 has been 17,355 fish. The 2013 fishery began on Monday, June 3, with harvests reported from 10 different days, yielding a total catch of 15,518 sockeye salmon and 470 Chinook salmon. Of the total harvest, 80% of the sockeye and 44% of the Chinook salmon were caught in the Kalgin Island west side waters, which is statistical area 246-10 (Figure 3). There were 30 permit holders that reported participating in the fishery, which was up from recent years, but less than the peak level of effort of 41 permit holders in 1992 (Appendices A3 and A4).

Western Subdistrict

The next commercial fishery to open in 2013 was the set gillnet fishery in the Western Subdistrict of the Central District. This fishery opens on the first Monday or Thursday on or after June 16, and the regular fishing schedule consists of two 12-hour weekly fishing periods (Mondays and Thursdays) throughout the season, unless modified by EO. The fishery primarily targets sockeye salmon bound for Crescent Lake.

In 2013, the Crescent River sonar project was not in operation. Typically, by early July, sockeye salmon passage into the Crescent River is proceeding at a rate that would result in exceeding the escapement goal (30,000–70,000 fish) and the fishery is expanded to 24 hours per day, 7 days per week to control passage. In the absence of the Crescent River sonar program, sockeye salmon harvest rates in the 2013 set gillnet fishery near the Crescent River were compared to previous years. When these harvest rates were determined to be above average and considering the fact that in 11 of the past 13 years, the sockeye salmon escapement goal at Crescent River had been exceeded, additional fishing time was warranted. Therefore, EO No. 5 was issued (effective on July 1), which opened that portion of the Western Subdistrict south of the latitude of Redoubt Point 6:00 a.m. until 10:00 p.m. on Mondays, Thursdays, and Saturdays. This

fishing schedule remained in place until 10:00 p.m. on Saturday, August 3, when EO No. 36 was issued, returning the fishery to its regular schedule of two fishing periods per week.

Approximately 30,000 sockeye salmon were harvested by 21 permit holders fishing in the Western Subdistrict set gillnet fishery in 2013 (Appendix A8). The estimated escapement into Crescent Lake was unknown due to the sonar project not being operated in 2013.

Northern District

The set gillnet fishery in the Northern District opens by regulation on June 25 for regular Monday and Thursday 12-hour periods. This fishery is primarily managed through the 5 AAC 21.358 *Northern District Salmon Management Plan* (NDSMP) and the *Susitna River Sockeye Salmon Action Plan* (SSSAP). The intent of these plans is to allow a commercial fishery while minimizing the harvest of Northern District coho salmon and conserving Susitna River sockeye salmon.

At the 2008 BOF meeting, Susitna River sockeye salmon were found to be a stock of yield concern. No change was made to this assessment during the 2011 UCI BOF meeting. At the 2013 BOF work session, ADF&G recommended that Susitna River sockeye salmon remain classified as a stock of yield concern because: 1) five of the escapements (out of 15 total) have been below the minimum goal, and 2) harvests in Central and Northern districts from 2008 through 2013 were generally less than long-term averages. Research studies are ongoing to better understand sockeye salmon abundance and distribution. According to the *Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222), a stock of yield concern is defined as “a concern arising from a chronic inability, despite the use of specific management measures, to maintain expected yields, or harvestable surpluses, above a stock’s escapement needs; a yield concern is less severe than a management concern, which is less severe than a conservation concern.” As a result of this finding, an action plan was developed by ADF&G and the BOF to identify conservative management measures in both the sport and commercial fisheries targeting Susitna River sockeye salmon stocks. Adopted by the BOF at this meeting, the SSSAP included the following statement: “In light of recent ADF&G data revealing concerns about the validity of Yentna River sockeye salmon enumeration data, it is the intent of the BOF that Susitna River sockeye salmon stocks will be conservatively managed while ADF&G continues its studies in this drainage.”

In compliance with the NDSMP and the SSSAP, EO No. 18 was issued, reducing legal gear to one set gillnet per permit, measuring no more than 35 fathoms in length, for all regular Monday and Thursday fishing periods, beginning at 7:00 a.m. on Monday, July 22, 2013. On Thursday, August 1, EO No. 30 modified EO No. 18 and changed legal gear for that portion of the General Subdistrict of the Northern District, south of the Susitna River, to no more than 2 set gillnets per permit, with either net measuring no more than 35 fathoms in length; the periods affected by this EO were August 1 and August 5. Legal gear in the remainder of the Northern District remained limited to no more than 1 set gillnet per permit. Beginning on Thursday, August 8, gear restrictions imposed by the NDSMP and the SSSAP expired and a full complement of gear became legal for the remainder of the season. Due to a robust return of Northern Cook Inlet coho salmon, no further restrictions were placed on the Northern District set gillnet fishery. For the 2013 season, 23,423 sockeye salmon were harvested by 70 permit holders in the Northern District set gillnet fishery (Appendices A4 and A8).

Upper Subdistrict Set Gillnet and Central District Drift Gillnet

Management of the set gillnet fishery in the Upper Subdistrict is guided primarily by 5 AAC 21.365 *Kasilof River Salmon Management Plan* (KRSMP) and 5 AAC 21.360 *Kenai River Late-Run Sockeye Salmon Management Plan* (KRLSSMP). There are two principal restrictions to the set gillnet fisheries within these plans: 1) a limit on the number of additional hours that may be fished each week beyond the two regular 12-hour fishing periods; and 2) implementation of closed fishing times (windows) each week. By regulation, a week is defined as a period of time beginning at 12:00:01 a.m. Sunday and ending at 12:00 midnight the following Saturday (5 AAC 21.360 (i)). Weekly limitations vary according to the time of year and the size of the sockeye salmon run returning to the Kenai River. In light of the fact that the upper end of escapement goals had often been exceeded in both the Kenai and Kasilof rivers, the BOF modified the *Upper Cook Inlet Salmon Management Plan* (5 AAC 21.363 (e)) at the 2008 meeting. The BOF stated that while in most circumstances, ADF&G should adhere to the management plans in the chapter, no provision within a specific management plan was intended to limit the commissioner's use of EO authority, under AS 16.06.060, to achieve established escapement goals in the management plans as the primary management objective.

The Kasilof Section set gillnet fishery is open from June 25 through August 15. However, if 50,000 sockeye salmon are in the Kasilof River before June 25, the season may begin as early as June 20. According to the KRSMP, from the beginning of the fishing season through July 7, the fishery shall remain closed for at least one continuous 36-hour period per week, with the closure to begin between 7:00 p.m. on Thursday and 7:00 a.m. on Friday. In addition, no more than 48-hours of additional fishing beyond the two regular weekly periods may be allowed. The KRSMP also states that achieving the lower end of the Kenai River sockeye salmon escapement goal shall take priority over not exceeding the upper end of the Kasilof River optimum escapement goal (OEG) of 160,000–390,000 salmon. In essence, the BOF added 50,000 fish to the Kasilof River BEG (160,000–340,000 fish) for those years where achieving the lower end of the Kenai River goal (700,000) was in jeopardy.

The Kenai and East Forelands Sections are open from July 8 through August 15. Beginning July 8, the Kasilof Section is managed in concert with the Kenai and East Forelands sections per the KRLSSMP. Until an assessment of the Kenai River sockeye salmon run strength can be made, which in recent years has been around July 25, the Upper Subdistrict set gillnet fishery is to be managed based on the size of the Kenai River run that was projected in the preseason forecast. There are three options (or tiers) available for the management of this fishery. First, if the Kenai River sockeye salmon run is projected to be less than 2.3 million fish, there may be no more than 24-hours of additional fishing time per week in the Upper Subdistrict set gillnet fishery. If the Kenai and East Forelands sections are not open during regular or additional fishing periods, ADF&G may limit fishing in the Kasilof Section to an area within one-half mile of the shoreline. There are no mandatory window closures on Kenai River sockeye salmon runs of less than 2.3 million fish. For runs of this strength, if ADF&G projects the Kasilof River OEG of 390,000 may be exceeded, an additional 24 hours of fishing time per week may be allowed within one-half mile of the shoreline in the Kasilof Section after July 15. The second management tier is for Kenai River runs of between 2.3 and 4.6 million sockeye salmon. In this scenario, the Upper Subdistrict set gillnet fishery will fish regular weekly fishing periods, with no more than 51 additional fishing hours allowed per management week. The fishery is also closed for one continuous 36-hour period per week, beginning between 7:00 p.m. Thursday and

7:00 a.m. Friday, and for an additional 24-hour period on Tuesday from 12:00 a.m. to 11:59 p.m. during the same management week. The third management tier is for Kenai River sockeye salmon runs exceeding 4.6 million fish. ADF&G may allow up to 84 hours of additional fishing time per week, in addition to regular fishing periods, but the fishery will also be closed for one continuous 36-hour period per week beginning between 7:00 p.m. Thursday and 7:00 a.m. Friday.

The KRLSSMP directs ADF&G to manage Kenai River late-run sockeye salmon stocks primarily for commercial uses based on abundance. The commercial, sport, and personal use fisheries harvesting this stock are to be managed to: 1) meet an OEG range of 700,000–1,400,000 late-run sockeye salmon; 2) achieve inriver goals that are dependent upon the size of the Kenai River run; and 3) distribute sockeye salmon escapements evenly within the OEG range, which is primarily achieved by meeting the second objective. For a detailed description of changes made to the KRLSSMP and KRSMP at the 2011 BOF meeting, see Shields and Dupuis (2012).

As stated earlier in this report, Susitna River sockeye salmon were found to be a stock of yield concern at the 2008 BOF meeting. A reduction in commercial harvest of Susitna River sockeye salmon stocks was to be accomplished through implementation of the *Central District Drift Gillnet Fishery Management Plan* (CDDGFMP) and NDSMP (5 AAC 21.358). Both management plans were modified at the 2008 BOF meeting (Shields 2010) and again at the 2011 BOF meeting. The CDDGFMP states that from July 9–15, ADF&G is to restrict the first regular drift fishing period to the Expanded Corridor (Figure 5), while the second regular period during this time frame should be restricted to Drift Area 1 (Figure 8) and the regular (or narrow) Corridor (Figure 6). From July 16–31, there are fishing area restrictions to the drift gillnet fleet that are dependent on the size of the Kenai River sockeye salmon run. For Kenai River sockeye salmon runs less than 2.3 million, fishing during one regular 12-hour period must be restricted to the Expanded Corridor; for runs of 2.3 million to 4.6 million, fishing during one regular 12-hour fishing period per week will be restricted to Drift Area 1 or the Expanded Corridor, but not both together; and for runs greater than 4.6 million, there are no mandatory restrictions.

The purpose of the July 9–15 restrictions was to allow for the passage of northern-bound sockeye salmon, while the July 16–31 restrictions were primarily for conservation of northern-bound sockeye and coho salmon. The NDSMP also required allows ADF&G to limit the Northern District set gillnet fishery to no more than one 35-fathom set gillnet per permit holder from July 20 through August 6, which represents the time period when the majority of the sockeye salmon run is transiting the Northern District. Limiting gear in the Northern District set gillnet fishery currently a common practice and will continue until such a time that escapements dictate otherwise. At the 2011 BOF meeting, there was a modification to this gear restriction, which allowed setnetters in the General Subdistrict of the Northern District south of the Susitna River to fish with 2 nets per permit from July 31 through August 6. These drift and set gillnet commercial fishing restrictions were intended to meet the commercial fisheries conservation burden for protection of Susitna River sockeye salmon stocks as a result of the stock of yield concern status.

With that brief history as a background, a description of the 2013 Upper Subdistrict set gillnet fishery and Central District drift gillnet fishery will be summarized by actions taken each management week, including estimates of commercial harvest, and effects on sockeye salmon passage into monitored watersheds. As in 2012, poor performance of the early- and late-runs of Chinook salmon into the Kenai River led to very conservative management of the set gillnet

fishery, and ultimately a closure (Shields and Dupuis 2013). With the set gillnet fishery used very discretely, and finally closed in the latter half of July, UCI management staff relied heavily on the drift gillnet fleet to control sockeye salmon escapements to both the Kenai and Kasilof rivers. While the restrictions implemented in the set gillnet fishery were not as severe as in 2012, the management approach nonetheless created a disparity in the harvest and opportunity between the two gear groups that normally does not exist.

The regular season for drift gillnetting began on Thursday, June 20, as provided for in the CDDGFMP. The harvest of 3,590 sockeye salmon from 64 boats was typical for early-season drift catches (Appendix A4). For the week of June 23–29, the drift gillnet fleet fished two regular periods and harvested a total of 19,743 sockeye salmon. Effort increased throughout the week with 87 boats participating in the fishery on June 24 and 159 boats on June 27. Sockeye salmon enumeration in the Kasilof River began on June 15; by June 22, approximately 53,000 sockeye had passed the sonar. While the set gillnet fishery in the Kasilof Section was scheduled to open for the 2013 season on June 27, 5 AAC 21.310 *Fishing Seasons* states that it may open on or after June 20 if the ADF&G estimates that 50,000 sockeye salmon have entered the Kasilof River. The conditions for opening the Kasilof Section prior to June 27 were met on June 22, but because of a weak return of Kenai River early-run Chinook salmon, the decision was made to not allow commercial fishing in the Kasilof Section prior to June 27. Set gillnetting in the Kasilof Section opened on June 27. This fishing period was extended by 2 hours to increase the harvest of Kasilof River sockeye salmon; 48,360 sockeye salmon were harvested by the set gillnet fleet during this period. By June 29, nearly 142,000 sockeye salmon had been enumerated at the Kasilof River sonar site, which was the most fish estimated to ever have entered the river through this date, since passage estimates began in the late 1970's. Moreover, this estimate was approximately 154% greater than the average cumulative passage for this date (Appendix A2). The cumulative commercial sockeye salmon harvest through June 29 was 71,693 fish (Appendix A4).

For the management week of June 30 to July 6, the drift gillnet fleet fished two regular district wide (in all of the Central District) fishing periods. Sockeye salmon harvest and participation from the July 1 (39,591 fish; 309 boats) and July 4 (111,293 fish; 380 boats) drift fishing periods was typical for this time of year (Appendix A4). The set gillnet fleet fished two regular periods in the Kasilof Section (Figure 6); sockeye salmon harvest from the July 1 (12,073 fish) and July 4 (27,922 fish) set gillnetting periods was typical given the time of year. Because of a much stronger than expected run of Kasilof River sockeye salmon through June 30, EO No. 4 opened an 8-hour set gillnetting and drift gillnetting period in the Kasilof Section on June 30. Additionally, EO No. 6 authorized an 8-hr period for set gillnetting and drifting in the Kasilof Section, again on July 6. The purpose of these two EOs was to reduce sockeye salmon passage into the Kasilof River. While 8-hour fishing periods have been used in previous years, fishing an incoming tide only is a relatively uncommon practice. This strategy was used in order to provide for opportunity to harvest the strong Kasilof River sockeye salmon run, but to keep Chinook salmon harvests at a minimum. This would be the strategy used for most of the 2013 season for the Upper Subdistrict set gillnet fishery. From June 30 to July 6, the set gillnet gear group harvested 88,533 sockeye salmon, while the drift gillnet fleet harvested 163,518 sockeye salmon (Appendix A4). As of July 6, sockeye salmon cumulative passage to the Kenai and Kasilof rivers was nearly 43,000 and 178,000 fish, respectively (Appendix A2). The lower end of the Kasilof River OEG (160,000 sockeye salmon) was met on July 3. The passage estimate of approximately 178,000 fish was the most fish ever enumerated through July 6 in the Kasilof River.

Table 4.–Upper Subdistrict set gillnet fishing hours, 2013.

Week	KASILOF SECTION				KENAI & EAST FORELANDS SECTIONS			
	Hours In Plan	Hours Used	Window Hours In Plan	Window Hours Observed	Hours In Plan	Hours Used	Window Hours In Plan	Window Hours Observed
Jun 23–29	48	2	36	36	closed	closed	closed	closed
Jun 30–Jul 6	48	16	36	36	closed	closed	closed	closed
Jul 7–13	51	8	24	24	51	0	24	24
			36	36			36	36
Jul 14–20	51	18	24	24	51	18	24	24
			36	36			36	36
Jul 21–27	51	0	24	24	51	0	24	24
			36	36			36	36
Jul 28–Aug 3	51	0	24	24	51	0	24	24
			36	36			36	36
Aug 4–10	51	0	24	24	51	0	24	24
			36	36			36	36
Aug 11–15	51	0	24	24	51	0	24	24
			36	36			36	36
Totals	402	44	396	396	306	18	324	324

Beginning July 8, the management of the Upper Subdistrict set gillnet fishery transitioned from the *Kasilof River Salmon Management Plan* to the *Kenai River Late-Run Sockeye Salmon Management Plan*. The Kenai, Kasilof, and East Forelands sections fished two regular periods during the July 7–13 management week. July 8 was the first fishing period for the Kenai and East Forelands sections in the 2013 season. The July 11 set gillnet period was modified to allow fishing from 10:00 a.m. until 10:00 p.m. (instead of 7:00 a.m. until 7:00 p.m.) in order to facilitate an orderly closure of the fishery by keeping the period open until the strong Cook Inlet tide slackened off (Figure 7). Typically, this is done by extending a regular 12-hour period until slack tide, but because of concerns for Chinook salmon passage, keeping the fishing period at 12 hours was the preferred option. The set gillnet fleet harvested 75,970 sockeye salmon during these two periods. The drift fleet fished an inlet wide regular period on July 8 (253,434 sockeye salmon were harvested), but was restricted by management plan to the Expanded Kenai and Expanded Kasilof sections (expanded corridor) on July 11 (51,263 sockeye salmon were harvested).

Due to increased passage to the Kenai River, and the likelihood that the upper end of the Kasilof River sockeye salmon OEG (390,000 fish) would be exceeded without additional harvest of this stock, ADF&G issued two EOs authorizing additional fishing in both the drift gillnet and set gillnet fisheries. EO No. 7 authorized an 8-hour fishing period on July 10 for set gillnetting in the Kasilof Section within one-half mile of the mean high tide mark, which produced a sockeye salmon harvest from this period of 51,835 fish (Table 4; Appendix A4). The Kasilof Section one-half mile fishery was authorized in this area in order to harvest Kasilof River sockeye salmon, while conserving Kenai River late-run Chinook salmon. EO No. 9 opened a 12-hour fishing period on July 13 for drifting in the expanded corridor, which resulted in a harvest of 32,315 sockeye salmon. Commercial harvest and participation in the drift gillnet and set gillnet

fisheries steadily increased throughout the week with a July 7–13 total harvest of 464,817 sockeye salmon (Appendix A4). The cumulative commercial salmon harvest in the Upper Subdistrict set gillnet and drift gillnet fisheries totaled 788,561 sockeye salmon. As of July 13, the cumulative sockeye salmon passage to the Kenai and Kasilof rivers was 128,100 and 239,000 fish, respectively (Appendix A2).

The management week of July 14–20 produced the majority of commercial sockeye salmon harvest for the 2013 season, and generated significant sockeye salmon passage estimates into the Kenai and Kasilof rivers. Early in this management week, large sockeye salmon catches from both the North and South UCI offshore test fishery projects indicated that a large number of fish had entered the inlet and were heading rapidly toward the rivers (Appendix A1; Dupuis and Willette *In prep*). The set gillnet (Kenai, Kasilof, and East Forelands sections) and drift gillnet fleet fished two regular periods during this week. In compliance with the CDDGFMP, both the July 15 and July 18 regular periods were restricted to Drift Area 1 and the Kenai and Kasilof sections (narrow corridor; Figures 5 and 7). Early into the July 15 regular period, it became clear that sockeye salmon harvests in both the drift and set gillnet fisheries would be quite high. Given the level of passage observed in the Kenai and Kasilof rivers and the reported high harvest in both fisheries, EO No. 10 was issued. This EO authorized 4 additional hours of fishing in the Upper Subdistrict set gillnet fishery and extended the drift gillnet fleet for 4 hours in the expanded corridor, with the intention of maximizing the harvest of sockeye salmon. The July 18 regular period for set gillnetting and drift gillnetting (in the expanded corridor) was extended by 3 hours to harvest additional sockeye salmon bound for the Kenai and Kasilof rivers (EO No. 14; Appendix A10). In order to control sockeye salmon passage, the drift gillnet fleet was allowed to fish in the expanded corridor on July 17, July 19, and July 20, while the set gillnet fleet fished an additional period in the entire Upper Subdistrict on July 19 (Appendices A10 and A11). While Kenai River late-run Chinook salmon projections indicated that the lower end of the OEG (15,000–30,000 fish) would be met, the projections for the final escapement began to decline during this management week.

The continued poor performance of the Kenai River late-run Chinook salmon return combined with an above average sockeye salmon return led to an atypical management strategy during late July. This strategy included utilizing the Kasilof River Special Harvest Area (KRSHA) and decoupling the drift fleet from the set gillnet fleet in order to control passage to the Kenai and Kasilof rivers, while conserving Kenai River late-run Chinook salmon. The KRSHA, while originally intended to harvest Kasilof River sockeye salmon while conserving Kenai River fish, was opened to set and drift gillnetting on July 17 and July 18 for a total of 26 hours for a total harvest of 20,116 sockeye salmon. Participation in the drift gillnet fishery peaked during this week, with an average of 390 boats participating in open periods. Sockeye salmon harvests in the drift and set gillnet fleets were high this week, with a total weekly harvest of 1,431,674 fish. Sockeye salmon harvests from the July 15 period for the set gillnet (353,172 fish) and the drift gillnet (432,662 fish) fisheries were among the highest daily harvest in UCI history (Appendix A4). Between July 15 and July 19 (Monday to Friday), approximately 767,000 sockeye salmon had passed the Kenai River sonar site and 137,000 fish had passed the Kasilof River sonar site. The sockeye salmon passage estimate on July 16 in the Kenai River of 247,000 fish was the highest daily passage estimate since 1979. The upper end of the Kasilof River sockeye salmon OEG was exceeded on July 19, and the lower end of the Kenai River inriver goal of 1,000,000–1,200,000 fish was met on July 20. The cumulative estimates of sockeye salmon passage through July 20 to the Kenai and Kasilof rivers were 1,000,310 and 419,166 fish, respectively (Appendix A2).

Early in the management week of July 21–27, inseason projections of Kenai River late-run Chinook salmon escapement began to suggest that achieving the lower end of the SEG would not be likely without further management action. Additionally, the daily sockeye salmon passage estimates to the Kenai and Kasilof rivers began to decline dramatically compared to the previous week (Appendix A2). Because of lagging sockeye salmon passage estimates and concerns over Chinook salmon, the regular period for set gillnetting was moved from 7:00 a.m. to 7:00 p.m. on Monday, July 22 to 8:00 a.m. to 8:00 p.m. on Tuesday, July 23 (EO No. 20). This change in the regular fishing schedule was made in an attempt to maximize sockeye salmon harvest.

On July 23, the Division of Sport Fish issued an EO (2-KS-1-43-13) restricting the Kenai River late-run Chinook salmon sport fishery to catch-and-release/trophy fishing effective on Thursday, July 25. In response to the sport fishery being restricted to catch-and-release/trophy fishing, the Division of Commercial Fisheries concluded that the Upper Subdistrict set gillnet fishery would fish no more than one 12-hour period per management week. Therefore, because this fishery already fished a 12-hour period on July 23, the earliest it could fish again would be Sunday, July 28. However, despite the severe restrictions, Chinook salmon escapement projections to the Kenai River continued to decline; this prompted the Division of Sport Fish to close the Kenai River late-run Chinook salmon sport fishery effective on July 28. This action automatically triggered a closure of the Upper Subdistrict set gillnet fishery through July 31, in compliance with the *Kenai River Late-Run King Salmon Management Plan* (EO No. 28). However, EO No. 28 set the closure of the set gillnet fishery “until further notice” in response to projections that the Kenai River late-run of Chinook salmon may not achieve the minimum SEG. EO No. 28 also closed drift gillnetting within 1 mile of the Kenai Peninsula shoreline north of the Kenai River and within 1.5 miles of the Kenai Peninsula shoreline south of the Kenai River until further notice.

With the Upper subdistrict set gillnet fishery severely restricted, and ultimately closed, management staff was forced to rely entirely on the KRSHA (not affected by EO No. 28) and the drift fleet to control sockeye salmon passage to the Kenai and Kasilof rivers. On July 24, commercial fisheries staff estimated the total Kenai River sockeye salmon run through July 23 to be 2.8 million fish; the final run to the Kenai River was expected range between 3.4 and 3.8 million fish. With this inseason assessment, commercial fisheries management remained within the guidelines for run sizes between 2.3 and 4.6 million Kenai River sockeye salmon. The drift fleet fished two regular 12-hour periods this week. The July 22 period was restricted to Drift Area 1, in compliance with the CDDGFMP. Despite indications of a robust Northern UCI coho salmon run, the July 25 regular drift period was restricted to Drift Area 1 and the expanded corridor. This action was taken to reduce the harvest of Northern District coho salmon. Nearly 430 boats harvested 133,209 sockeye salmon on July 22 and 85,719 sockeye salmon on July 25. An additional 75 hours of fishing was allowed in the expanded corridor during the week (Appendix A11). Participation in the expanded corridor openings dwindled throughout the week from 216 boats on July 21 to 117 boats on July 27. The KRSHA was opened by EO for both set gillnet and drift gillnet gear for a total of 104 hours this week (Appendices A10 and A11). Drift gillnetters and set gillnetters harvested 35,420 sockeye salmon in the KRSHA, with 34,002 fish harvested by set gillnetters. Participation in the KRSHA open periods was largely skewed towards set gillnet gear; 67 set gillnetters and 11 drifter gillnetters reported harvesting fish in the KRSHA during these openings. Excluding harvest in the KRSHA, 22,393 sockeye salmon were harvested by the set gillnetters and 267,489 sockeye salmon were harvested by the drift gillnet fleet during this management week. The cumulative sockeye salmon harvest for both gear groups (including harvest from the KRSHA) was 2,545,537 fish through July 27. The

cumulative estimates of sockeye salmon passage through July 27 to the Kenai and Kasilof rivers were approximately 1,177,000 and 457,000 fish, respectively (Appendix A2).

Drift gillnet fishing during the week of July 28–August 3 was limited to two 12-hour regular periods and two 12-hour periods in the Expanded Kenai and Expanded Kasilof sections. The regular period on Monday, July 29 was restricted to Drift Area 1 and the Expanded Kenai and Expanded Kasilof sections in accordance with the CDDGFMP. Thus, all six regularly scheduled drift gillnet fishing periods from July 11–29 were restricted, with five of them mandated by management plan and one at the discretion of ADF&G. All of the restrictions were implemented in order to reduce the harvest of northern bound sockeye and coho salmon. The regular period on August 1 was fished district wide. There was a marked decline in participation and harvest in the drift fishery throughout the week, with 303 boats harvesting 18,228 sockeye salmon on July 29, and 228 boats harvesting 5,125 sockeye salmon on August 1. Participation in the August 1 district wide opening was unusually low, which was likely the result of declining sockeye salmon abundance in Cook Inlet. Commercial fishing with set and drift gillnet gear was opened in the KRSHA for a total of 82 hours between July 28 and August 2. Like the previous week, most of the participation in the KRSHA was from set gillnet fishermen. Of the 37,600 sockeye salmon harvested between July 28 and August 3, 10,344 fish were harvested in the KRSHA (Appendix A4). Projections of Kenai River late-run Chinook salmon continued to indicate that the lower end of the SEG (15,000–30,000 fish) would likely be met provided there was no additional harvest. Therefore, even though management plans could have allowed for a reopening of the Upper Subdistrict set gillnet fishery after July 31, fishermen were advised the fishery would remain closed until the lower end of the SEG had been achieved (i.e., the inriver passage of Chinook salmon minus the upriver sport harvest to date needed to be greater than 15,000 fish). The cumulative estimates of sockeye salmon passage through August 3 to the Kenai and Kasilof rivers were approximately 1,327,000 and 483,000 fish, respectively (Appendix A2).

There were only two 12-hour district wide drift gillnet openings during the management week of August 4–10 (Appendix A11). Eighty-nine boats harvested 357 sockeye salmon on August 5 and 52 boats harvested 190 sockeye salmon on August 8 (Appendix A4). This level of participation and harvest was low, but not unexpected for this time of year. The Upper Subdistrict set gillnet fishery remained closed, as the Kenai River late-run Chinook salmon return had not yet achieved the lower end of its SEG. With daily passage estimates to the Kenai and Kasilof rivers continuing to decline, the KRSHA was no longer needed to reduce sockeye salmon passage to the Kasilof River. August 7 was the last day of sockeye salmon enumeration in both the Kenai and Kasilof rivers. This marked the 3rd earliest season ending date for sonar enumeration in the Kenai River since 1979 and the 8th earliest ending date in the Kasilof River since 1983. Sonar enumeration typically ends in each river when daily estimates of passage fall below 1% of the cumulative passage estimate for 3 consecutive days. The final sockeye salmon passage estimate for the Kenai River was 1,359,893 fish and the final sockeye salmon passage estimate for the Kasilof River was 489,654. The final sockeye salmon passage in the Kenai River exceeded the inriver goal (1,000,000–1,200,000 fish) by nearly 160,000 fish; the final sockeye salmon passage in the Kasilof River exceeded the OEG (160,000–390,000) by nearly 100,000 fish. The sockeye salmon run to the Kenai River turned out to be one of the most compressed runs on record, with approximately 62% of the inriver run passing the sonar during a 6-day period from July 15–20. Only 6% of the inriver run occurred in August, even with no commercial fishing on sockeye salmon stocks by the set gillnet fishery.

During the week of August 11–August 17, the drift fleet fished two 12-hour district wide periods. Similar to the previous week, harvest and participation in the drift fishery waned, with only 37 boats participating on August 12 and 32 boats participating on August 15. By regulation, the Upper Subdistrict set gillnet fishery closes for the season on August 15, and from August 11–15, only regular periods may be fished. By midnight on Tuesday, August 13, the estimated escapement of Kenai River Chinook salmon (inriver return minus estimated sport harvest) was 14,971 fish. Therefore, the Upper Subdistrict set gillnet fishery remained closed for the season. The last day the Kenai River Chinook salmon sonar was operated was on August 15. The drift fleet harvested 345 sockeye salmon during the August 12 and August 15 regular periods. The cumulative sockeye salmon harvest through August 17 was 2,584,032 fish.

By management plan, the drift fleet is restricted to Drift Gillnet Areas 3 and 4 for the remainder of the season after August 15 (Figure 9). For the 2013 season, the drift gillnet fishery harvested 1,662,561 sockeye salmon in all of UCI, while the set gillnet fishery in the Upper Subdistrict harvested 921,533 sockeye salmon (Appendix A4).

Kalgin Island Subdistrict

The estimated sockeye salmon harvest in the Kalgin Island Subdistrict in 2013 was 42,585 fish, with roughly 12,445 fish being taken on the west side of the island (Statistical Area 246-10) during the Big River sockeye salmon fishery (Appendix A4). No additional openings beyond the Monday and Thursday regular periods were provided in the Kalgin Island Subdistrict in 2013. A remote video system used to estimate sockeye salmon escapement at Packers Lake was not operational for the entire run; technical issues with the video recorder prohibited the retrieval of recorded fish passage.

COHO SALMON

The 2013 commercial coho salmon harvest of 260,963 fish was the second highest harvest in the past 10 years. The harvest was about 52% greater than the previous 10-year average annual harvest of 172,000 fish, and nearly 12%, or 36,000 fish, less than the 1966–2012 average annual harvest of 297,000 fish (Appendix B3). The stock status and outlook section of this report has additional discussion on coho salmon stocks.

Drift gillnetters were allowed to fish beyond August 15, but only in Drift Areas 3 and 4, and in Chinitna Bay, beginning on August 19. Fishing periods in Drift Areas 3 and 4 were 12 hours in duration and occurred on Mondays and Thursdays, while the Chinitna Bay 12-hour openings occurred on Mondays, Wednesdays, and Fridays, beginning on August 19. The estimated coho salmon harvest by drift gillnetters after August 15 was 7,113 fish (Appendix A5). The total coho salmon harvest in the UCI drift gillnet fishery for 2013 was 184,771 fish, which is 85% more than the 2003–2012 average of 100,000 fish (Appendix B3).

The exvessel value of coho salmon from the 2013 UCI commercial fishery was \$1,362,395 or 3.4% of the total exvessel value (Appendix B7). The average price paid for coho salmon was estimated at \$0.85/lb (Appendix B11), which was the third highest price since 1970. Due to a significant increase in the price paid for coho salmon in August, it is possible the exvessel value was even higher than what was estimated here.

PINK SALMON

The 2013 UCI harvest of 48,275 pink salmon was 60% less than the average odd-year harvest since 1967 of 119,700 fish (Appendices A6 and B4). A likely cause for the less than expected harvest in 2013 was the lack of fishing time in the set gillnet fishery in the Upper Subdistrict and the restrictive management of the drift gillnet fishery. The average price paid for pink salmon in 2013 was \$0.35/lb (Appendix B11), resulting in an exvessel value for this species of \$54,000, or 0.1% of the total exvessel value (Appendix B7).

CHUM SALMON

A total of 139,365 chum salmon were harvested by UCI commercial fishermen in 2013, which was 12% more than the previous 10-year average annual harvest of 124,000 fish; however, the 2013 harvest was nearly 70% less than the average annual harvest of 442,000 fish taken from 1966 to 2012 (Appendix B5). Assessing chum salmon stocks based only on recent harvest trends is difficult. For example, the drift gillnet fleet is the primary harvester of chum salmon, but drift gillnet fishing time in the Central District varies greatly from year to year. Restrictions to the drift gillnet fleet are implemented primarily to conserve northern bound sockeye and coho salmon, but these restrictions also result in harvest reductions of chum salmon. While, area restrictions were implemented to conserve northern bound salmon stocks, the drift fleet was fished extensively in the Expanded Kenai and Expanded Kasilof sections in an attempt to control sockeye salmon escapement to the Kenai and Kasilof rivers. The estimated chum salmon harvest in the Expanded Corridor during 2013 was only 18,285 fish (Appendix A7). Again, making definitive statements about chum salmon stocks based solely on harvest data must always be viewed with the understanding that fishing time and areas fished are often regulated to conserve harvest of other species, which can affect the number of chum salmon that are harvested.

Chinitna Bay was opened by emergency order (EO No. 37) to set and drift gillnetting for 12-hour fishing periods on Mondays, Wednesdays, and Fridays, beginning on Monday, August 19. This action was taken after aerial census surveys revealed the chum salmon escapement goal for Clearwater Creek, which drains into Chinitna Bay, had been achieved. A total of 370 chum salmon were harvested by drift and set gillnets in Chinitna Bay after August 19 (Appendix A7).

The status of chum salmon will be discussed further in the stock status and outlook section of this report.

The 2013 exvessel value for chum salmon was \$828,113, or 2.1% of the overall exvessel value of the 2013 fishery (Appendix B7). The average price paid for chum salmon in 2013 was estimated to be \$0.80/lb (Appendix B11), the second highest average price per pound since 1970.

PRICE, AVERAGE WEIGHT, AND PARTICIPATION

The estimated average price per pound paid to UCI commercial fishermen for their catch in 2013 was similar to prices paid in 2012 (Appendix B11), except for sockeye salmon. The estimate of \$2.25/lb for sockeye salmon was the second highest price ever paid. As mentioned earlier in this report, it must be noted that calculating the average price for what fishermen receive for their catch is becoming more difficult to estimate. Since the late 1990s, farmed salmon have been finding a niche in global markets. In 1998 and 2000, the UCI sockeye salmon harvests were some of the poorest catches on record. These factors led to a marked reduction in the prices paid for wild-caught salmon, forcing many fishermen to search for markets where they could receive

higher prices for their catches. Additionally, in recent years, there has been a marked increase in the price paid for salmon caught early in the season, because local markets have kept demand high for early-season fresh fish. A combination of these various market forces have helped expedite a change in the way that UCI salmon are handled at the time of catch. In recent years, the UCI commercial salmon fishing industry has emphasized quality of the final product. Many fishermen now bleed and ice their catch immediately upon harvest. This emphasis on quality has played an important role in an increase in the price that fishermen are receiving from processors, as well as in individual markets.

Average prices reported here are generated from inseason grounds prices and do not reflect any postseason adjustments. It is unknown whether this occurred to any significant degree for fish harvested in 2013.

The average weight by species from the 2013 commercial harvest was comparable to historical averages, other than for Chinook salmon (Appendices A14 and B12). The 13.9 pound average weight of Chinook salmon from all commercial fisheries in 2013 was 46% less than the 1970-2012 average of 25.6 pounds and was the smallest average weight since 1970. Even when compared to the most recent 10-year (2003–2012) average weight of 20.9 lbs for commercially harvested Chinook salmon, the 2013 average was 33% smaller. The explanation for the drop in average weight for Chinook salmon in 2013 can largely be attributed to the age of the fish in the run. From 2003 to 2012, the average annual age composition (percentage of total harvest) of the Upper Subdistrict set gillnet commercial harvest of Chinook salmon that had spent 2 years or less in salt water was 41%, nearly twice the 1987–2002 average of 25% (Figure 10; Appendix A15). In 2013, the proportion of younger aged Chinook salmon was much higher than the historical average; with approximately 66% of the Upper Subdistrict set gillnet harvest comprised of fish that had spent 2 years or less in salt water (Figure 10; Appendix A15). Moreover, the one-ocean component of the 2013 run made up more than 22% of the harvest, which was significantly greater than the historical average of about 7%. This unusually high proportion of younger, smaller fish in the Upper Subdistrict set gillnet harvest helps to explain the lower than average weight of commercially harvested Chinook salmon in UCI in 2013.

Commercial Fisheries Entry Commission (CFEC) information on the number of active drift gillnet and set gillnet permits in Cook Inlet in 2013 was not available at the time this report was published (2012 information can be found in Appendix B13). In 2013, 496 drift gillnet permit holders and 476 set gillnet permit holders reported fishing in UCI (Appendix A8). A total of 20 shore-based processors purchased UCI fishery products in 2013, as well as 6 direct marketing vessels, one catcher-processor, and 31 catcher-sellers. A catcher-seller is defined in 5 AAC 39.130(k) as a “commercial fisherman who sells or attempts to sell unprocessed fish that were legally taken by the catcher-seller.” These fish may be sold 1) to the general public for use for noncommercial purposes; 2) for use as bait for commercial or noncommercial purposes; 3) to restaurants, grocery stores, and established fish markets; or 4) by shipping the fish to a licensed buyer, processor or exporter within the state.

Direct marketing means selling a product directly to a user at a higher point on the distribution chain than the primary processor. For more information, please visit <http://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.marketers>. A list of the major fishery processors that purchased salmon in UCI in 2013 can be found in Appendix A16.

SALMON ENHANCEMENT

Salmon enhancement through hatchery stocking has been a part of UCI salmon production since the early 1970s. Currently, there is a single private hatchery that is fully operational in UCI, the Trail Lakes facility operated by CIAA. Trail Lakes hatchery is located in the upper Kenai River drainage near Moose Pass. This hatchery was originally built and operated by ADF&G's Fisheries Rehabilitation and Enhancement Division, but was subsequently leased to CIAA in 1990, as state operating budgets declined. Trail Lakes hatchery has functioned primarily to produce sockeye salmon, with minor production of coho and Chinook salmon. Most of the production from this facility benefits Lower Cook Inlet fishermen.

The only lake in UCI currently stocked with sockeye salmon fry is Hidden Lake, which is located on the Kenai Peninsula. Production from this enhancement program contribute to the UCI commercial, personal use, educational, and recreational fisheries. In 2013, CIAA released approximately 860,000 unfed sockeye salmon fry (0.09 g) into Hidden Lake (<http://www.ciaa.net.org>). These fry were otolith-marked, which allowed for identification and enumeration of hatchery stocks when the smolt emigrated to sea. From May 19 to July 8, 2013, CIAA enumerated approximately 185,000 sockeye salmon smolt emigrating Hidden Lake, of which approximately 56% were estimated to be of hatchery origin, with 95% of the emigrants being age-1 smolt. (Wendy Gist, Commercial Fisheries Biologist, ADF&G, Soldotna, Alaska, personal communication). Adult salmon are also sampled and examined for hatchery otolith marks when they swim through the weir at Hidden Creek.

Since 1975, a sockeye salmon enhancement project has been conducted at Big Lake, located in the Matanuska-Susitna Valley, approximately 15 miles west of Wasilla (Figure 1). ADF&G directed the stocking program through 1992. Beginning in 1993, CIAA conducted gamete collection, incubation, and release activities. After the 2008 season, CIAA ceased stocking fry and smolt in Big Lake (see the stock status section of this report for further details on Big Lake sockeye salmon). Thus, there were no juvenile salmon released at Big Lake in 2013. As a result of terminating enhancement activities in Big Lake, CIAA also ceased the smolt enumeration project at Fish Creek, which drains out of Big Lake. ADF&G is currently conducting the smolt enumeration project at Fish Creek. In 2013, approximately 430,500 sockeye salmon smolt were enumerated emigrating from Big Lake (Table 5).

Due to a ruling issued by the U.S. Ninth Circuit Court of Appeals in 2003 (Shields 2007), stocking activities were terminated in Tustumena Lake after the sockeye salmon fry release in 2004. Therefore, 2010 was the first year since the late 1970s that no hatchery-produced sockeye salmon returned to Tustumena Lake.

CIAA conducts other activities that benefit wild salmon production, such as trapping and netting of northern pike, removal of beaver dams, installation and monitoring of flow control structures, and other seasonal barrier modifications.

Table 5.–Production of sockeye salmon in Big Lake, 1997–2013.

Year	Total			Spring Fry Release	Fall Fry Release	Smolt Release	Smolt Emigration	
	Run	Weir	Spawners				Age-1	Age-2
1997	131,814	54,656	48,513	4,018,000				
1998	45,622	22,859	18,789	5,000,000				
1999	45,714	26,749	25,199		197,000			
2000	37,635	19,533	16,704	846,000				
2001	70,013	43,486	39,093					
2002	133,640	90,483	86,181	4,316,000				
2003	149,586	91,743	86,858	3,589,000			114,654	2,340
2004	42,160	22,157	20,065	5,000,000			251,195	25,632
2005	21,967	14,215	12,140	1,742,300			135,739	22,623
2006	36,567	32,562	26,712	444,200	426,000		205,135	19,307
2007	48,277	27,948	23,845	3,812,400	702,500	315,700	278,351	30,928
2008	26,872	19,339	19,314	3,610,000		433,000	592,919	38,785
2009	121,965	83,477	83,477					
2010	209,000	126,826	126,826					
2011	119,528	66,183	66,183				269,020	23,722
2012	32,460	18,813	18,713				178,081	11,857
2013	25,082	18,912	18,315				422,258	8,241

STOCK STATUS AND OUTLOOK

Overall, the status of UCI monitored salmon stocks is positive; however, some stocks warrant detailed review. These stocks include Susitna River and Fish Creek (Big Lake) sockeye salmon and six Northern District Chinook salmon stocks.

Sockeye Salmon

Table 6.–Upper Cook Inlet sockeye salmon run, 2013.

System	Commercial Harvest	Escapement	Other Harvest	Total
Crescent River	26,160	54,190 ^a	0	80,350
Fish Creek	6,431	18,315	336	25,082
Kasilof River	515,989	487,262	103,470	1,106,721
Kenai River	1,678,868	1,182,888	657,465	3,519,221
Susitna River	159,754	300,550	6,477	466,781
All Others	253,986	324,805	20,056	598,847
Totals	2,641,188	2,368,010	787,804	5,797,002

^a Estimated.

A run of 6.7 million sockeye salmon was forecasted to return to Upper Cook Inlet in 2013, with a harvest by all user groups of 4.9 million. (Appendix C1). The forecasted harvest in 2013 was 1.1 million fish above the 20-year average harvest of 3.8 million by all user groups. The actual run was approximately 5.8 million fish (Table 6), resulting in a total harvest by all users of nearly 3.5 million fish, with 2.7 million caught by commercial gillnets and an estimated

0.80 million fish taken by sport, personal use, educational, and subsistence fisheries (Appendix A22). The total harvest includes an estimate of the number of fish taken in sport fisheries; the sport harvest is published as *Estimates of participation, catch, and harvest in Alaska sport fisheries* (e.g., Jennings et al. 2011).

Susitna River

Since 1976, Susitna River sockeye salmon total annual runs were estimated to have ranged from 147,000 to 773,000 fish (Fair et al. 2009). Total run size estimates were arrived at by summing 1) the number of fish harvested in the various commercial fisheries using a weighted age-composition catch allocation method, as described by Tobias and Tarbox (1999); 2) the number of fish harvested in recreational and subsistence fisheries; and 3) the number of fish escaping into the entire watershed, which was estimated with Bendix sonar and fish wheel species apportionment in the Yentna River, that was multiplied by 1.95 to represent the entire Susitna River drainage escapement (Fried 1996). From 1986 to 2001, the escapement goal for Susitna River sockeye salmon was a BEG, which was predicated on an escapement of 100,000–150,000 fish in the Yentna River (Appendix B10). Beginning in 2002, ADF&G changed the BEG for the Susitna River to an SEG range of 90,000–160,000 sockeye salmon for the Yentna River, because stock-specific estimates of the harvest and total run to the Susitna River were considered unreliable.¹ In 2005, the BOF added a Yentna River sockeye salmon OEG of 75,000–180,000 fish for years when the Kenai River total sockeye salmon run exceeded 4 million fish. For more details on previous studies pertaining to sockeye salmon in the Susitna River drainage, see Tarbox and Kyle (1989); Kyle et al. (1994); King and Walker (1997); Edmundson et al. (2000); and Todd et al. (2001).

The 2007 UCI annual management report (Shields 2007) provided details about the declining sockeye salmon runs to the Susitna River drainage over the past decade (using the method just described to enumerate the runs). In response to diminishing runs, research objectives were defined and studies were funded beginning in 2006 to help ADF&G better understand sockeye salmon production in the watershed. These studies included: 1) mark–recapture and radio telemetry projects intended to estimate the number of sockeye salmon entering the system, which also allowed for the identification of spawning areas in the drainage; 2) limnological investigations of numerous lakes throughout the drainage to assess production potential; 3) fry and smolt population estimates in as many as 7 different lakes; 4) evaluation of the effects of northern pike (*Esox lucius*) predation and beaver dams on production; and 5) a comprehensive GSI study of sockeye salmon fisheries in UCI to determine the river of origin of all harvested fish. Based upon the results from the 2006 season, minor modifications to the GSI project were implemented.

Although the final summary report from these studies was not available at the time this report was published (please see Yanusz et al. 2007 for results from the first 2 years of the study), preliminary population estimates, which included the number of adult salmon counted through weirs at lakes in the Yentna River drainage upstream of the sonar site, revealed the Bendix sonar/fish wheel species apportionment program was significantly underestimating sockeye salmon passage in the Yentna River (Appendix A12). Deployment of a DIDSON resulted in substantially more fish targets being ensonified than with the Bendix sonar, but the improved sonar technology could not resolve the species apportionment issue. This became evident when escapements counted through weirs at

¹ Bue, B. G., and J. J. Hasbrouck. *Unpublished*. Escapement goal review of salmon stocks of Upper Cook Inlet. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, November 2001 (and February 2002), Anchorage.

two lakes (Chelatna and Judd) in the Yentna River drainage exceeded the Bendix passage estimate for the entire river. In addition, mark–recapture population estimates for the Susitna drainage corroborated the fact that the Bendix sonar passage estimates were significantly biased low. Moreover, data from 2009 seemed to indicate that the Bendix sonar/fish wheel species apportionment program was likely not a reliable index of escapement.

In 2009, the total sockeye salmon escapement estimate into the Susitna River drainage was 275,000 fish. This number was derived by summing the weir counts at Chelatna, Judd, and Larson lakes and then using the average ratio of cumulative weir counts to mark–recapture population estimates to expand to a drainage-wide estimate. In 2009, DIDSON was used instead of Bendix sonar at the Yentna River to estimate the daily and annual sockeye salmon passage. The DIDSON estimates were then converted to Bendix-equivalent units using the ratio between the two sonar enumeration estimates from previous years when they were operated side-by-side. Using the DIDSON to Bendix converted estimate, the ratio between the Bendix count and the drainage-wide escapement estimate in 2009 was approximately 9.7. The mean ratio between the sockeye salmon mark–recapture abundance estimates for the entire Susitna River drainage and the Yentna River Bendix sonar estimates from 2006 to 2008 was 4.2. That is, the mark–recapture population estimates were more than four times higher than the Bendix sonar counts during this 3-year time frame. Therefore, it appears the sonar estimate was biased even lower in 2009 than in earlier years; most likely due to fish wheel selectivity and the large number of odd-year pink salmon migrating up the Yentna River. These data support the conclusion that the sonar estimates, without proper correction for fish wheel selectivity, may not be an index of the actual escapement. These data also suggest that achievement of the Yentna River sockeye salmon goal in previous years may have been obtained more often than was originally stated. It is possible that escapements exceeded the goal range in some years when the Bendix sonar/fish wheel passage estimate had indicated otherwise.

At the 2008 BOF meeting, when it was reported that the Bendix sonar/fish wheel species apportionment program had likely been underestimating sockeye salmon passage for years, a debate ensued about the origins of the escapement goal and how salmon escapements were enumerated. It was generally acknowledged that Susitna River sockeye salmon production had declined, but questions were raised about the escapement goal, including 1) how it was originally set; 2) whether or not Yentna River sockeye salmon passage estimates were an index of abundance; and 3) how fisheries (sport and commercial) should be managed with respect to the new information about undercounting bias. It was during this meeting that the SSSAP, outlined earlier in this report, was developed and adopted.

In May 2008, Senate Concurrent Resolution No. 21 was adopted, forming the Cook Inlet Sockeye Salmon Task Force. The task force, composed of 5 members from the Alaska Senate and 5 members from the House of Representatives, was established to 1) examine the conservation and allocation issues in fisheries management of Cook Inlet; 2) scrutinize the economic effect of Cook Inlet salmon and the maximum benefit of those salmon to the people of Alaska; and 3) investigate the legal and constitutional issues of a permit buyback program, thus reducing the number of commercial fishing permits in Cook Inlet. Between May 2008 and January 2009, the task force held 5 public meetings during which ADF&G provided a substantial amount of reports and written material, as well as oral testimony, which included a historical perspective of sockeye salmon research and management of Susitna River sockeye salmon stocks. Public testimony was also heard at meetings held in Soldotna and in Wasilla. The task force committed to summarize its

findings in a report that would be submitted to the legislature on the first day of the 26th Alaska State Legislature (January 2009). The report was to include 1) the short-term and long-term uses of Cook Inlet salmon consistent with the maximum benefit principle contained within Article VIII, Section 2, Constitution of the State of Alaska; 2) specific proposals to address the conservation issues in the Northern District; and 3) options to reduce allocative conflicts in Cook Inlet, which may have included a buyback program. This report remains unpublished.

As a result of the data revealing that sockeye salmon were being undercounted in the Yentna River, ADF&G initiated an out-of-cycle Susitna River sockeye salmon escapement goal review in late 2008 (Fair et al. 2009). This analysis concluded that the existing escapement goal for the Susitna River drainage was inappropriate. The report from these analyses recommended the Yentna River sockeye salmon SEG be eliminated and replaced with 3 lake SEGs, as described earlier in this report. Fair et al. (2009) also recommended the research studies that were initiated in the Susitna River drainage in 2006 be continued, with 2 additional objectives: 1) add fish wheel selectivity experiments that might allow historical Bendix estimates of passage to be adjusted to more accurately reflect past escapements in the Yentna River; and 2) test sources of error with the DIDSON system at the Yentna River sonar site to help improve sockeye salmon passage estimates. These and other studies were continued through the 2013 field season.

The formation of individual lake sockeye salmon escapement goals within the Susitna River drainage represented a departure from approximately 30 years of management with a Yentna River drainage sonar escapement objective. Some stakeholders expressed concerns that the new escapement goals provided no inseason direction to commercial fisheries management. It must be noted, though, that when the sonar project was in operation, there was a lag time of 2 to 3 weeks for sockeye salmon to swim from the Central District to the sonar site at the Yentna River. Therefore, any savings from a closure or restriction to the drift fleet in the Central District could not be measured for weeks, and accurate correlation of the number of fish saved from a restriction or closure was not possible. Thus, when the Susitna Sockeye Salmon Action Plan (SSSAP) was developed, it maintained the mandatory restrictions to both the Central District drift gillnet fishery and the Northern District set gillnet fishery that were believed to provide for adequate conservation of northern-bound sockeye salmon stocks. The mandatory restrictions to commercial fishing in the SSSAP (and CDDGFMP) include 4 to 5 regular period restrictions to the drift gillnet fleet in July for Kenai River sockeye salmon runs of less than 4.6 million fish (75% of all Kenai River runs since 1978). Furthermore, the Northern District set gillnet fishery was limited to fishing no more than one-third of its full allotment of gear from July 20 through August 6, which is the time period when the bulk of the Susitna River sockeye salmon run is migrating through marine waters in the Northern District. There was a moderate relaxation of this restriction for part of the Northern District beginning in 2011 (see the Regulatory Changes section of this report for specifics).

The 2009 season marked the first year where the sonar project in the Yentna River was not used for inseason management of sport and commercial fisheries. All restrictions just outlined in the CDDGFMP and SSSAP were observed in 2009–2013. At the 2011 BOF meeting, ADF&G recommended continued designation of Susitna River sockeye salmon as a stock of yield (SOY) concern. The BOF accepted this recommendation. At the 2013 BOF fall work session, ADF&G again recommended Susitna River sockeye salmon remain a SOY concern. The BOF will take this up at the 2014 UCI meeting in Anchorage. The impetus behind the SOY endorsement was to provide more time for the studies, just described, to provide critical information needed to

formulate management strategies that will, hopefully, lead to increased yields from these stocks. At the 2011 meeting, modifications were made to the CDDGFMP in order to further reduce drift gillnet harvest of northern-bound sockeye salmon (Shields and Dupuis 2012).

The 2013 sockeye salmon run to the Susitna River was estimated at 467,000 fish (using the escapement and the mean harvest rate estimated from genetic stock composition of the commercial harvest in 2007–2010). The 2013 run was about 29% above preseason expectations (Table 3). The sockeye salmon escapement estimate at Chelatna Lake was 70,555 fish (escapement goal of 20,000–65,000); at Judd Lake, escapement enumeration reached 14,088 fish (escapement goal is 25,000–55,000); and at Larson Lake 21,821 sockeye salmon (escapement goal is 15,000–30,000) were counted through the weir (Table 1). Collectively, the escapement goal for all three systems is 60,000–170,000 fish. The 2013 escapement at these three lakes was 106,464 sockeye salmon.

The sockeye salmon total-run forecast for the Susitna River in 2014 is only 264,000 fish, which is 39% less than the 7 year average run of 430,000. This forecast was derived using mean return per spawner by age class for brood years 2006–2009 and mark–recapture estimates of spawner abundance in 2006–2010. Sonar and age composition catch allocation models were not used, because mark recapture studies have shown that the Yentna sonar project underestimated sockeye salmon escapement, causing estimates of adult returns to also be underestimated. The 7-year average run (2006–2012) was calculated using mark–recapture estimates of inriver run and genetic estimates of commercial harvests.

In summary, there continues to be concerns for Susitna River sockeye salmon. In 2008, Susitna River sockeye salmon were first found to be a stock of yield concern; in 2013, ADF&G recommended that Susitna River sockeye salmon remain classified as a stock of yield concern because: 1) 5 of the escapements (out of 15 total) have been below the minimum goal, and 2) harvests in Central and Northern districts from 2008 through 2013 were generally less than long-term averages. As a result of the initial classification of stock of concern in 2008, an action plan was developed by ADF&G and the BOF to identify conservative management measures in both the sport and commercial fisheries targeting Susitna River sockeye salmon stocks. These restrictions have likely reduced the harvest of Susitna sockeye salmon. However, even with the reduction in harvest, Susitna sockeye salmon remain a stock of concern.

A number of other factors or activities have been identified that are likely to negatively impact the production of salmonids in the Matanuska-Susitna (Mat-Su) basin (Hughes²). Potential impacts can be characterized in two different categories: natural and anthropogenic. Natural threats include natural loss or alteration of wetland and riparian habitats, alteration in of water quality and quantity, and beaver dams blocking fish migration. Anthropogenic impacts include urbanization that increases loss or alteration of wetlands and riparian habitats and decreases water quantity and quality; culverts that block or impair fish passage; ATV impacts to spawning habitats, stream channels, wetlands and riparian habitats; introduction northern pike; and beaver dams at or in culverts.

Sockeye salmon production from Judd, Chelatna, and Larson lakes appears to be stable. However, there are other lakes within the Susitna River drainage that are producing fewer adults

² Hughes, D. W. *Unpublished* (2013). A comprehensive inventory of impaired anadromous fish habitats in the Matanuska-Susitna basin, with recommendations for restoration, 2013. Alaska Department of Fish and Game, Division of Habitat Research and Restoration. http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2013-2014/uci/anadromous_fish.pdf (accessed 01/14).

than they once did and some void of sockeye salmon altogether. Other lakes experiencing marked reductions in sockeye salmon production in the Susitna River drainage include Whiskey, Hewett, Shell, and Red Shirt. Research studies are ongoing to better understand sockeye salmon abundance and distribution within the Susitna River drainage.

Crescent River

After experiencing record-level runs through the mid to late 1980s, Crescent River sockeye salmon runs declined dramatically and remained depressed throughout most of the 1990s. Since 2000, however, sockeye salmon runs to Crescent Lake have revealed marked improvement (Table 7). For a more thorough review of sockeye salmon production at Crescent Lake, please see Edmundson and Edmundson (2002) and the 2009 UCI annual management report (Shields 2010).

Table 7.—Crescent Lake sockeye salmon average escapement, harvest and run, 1976–2013.

Decade	Average Annual Escapement (thousands) ^a	Average Annual Commercial Harvest (thousands)	Average Annual Total Run (thousands)
1976–1979	75	56	130
1980–1989	87	82	169
1990–1999	50	23	73
2000–2013	85	44	128

^a Sonar project was not run in 2009 and 2013; escapement data for this year was estimated based on harvest statistics.

Since 1999, an aggressive fishing schedule with set gillnets in the Western Subdistrict south of Redoubt Point has occurred in an attempt to keep escapements within the BEG range for this system. In 2013, this area was opened 16 hours per day, on Mondays, Thursdays, and Saturdays from July 1 through August 3 (Appendix A11). Many fishermen and nearly all processors abandoned the fishery during the 1990s because of diminished returns and considerable restrictions placed on the fishery in order to achieve escapement goals. Since then, participation in this fishery has remained relatively low, resulting in an average annual exploitation rate of 34% on Crescent River sockeye salmon stocks from 2000 to 2013.

Approximately 22,500 sockeye salmon were harvested by set gillnetters in the immediate area around the Crescent River terminus in 2013. The BEG for Crescent Lake sockeye salmon is set at 30,000–70,000 fish. Since 1999, escapements in 12 of 14 years have exceeded the upper end of the escapement goal range (Appendix B10). At this time, the outlook for Crescent Lake sockeye salmon is positive.

Fish Creek

From 1997 to 2013, sockeye salmon runs to Fish Creek, which drains Big Lake and flows into Knik Arm, have been highly variable, as evidenced by the inconsistent achievement of meeting the escapement goal for this system (Appendix B10). In 2013, ADF&G forecasted a total sockeye salmon run to Fish Creek of 61,000 fish (Table 3; Appendix C1). The actual estimated run, however, was closer to 25,000 fish, resulting in an escapement of 18,912 sockeye salmon (Table 5; Appendix A2). At this level of escapement, the lower bound of the sockeye salmon SEG (20,000 fish) was not achieved. Commercial fishery exploitation of Big Lake sockeye

salmon for the past 10 years has averaged 34% (based on the age-composition allocation method of allocating the commercial harvest to stock of origin).

During the past 17 years, escapements were below the goal 8 years, within the goal range 5 years, and exceeded the goal in 4 years. The average annual total sockeye salmon run to Big Lake from 1980–1997 was 212,000 fish. But, from 1998–2001 and 2004–2008 (8 total years), the average annual return fell to 42,000 fish (Tobias and Willette 2004). Conversely, the total sockeye salmon run to Fish Creek in 1997, 2002–2003, and 2009–2013 (7 total years) averaged nearly 115,000 fish annually. The number of smolt emigrating Big Lake from 2003 to 2008 ranged from 117,000 to 632,000 fish (<http://www.ciaa.net.org/>). CIAA ended fry releases and smolt enumeration projects in Fish Creek in 2008. Each year, otoliths are collected from adults escaping the weir at Fish Creek. These otoliths are analyzed for hatchery thermal marks, which allows for an estimate of the hatchery contribution to the run to be made. From 2002 to 2013, the average annual hatchery proportion of the run to Big Lake was 40%, ranging from 2% in 2002 to 73% in 2006 (Wendy Gist, Commercial Fisheries Biologist, ADF&G, Soldotna, personal communication).

A technical review assessing Big Lake sockeye salmon production was completed prior to the 2002 BOF meeting (Litchfield and Willette 2001). This report proposed 2 likely causes for the decline in sockeye salmon production: 1) degradation of spawning habitat as a result of questionable hatchery practices; and 2) placement of a coffer dam at the outlet of the lake, which prevented many wild fry from being able to recruit into the lake, as well as causing a productive spawning area at the lake outlet to be filled in with silt and mud. At the 2002 BOF meeting, Fish Creek sockeye salmon were found to be a stock of yield concern and ADF&G proposed additional studies to more clearly define limitations to sockeye salmon production in this system. As a result of identifying the coffer dam as a barrier to upstream migration of juvenile sockeye salmon fry, modifications were made at the lake outlet that allowed fry to more easily recruit into Big Lake. It was expected that more adults would again utilize this productive spawning area. Fish-hatchery culture methods and stocking procedures were also modified in the hope that these changes, combined with the modifications at the lake outlet, would improve sockeye salmon production in Big Lake.

The ADF&G recommended removing Big Lake sockeye salmon as a stock of yield concern at the 2005 BOF meeting. However, sockeye salmon production from Big Lake remains somewhat of a mystery. Even when the recommended number of spawners for the system has been met, the production of wild-produced smolt has been poor. Furthermore, CIAA stocked the lake with sockeye salmon fry for a number of years, but fry-to-smolt survival was also very poor (Dodson 2006). In an attempt to try and isolate the mechanisms leading to poor juvenile survival, CIAA released fish at three different time intervals: spring fry, fall fry, and spring smolt. Unfortunately, the number of smolt emigrating Big Lake did not increase, even with the stocking of larger juveniles. As a result of the poor sockeye salmon smolt survival in Big Lake, CIAA ceased enhancement activities after the fry release in 2008.

2014 Sockeye Salmon Outlook

A run of 6.1 million sockeye salmon is forecasted to return to UCI in 2014, with a harvest by all user groups of 4.3 million. The forecasted harvest in 2014 is 0.6 million fish above the 20-year average harvest of 3.7 million by all user groups.

The run forecast for the Kenai River is approximately 3.8 million, which is equal to the 20-year average run. Age-1.3 salmon typically comprise about 57% of the run to the Kenai River. A

sibling model based upon the return of age-1.2 salmon in 2013 (307,000; 20-year average is 369,000) predicted a return of 1.8 million age-1.3 salmon. Age-2.3 salmon typically comprise about 18% of the run to the Kenai River. A sibling model based upon the return of age-2.2 salmon in 2013 (194,000; 20-year average is 252,000) predicted a return of 389,000 age-2.3 salmon in 2014. A smolt model based upon the abundance of age-2 smolt emigrating from the Kenai River in spring 2011 (4.8 million) predicted a return of 1.1 million age-2.3 salmon. The predominant age classes in the 2014 run should be age 1.3 (47%), age 1.2 (11%), and age 2.3 (28%). The 5-year mean absolute percent error (MAPE) for the set of models used for the 2014 Kenai sockeye salmon run forecast was 11%. The 5-year MAPE was used for the Kenai sockeye salmon run forecast, because smolt data used for the age-2.3 forecast is only available for the past 5 brood years (Appendix C2).

The sockeye salmon run forecast for the Kasilof River is 1,062,000, which is 11% greater than the 20-year average run of 953,000. Age-1.3 salmon typically comprise about 34% of the run to the Kasilof River. The forecast for age-1.3 salmon is 376,000, which is 17% greater than the 20-year average return (321,000) for this age class. Age-1.2 salmon typically comprise about 31% of the run. The forecast for age-1.2 salmon is 279,000, which is 7% less than the 20-year average return (300,000) for this age class. Age-2.2 salmon typically comprise about 24% of the run. The forecast for age-2.2 salmon is 268,000, which is 17% greater than the 20-year average return (229,000) for this age class. The predominant age classes in the 2014 run should be age 1.2 (26%), age 1.3 (35%), and age 2.2 (25%). The 10-year MAPE for the set of models used for the 2014 Kasilof sockeye salmon run forecast was 24% (Appendix C2).

The sockeye salmon run forecast for the Susitna River is 264,000, which is 39% less than the 7-year average run of 430,000. This forecast was derived using mean return per spawner by age class for brood years 2006–2009 and mark–recapture estimates of spawner abundance in 2006–2010. Sonar and age composition catch allocation models were not used, because mark–recapture studies have shown that the Yentna sonar project underestimated sockeye salmon escapement, causing estimates of adult returns to also be underestimated. This is the second year this forecast method has been used, so MAPE is not available. The 7-year average run (2006–2012) was calculated using mark–recapture estimates of inriver run and genetic estimates of commercial harvests (Appendix C2).

The sockeye salmon run forecast for Fish Creek is 79,000, which is 26% less than the 20-year average run of 107,000. Age-1.2 and -1.3 salmon typically comprise 72% of the run to Fish Creek. A smolt model based upon the abundance of age-1 smolt emigrating from Fish Creek in 2012 (178,000; 9-year average: 229,000) predicted a return of 40,000 age-1.2 salmon. A smolt model based upon the abundance of age-1 smolt in 2011 (269,000) predicted a return of 20,000 age-1.3 salmon in 2014. The age-1.2 forecast is 23% less than the 20-year average return (52,000) for this age class, while the age-1.3 forecast is 21% less than the 20-year average return (26,000) for this age class. The predominant age classes in the 2014 run should be age 1.2 (50%) and age 1.3 (25%; Appendix C2).

The sockeye salmon run forecast for Crescent River is 92,000, which is 17% less than the 20-year average run. Age-1.3 and -2.3 salmon typically comprise 75% of the run to Crescent River. Sibling models based upon returns of age-1.2 and -2.2 salmon in 2013 were used to forecast returns of age-1.3 (38,000) and -2.3 (33,000) salmon in 2014. The predominant age classes in the 2014 run should be age 1.3 (42%) and age 2.3 (36%). The sockeye salmon run forecast for Crescent River was pooled with unmonitored systems, because the Crescent River

sonar project is no longer operated, and ADF&G has recommended that the escapement goal for this stock be removed (Appendix C2).

Pink Salmon

Pink salmon runs in UCI are even-year dominant, with odd-year average annual harvests typically less than one-seventh of even-year harvests (Appendix B4). Pink salmon are generally harvested in significant quantities in UCI beginning in late July and early August. The 2013 UCI harvest of 48,275 pink salmon was 41% less than the 1997–2011 average odd-year harvest of 81,500 fish (Table 8). This follows the 2012 harvest of 469,000 pink salmon, which was 44% more than the 1996–2010 average even-year harvest of 326,000 fish. (Table 8; Appendix B4). As noted throughout this report, however, it is difficult to gauge the status of various stocks based solely on commercial harvest data.

Table 8.—Upper Cook Inlet pink salmon commercial harvests and Deshka River escapements, 1996–2013.

Year	UCI Pink Salmon			
	Commercial Harvest		Deshka River Enumeration	
	Even-Year	Odd-Year	Even-Year	Odd-Year
1996	242,911		37,482	
1997		70,933		1,101
1998	551,260		541,946	
1999		16,174		766
2000	146,482		1,248,498	
2001		72,559		3,845
2002	446,960		946,255	
2003		48,789		9,214
2004	357,939		390,087	
2005		48,419		7,088
2006	404,111		83,454	
2007		147,020		3,954
2008	168,890		12,947	
2009		214,321		26,077
2010	289,000		9,328	
2011		34,030		4,489 ^a
2012	469,411		78,853	
2013		48,275		27,926

^a No counts from August 8 to August 14 due to high water.

Prior to 2009, pink salmon were enumerated at a weir on the Deshka River (Table 8). Although pink salmon are still counted there, the weir is taken down prior to the end of the pink salmon run. Additionally, there are no escapement goals in UCI for this species. Thus, the only data collected on pink salmon stocks are from commercial fisheries harvests, recreational fishing surveys, and some information collected at projects that are designed to enumerate other species (i.e., Deshka River weir). In general, pink salmon stocks in UCI have maintained their even-year dominance, albeit the 2007 and 2009 harvests were much above average for odd-year runs. Although pink salmon enumeration data are limited, ADF&G did conduct a marine tagging project designed to estimate the total population size, escapement, and exploitation rates for coho, pink, and chum

salmon returning to UCI in 2002 (Willette et al. 2003). This study estimated the harvest rate of pink salmon by the UCI commercial fishery to range between 1% and 12%, with a point estimate of 2%, indicating pink salmon are harvested at very low rates in UCI.

Chum Salmon

Chum salmon runs to UCI are concentrated predominately in the western and northern watersheds, with the most significant harvest coming from the Central District drift gillnet fleet. The 2013 UCI commercial chum salmon harvest of approximately 139,000 fish was 12% greater than the 2003-2012 average annual harvest of 124,000 fish (Appendix B5). However, the 2013 harvest was approximately 70% less than the 1966–2012 average annual harvest of 442,000 fish (Appendix B5). An evaluation of chum salmon runs is made difficult because of a lack of information other than commercial harvest data. Chum salmon are no longer enumerated at either the Deshka River or Little Susitna River weirs. They are captured in the OTF project, but this project was designed temporally and spatially to assess UCI sockeye salmon stocks. The only chum salmon escapement goal in all of UCI is an aerial survey SEG in Chinitna Bay (Clearwater Creek) set at 3,800–8,400 fish (Fair et al. 2007). This SEG has been met or exceeded every year since it was established in 2002. As a result, drift gillnetting has been opened by EO in Chinitna Bay each of the past 7 years per 5 AAC 21.320(c)(1).

While ADF&G lacks long-term quantitative chum salmon escapement information, escapements to streams throughout UCI have benefited by management actions or regulatory changes aimed principally at other species. These actions have included 1) significant reductions in the offshore drift gillnet and Northern District set gillnet fisheries to conserve Susitna River sockeye salmon; 2) adoption of the NDSMP (5 AAC 21.358), which states that its primary purpose is to minimize the harvest of coho salmon bound for the Northern District; 3) the lack of participation in the directed chum salmon fishery in Chinitna Bay; and 4) harvest avoidance by the drift fishery as a result of lower prices being paid for chum salmon than for sockeye salmon. Other than aerial counts in Chinitna Bay, most of the sporadic chum salmon data available to assess annual runs can be used to make general conclusions (i.e., the run was below average, average, or above average). It appears the 2013 chum salmon run was above average. Based on the 2002 tagging study, which estimated the commercial fishing harvest rate on chum salmon at approximately 6%, and considering the escapement objective in Chinitna Bay has been consistently achieved, these limited data reveal no concerns for chum salmon stocks in UCI.

Coho Salmon

Commercial coho salmon harvests in UCI during the 1980s and early 1990s were much higher than the long-term average (Appendix B3). This can be attributed to good coho salmon production, but also due to additional fishing time on strong sockeye salmon runs to UCI. Recent coho salmon harvest data, however, may or may not be a true indication of run strength, largely due to regulatory changes that were made to reduce coho salmon commercial harvests. For example, coho salmon runs in 1997 and 1999 were viewed as mediocre to poor, prompting BOF measures in 1997, 1999, and 2000 that placed restrictions on sport and commercial fishermen in much of UCI. From 2000 to 2004, the commercial set gillnet fishery in the Upper Subdistrict was closed no later than August 7, and no more than one EO, not to exceed 24 hours in duration, was allowed during the month of August. These actions resulted in marked reductions in commercial coho salmon harvests. At the same time, however, the 2000 and 2001 coho salmon runs appeared to be much improved, with the 2002 run being exceptional, perhaps even a record

run³ (Table 9). Therefore, at the 2005 BOF meeting, the restrictions on fishing in August in the Upper Subdistrict set gillnet fishery and Central District drift gillnet fishery were moderately relaxed. Both fisheries' closing dates were changed to no later than August 10, with the set gillnet fishery to be managed under the same set of weekly guidelines in August that were applicable in July. In 2008, the BOF extended the Upper Subdistrict set gillnet and district wide drift gillnet fishing seasons to no later than August 15. These changes were made largely in light of data revealing good coho salmon runs and low Kenai River coho salmon exploitation by commercial fishermen during this extended time period.

Northern District

The Division of Sport Fish has used coho salmon weir counts at the Little Susitna River as a surrogate of escapement for all Knik Arm coho salmon stocks since 2005. The SEG for this system was set in 2000 at 10,100–17,700 fish (Fair et al. 2007). The SEG was met or exceeded each year from 2000–2008 and 2013. However, the SEG was not achieved from 2009–2012 (Table 9). It should be noted that the weir washed out early in 2006, but based on the inriver sport fishing performance, the 2006 coho salmon run in the Little Susitna River was categorized as “very early and very, very strong” and the SEG was likely achieved (Sam Ivey, Sport Fish Biologist, ADF&G, Palmer; personal communication). The weir also washed out early in 2005, which means the estimated passage of 16,839 fish was less than the actual unknown escapement. In 2012, the Little Susitna River weir was moved downstream approximately 40 miles to its current location at river mile 32.5. This provided managers with timelier inseason information of coho salmon passage.

In most years since 1969, ADF&G has enumerated coho salmon at a weir at Fish Creek (Fair et al. 2010). In 1994, an escapement goal of 2,700 (point goal) was established, which was changed in 2002 to an SEG of 1,200–4,400 (Bue and Hasbrouck⁴). However, this goal was dropped in 2005 (Hasbrouck and Edmundson 2007) because the weir was not operated during the entire coho salmon run. In 2009 and 2010, funding obtained by a grant from the U.S. Fish and Wildlife Service allowed the weir to be operated through the entire coho salmon run. Therefore, at the 2011 BOF meeting, the previous SEG of 1,200–4,400 fish was reinstated. Since the goal was reinstated, it has been met or exceeded every year (Table 9).

While there are several regulatory management plans pertinent to the Susitna River that provide direction to ADF&G about management of coho salmon, there are no escapement goals or comprehensive sustained yield objectives for Susitna River drainage coho salmon. Sustained yield is thought to be provided for by basic bag limits and seasons in the sport fishery and inseason management of the commercial fishery⁵. In 2013, coho salmon runs in many Northern Cook Inlet watersheds, especially the Little Susitna River and Knik Arm streams, appear to have been above average, as was commercial coho salmon harvest.

In summary, when coho salmon runs are viewed over a long period of time in Northern Cook Inlet, there are no apparent concerns about the sustainability of these stocks. The Little Susitna River coho salmon escapement goal was first established in 1990, and since that time, there have

³ Yanusz, R., J. Carlon, D. Bosch, and R. Clark. *Unpublished* (2002). Stock status of coho salmon in Upper Cook Inlet, a report to the Alaska Board of Fisheries. Located at: Alaska Department of Fish and Game, Division of Sport Fish, 333 Raspberry Road, Anchorage.

⁴ Bue, B. G., and J. J. Hasbrouck. *Unpublished*. Escapement goal review of salmon stocks of Upper Cook Inlet. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, November 2001 (and February 2002), Anchorage.

⁵ Lafferty, R., R. Massengill, T. Namtvedt, D. Bosch, and J. Hasbrouck. *Unpublished*. Stock status of coho salmon in Upper Cook Inlet, Alaska. Alaska Department of Fish and Game, Report to the Alaska Board of Fisheries, 2005, Anchorage.

been 19 years where a complete census of the escapement has been completed. Of those 19 years, the goal was achieved or exceeded 15 years (79%) and not achieved 4 years (21%). At Fish Creek, a coho salmon escapement goal was first adopted in 1994. From 1994–2001, it was a point goal of 2,700 fish. In 2002, the goal was changed to an SEG of 1,200–4,400 fish. The coho salmon escapement goal at Fish Creek has been achieved or exceeded 16 years out of the 20 years (80%) it has been in existence, including every year for the past 14 years. And finally, there is a coho salmon single foot survey escapement goal at Jim Creek. From 1994–1999, it was a point goal of 830 fish. Since 2000, the goal was changed to an SEG of 400-700 fish. During the 19 years that a coho salmon goal has been in place at Jim Creek, it has been achieved or exceeded 11 times (58%).

Table 9.–Coho salmon escapement and enumeration, 1996–2013.

Year	Cottonwood Creek	Fish Creek	L. Susitna River	Wasilla Creek	Deep Creek	OTF CPUE
1996			15,803			534
1997	936	2,578 ^a	9,894	670	2,017	362
1998	2,114	5,463	15,159	3,777	1,541	403
1999	478	1,766	3,017	1,587	2,267	294
2000	1,888	5,979	14,436	6,154	3,408	766
2001	3,525	10,047	30,587	6,784	3,747	838
2002	4,270	15,187	47,938	12,657	6,132	798
2003	791	2,142	10,877	2,962		368
2004	2,004	3,255 ^a	40,199			785
2005		3,836 ^a	16,839 ^b			367
2006		5,723 ^a	8,786 ^b			1,034
2007		9,618 ^a	17,573			482
2008		9,603 ^a	18,485			718
2009		8,666	9,523			283
2010		7,034	9,214			454
2011		1,428 ^a	4,826			264
2012		1,237	6,770			154
2013		7,593	13,583 ^b			494

^a Represents a partial count, the weir was pulled before the coho salmon run was complete.

^b Weir washed out; count incomplete.

Kenai River

From 1999 to 2004, the total return of Kenai River adult coho salmon was estimated annually by: 1) population-specific harvest in marine commercial fisheries, 2) inriver sport and personal use harvest, and 3) spawning escapement (Carlson and Evans 2007; Massengill and Evans 2007). The sum of these three components provided the estimates of annual adult production, although no escapement goal exists for this system. Smolt enumeration studies were conducted in the Moose River, a Kenai River tributary that has been shown to be a very important rearing environment for juvenile coho salmon, from 1992 to 2007 (Massengill and Carlson 2007). As a result of increasing sport and commercial harvest levels in the early 1990s, combined with a decreasing trend in Moose River smolt production from 1993 to 1997, the BOF implemented conservation measures at its 1997 and 2000 meetings to reduce sport and commercial exploitation of Kenai River coho salmon. Since 1997, the drainagewide coho salmon smolt emigrations have stabilized. The 1999 record

low adult escapement estimate of 7,364 fish produced a smolt emigration in 2001 that was only slightly below the historical average. Conversely, the record low smolt emigration in 1997 of 374,225 fish produced what was believed to be a very weak return of adults in 1998, although the total return strength for that year is unknown.

Since 2000, Kenai River adult coho salmon runs have been considered good to excellent. In response to an emergency petition from the Kenai-Soldotna Fish and Game Advisory Committee in 2004, the BOF extended the Kenai River sport fishing season for coho salmon from September 30 to October 31. This decision was based upon ADF&G data that projected an escapement of Kenai River coho salmon above the 1999–2003 average. In 2005, the BOF repealed the *Kenai River Coho Salmon Conservation Management Plan* (5 AAC 21.357) and extended the Kenai River coho salmon sport fishing season in regulation through October 31. This latter change was based on an expectation of low October fishing effort and recent (2000–2004) exploitation estimates, which indicated that Kenai River coho salmon returns were exploited at a rate deemed sustainable. Unfortunately, 2004 was the final year that mark–recapture abundance estimates were generated for Kenai River adult coho salmon. In 2008, the BOF extended the Upper Subdistrict set gillnet fishing season from a closing date of August 10 to no later than August 15, with the caveat that from August 11 to August 15, the fishery was to be open for regular periods only. The Central District drift gillnet fishery was also extended to August 15 with the same regular period restriction only from August 11 to August 15. This additional commercial fishing time was granted in response to reports the BOF received at its 2008 meeting showing that during the 6 years that the total annual run of Kenai River coho salmon was estimated, the Upper Subdistrict set gillnet fishery harvested between 0.3% to 6.0% of the run annually. Estimates were also provided to the BOF that showed the combined additional daily exploitation rate by both set and drift gillnet fisheries on Kenai River coho salmon stocks at this time in August was estimated to range between 0.78% to 1.43% for each additional day fished.

Beginning in 2005, fish wheel catch rate data provided a tool to index Kenai River coho salmon abundance into 1 of 3 general classes (low<50K; 50K<med<120K; high>120K) by utilizing inseason fish wheel catch rate data plotted into a regression of historical fish wheel catch rates to abundance estimates. The index level assigned to the 2005 and 2006 Kenai River adult coho salmon returns arriving at the fish wheel site (river mile 28) was characterized as “medium,” while the 2007 run was characterized as “low”; however, the 2007 index may have been biased low as an unexpected drop in fish wheel efficiency for sockeye salmon was detected (Massengill⁶). This project was last active in 2007. Current regulations for Kenai River coho salmon are believed to be providing for sustainable harvest and the most recent inriver harvest estimates (2007–2009) were stable and near the historical average.

Chinook Salmon

Northern District

The *Northern District King Salmon Management Plan* (5 AAC 21.366) was first adopted in 1986. In response to low escapements in the Theodore and Chuitna rivers, fishing area restrictions were implemented beginning in 1997 in the area from an ADF&G regulatory marker located 1 mile south of the Theodore River to the Susitna River. This area was restricted to a

⁶ Massengill, R. L. *Unpublished*. 2007 smolt abundance and summary statistics for Kenai River coho salmon. Alaska Department of Fish and Game, Fishery Data Series, Anchorage.

single 12-hour fishing period each year. The Northern District has approximately 345 streams and rivers where Chinook salmon are present and the estimated total annual return is between 100,000 and 200,000 fish (<http://www.adfg.alaska.gov/static-sf/Region2/pdfpubs/MatSuKingSalmon.pdf>). The average harvest in the Northern District commercial fishery for the last 10 years (2003–2012) is approximately 2,300 fish (Table 2), or about 10% of the total Northern District Chinook salmon harvest (including sport harvest), which equates to an annual harvest rate of between 1.2% and 2.4%. The commercial Chinook salmon harvest has not reached the 12,500 harvest cap since 1986. This is due to declining participation in this fishery as a result of preseason registration requirements.

In an ADF&G memo (RC 6) to the BOF dated October 1, 2010, a summary of results from the stock of concern evaluation for UCI salmon was presented. ADF&G's recommendation stated that despite sport fishery restrictions already in place and recent commercial fishery restrictions and closures on westside fisheries, Chuitna, Theodore, and Lewis Rivers' Chinook salmon escapement goals have not been achieved the past 4 years. Escapements are evaluated with a single aerial census flight each year. ADF&G recommended that the BOF consider these systems for stock of management concern status. In addition, ADF&G recommended Alexander Creek Chinook salmon as a stock of management concern, because runs to this system have declined drastically over the past 5 years despite closure of the sport fishery beginning in 2008. The ADF&G memo also recommended that Willow and Goose Creeks' Chinook salmon be considered as stocks of yield concern in response to the SEGs not being met over several consecutive years. The BOF reviewed these ADF&G recommendations at the 2011 UCI finfish meeting in Anchorage and agreed with ADF&G staff to list Chinook salmon stocks in Alexander, Willow, and Goose creeks, and the Chuitna, Theodore, and Lewis rivers as stocks of concern. As a result of this decision, sport fishing in the Theodore, Lewis, and Chuitna rivers was closed by regulation during the 2011–2013 seasons. Because of the sport fishing closures, the area from the wood chip dock to the Susitna River was closed for the directed Chinook salmon commercial fishery per the *Northern District King Salmon Management Plan*. Prior to the 2012 season, additional restrictions to sport and commercial fisheries, beyond those taken in 2011, were implemented. In the commercial fishery, all fishing periods were reduced in duration from 12 hours to 6 hours. Then, in 2013, because of continued low Chinook salmon escapement in 2012, and a below average forecast for 2013, additional restrictions were enacted. In the commercial fishery, EO No. 1 was issued, restricting weekly fishing periods from 12 hours to 6 hours and closing the first scheduled period on May 27 (Appendix A10). As a result, the Northern District was opened for four 6-hour periods between June 3 and June 24. The total harvest of Chinook salmon in the 2013 Northern District directed Chinook salmon fishery was 1,134 fish, the third lowest harvest in this fishery since its inception in 1986. The final escapement estimate for Chinook salmon in the Deshka River in 2013 totaled a little more than 18,500 fish (Table 10).

Deshka River

After experiencing a marked decline in abundance in the early to mid-1990s, Northern District Chinook salmon stocks rebounded, with exceptional runs measured at the Deshka River weir, the only site where Chinook salmon are totally enumerated in the Northern District (Table 10). From 1999 through 2006, the upper end of the Deshka River BEG of 13,000–28,000 fish (Fair et al. 2007) was exceeded. As a result of strong runs during this time, there were numerous liberalizations to the inriver sport fishery through inseason EOs. In addition, in 2005, the BOF

lengthened fishing periods for the commercial fishery from 6 hours to 12 hours and in 2008, allowed the commercial fishery to remain open through June 24 (Monday periods only). The commercial fishery harvest cap of 12,500 Chinook salmon remained in effect. The 2007 Deshka River run, albeit less than originally anticipated, fell within the BEG range. The 2008 and 2009 runs, which were projected to be smaller than average, were both poor runs, resulting in closures to both sport and commercial fisheries. The lower end of the BEG was not achieved either year.

Table 10.–Deshka River Chinook salmon passage, 1995–2013.

Year	Passage	Year	Passage
1995	10,044	2005	37,725
1996	14,349	2006	31,150
1997	35,587	2007	18,714
1998	15,409	2008	7,533
1999	29,649	2009	11,960
2000	35,242	2010	18,594
2001	29,004	2011	19,026
2002	29,427	2012	14,088
2003	40,069	2013	18,532
2004	57,934		

Note: BEG = 13,000–28,000; in 2011 the BEG was changed to an SEG with the same escapement range.

The poor runs that were experienced in 2008, 2009, and 2010 resulted in restrictions to the sport and commercial fisheries that harvest this stock (Shields and Dupuis 2012). While the 2013 Deshka River Chinook salmon forecast called for a below average run, it also indicated that if average harvest occurred, the lower end of the SEG would likely be met. However, because of poor Chinook salmon runs in 2012, the Division of Sport Fish issued an EO (2-KS-2-08-13) which limited sport fishing for Chinook salmon in the Susitna River drainage. This EO restricted the Deshka River Chinook salmon sport fishery to single hook, artificial lures. In 2013, the final Chinook salmon escapement estimate of more than 18,000 fish was well within the SEG range of 13,000–28,000 fish (Table 10).

The forecast for Deshka River Chinook salmon in 2013 is for a total run of 26,800 fish, which is below average. A total return of this size would rank 25th out of 35 years and be below the 1979–2012 average run of 35,406 fish. The projected 2013 harvest of Deshka River Chinook salmon in all fisheries is around 6,000 fish (2000–2011 average). If this level of harvest is achieved, it would result in a 2013 escapement of about 20,800 fish, again, well within the SEG range of 13,000 to 28,000 fish.

Although Chinook salmon stocks throughout Cook Inlet are experiencing a period of lower abundance, the escapement goal at the Deshka River has been met or achieved in 17 of the past 19 years. However, in recent years, restrictive actions in both commercial and sport fisheries were needed to ensure escapement objectives were met.

Kenai River

The early-run Kenai River Chinook salmon run migrates through Cook Inlet in May and June, and therefore, receives very little commercial exploitation.

Since 1986, Kenai River late-run Chinook salmon estimates of inriver passage have been completed via traditional target-strength sonar (TS-sonar) by the Division of Sport Fish. The original escapement goal was developed in 1989 and set a minimum goal of 15,500 fish and an optimum escapement of 22,300 (McBride et al. 1989). In 1999, this goal was revised to a BEG of 17,800–35,700 (Fried 1999). In 2011, ADF&G again revised the escapement goal from a BEG to an SEG because of the uncertainty in the estimates of escapement and lack of stock-specific information in the commercial harvest. In addition, ADF&G informed the public that it would discontinue use of TS-based estimates of inriver run in favor of five abundance indices and would also continue development of the new DIDSON-based assessment. As stated earlier in this report, on October 4–5, 2011, the Division of Sport Fish presented a memo (RC 7) to the BOF summarizing ADF&G’s current knowledge regarding the inriver run strength of late run Kenai River Chinook salmon in 2010 and 2011. The memo provided escapement estimates, properly converted to the currency of TS-based sonar estimates for comparison with the SEG goal of 17,800–35,700. The estimates were developed from information from all five indices of abundance. For 2010, the expected TS-based estimate of Chinook salmon passing the sonar site was 33,600 fish. After subtracting estimates of harvest and mortality above the sonar, the corresponding estimate of escapement was 26,600. In 2011, the estimate of passage for late run Chinook salmon was 36,000 fish, and after subtracting for harvest and mortality, the estimate of escapement was 29,800.

In both 2011 and 2012, ADF&G managed the Kenai River late-run Chinook salmon fishery primarily on indices of abundance, rather than use of traditional sonar technology. In 2011, TS-based sonar was still being used, but questions about its reliability resulted in the use of indices of abundance to determine relative inriver abundance. Numerous restrictions to sport and commercial fisheries were enacted in 2011 in response to inseason assessments that indicated harvest rate reductions were needed in order to ensure escapement objectives would be met (Shields and Dupuis 2012). However, the restrictions became a matter of public debate because of the uncertainty regarding how many Chinook salmon actually escaped in 2011.

For the 2012 season, the TS-based sonar was not used; it was replaced with the DIDSON technology. Since the current escapement goals were not DIDSON-based goals, estimation of late-run Chinook salmon passage was completed using several indices of abundance. The two most reliable indices, sport fishing CPUE and Upper Subdistrict set gillnet CPUE, were unavailable due to restrictions and closures of these fisheries. This left ADF&G with one index of abundance (the inriver netting CPUE) as well as DIDSON passage estimates to enumerate the Chinook salmon run. Concerns over ensuring adequate escapement led the ADF&G to close the inriver fishery and the Upper Subdistrict set gillnet fishery (ESSN) in mid-July. By August 6, Chinook salmon passage in the Kenai River, as estimated by DIDSON, indicated that enough fish had now entered the river to ensure escapement objectives would be met. It was estimated that nearly 36% of the 2012 run occurred in August; typically, 10–16% of the run enters the Kenai River in August. The 2012 escapement was estimated at approximately 27,700 fish.

After the 2012 season, the BOF, at their annual work session meeting in October, formed the Cook Inlet task force, with the objective of reviewing the *Kenai River Late-Run Chinook Salmon Management Plan*. The mission of the task force was to identify a set of recommended adjustments to the management plan that would result in the best mix of inriver and Upper Subdistrict set gillnet fishing opportunity, while providing the best means of attaining the escapement goal for Kenai River Chinook salmon during times of low Chinook salmon

abundance, as experienced in the 2012 season. The 11 member task force (9 members of the public along with BOF members Webster and Kluberton) met three different times (November 2012, and January and February 2013) to address proposals submitted by task force members suggesting modifications to the Chinook salmon management plan. A list of suggested changes was developed, but there was no consensus from the panel on how to proceed. This list of changes formed the basis of a full BOF review at the statewide meeting in March of 2013.

In March 2013, ADF&G released a new DISON-based interim escapement goal for Kenai River late-run Chinook salmon (Fleischman and McKinley 2013). The new goal was developed, in part, to facilitate the change in sonar technology and to address the confusion over assessment methods that was experienced in 2011 and 2012. An age-structured state-space model and Bayesian statistical methods were used to develop the new goal. It was recommended that an interim SEG of 15,000–30,000 fish be adopted for the Kenai River late-run Chinook salmon. The BOF adopted the recommended SEG at the March 2013 meeting, but left the rest of the *Kenai River Late-Run Chinook Salmon Management Plan* intact. Because the Chinook salmon sonar site will be changing locations in the near future, ADF&G recommended a reevaluation of the new escapement goal when the sites are changed.

For the 2013 season, DIDSON was the primary method of Chinook salmon assessment, but the other indices of abundance were also used to corroborate DIDSON estimates. Two DIDSON sites were operational during the 2013 season, but only counts from the river-mile 8 project were used for inseason management. Because the forecast for late-run Chinook salmon indicated that the run would be below average, the Upper Subdistrict set gillnet fishery and the sport fishery in the Kenai River were prosecuted conservatively. This meant that the sport fishery started the season without bait and multiple hooks and the commercial fishery fished regular periods with few additional hours (only when sockeye salmon numbers justified an open period). As the season progressed, daily passage estimates, as measured by DIDSON and escapement projections, indicated that, while below average, the run was sufficient to meet escapement needs with the current level of restricted harvest. However, by the end of July, the daily counts and escapement projections began to drop and indicated that without further restrictions, meeting the lower end of the SEG would be in jeopardy. As a result, both the sport fishery (July 28) and the Upper Subdistrict set gillnet fishery (July 26) were closed for Chinook salmon conservation. On July 31, the Kenai River late-run Chinook salmon sport fishery ends by regulation and the coho salmon sport fishery begins on August 1; the Division of Sport Fish restricted the coho fishery to prohibit the use of bait and multiple hooks until August 15. The Upper Subdistrict set gillnet fishery never reopened after the closure in July. The preliminary late-run Chinook salmon escapement estimate for 2013 was approximately 15,400 fish.

The Kenai River Chinook salmon late-run stock has never failed to achieve its minimum escapement objective since enumeration began in 1986. In addition, the upper end of the escapement goal was exceeded in 15 years out of 27 years. However, similar to other Chinook salmon stocks in Cook Inlet, Kenai River Chinook salmon are experiencing a period of lower abundance, with the 2013 run being one of the lowest on record.

COMMERCIAL HERRING FISHERY

The 2013 UCI herring fishery produced a harvest of 35.6 tons, with all but 6.0 tons of the harvest coming from the Upper Subdistrict (Appendix B8). This was the largest herring harvest in UCI since 1992. A total of 14 permit holders reported fishing, which was very close to the average

annual number of participants from the previous 10 years (2003–2012). Although open to both set and drift gillnets, all of the harvest was taken by set gillnets. Samples of the harvest are obtained annually to assess age, weight, size and sex distribution (Appendix A19). It must be noted that these samples are obtained from the set gillnet fishery and may reflect biases in the gear type used to collect the samples. In the Upper Subdistrict, 5 age classes dominated the population in 2013, comprising 99% of the 184 samples collected from four sample dates. The average by age-class was age 4 (4%), age 5 (22%), age 6 (27%), age 7 (27%), and age 8 (19%). A sample of herring (n = 192) was also collected from Chinitna Bay in 2013, with the age-6 and age-7 fish comprising 76% of the sample.

All of the herring harvested in UCI were used exclusively for personal use or sold as bait. Because Prince William Sound and Kamishak Bay herring fisheries have remained closed for many years, bait herring from UCI has risen in value. Demand by commercial and sport halibut fishermen has resulted in an average price of approximately \$1.00/lb or \$2,000/ton. Based on this price, the estimated exvessel value of the 2013 commercial herring fishery was approximately \$71,200.

COMMERCIAL SMELT FISHERY

Commercial smelt harvests in UCI have ranged from 300 pounds to 100.8 tons (Table 11). For more details about the history of smelt fishing in UCI, see Shields (2005). The fishery is prosecuted under 5 AAC 21.505 *Cook Inlet Smelt Fishery Management Plan*. In 2013, 13 people obtained commissioner’s permits enabling them to participate in the fishery, with 4 CFEC permit holders reporting harvests on fish tickets. The total smelt harvest in UCI in 2013 was approximately 95.4 tons. The harvest cap for this fishery is 100 tons. The amount of smelt harvested in this fishery is limited by market demand and the logistics of getting the catch to a location where the smelt can be processed (boxed and frozen) prior to shipment, rather than abundance of fish. On Sunday, June 2, 2013, after smelt fishermen reported their estimated harvest for the day, the total season harvest was approaching the 100 ton limit. Therefore, an EO was issued closing the commercial smelt fishery for the 2013 season at 12:00 noon on June 2, 2013.

Table 11.–Commercial smelt harvest, 1978, 1980, 1998–1999, and 2006–2013.

Year	Lbs	Tons	Permits
1978	300	0.2	NA
1980	4,000	2	NA
1998	18,610	9.3	2
1999	100,000	50	NA
2006	90,783	45.4	8
2007	125,044	62.5	11
2008	127,365	63.7	6
2009	78,258	39.1	6
2010	126,135	63.1	3
2011	201,570	100.8	5
2012	195,910	98.0	4
2013	190,830	95.4	4

Estimating the exvessel value of this fishery is very difficult. Participants catch and market all of their harvest. Most of the product is transported via boat to the Kenai River where it is boxed and frozen for shipment to the west coast of the U.S. The vast majority of the harvest is sold as bait, with smaller amounts marketed for human consumption. The final value of the smelt fishery is unknown, but it easily exceeds \$1.00/lb, for an exvessel value approaching \$200,000.

Age-composition analyses (determined from otoliths) of samples collected from the 2006–2013 harvests show that age-4 smelt are the most abundant age class, ranging from 45% to 84% of the population (Appendix A20). Fork length from the 2013 harvest ranged from 196 mm to 235 mm, with an overall average of 218 mm, which was very similar to the average lengths from previous years. In 2013, the percent female was 31%, compared to the 2006–2012 average of 46% female. It should be noted that samples collected for age and size data were from a single date, and therefore, would not reflect temporal changes in these parameters.

COMMERCIAL RAZOR CLAM FISHERY

The razor clam fishery on the west side of Cook Inlet has historically been confined to the area between Crescent River and Redoubt Creek. All clams harvested in this area are directed, by regulation, to be sold for human consumption, except for the small percentage (less than 10% of the total harvest) of broken clams, which may be sold for bait. Razor clams are present throughout this area, with dense concentrations in the Polly Creek and Crescent River areas. In the remainder of the UCI Management Area, there are no restrictions on the amount of clams that can be sold for bait. Currently though, there is no directed effort to harvest razor clams for the bait market. The minimum legal size for razor clams is 4.5 inches (114 mm) in shell length.

The 2013 harvest, taken primarily from the Polly Creek/Crescent River area, was approximately 380,912 pounds in the shell (Appendices A23 and B9). A total of approximately 18 diggers participated in the fishery. Harvest was reported from 66 different days spanning the time period from May 6 to July 27. Diggers were paid an average of \$.65 per pound for their harvest, resulting in an exvessel value for this fishery of approximately \$250,000. The average clam size from the 2013 harvest was 140 mm, or 5.5 inches (Figure 11). The 2013 summer tide schedule can be found in Appendix A21.

SUBSISTENCE AND PERSONAL USE FISHERIES

There is a long history of Alaskans harvesting fish and game for their personal consumptive needs under sport, personal use, subsistence, and commercial fishing regulations in the Cook Inlet area (Braund 1982). Since 1978, when the State of Alaska passed its first subsistence statute (AS 16.05.258), many changes have occurred in the regulations governing the harvest of fish and game for personal consumption in Cook Inlet. Beginning in 1981, a new category of fisheries was established. Personal use fishing was created to provide for the personal consumptive needs of state residents not able to meet their needs in other fisheries. Since their creation, numerous changes have occurred in the personal use or subsistence fisheries in Cook Inlet, with many of the changes coming as a result of challenges in the State of Alaska court system, the Alaska State Legislature, or BOF process. The only personal use or subsistence fishery that has occurred consistently in Cook Inlet during this entire period is the Tyonek Subdistrict subsistence fishery. A review of the various personal use and subsistence fisheries that have been conducted in Cook Inlet are reported in Brannian and Fox (1996), Reimer and Sigurdsson (2004), and Dunker and Lafferty (2007).

TYONEK SUBSISTENCE SALMON FISHERY

The subsistence fishery in the Tyonek Subdistrict was mandated by an Anchorage Superior Court order in May 1980. In March 1981, the BOF adopted permanent regulations for this fishery (Stanek et al. 2007). Originally open only to those individuals living in the community of Tyonek, court decisions ruled all Alaska residents are eligible to participate. According to 5AAC 01.560 *Fishing Seasons and Daily Fishing Periods*, subsistence fishing is allowed in the Tyonek Subdistrict of the Northern District during 2 distinct time periods, with a separate permit require for each period. The early-season permit allows for fishing from 4:00 a.m. to 8:00 p.m. each Tuesday, Thursday, and Friday from May 15 to June 15. The late-season permit allows for fishing from 6:00 a.m. to 6:00 p.m. each Saturday after June 15. Both permits allow for 25 salmon per permit holder and 10 salmon for each additional member. However, 5 AAC 01.595(a)(3) allows for up to 70 Chinook salmon per permit holder in the Tyonek Subdistrict subsistence fishery, which are mostly caught during the early season. At the 2011 BOF meeting in Anchorage, the BOF specified the amounts necessary for subsistence of Chinook salmon and other salmon in the Tyonek Subdistrict as 700–2,700 Chinook salmon and 150–500 other salmon. Each permit holder is allowed a single 10-fathom gillnet, with a mesh size no greater than 6.0 inches. The early-season permit, focusing on the annual Chinook run, is the most popular fishery. Few late-season permits are issued.

The 2013 harvest estimates for the Tyonek subsistence salmon fishery were unavailable when this report was published.

UPPER YENTNA RIVER SUBSISTENCE SALMON FISHERY

A subsistence salmon fishery (5 AAC 01.593) is allowed in the Yentna River drainage outside the Anchorage-Matsu-Kenai Non-Subsistence Area, which is described in 5 AAC 99.015(a)(3). The BOF has determined that 400–700 salmon, other than Chinook salmon, are reasonably necessary for subsistence uses in the Yentna River (5 AAC 01.566(e)). The provisions of this fishery allow for the harvest of 25 salmon per head of household, plus 10 more for each dependent. All Chinook salmon and rainbow trout must be returned to the water alive. The specific area open for the fishery is in the mainstem Yentna River from its confluence with Martin Creek upstream to its confluence with the Skwentna River. Legal gear consists of fish wheels only. The subsistence fishing season occurs from July 15 through July 31 from 4:00 a.m. to 8:00 p.m. each Monday, Wednesday, and Friday during this timeframe. The preliminary harvest for the 2013 Yentna River subsistence fisheries was below average, and included 279 sockeye, 24 coho, 21 pink, and 19 chum salmon taken by 24 permit holders (Appendix B15).

EDUCATIONAL FISHERIES

Educational fisheries first began in UCI in 1989 with the federal court-ordered subsistence fishery for the Kenaitze Indian Tribe (Sweet et al. 2004). The fishery was labeled as a subsistence fishery due to differences in interpretations of subsistence. The Alaska Superior Court ordered ADF&G to issue educational fishing permits beginning with the 1993 fishing season. The objectives for educational fisheries are specified in 5 AAC 93.235 as “educating persons concerning historic, contemporary, or experimental methods for locating, harvesting, handling, or processing fishery resources.” The present standards for educational fisheries are established by the BOF under 5 AAC 93.200 and include: 1) instructors must be qualified to teach the subject matter; 2) there must be students enrolled in the fishery; 3) there are minimum

attendance requirements; 4) procedures for testing a student's knowledge of the subject matter or the student's proficiency in performing learned tasks must be administered; and 5) standards for successful completion of the program must be set. According to 5 AAC 93.210, the commissioner will issue a nontransferable, no-cost educational fishery permit to an applicant who proposes to operate an educational fishery program that meets the above standards, except in the following cases: 1) when the commissioner determines that the educational objective of the program can be accomplished under existing fisheries statutes and regulations; 2) the sustained yield of any fishery resource would be jeopardized or the fishery resource would be significantly reallocated among existing users; 3) the applicant failed to provide the information required by the permit; 4) the applicant violated a condition or requirement of an educational fishery permit; or 5) the applicant failed to comply with the reporting requirements of the permit.

The total harvest from all educational fisheries in 2013 was 8,012 fish. The average annual harvest from 1994 through 2012 was approximately 6,456 fish (Appendix B16).

CENTRAL DISTRICT EDUCATIONAL FISHERIES

In the Central District of UCI, there currently are 8 groups permitted to conduct educational fisheries, including the Kenaitze Tribal Group, Ninilchik Traditional Council, Ninilchik Native Descendants, Ninilchik Emergency Services, Anchor Point VFW, Homer VFW, Kasilof Historical Association, and the Southcentral Foundation.

In 1993, a state court ordered ADF&G to create an educational fishery for the Kenaitze Indian Tribe, pending final court rulings on other subsistence cases. In 2013, the Kenaitze Tribe harvested 19 Chinook, 4,837 sockeye, 566 coho, and 24 pink salmon, for a total of 5,466 salmon. From 1994 through 2012, the average annual harvest of all salmon by the Kenaitze Indian Tribe has been 4,528 fish. The total fish harvest quota for this group is 8,000 fish (Appendix B16).

In 1993, the Ninilchik Traditional Council (NTC) applied for and was granted a permit for an educational fishery (Szarzi and Begich 2004). In 1998, a group of NTC members formed a new organization, the Ninilchik Native Descendants (NND), and requested a separate permit with similar goals of passing on traditional knowledge and providing food for needy tribal members. Initially one permit was issued for both groups, but this was not acceptable to the NTC and both groups were allowed to fish concurrently. There have been a number of changes to the annual harvest limits allowed under these permits, but the total salmon quota more than tripled in 2007 from 850 to 2,800 fish for both the NTC and NND groups. In 2013, the NTC harvested 62 Chinook, 623 sockeye, 434 coho, 56 pink and 0 chum salmon. The NND reported a harvest of 16 Chinook, 195 sockeye, 128 coho, 26 pink, and 0 chum salmon in 2013 (Appendix B16).

In 2003, another group from Ninilchik, the Ninilchik Emergency Services (NES), applied for and was granted an educational fishery. In 2013, the NES harvested 13 Chinook salmon, 141 sockeye salmon, 50 coho, and 23 pink salmon (Appendix B16).

The Anchor Point VFW applied for and was granted an educational fishery permit in 2007. They reported the following harvest from their 2013 fishing activities: 50 sockeye, 21 coho, and 40 pink salmon. In 2011, the Homer VFW applied for and was granted an educational fishery permit. The Homer VFW group reported a harvest of 67 sockeye, and 24 coho salmon in 2013 (Appendix B16).

The Kasilof Historical Association applied for an educational permit beginning with the 2008 season. For 2013, they reported the following harvest: 1 sockeye, and 44 coho salmon (Appendix B16).

Finally, the Southcentral Foundation (SCF) applied for an educational permit beginning in 2010. They are an Alaska Native-owned, nonprofit health care organization serving nearly 60,000 Alaska Native and American Indian people living in Anchorage, the Matanuska-Susitna Valley, and 60 rural villages in the Anchorage Service Unit. This fishery occurs on the west side of Cook Inlet, in the Silver Salmon Creek area. The SCF harvest in 2013 was 30 coho salmon (Appendix B16).

NORTHERN DISTRICT EDUCATIONAL FISHERIES

In the Northern District of UCI, five groups have received permits for educational fisheries, these being 1) the Knik Tribal Council, 2) Big Lake Cultural Outreach, 3) Eklutna Village, 4) Tyonek Village, and 5) Territorial Homestead Lodge, operated by Tim O'Brien (Appendix B16).

The Knik Tribal Council began an educational fishery in 1994 (Sweet et al. 2004). Its harvest in 2013 totaled 26 sockeye, 31 coho, 4 pink, and 52 chum salmon. The peak harvest from this group of 823 fish occurred in 2003 (Appendix B16).

In 2013, Big Lake Cultural Outreach group reported harvesting 21 sockeye and 9 coho salmon (Appendix B16).

The Eklutna Village group was also issued an educational fisheries permit beginning in 1994. They reported a harvest in 2013 of 124 sockeye, 52 coho, 2 pink, and 18 chum salmon (Appendix B16).

The village of Tyonek did not report any harvest in their educational fishery in 2013.

The Territorial Homestead Lodge (O'Brien) also applied for and received an educational fishery permit beginning in 2007. This fishery is located near Moose Point in the Eastern Subdistrict of the Northern District. In 2013, the harvest from this fishery was 7 Chinook, 100 sockeye, 31 coho, 33 pink, and 11 chum salmon, for a total of 182 fish (Appendix B16).

PERSONAL USE SALMON FISHERY

Operating under the *Upper Cook Inlet Personal Use Salmon Fishery Management Plan 5 AAC 77.540*, personal use fishing is allowed in limited areas in Cook Inlet. The management plan received substantial changes at the BOF meeting in January of 1996. In 1995, personal use fishing was allowed with set gillnets in most areas of Cook Inlet normally open to commercial set gillnet fishing. Most of this area was closed in 1996, but to compensate for the lost opportunity, dip net fisheries were expanded to allow for approximately the same level of harvest that had occurred with gillnets in 1995. Personal use fishing using gillnets is now only open near the Kasilof River in the waters of UCI normally closed to commercial set gillnet fishing. This area encompasses approximately 1 mile on either side of the Kasilof River terminus, extending out from shore for 1 mile. In addition, personal use fishing with dip nets is allowed at the terminus of the Kenai and Kasilof rivers, and in some years, at Fish Creek. The personal use management plan was again amended at the 2002 BOF meeting, modifying how the dip net fishery at Fish Creek in Knik Arm was to be managed, as well as making time changes to both the Kenai and Kasilof personal use fisheries. The Fish Creek dip net fishery was continued in regulation, but per 5 AAC 77.540(d)(1), opens only from July 10 through July 31 and only if ADF&G projects that the escapement of

sockeye salmon into Fish Creek will exceed 50,000 fish. All salmon other than Chinook salmon may be retained. The Kasilof River gillnet fishery was also modified by the BOF, expanding the days and hours that the fishery was open. The fishery now opens on June 15 and takes place from 6:00 a.m. until 11:00 p.m. daily. Instead of being managed for a harvest goal of 10,000–20,000 fish, the fishery remains open until 11:00 p.m. on June 24, regardless of how many fish are harvested. The Kasilof River dip net personal use fishery occurs from June 25 through August 7, 24 hours per day. The BOF-amended management plan also changed how the Kenai River dip net fishery was prosecuted. This fishery is open from July 10 through July 31, 7 days per week, but only from 6:00 a.m. to 11:00 p.m. daily, subject to the requirement of achieving the lower end of the OEG. However, if ADF&G determines that the abundance of Kenai River late-run sockeye salmon is greater than 2.3 million fish; this fishery may be extended by EO to 24 hours per day.

In 2008, the BOF authorized a new UCI personal use fishery. Referred to as the *Beluga River Senior Citizen Personal Use Dip Net Fishery* 5 AAC 77.540(g), salmon may be taken by dip net only by persons 60 years of age or older (no proxy fishing is allowed). The fishery is open 24 hours per day from the Beluga River Bridge downstream to an ADF&G regulatory marker located approximately 1 mile below the bridge. The annual limit in this fishery is the same as for other personal use fisheries, except that within the total annual limit 1 Chinook salmon may be retained per household. The fishery will close, by EO, when 500 salmon, other than Chinook salmon, have been harvested. Permit holders are required to report their harvests weekly to ADF&G as specified in the permit.

A permit issued by ADF&G, along with a valid Alaska resident sport fishing license, or an exemption from licensing under AS 16.05.400, is required to participate in any of the personal use fisheries. The annual limits are 25 salmon per head of household, with an additional 10 salmon for each household member. In the Kasilof River dip net fishery, Chinook salmon may not be retained and must be released immediately to the water unharmed. In the Kenai River dip net fishery, 1 Chinook salmon may be retained per household. There is no Chinook salmon harvest restrictions in the Kasilof River gillnet personal use fishery. Legal gear under the management plan are set gillnets and dip nets. A set gillnet cannot exceed 10 fathoms (60 feet) in length or 45 meshes in depth. Mesh size must be greater than 4 inches, but may not exceed 6 inches. Gillnets must be set at least 100 feet apart at all times. A legal dip net has been defined in regulation (5 AAC 39.105) as a bag-shaped net supported on all sides by a rigid frame. The maximum straight-line distance between any 2 points on the net frame, as measured through the net opening, may not exceed 5 feet. The depth of the bag must be at least one-half of the greatest straight-line distance, as measured through the net opening. No portion of the bag may be constructed of webbing that exceeds a stretched measurement of 4.5 inches; the frame must be attached to a single rigid handle and be operated by hand.

The 2013 personal use harvest data can be found in Appendices A17 and A18, while all UCI personal use salmon harvests since 1996 are summarized in Appendix B17.

KASILOF RIVER GILLNET

The personal use fishery using gillnets at the mouth of the Kasilof River opened on Saturday, June 15, 2013. Because of concerns over Kenai River early-run king salmon escapement, EO No. 2 was issued, which closed the Kasilof River personal use set gillnet fishery at 11:00 p.m. on Wednesday, June 19, 2013. This was the first time this fishery had ever been closed for conservation of any salmon stock. In 2013, 14,439 sockeye, 46 Chinook, 129 coho, 3 pink, and 5 chum salmon were

harvested in this fishery. From 2002–2012, the average annual Chinook salmon harvest was 163 fish in this fishery (Appendix B17). Since 2002, the average annual sockeye salmon harvest has been 22,177 fish.

KASILOF RIVER DIP NET

The Kasilof River dip net fishery was open 24 hours per day from June 25 through August 7, 2013 (44 days). The 2003–2012 average annual harvest of sockeye salmon was 55,600 fish. As the season progressed, it became apparent that the upper end of the Kasilof River sockeye salmon OEG (160,000–390,000) would very likely be exceeded. Therefore, on Saturday, July 13, the Division of Sport Fish issued an EO (2-RS-1-38-13) expanding the area that salmon may be harvested in this fishery. Dipnetting from shore was allowed upstream in the Kasilof River to the Sterling Highway Bridge and dipnetting from a boat was allowed upstream to river mile 3. In 2013, 85,528 sockeye salmon were harvested in this fishery, which was the largest sockeye salmon catch in the history of this fishery. Moreover, it was estimated that 8,556 household days were fished in the 2013 dip net fishery. This too was the largest effort ever measured in this fishery, and exceeded the 2003–2012 annual average of 5,709 by 2,847 days.

KENAI RIVER DIP NET

The personal use dip net fishery located at the mouth of the Kenai River opened by regulation on July 10. The fishery was open from 6:00 a.m. to 11:00 p.m. daily through July 24, and then was open 24 hours per day from 12:01 p.m. on July 25 through July 31. Prior to the season opening, the Division of Sport Fish issued EO No. 2-KS-1-34-13, which prohibited the retention of king salmon in this fishery in 2013. The *Upper Cook Inlet Personal Use Salmon Fishery Management Plan* states that the personal use fishery may be expanded to 24 hours per day if ADF&G determines that the abundance of the Kenai River late-run sockeye salmon will be greater than 2.3 million fish. By July 22, it was evident the run had already exceeded this number; thereby warranting the additional hours (see Division of Sport Fish EO No. 2-RS-1-42-13). The sockeye salmon harvest in 2013 was approximately 347,222 fish. The entry pattern of sockeye salmon into the Kenai River was not conducive to large dip net harvest as 766,000 sockeye salmon entered the river between Monday, July 15 and Friday, July 19. In 2011 and 2012, large pulses of sockeye salmon entered the Kenai River on weekend days in mid-July; weekends typically see higher levels of effort and harvest than mid-week days. In 2013, had the pulse of fish entered in the Kenai River on a weekend, harvest rates undoubtedly would have been much higher. The average annual sockeye salmon harvest from 1996 to 2012 was approximately 243,000 fish.

FISH CREEK DIP NET FISHERY

The Fish Creek personal use dip net fishery was not opened in 2013. According to 5 AAC 77.540 *Upper Cook Inlet Personal Use Salmon Fishery Management Plan*, the Fish Creek personal use dip net fishery may open from July 10 through July 31 if ADF&G projects that the escapement of sockeye salmon will be more than 50,000 fish. The final escapement estimate for Fish Creek in 2013 was approximately 18,900 sockeye salmon.

BELUGA RIVER SENIOR CITIZEN DIP NET FISHERY

The estimated harvest from the 2013 Beluga River senior citizen dip net fishery shows that 8 permit holders participated in the fishery, with a total harvest of 88 salmon (30 sockeye, 55 coho, and 2 pink salmon; Appendix A17).

ACKNOWLEDGEMENTS

The authors would like to acknowledge and thank the following Division of Commercial Fisheries staff for their tireless efforts and various contributions that were vitally important to UCI management during the 2013 season.

Soldotna Office Staff

Name	Job Class	Project / Title
Mark Willette	Fisheries Biologist III	UCI Area Research Biologist
Bill Glick	Fisheries Biologist II	UCI Sonar Project Biologist
Bob DeCino	Fisheries Biologist II	UCI Assistant Research Biologist
Wendy Gist	Fisheries Biologist I	UCI Catch Sampling Crew Leader
Sheryl Neel	F&W Technician II	Fish Ticket Data Entry/Processing
Jennifer Brannen-Nelson	F&W Technician III	Herring/Smelt Age Sampling
Kim Rudge-Karic	F&W Technician III	Herring Age Sampling
Constance Nicks	F&G Program Technician	Office Administration

Anchorage Regional Staff

Name	Project / Title
Tracy Lingnau	F&G Regional II Supervisor
Tim Baker	Regional Management Coordinator, Region II
Lowell Fair	Regional Research Coordinator, Region II
Katie Sechrist	Information Officer

We would also like to acknowledge the staff of Cook Inlet Aquaculture Association for their involvement in numerous other salmon enumeration and research projects in the UCI area.

REFERENCES CITED

- Barclay, A. W., C. Habicht, W. D. Templin, H. A. Hoyt, T. Tobias, and T. M. Willette. 2010a. Genetic stock identification of Upper Cook Inlet sockeye salmon harvest, 2005–2008. Alaska Department of Fish and Game, Fishery Manuscript No. 10-01, Anchorage.
- Barclay, A. W., C. Habicht, T. Tobias, and T. M. Willette. 2010b. Genetic stock identification of Upper Cook Inlet sockeye salmon harvest, 2009. Alaska Department of Fish and Game, Fishery Data Series No. 10-93, Anchorage.
- Brannian, L., and J. Fox. 1996. Upper Cook Inlet subsistence and personal use fisheries report to the Alaska Board of Fisheries, 1996. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A96-03, Anchorage.
- Braund, S. R. 1982. Cook Inlet subsistence salmon fishery. Alaska Department of Fish and Game, Division of Subsistence, Technical Paper No. 54, Juneau.
- Carlson, J. A., and D. Evans. 2007. Abundance of adult coho salmon in the Kenai River, Alaska, 1999–2003. Alaska Department of Fish and Game, Fishery Data Series No. 07-81, Anchorage.
- Dodson, T. T. 2006. Big Lake sockeye salmon enhancement progress report, 2005. Cook Inlet Aquaculture Association, Soldotna.
- Dunker, K. J. 2010. Upper Cook Inlet personal use salmon fisheries, 2007-2009. Alaska Department of Fish and Game, Fishery Data Series No. 10-89, Anchorage.
- Dunker, K. J., and R. Lafferty. 2007. Upper Cook Inlet personal use salmon fisheries, 2004–2006. Alaska Department of Fish and Game, Fishery Data Series No. 07-88, Anchorage.
- Dupuis, A., and M. Willette. *In prep.* Migratory timing and abundance estimates of sockeye salmon into Upper Cook Inlet, Alaska, 2012. Alaska Department of Fish and Game, Fishery Data Series, Anchorage.
- Edmundson, J. A., V. P. Litchfield, and D. M. Cialek. 2000. An assessment of trophic status of 25 lakes in the Matanuska-Susitna borough, Alaska. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A00-26, Anchorage.
- Edmundson, J. M., and J. A. Edmundson. 2002. Sockeye salmon production relative to changes in rearing capacity of Crescent Lake, Upper Cook Inlet. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A02-08, Anchorage.
- Eskelin, T., and J. D. Miller. 2010. A qualitative evaluation of parameters used to assess Kenai River king salmon, 1986–2010. Alaska Department of Fish and Game, Special Publication No. 10-18, Anchorage.
- Fair, L. F., R. A. Clark, and J. J. Hasbrouck. 2007. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2007. Alaska Department of Fish and Game, Fishery Manuscript No. 07-06, Anchorage.
- Fair, L. F., T. M. Willette, and J. W. Erickson. 2009. Escapement goal review for Susitna River sockeye salmon, 2009. Alaska Department of Fish and Game, Fishery Manuscript Series No. 09-01, Anchorage.
- Fair, L. F., T. M. Willette, J. W. Erickson, R. J. Yanusz, and T. R. McKinley. 2010. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2011. Alaska Department of Fish and Game, Fishery Manuscript Series No. 10-06, Anchorage.
- Flagg, L. 1974. Annual management report 1973, Cook Inlet Management Area. Alaska Department of Fish and Game, Homer.
- Fleischman, S. J., and T. R. McKinley. 2013. Run reconstruction, spawner-recruit analysis, and escapement goal recommendation for late-run Chinook salmon in the Kenai River. Alaska Department of Fish and Game, Fishery Manuscript Series No. 13-02, Anchorage.

REFERENCES CITED (Continued)

- Fried, S. M. 1996. Upper Cook Inlet Pacific salmon biological escapement goal review: department findings and recommendations to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Commercial Fisheries Management and Development Division, Regional Information Report 2A96-05, Anchorage.
- Fried, S. M. 1999. Upper Cook Inlet Pacific salmon biological escapement goal review – department findings and recommendations to the Alaska Board of Fisheries. Alaska Department of Fish and Game, Regional Information Report 2A99-05, Anchorage.
- Habicht, C., W. D. Templin, T. M. Willette, L. F. Fair, S. W. Raborn, and L. W. Seeb. 2007. Postseason stock composition analysis of Upper Cook Inlet sockeye salmon harvest, 2005–2007. Alaska Department of Fish and Game, Fishery Manuscript No. 07-07, Anchorage.
- Hasbrouck, J. J., and J. A. Edmundson. 2007. Escapement goals for salmon stocks in Upper Cook Inlet, Alaska: report to the Alaska Board of Fisheries, January 2005. Alaska Department of Fish and Game, Special Publication No. 07-10, Anchorage.
- Jennings, G. B., K. Sundet, and A. E. Bingham. 2011. Estimates of participation, catch, and harvest in Alaska sport fisheries during 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-60, Anchorage.
- King, B. E., and S. C. Walker. 1997. Susitna River sockeye salmon fry studies, 1994 and 1995. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Regional Information Report 2A97-26, Anchorage.
- Kyle, G. B., B. E. King, L. R. Peltz, and J. A. Edmundson. 1994. Susitna drainage sockeye salmon investigations: 1993 annual report on fish and limnological surveys. Alaska Department of Fish and Game, Division of Commercial Fisheries Management and Development, Regional Information Report 5J94-14, Juneau.
- Litchfield, V. P., and T. M. Willette. 2001. Fish Creek sockeye salmon technical review. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A01-32, Anchorage.
- Massengill, R., and J. A. Carlon. 2007. Assessment of coho salmon from the Kenai River, Alaska, 2003. Alaska Department of Fish and Game, Fishery Data Series No. 07-38, Anchorage.
- Massengill, R. L., and D. Evans. 2007. Abundance of adult coho salmon in the Kenai River, Alaska, 2004. Alaska Department of Fish and Game, Fishery Data Series No. 07-85, Anchorage.
- McBride, D. N., M. Alexandersdottir, S. Hammarstrom, and D. Vincent-Lang. 1989. Development and implementation of an escapement goal policy for the return of Chinook salmon to the Kenai River. Alaska Department of Fish and Game, Fishery Manuscript No. 8, Juneau.
- Nickerson, R. B. 1975. A critical analysis of some razor clam (*Siliqua patula*, Dixon) populations in Alaska. Alaska Department of Fish and Game, Fisheries Rehabilitation, Enhancement and Development Division, Juneau.
- Reimer, A. M., and D. Sigurdsson. 2004. Upper Cook Inlet personal use salmon fisheries, 1996–2003. Alaska Department of Fish and Game, Fishery Data Series No. 04-31, Anchorage.
- Shields, P. 2005. Upper Cook Inlet commercial herring and smelt fisheries through 2004. Alaska Department of Fish and Game, Special Publication No. 05-14, Anchorage.
- Shields, P. 2007. Upper Cook Inlet commercial fisheries annual management report, 2007. Alaska Department of Fish and Game, Fishery Management Report No. 07-64, Anchorage.
- Shields, P. 2010. Upper Cook Inlet commercial fisheries annual management report, 2009. Alaska Department of Fish and Game, Fishery Management Report No. 10-27, Anchorage.
- Shields, P., and A. Dupuis. 2012. Upper Cook Inlet commercial fisheries annual management report, 2011. Alaska Department of Fish and Game, Fishery Management Report No. 12-25, Anchorage.

REFERENCES CITED (Continued)

- Shields, P., and A. Dupuis. 2013. Upper Cook Inlet commercial fisheries annual management report, 2012. Alaska Department of Fish and Game, Fishery Management Report No. 13-21, Anchorage.
- Shields, P., M. Willette, and A. Dupuis. 2013. Migratory timing and abundance estimates of sockeye salmon into Upper Cook Inlet, Alaska, 2011. Alaska Department of Fish and Game, Fishery Data Series No. 13-35, Anchorage.
- Stanek, R. T., D. L. Holen, and C. Wassillie. 2007. Harvest and uses of wild resources in Tyonek and Beluga, Alaska, 2005-2006. Alaska Department of Fish and Game Division of Subsistence, Technical Paper No. 321, Juneau.
- Sweet, D., S. Ivey, and D. Rutz. 2004. Area management report for the recreational fisheries of Northern Cook Inlet, 2003. Alaska Department of Fish and Game, Fishery Management Report No. 04-05, Anchorage.
- Szarzi, N. J., and R. N. Begich. 2004. Recreational fisheries in the Lower Cook Inlet Management Area, 1995–2000. Alaska Department of Fish and Game, Fishery Management Report No. 04-06, Anchorage.
- Tarbox, K. E., and G. B. Kyle. 1989. An estimate of adult sockeye salmon *Oncorhynchus nerka* production based on euphotic volume for the Susitna River Drainage, Alaska. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A89-01, Anchorage.
- Tobias, T. M., and K. E. Tarbox. 1999. An estimate of total return of sockeye salmon to upper Cook Inlet, Alaska 1976–1998. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A99-11, Anchorage.
- Tobias, T. M., and T. M. Willette. 2004. An estimate of total return of sockeye salmon to Upper Cook Inlet, Alaska, 1976–2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A04-11, Anchorage.
- Todd, G. L., S. R. Carlson, P. A. Shields, D. L. Westerman, and L. K. Brannian. 2001. Sockeye and coho salmon escapement studies in the Susitna drainage. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A01-11, Anchorage.
- Westerman, D. L., and T. M. Willette. 2011. Upper Cook Inlet salmon escapement studies, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-66, Anchorage.
- Willette, T. M., R. DeCino, and N. Gove. 2003. Mark–recapture population estimates of coho, pink and chum salmon runs to Upper Cook Inlet in 2002. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A03-20, Anchorage.
- Yanusz, R., R. Merizon, D. Evans, M. Willette, T. Spencer, and S. Raborn. 2007. Inriver abundance and distribution of spawning Susitna River sockeye salmon *Oncorhynchus nerka*, 2006. Alaska Department of Fish and Game. Fishery Data Series 07-83, Anchorage.

FIGURES



Figure 1.—Major tributaries of the Cook Inlet basin.

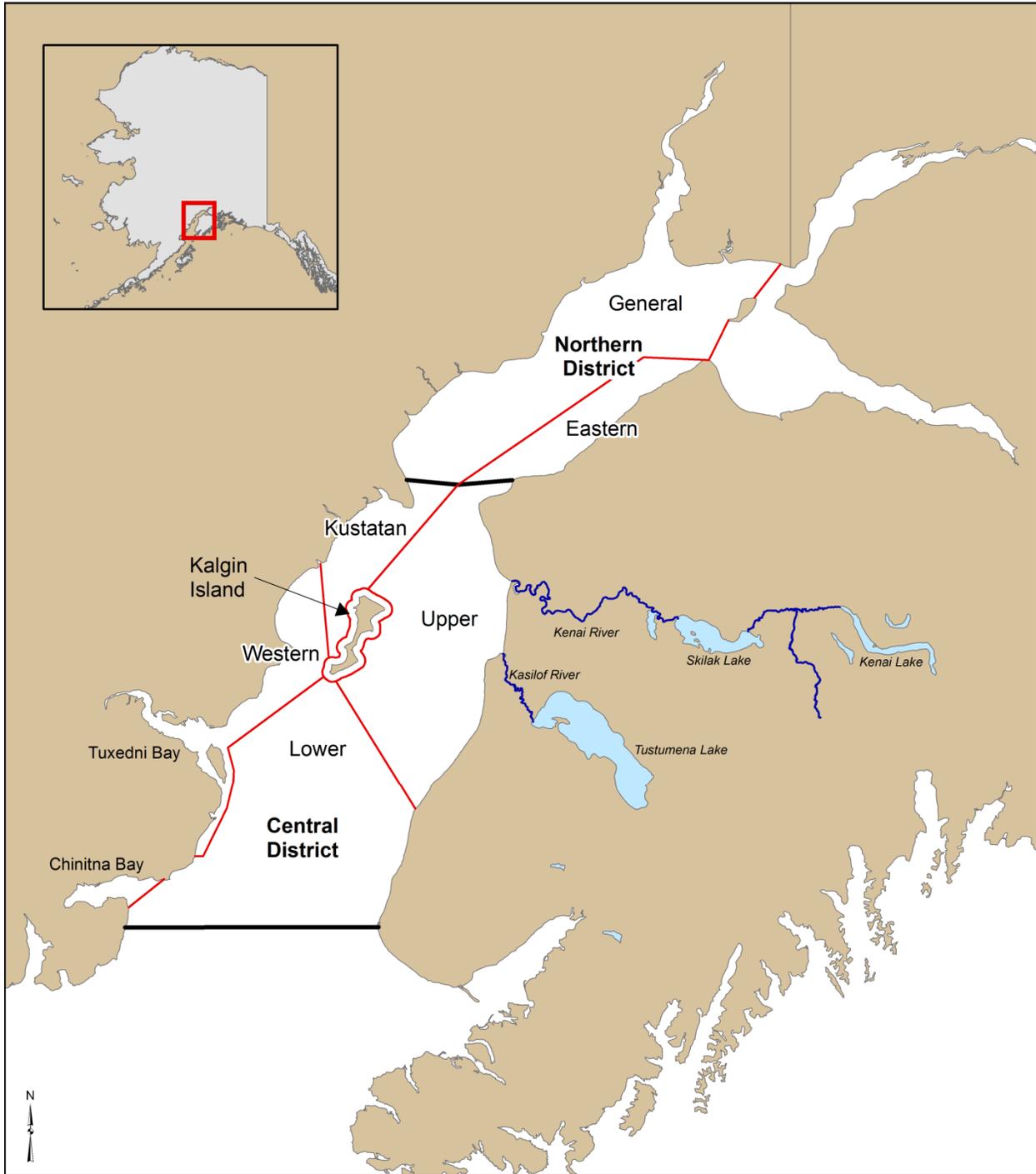


Figure 2.—Upper Cook Inlet commercial fisheries subdistrict fishing boundaries.

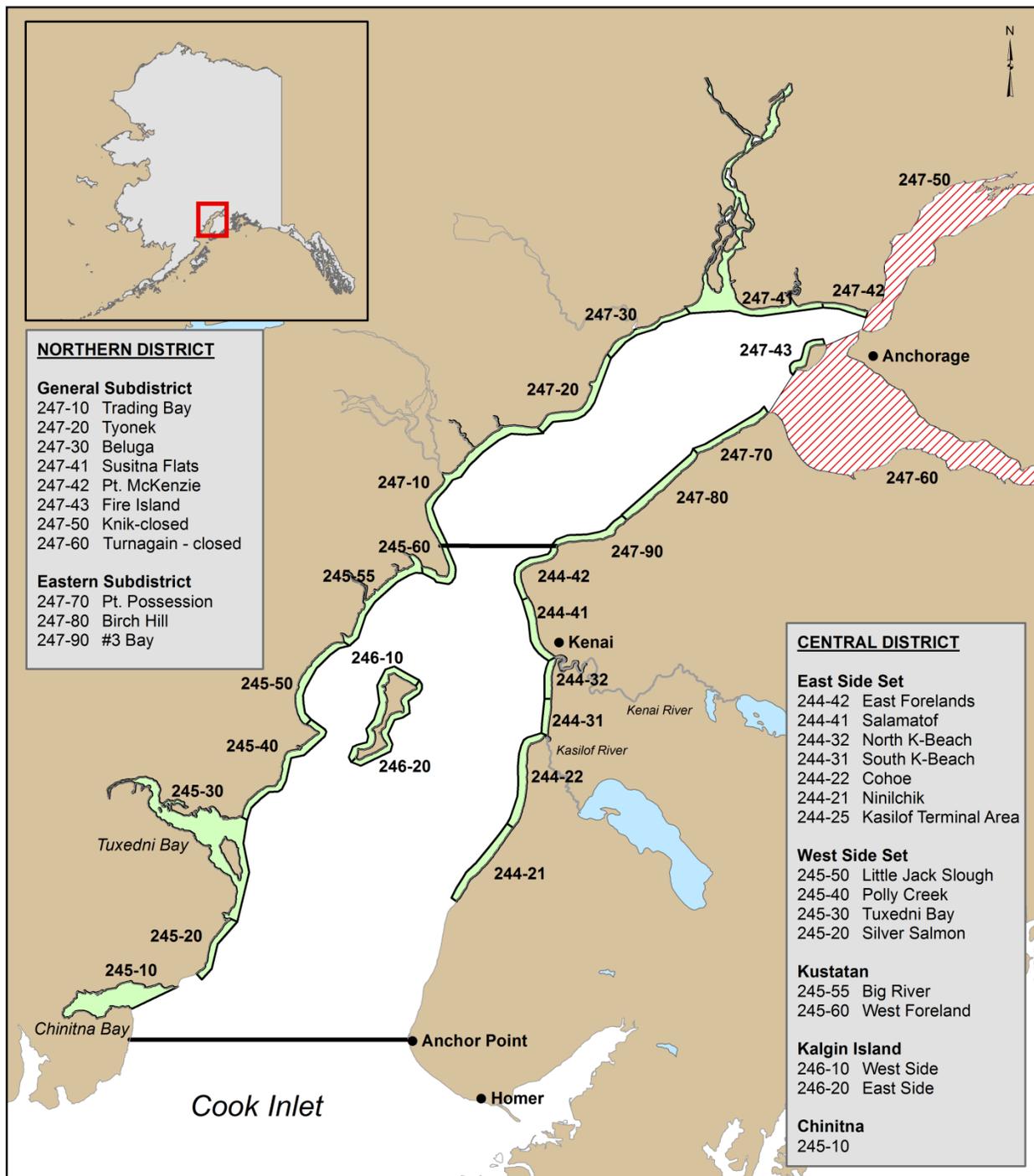


Figure 3.—Upper Cook Inlet commercial set gillnet statistical areas.

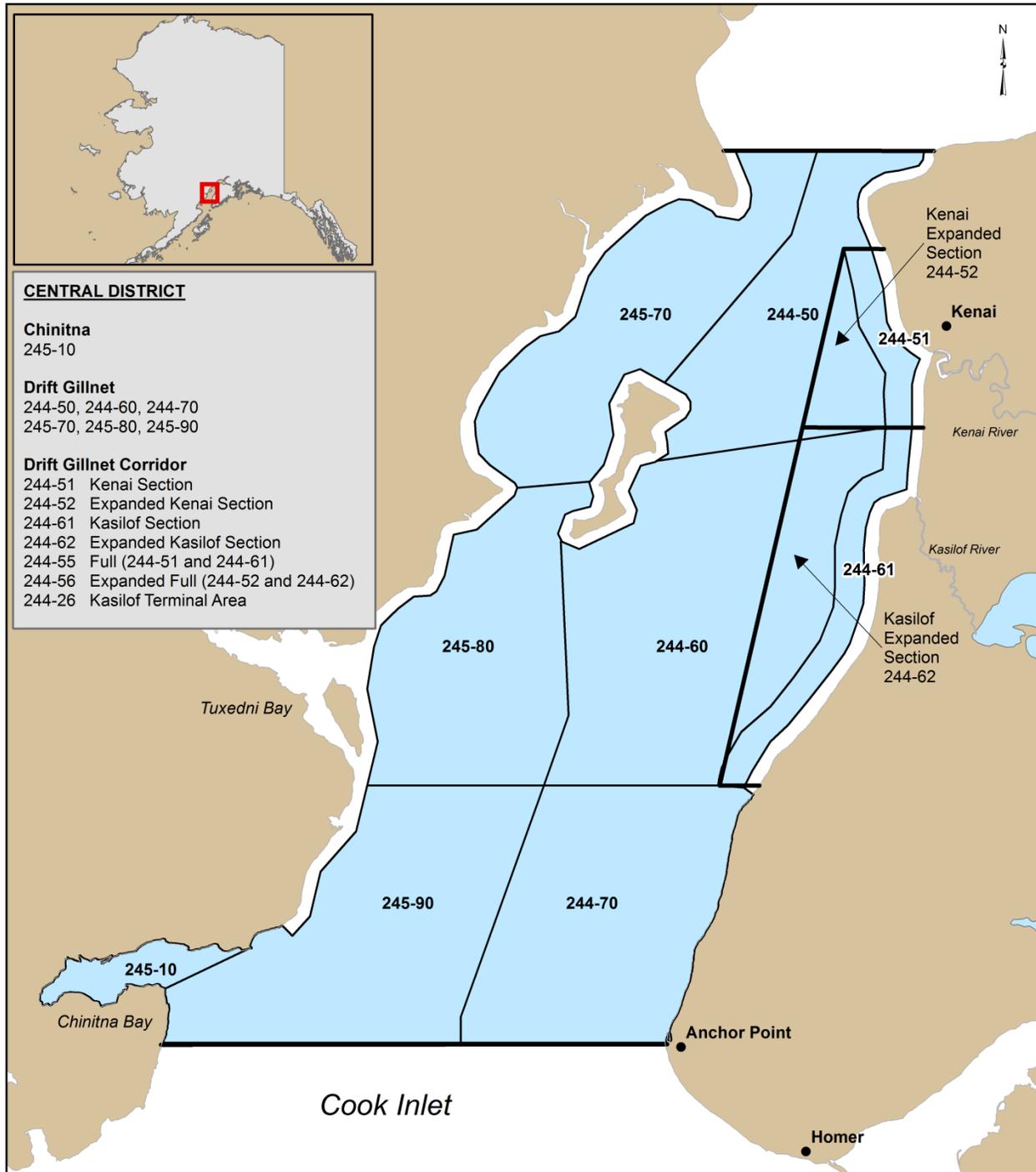


Figure 4.—Upper Cook Inlet commercial drift gillnet statistical areas.

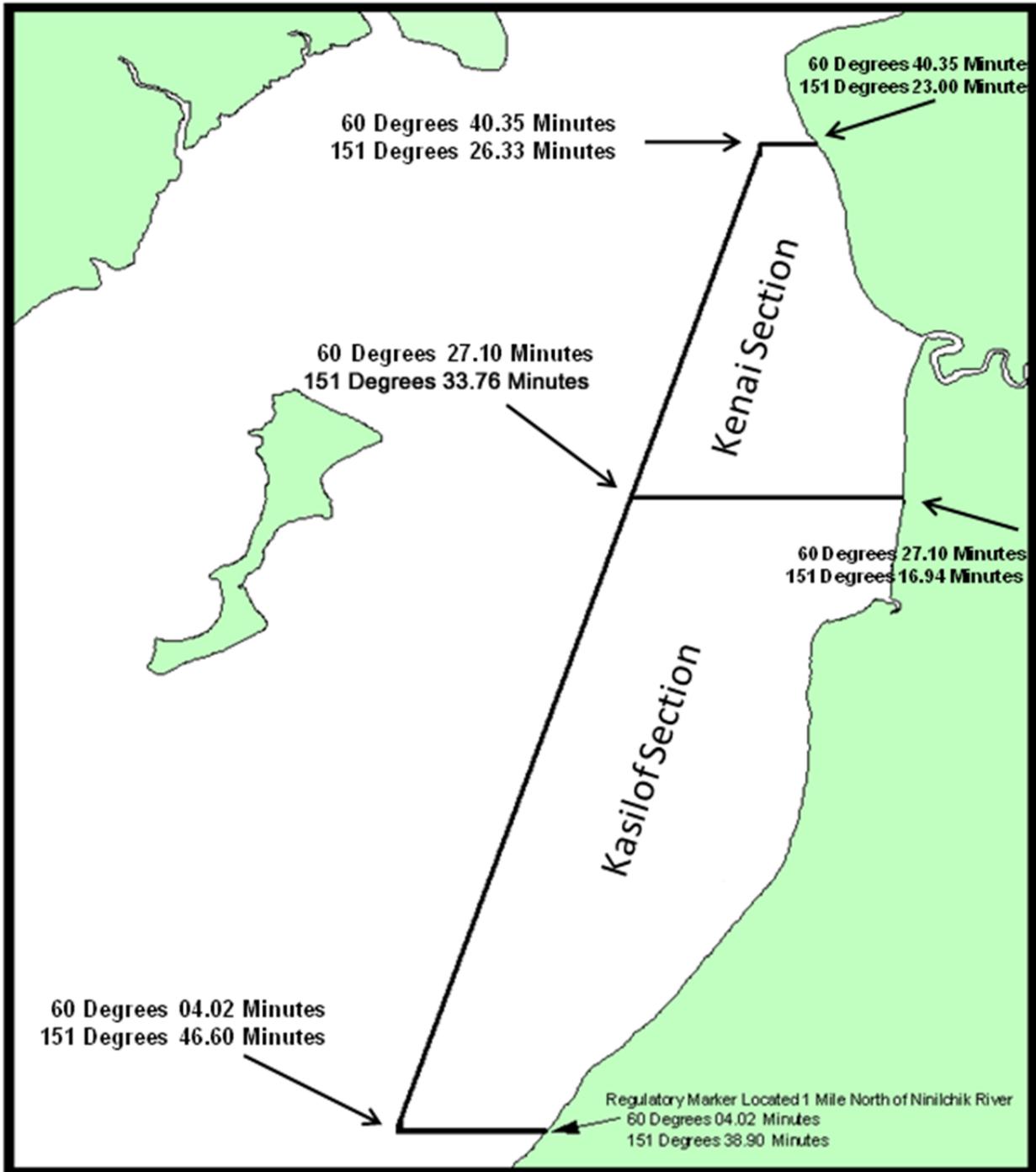


Figure 5.—Map of the Expanded Kenai and Expanded Kasilof Sections with waypoint descriptions.

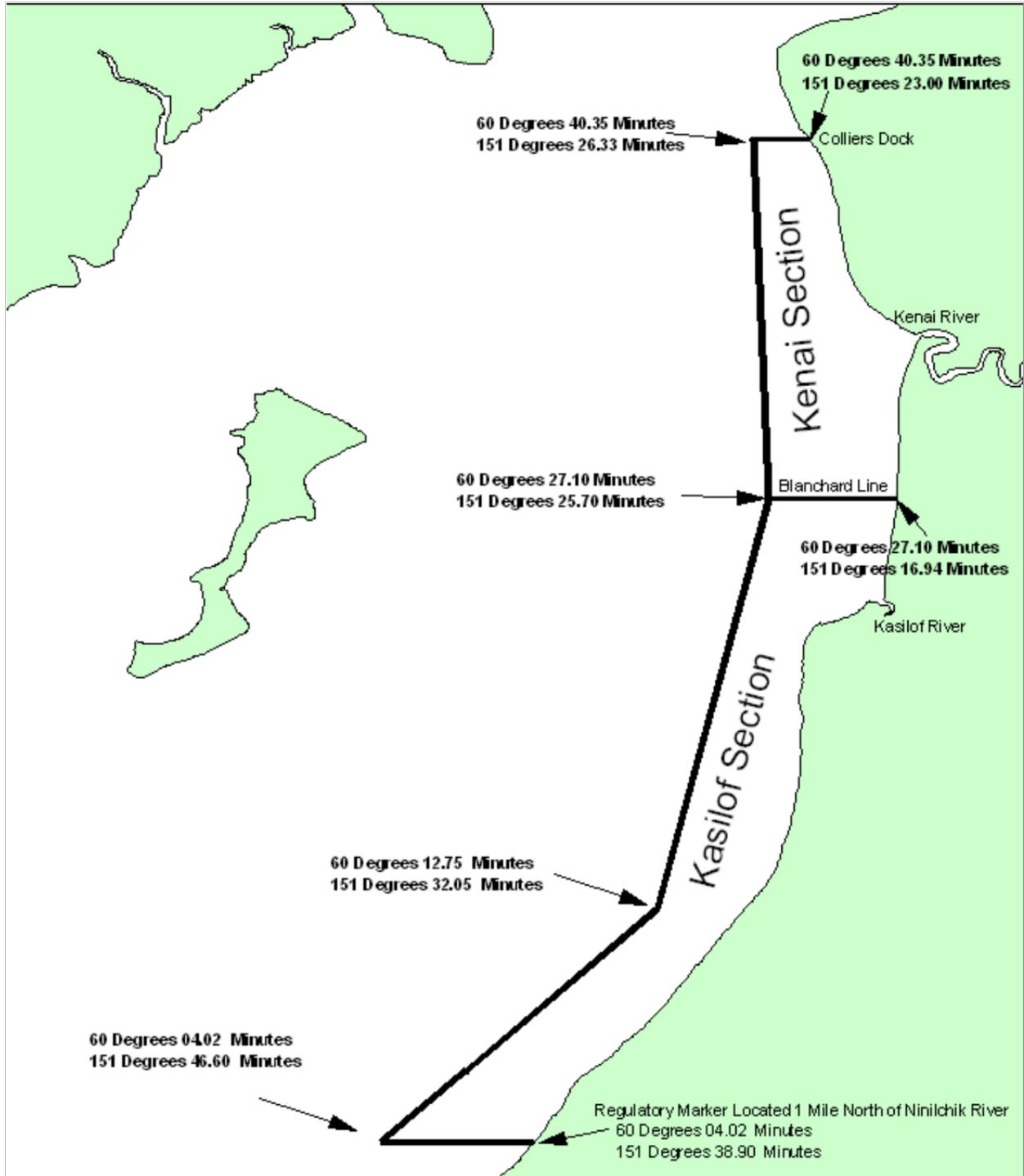
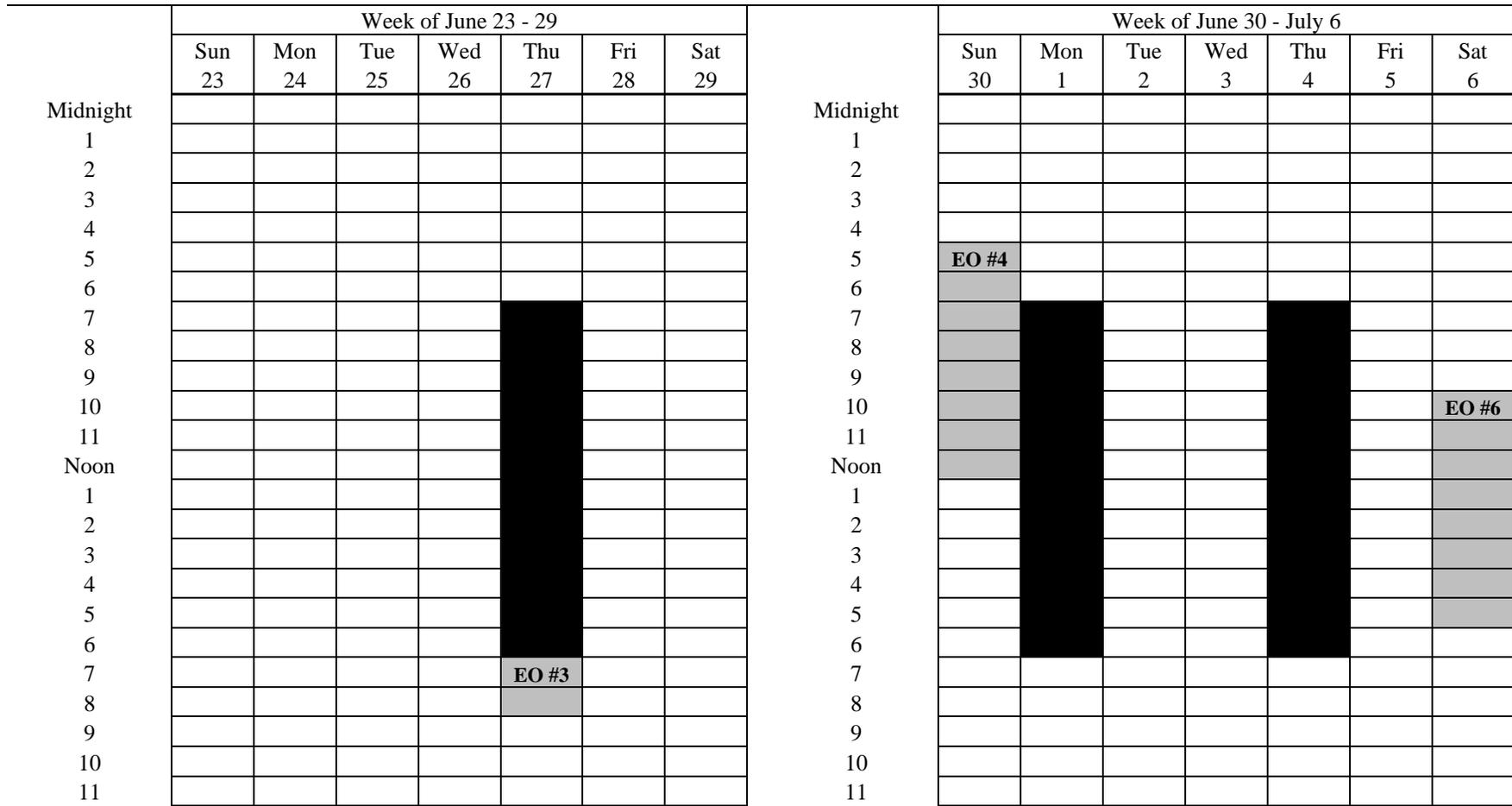


Figure 6.—Map of the Kenai and Kasilof Sections with waypoint descriptions.



EO #3 Kasilof Section from 7pm to 9pm on June 27

EO #4 Kasilof Section from 5am to 1pm on June 30

EO #6 Kasilof Section from 10am to 6pm on

Regular Fishing Periods
Additional Fishing Time
No Commercial Fishing

Regular Fishing Periods
Additional Fishing Time
No Commercial Fishing

-continued-

Figure 7.—Hours fished in the Upper Subdistrict set gillnet fishery, 2013.

		Week of July 7 - 13						
		Sun	Mon	Tue	Wed	Thu	Fri	Sat
		7	8	9	10	11	12	13
Midnight								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
Noon								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

EO #7 Kasilof Section 1/2 Mile from noon to 8pm on July 10
 EO #8 Upper Subdistrict from 10am to 10pm on July 11

Regular Fishing Periods
Additional Fishing Time
No Commercial Fishing

		Week of July 14 - 20						
		Sun	Mon	Tue	Wed	Thu	Fri	Sat
		18	19	20	21	22	23	24
Midnight								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
Noon								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

EO #10 Upper Subdistrict from 7pm to 11pm on July 19
 EO #14 Upper Subdistrict from 7pm to 9pm on July 22
 EO #15 Upper Subdistrict from 11am to 7pm on July 24
 EO #16 Upper Subdistrict from 7pm to 11pm on July 24

Regular Fishing Periods
Additional Fishing Time
No Commercial Fishing

-continued-

Figure 6.-Page 2 of 4.

		Week of July 21 - 27									Week of July 28 - August 3						
		Sun	Mon	Tue	Wed	Thu	Fri	Sat			Sun	Mon	Tue	Wed	Thu	Fri	Sat
		21	22	23	24	25	26	27			28			31	1	2	3
Midnight									Midnight								
1									1		29	30					
2									2								
3									3								
4									4								
5									5								
6									6								
7									7								
8				EO #20					8								
9									9								
10									10								
11									11								
Noon									Noon								
1									1								
2									2								
3									3								
4									4								
5									5								
6									6								
7									7								
8									8								
9									9								
10									10								
11									11								

EO #20 Upper Subdistrict from 8am to 8pm on July 23

Regular Fishing Periods
Additional Fishing Time
No Commercial Fishing

Regular Fishing Periods
Additional Fishing Time
No Commercial Fishing

-continued-

Figure 6.-Page 3 of 4.

		Week of August 4 - 10						
		Sun 21	Mon	Tue	Wed 24	Thu	Fri 26	Sat 27
Midnight								
1								
2		22	23		25			
3								
4								
5								
6								
7								
8								
9								
10								
11								
Noon								
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								

Regular Fishing Periods
Additional Fishing Time
No Commercial Fishing

Figure 6.-Page 4 of 4.

Drift Gillnet Area 1 and Area 2 Descriptions

Area 2 Description and Coordinates

- A. Southwest Corner: 60° 20.43' N. lat, 151° 54.83' W. lon.
- B. Northwest Corner: 60° 41.08' N. lat., 151° 39.00' W. lon.
- C. Northeast Corner: 60° 41.08' N. lat., 151° 24.00' W. lon.
- D. Blanchard Line Corridor Boundary: 60° 27.10' N. lat., 151° 25.70' W. lon.
- E. Southeast Corner: 60° 20.43' N. lat., 151° 28.00' W. lon.

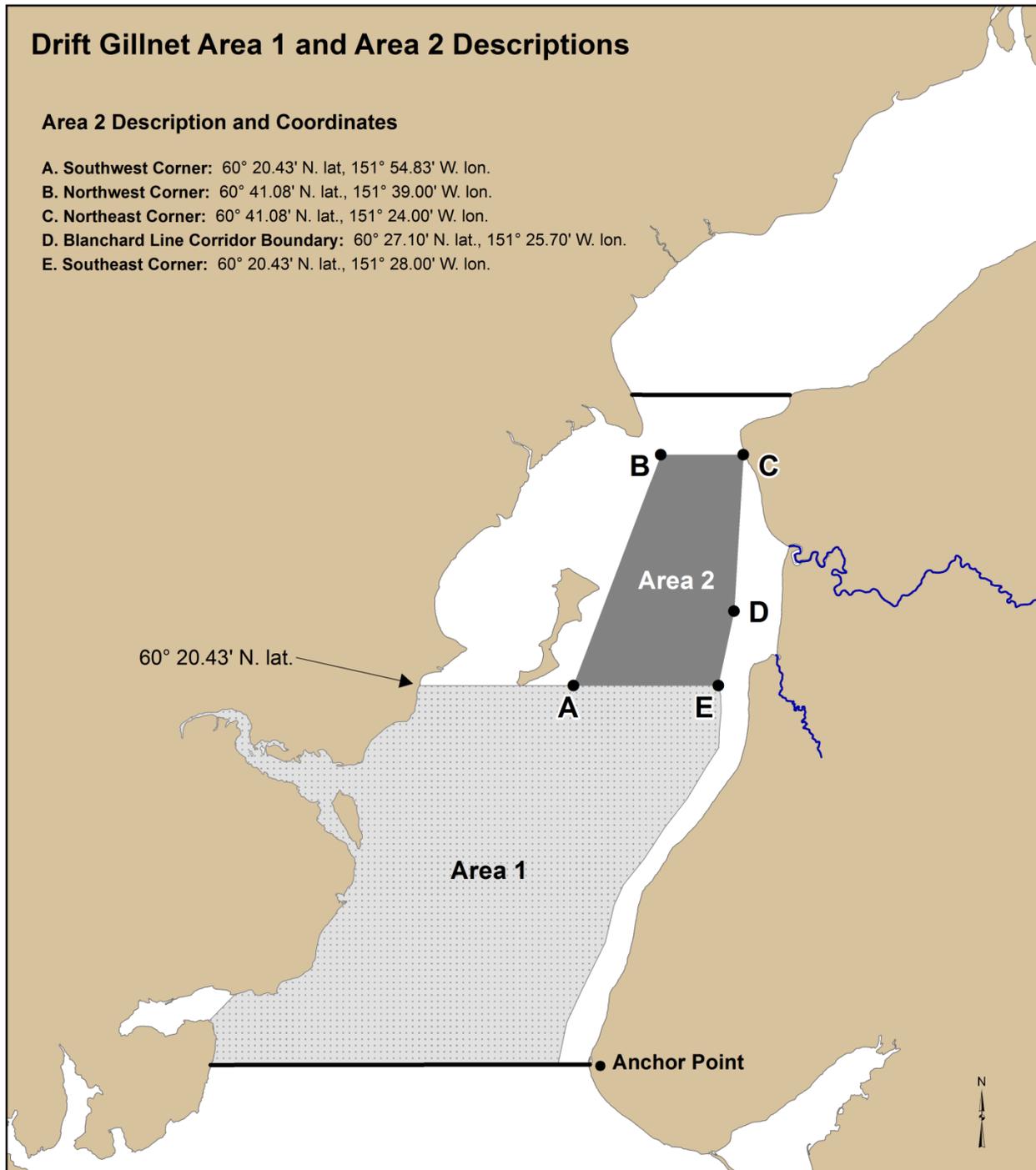


Figure 8.—Drift gillnet boundaries for fishing areas 1 and 2.

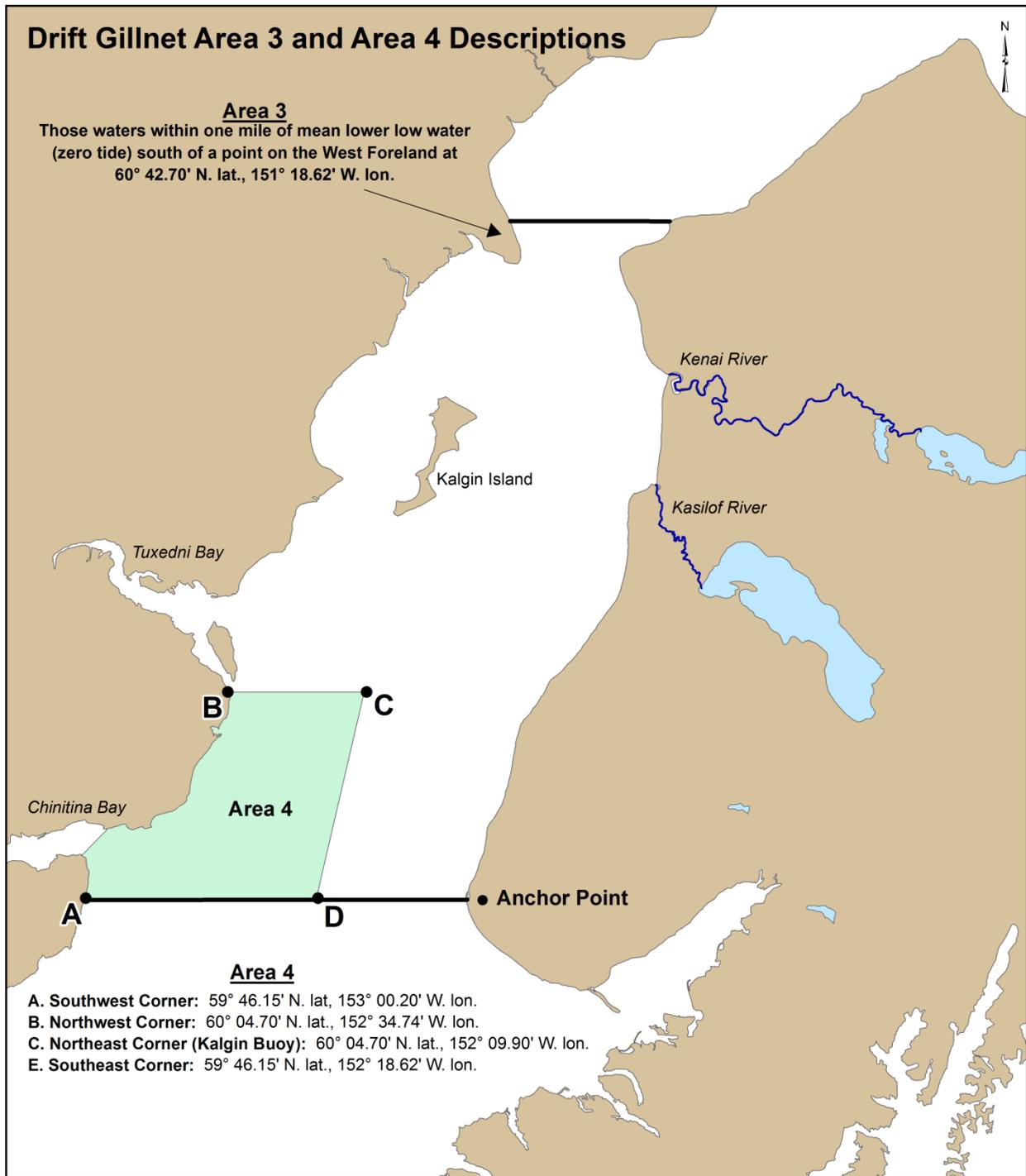


Figure 9.—Map of drift gillnet areas 3 and 4.

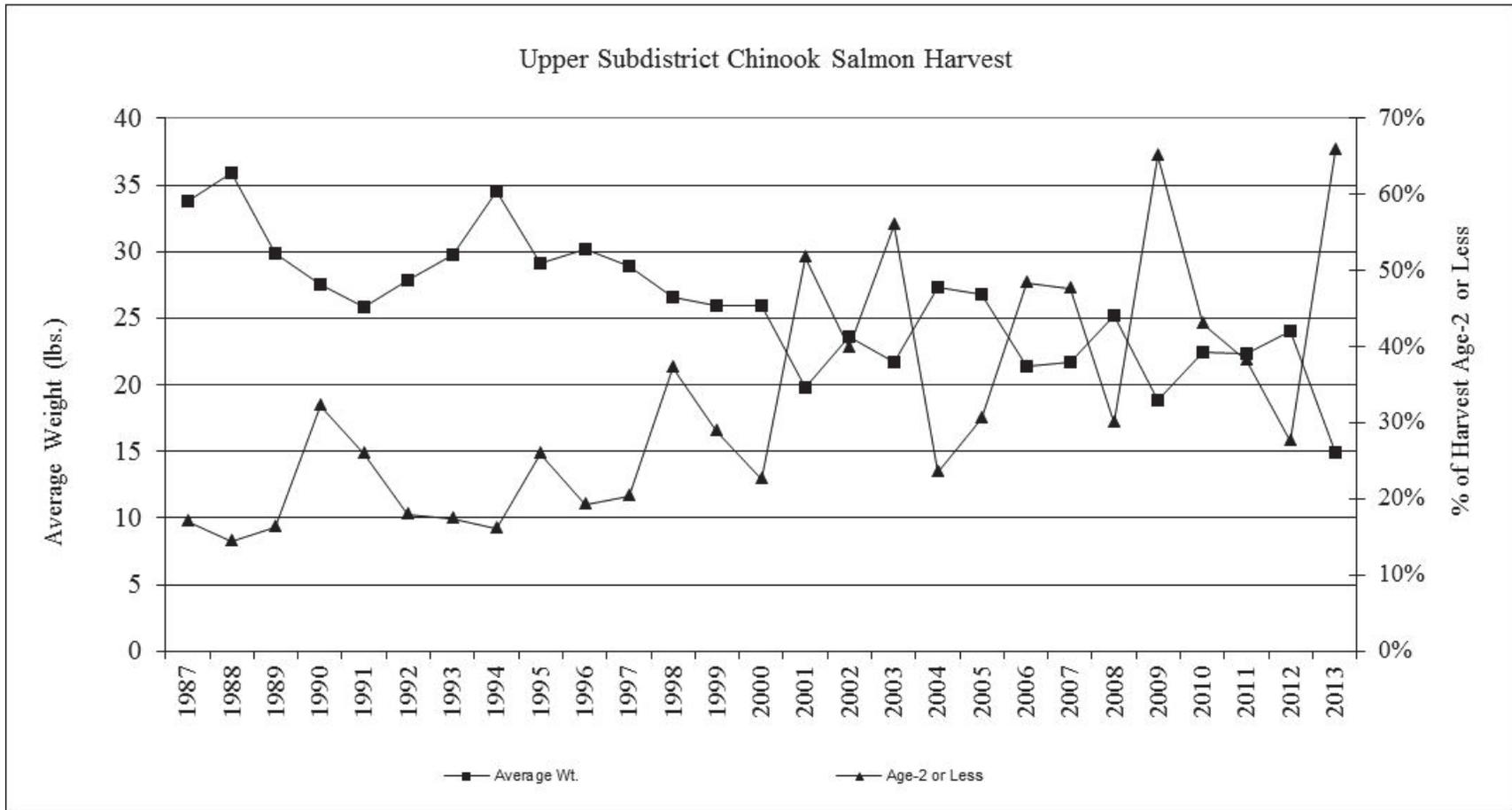


Figure 10.—Chinook salmon average weight (all fish) and percentage of the harvest comprised of ocean-age-2 or less fish in the Upper Subdistrict set gillnet commercial fishery, 1987–2013.

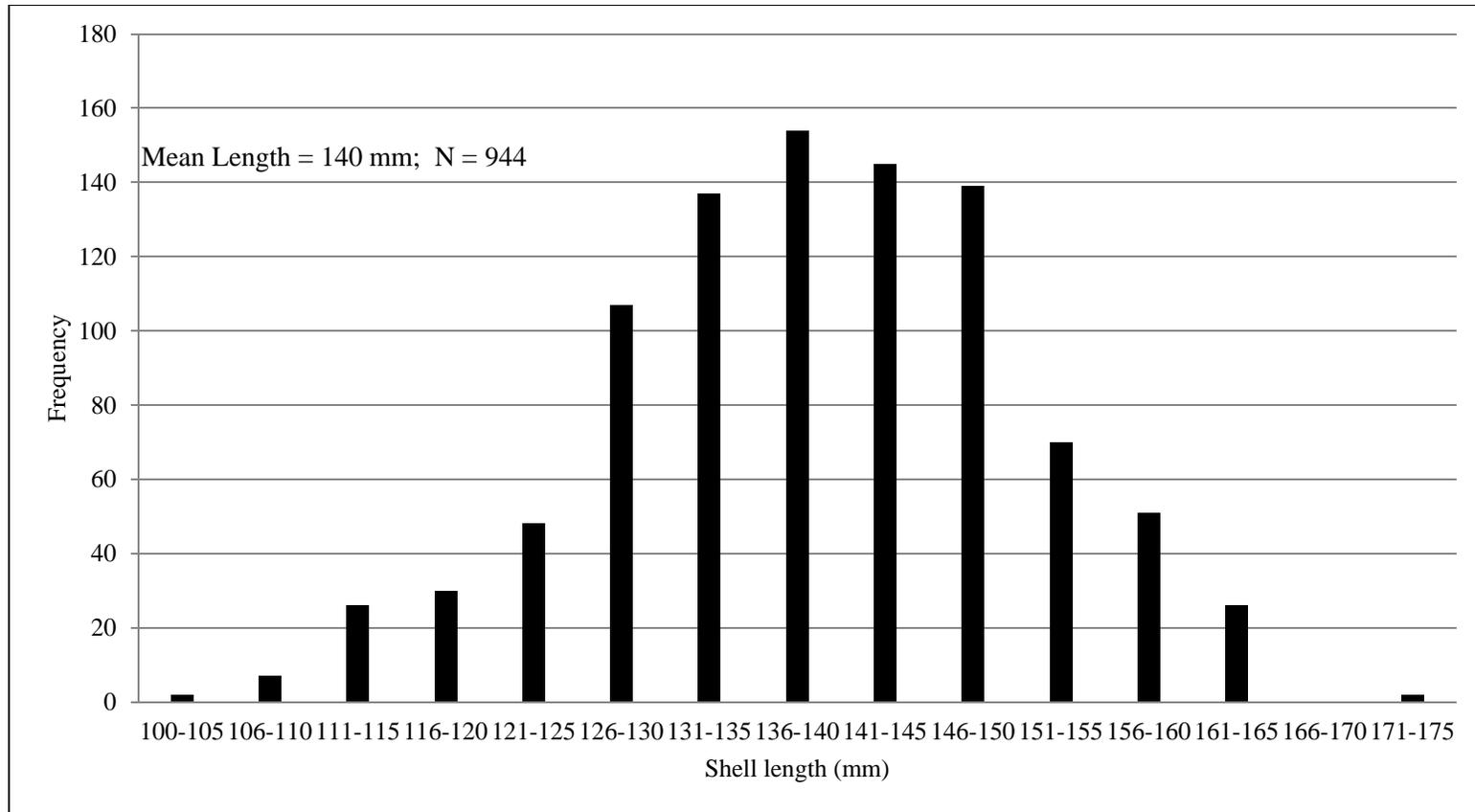


Figure 11.—Length frequency of razor clam shells sampled from the 2013 Polly Creek commercial razor clam fishery.

APPENDIX A: 2013 SEASON DATA

Appendix A1.–Offshore test fish sockeye salmon catch results and environmental data, 2013.

Date	No. of Stations	Fishing Time (min)	Catch		Index		Mean Length (mm)	Water Temp (c)	Air Temp (c)	Salinity (ppm)	Beginning Wind		Ending Wind	
			Daily	Cum	Daily	Cum					Vel	Dir	Vel	Dir
7/1	6	245.5	66	66	48	48	575	8.9	11.1	28.6	4	NE	13	E
7/2	6	224.0	60	126	47	95	565	9.0	9.6	28.2	9	SW	9	SW
7/3	6	234.0	97	223	72	166	566	10.0	11.0	26.9	9	S	7	SW
7/4	4 ^a	158.5	97	320	60	226	570	9.5	10.2	27.4	14	NW	3	NW
7/5	6	229.0	129	449	90	316	571	9.5	11.0	27.6	1	SW	5	S
7/6	6	224.5	66	515	49	364	563	9.3	10.8	27.9	2	S	4	SW
7/7	6	220.5	145	660	121	486	566	9.1	9.8	28.5	4	SW	7	SW
7/8	4 ^a	174.0	9	669	6	492	558	9.1	10.0	28.0	9	S	8	E
7/9	6	260.0	165	834	105	597	572	9.9	12.2	27.8	8	SE	5	S
7/10	6	235.0	15	849	11	607	553	9.4	11.9	27.9	2	S	3	SE
7/11	6	258.5	187	1,036	114	721	566	9.5	12.5	28.7	4	NW	4	NW
7/12	6	248.5	149	1,185	88	809	579	9.4	12.4	28.3	2	SE	2	SW
7/13	3 ^a	121.5	23	1,208	17	826	555	9.9	11.3	29.1	9	SW	13	SW
7/14	0 ^a	-	-	1,208	-	826	-	-	-	-	-	-	-	-
7/15	6	242.5	25	1,233	19	845	555	9.5	11.5	29.5	3	SW	4	SW
7/16	6	268.0	298	1,531	183	1,029	578	10.6	14.3	30.8	0	SE	2	SE
7/17	1 ^a	31.5	13	1,544	12	1,041	578	9.8	11.6	30.8	15	S	-	-
7/18	0 ^a	-	-	1,544	-	1,041	-	-	-	-	-	-	-	-
7/19	0 ^a	-	-	1,544	-	1,041	-	-	-	-	-	-	-	-
7/20	3 ^a	140.5	32	1,576	20	1,061	574	9.8	13.5	31.2	7	SW	13	SW
7/21	6	227.0	15	1,591	12	1,072	584	10.8	14.2	31.6	6	E	2	N
7/22	6	266.0	108	1,699	64	1,136	565	10.7	13.3	32.5	3	N	4	SW
7/23	6	244.5	17	1,716	12	1,148	562	11.0	33.3	32.3	3	S	1	NW
7/24	6	247.0	169	1,885	107	1,255	575	10.9	12.6	31.6	3	SE	1	N
7/25	5 ^a	232.5	73	1,958	42	1,298	562	11.2	12.2	32.2	7	SW	6	SW
7/26	6	237.0	7	1,965	5	1,303	572	11.4	12.4	32.4	3	SW	5	SW
7/27	6	244.0	29	1,994	20	1,323	572	11.0	10.8	31.8	5	SW	3	SE
7/28	6	232.0	5	1,999	4	1,327	563	10.9	12.8	32.5	1	SE	3	SE
7/29	4 ^a	167.5	16	2,015	11	1,338	564	10.1	9.9	32.5	8	SW	9	SW
7/30	2 ^a	76.0	5	2,020	4	1,342	563	11.5	11.9	32.6	9	SE	9	SE

^a Not all stations fished due to weather conditions or mechanical issues.

Appendix A2.—Upper Cook Inlet sockeye salmon enumeration by watershed and date, 2013.

Date	Kenai River		Kasilof River		Fish Creek		Crescent River		Chelatna Lake		Judd Lake		Larson Lake	
	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum
15 Jun			6,946	6,946										
16 Jun			4,446	11,392										
17 Jun			2052	13,444										
18 Jun			1980	15,424										
19 Jun			5,670	21,094										
20 Jun			4,692	25,786										
21 Jun			13,188	38,974										
22 Jun			14,994	53,968										
23 Jun			9,006	62,974										
24 Jun			10,218	73,192										
25 Jun			13,848	87,040										
26 Jun			13,914	100,954										
27 Jun			22,398	123,352										
28 Jun			8,278	131,630										
29 Jun			10,212	141,842										
30 Jun			8,464	150,306										
1 Jul	7,530	7,530	2,262	152,568										
2 Jul	4,380	11,910	2,034	154,602										
3 Jul	4,164	16,074	9,936	164,538										
4 Jul	10,655	26,729	8,976	173,514										
5 Jul	11,454	38,183	1,398	174,912										
6 Jul	4,915	43,098	3,006	177,918	0	0								
7 Jul	3,508	46,606	1,320	179,238	0	0								
8 Jul	3,514	50,120	5,046	184,284	0	0								
9 Jul	6,814	56,934	7,068	191,352	0	0								
10 Jul	18,270	75,204	26,586	217,938	63	63							0	0

-continued-

Appendix A2.–Page 2 of 4.

Date	Kenai River		Kasilof River		Fish Creek		Crescent River		Chelatna Lake		Judd Lake		Larson Lake	
	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum
11 Jul	33,702	108,906	5,524	223,462	86	149							0	0
12 Jul	10,086	118,992	3,192	226,654	2	151							32	32
13 Jul	9,090	128,082	12,132	238,786	20	171			0	0			135	167
14 Jul	24,520	152,602	20,094	258,880	123	294			3	3			63	230
15 Jul	93,151	245,753	43,316	302,196	503	797			7	10			147	377
16 Jul	247,084	492,837	31,890	334,086	64	861			843	853	0	0	219	596
17 Jul	215,636	708,473	29,694	363,780	1,267	2,128			837	1690	0	0	428	1,024
18 Jul	117,785	826,258	16,848	380,628	55	2,183			674	2364	0	0	254	1,278
19 Jul	92,771	919,029	15,174	395,802	879	3,062			778	3142	0	0	313	1,591
20 Jul	81,281	1,000,310	23,364	419,166	1,182	4,244			1030	4172	0	0	0	1,591
21 Jul	38,302	1,038,612	5,292	424,458	1,752	5,996			1781	5,953	1	1	1,292	2,883
22 Jul	24,900	1,063,512	4,223	428,681	124	6,120			5,413	11,366	0	1	1,026	3,909
23 Jul	29,796	1,093,308	3,564	432,245	494	6,614			11,331	22,697	102	103	3,442	7,351
24 Jul	17,993	1,111,301	3,864	436,109	421	7,035			11,414	34,111	184	287	1,735	9,086
25 Jul	13,542	1,124,843	6,480	442,589	3,777	10,812			11,710	45,821	413	700	2,695	11,781
26 Jul	21,954	1,146,797	5,861	448,450	1,548	12,360			7,232	53,053	964	1,664	3,261	15,042
27 Jul	29,878	1,176,675	8,819	457,269	731	13,091			3,793	56,846	1,260	2,924	843	15,885
28 Jul	28,039	1,204,714	4,161	461,430	1,183	14,274			1,875	58,721	1,164	4,088	549	16,434
29 Jul	29,100	1,233,814	4,710	466,140	85	14,359			1,675	60,396	1,641	5,729	1,090	17,524
30 Jul	23,908	1,257,722	3,072	469,212	313	14,672			1,396	61,792	146	5,875	390	17,914
31 Jul	18,140	1,275,862	5,010	474,222	396	15,068			1,171	62,963	1,492	7,367	434	18,348
1 Aug	22,992	1,298,854	3,756	477,978	413	15,481			617	63,580	615	7,982	85	18,433
2 Aug	16,922	1,315,776	2,640	480,618	881	16,362			400	63,980	539	8,521	173	18,606

-continued-

Appendix A2.–Page 3 of 4.

Date	Kenai River		Kasilof River		Fish Creek		Crescent River		Chelatna Lake		Judd Lake		Larson Lake	
	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum
3 Aug	11,583	1,327,359	2,478	483,096	338	16,700			418	64,398	1,067	9,588	31	18,637
4 Aug	8,437	1,335,796	1,734	484,830	317	17,017			394	64,792	406	9,994	28	18,665
5 Aug	9,392	1,345,188	1,758	486,588	229	17,246			761	65,553	288	10,282	11	18,676
6 Aug	7,368	1,352,556	1,758	488,346	199	17,445			1,359	66,912	221	10,503	1,071	19,747
7 Aug	7,337	1,359,893	1,308	489,654	276	17,721			1114	68,026	388	10,891	873	20,620
8 Aug					407	18,128			1043	69,069	1,176	12,067	317	20,937
9 Aug					176	18,304			662	69,731	900	12,967	237	21,174
10 Aug					140	18,444			484	70,215	371	13,338	139	21,313
11 Aug					40	18,484			228	70,443	89	13,427	111	21,424
12 Aug					201	18,685			60	70,503	249	13,676	218	21,642
13 Aug					58	18,743			52	70,555	94	13,770	63	21,705
14 Aug					17	18,760					27	13,797	116	21,821
15 Aug					24	18,784					69	13,866		
16 Aug					17	18,801					23	13,889		
17 Aug					37	18,838					84	13,973		
18 Aug					10	18,848					48	14,021		
19 Aug					9	18,857					56	14,077		
20 Aug					3	18,860					11	14,088		
21 Aug					4	18,864								
22 Aug					5	18,869								
23 Aug					6	18,875								
24 Aug					7	18,882								
25 Aug					1	18,883								
26 Aug					3	18,886								
27 Aug					2	18,888								
28 Aug					5	18,893								

-continued-

Appendix A2.–Page 4 of 4.

Date	Kenai River		Kasilof River		Fish Creek		Crescent River		Chelatna Lake		Judd Lake		Larson Lake	
	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum	daily	cum
29 Aug					2	18,895								
30 Aug					2	18,897								
31 Aug					2	18,899								
1 Sep					0	18,899								
2 Sep					4	18,903								
3 Sep					8	18,911								
4 Sep					1	18,912								
5 Sep					0	18,912								
6 Sep														
7 Sep														
8 Sep														
9 Sep														
10 Sep														
11 Sep														
12 Sep														
13 Sep														

Note: Days without data indicate time periods where the projects were not operational.

Appendix A3.–Commercial Chinook salmon catch by area and date, Upper Cook Inlet, 2013.

Upper Subdistrict Set Gillnet																
Date	244-21		244-22		244-25		244-31		244-32		244-41		244-42		Total	
	Daily	Cum	Daily	Cum												
27 Jun	15	15	36	36			8	8							59	59
30 Jun	15	30	36	72			21	29							72	131
1 Jul	34	64	39	111			32	61							105	236
4 Jul	29	93	36	147			14	75							79	315
6 Jul	29	122	42	189			18	93							89	404
8 Jul	32	154	66	255			22	115	88	88	145	145	9	9	362	766
10 Jul	24	178	79	334			11	126							114	880
11 Jul	35	213	58	392			34	160	111	199	215	360	11	20	464	1,344
15 Jul	38	251	84	476			36	196	34	233	105	465	9	29	306	1,650
17 Jul					26	26									26	1,676
18 Jul	26	277	81	557	8	34	47	243	73	306	129	594	14	43	378	2,054
20 Jul	25	302	34	591			27	270	42	348	150	744	7	50	285	2,339
21 Jul					18	52									18	2,357
22 Jul					36	88									36	2,393
23 Jul	28	330	50	641	10	98	34	304	59	407	146	890	8	58	335	2,728
24 Jul					37	135									37	2,765
25 Jul					15	150									15	2,780
26 Jul					58	208									58	2,838
27 Jul					18	226									18	2,856
28 Jul					26	252									26	2,882
29 Jul					18	270									18	2,900
30 Jul					55	325									55	2,955
1 Aug					11	336									11	2,966
2 Aug					22	358									22	2,988

-continued-

Appendix A3.–Page 2 of 7.

Central District - West Side Set Gillnet																						
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20				
		Chinitna Bay		Silv. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East		Total		
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
3 Jun												18	18				28	28			46	46
5 Jun												20	38				88	116			108	154
7 Jun												29	67				69	185			98	252
10 Jun												18	85				75	260			93	345
12 Jun												19	104				34	294			53	398
14 Jun												14	118				14	308			28	426
17 Jun					23	23						5	123				13	321			41	467
19 Jun												1	124				15	336			16	483
20 Jun					4	27			1	1											5	488
21 Jun																	5	341			5	493
24 Jun					8	35											5	346			13	506
27 Jun					1	36															1	507
1 Jul					8	44															8	515
4 Jul					7	51											2	348	1	1	10	525
6 Jul					6	57															6	531
8 Jul					11	68											2	350			13	544
11 Jul					12	80											6	356			18	562
13 Jul					10	90															10	572
15 Jul					4	94															4	576

-continued-

Appendix A3.–Page 3 of 7.

Central District - West Side Set Gillnet																						
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20		Total		
		Chinitna Bay		Silv. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East				
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
18 Jul					3	97															3	579
20 Jul					1	98															1	580
22 Jul					2	100									5	361					7	587
25 Jul					1	101															1	588
27 Jul					1	102															1	589
29 Jul					1	103															1	590
1 Aug																					0	590
3 Aug																					0	590
5 Aug																					0	590
8 Aug																					0	590
12 Aug																					0	590
15 Aug																					0	590
19 Aug																					0	590
21 Aug																					0	590
23 Aug	1	1																			1	591
26 Aug																					0	591
30 Aug																					0	591
2 Sep																					0	591
11 Sep																					0	591

-continued-

77

Appendix A3.–Page 4 of 7.

Northern District Set Gillnet

Date	247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90		Total			
	Trading Bay		Tyonek		Beluga		Su. Flats		Pt. McKenzie		Fire Island		Pt. Possesion		Birch Hill		#3 Bay					
	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum		
3 Jun	117	117					91	91	75	75	51	51	24	24	9	9					367	367
10 Jun	179	296					52	143	74	149	51	102	87	111	14	23	12	12			469	836
17 Jun	121	417					16	159	13	162	15	117	55	166	8	31	4	16			232	1,068
24 Jun	44	461					3	162	13	175							6	22			66	1,134
27 Jun	16	477	32	32					4	179			6	172	1	32	4	26			63	1,197
1 Jul	18	495	16	48									8	180	5	37					47	1,244
4 Jul	6	501	12	60									5	185	11	48	2	28			36	1,280
8 Jul	2	503	6	66					2	181	4	121	3	188		48					17	1,297
11 Jul			3	69			2	164	1	182					1	49					7	1,304
15 Jul			1	70									1	189	1	50					3	1,307
18 Jul					1	1			1	183								1	29		3	1,310
22 Jul																					0	1,310
25 Jul			3	73									1	190			2	31			6	1,316

-continued-

Appendix A3.–Page 5 of 7.

Northern District Set Gillnet																					
		247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90		Total	
		Trading Bay		Tyonek		Beluga		Su. Flats		Pt. McKenzie		Fire Island		Pt. Possesion		Birch Hill		#3 Bay			
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	
29 Jul							1	165										2	33	3	1,319
1 Aug									2	185										2	1,321
5 Aug																				0	1,321
8 Aug	1	504													1	51				2	1,323
12 Aug											1	122								1	1,324
15 Aug															1	52				1	1,325
19 Aug																		2	35	2	1,327
22 Aug																				0	1,327
26 Aug																				0	1,327
29 Aug																				0	1,327
2 Sep																				0	1,327
5 Sep																				0	1,327
9 Sep																				0	1,327

-continued-

08

Central District Drift Gillnet													
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total	
		Kasilof Terminal		Exp. Ken/Kas Section		District Wide		Kasilof Section		Chinitna Bay		Day	Cum
		Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
20 Jun	64					13	13					13	13
24 Jun	87					11	24					11	24
27 Jun	159					15	39					15	39
30 Jun	27							5	5			5	44
1 Jul	309					22	61					22	66
4 Jul	380					48	109					48	114
6 Jul	126							4	9			4	118
8 Jul	433					43	152					43	161
11 Jul	426			39	39							39	200
13 Jul	406			40	79							40	240
15 Jul	452					50	202					50	290
17 Jul	439	2	2	33	112							35	325
18 Jul	436					42	244					42	367
19 Jul	284			15	127							15	382
20 Jul	337			8	135							8	390
21 Jul	216	2	4	13	148							15	405
22 Jul	429	1	5			18	262					19	424
23 Jul	210			9	157							9	433

-continued-

Central District Drift Gillnet													
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total	
		Day	Cum	Day	Cum								
24 Jul	128		5	5	162							5	438
25 Jul	429					15	277					15	453
26 Jul	121	1	6	3	165							4	457
27 Jul	117		6	8	173							8	465
28 Jul	70	3	9	7	180							10	475
29 Jul	303					8	285					8	483
30 Jul	43			1	181							1	484
1 Aug	228	2	11			6	291					8	492
2 Aug	1											0	492
5 Aug	89											0	492
8 Aug	52											0	492
12 Aug	37											0	492
15 Aug	32											0	492
19 Aug	8											0	492
21 Aug	1											0	492
22 Aug	7											0	492
23 Aug	7									1	1	1	493
26 Aug	9											0	493
30 Aug	2											0	493
2 Sep	2											0	493
11 Sep	1											0	493
12 Sep	1											0	493

Note: Days without data indicate days when there was no harvest.

Appendix A4.-Commercial sockeye salmon catch by area and date, Upper Cook Inlet, 2013.

Upper Subdistrict Set Gillnet																
Date	244-21		244-22		244-25		244-31		244-32		244-41		244-42		Total	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
27 Jun	16,980	16,980	15,930	15,930			15,450	15,450							48,360	48,360
30 Jun	12,614	29,594	9,328	25,258			4,775	20,225							26,717	75,077
1 Jul	7,999	37,593	2,415	27,673			1,659	21,884							12,073	87,150
4 Jul	23,115	60,708	2,133	29,806			2,674	24,558							27,922	115,072
6 Jul	15,244	75,952	5,215	35,021			1,362	25,920							21,821	136,893
8 Jul	20,932	96,884	6,957	41,978			2,358	28,278	2,167	2,167	2,634	2,634	415	415	35,463	172,356
10 Jul	24,844	121,728	17,991	59,969			9,000	37,278							51,835	224,191
11 Jul	26,159	147,887	4,162	64,131			2,360	39,638	1,448	3,615	5,890	8,524	488	903	40,507	264,698
15 Jul	30,503	178,390	34,623	98,754			51,707	91,345	75,982	79,597	143,869	152,393	16,488	17,391	353,172	617,870
17 Jul					16,020	16,020									16,020	633,890
18 Jul	31,745	210,135	17,141	115,895	4,096	20,116	14,649	105,994	13,819	93,416	64,722	217,115	8,755	26,146	154,927	788,817
20 Jul	11,997	222,132	11,286	127,181			8,296	114,290	6,732	100,148	24,205	241,320	3,773	29,919	66,289	855,106
21 Jul					6,606	26,722									6,606	861,712
22 Jul					6,944	33,666									6,944	868,656
23 Jul	3,419	225,551	4,320	131,501	1,555	35,221	2,436	116,726	1,158	101,306	9,683	251,003	1,377	31,296	23,948	892,604
24 Jul					3,310	38,531									3,310	895,914
25 Jul					3,325	41,856									3,325	899,239
26 Jul					9,383	51,239									9,383	908,622
27 Jul					2,879	54,118									2,879	911,501
28 Jul					4,270	58,388									4,270	915,771
29 Jul					1,148	59,536									1,148	916,919
30 Jul					2,867	62,403									2,867	919,786
1 Aug					928	63,331									928	920,714
2 Aug					819	64,150									819	921,533

-continued-

Appendix A4.–Page 2 of 7.

Central District - West Side Set Gillnet																							
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20					
		Chinitna Bay		Silv. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East		Total			
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	
3 Jun												116	116			811	811			927	927		
5 Jun												419	535			2,088	2,899			2,507	3,434		
7 Jun												498	1,033			1,748	4,647			2,246	5,680		
10 Jun												516	1,549			2,115	6,762			2,631	8,311		
12 Jun												564	2,113			1,706	8,468			2,270	10,581		
14 Jun												443	2,556			589	9,057			1,032	11,613		
17 Jun					791	791				44	44	310	2,866			1,300	10,357			2,445	14,058		
19 Jun												207	3,073			700	11,057			907	14,965		
20 Jun					1,375	2,166				48	92									1,423	16,388		
21 Jun																445	11,502			445	16,833		
24 Jun					1,211	3,377				120	212					943	12,445			2,274	19,107		
27 Jun					1,543	4,920										1,062	13,507	152	152	2,757	21,864		
1 Jul					1,137	6,057										1,286	14,793	448	600	2,871	24,735		
4 Jul					1,475	7,532				50	262					768	15,561	266	866	2,559	27,294		
6 Jul					1,737	9,269														1,737	29,031		
8 Jul					1,238	10,507				99	361					1,735	17,296	80	946	3,152	32,183		
11 Jul					1,536	12,043				232	593					599	17,895	126	1,072	2,493	34,676		
13 Jul					2,045	14,088														2,045	36,721		
15 Jul					1,895	15,983				1,026	1,619	15	3,088			4,874	22,769	456	1,528	8,266	44,987		

-continued-

Appendix A4.-Page 3 of 7.

Central District - West Side Set Gillnet																						
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20				
		Chinitna Bay		Silv. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East		Total		
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum		
18 Jul					2,211	18,194				1,320	2,939					4,934	27,703	684	2,212	9,149	54,136	
20 Jul					584	18,778														584	54,720	
22 Jul					841	19,619				1,970	4,909	9	3,097	24	24	4,006	31,709	642	2,854	7,492	62,212	
25 Jul					848	20,467				1,061	5,970					1,944	33,653	370	3,224	4,223	66,435	
27 Jul					555	21,022														555	66,990	
29 Jul					542	21,564				777	6,747					1,418	35,071	530	3,754	3,267	70,257	
1 Aug	3	3			777	22,341				317	7,064					576	35,647	458	4,212	2,131	72,388	
3 Aug					84	22,425														84	72,472	
5 Aug					64	22,489				311	7,375					807	36,454	172	4,384	1,354	73,826	
8 Aug					10	22,499				73	7,448					483	36,937	576	4,960	1,142	74,968	
12 Aug					2	22,501				48	7,496					345	37,282	107	5,067	502	75,470	
15 Aug	1	4														139	37,421	40	5,107	180	75,650	
19 Aug	1	5														24	37,445			25	75,675	
21 Aug	1	6																		1	75,676	
23 Aug	4	10																		4	75,680	
26 Aug	3	13																	33	5,140	36	75,716
30 Aug	1	14																		1	75,717	
2 Sep	1	15																		1	75,718	
11 Sep	1	16																		1	75,719	

-continued-

Northern District Set Gillnet																						
		247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90				
		Trading Bay		Tyonek		Beluga		Su. Flats		Pt. McKenzie		Fire Island		Pt. Possesion		Birch Hill		#3 Bay		Total		
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
3 Jun	29	29							11	11	5	5	5	5	29	29	34	34	23	23	136	136
10 Jun	31	60							2	13	8	13	9	14	211	240	36	70	90	113	387	523
17 Jun	28	88							1	14	1	14	3	17	105	345	15	85	76	189	229	752
24 Jun	8	96									3	17							50	239	61	813
27 Jun	45	141	187	187					3	20					70	415	67	152	444	683	816	1,629
1 Jul	266	407	318	505											356	771	101	253	164	847	1,205	2,834
4 Jul	156	563	1,224	1,729					21	41					730	1,501	438	691	362	1,209	2,931	5,765
8 Jul	31	594	372	2,101	84	84	2	16	11	52	117	134	151	1,652	34	725	51	1,260	853	6,618		
11 Jul	24	618	626	2,727	315	399	96	112	29	81	112	246	669	2,321	128	853	177	1,437	2,176	8,794		
15 Jul	12	630	1,448	4,175	1,193	1,592	122	234	61	142	224	470	1,288	3,609	477	1,330	256	1,693	5,081	13,875		
18 Jul			828	5,003	1,214	2,806	320	554	416	558	246	716	1,210	4,819	600	1,930	210	1,903	5,044	18,919		
22 Jul	47	677	104	5,107	275	3,081	95	649	101	659	15	731	64	4,883	36	1,966	173	2,076	910	19,829		
25 Jul	1	678	60	5,167	38	3,119	56	705	72	731	82	813	81	4,964	29	1,995	195	2,271	614	20,443		

-continued-

Appendix A4.–Page 5 of 7.

Northern District Set Gillnet																						
		247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90				
		Trading Bay		Tyonek		Beluga		Su. Flats		Pt. McKenzie		Fire Island		Pt. Possesion		Birch Hill		#3 Bay		Total		
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
29 Jul	127	805	151	5,318	124	3,243	31	736	48	779	130	943	197	5,161	127	2,122	334	2,605	1,269	21,712		
1 Aug	94	899	48	5,366	14	3,257	34	770	58	837	57	1,000	106	5,267	82	2,204	167	2,772	660	22,372		
5 Aug	26	925	13	5,379			14	784	24	861	24	1,024	81	5,348	67	2,271	149	2,921	398	22,770		
8 Aug	16	941	8	5,387			3	787	17	878	20	1,044	76	5,424	27	2,298	52	2,973	219	22,989		
12 Aug	12	953	15	5,402			5	792	6	884	5	1,049	25	5,449	19	2,317	44	3,017	131	23,120		
15 Aug	9	962	13	5,415			6	798	4	888	5	1054	33	5,482	47	2,364	38	3,055	155	23,275		
19 Aug			2	5417					1	889			23	5,505	5	2,369	48	3,103	79	23,354		
22 Aug	4	966											7	5,512			26	3,129	37	23,391		
26 Aug	3	969									2	1056	7	5,519			13	3,142	25	23,416		
29 Aug																			0	23,416		
2 Sep													2	5,521			3	3145	5	23,421		
5 Sep																	1	3,146	1	23,422		
9 Sep																	1	3147	1	23,423		

-continued-

Central District Drift Gillnet													
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total	
		Kasilof Terminal		Exp. Ken/Kas Section		District Wide		Kasilof Section		Chinitna Bay		Day	Cum
		Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
20 Jun	64					3,590	3,590					3,590	3,590
24 Jun	87					5,828	9,418					5,828	9,418
27 Jun	159					13,915	23,311					13,915	23,333
30 Jun	27							1,216	1,216			1,216	24,549
1 Jul	309					39,591	62,891					39,591	64,140
4 Jul	380					111,293	174,185					111,293	175,433
6 Jul	126							11,418	12,634			11,418	186,851
8 Jul	433					253,434	427,613					253,434	440,285
11 Jul	426			51,263	51,263							51,263	491,548
13 Jul	406			32,315	83,578							32,315	523,863
15 Jul	452					432,662	860,313					432,662	956,525
17 Jul	439	1,265	1,265	124,055	207,633							125,320	1,081,845
18 Jul	436					210,531	1,070,844					210,531	1,292,376
19 Jul	284			28,184	235,817							28,184	1,320,560
20 Jul	337			44,569	280,386							44,569	1,365,129
21 Jul	216	194	1,459	19,725	300,111							19,919	1,385,048
22 Jul	429	159	1,618			133,050	1,203,894					133,209	1,518,257
23 Jul	210	62	1,680	8,091	308,202							8,153	1,526,410

-continued-

Central District Drift Gillnet													
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total	
		Kasilof Terminal	Exp. Ken/Kas Section	Day	Cum	Day	Cum	District Wide	Kasilof Section	Day	Cum	Chinitna Bay	Day
24 Jul	128	391	2,071	5,739	313,941							6,130	1,532,540
25 Jul	429					85,719	1,289,613					85,719	1,618,259
26 Jul	121	516	2,587	6,649	320,590							7,165	1,625,424
27 Jul	117	96	2,683	8,516	329,106							8,612	1,634,036
28 Jul	70	193	2,876	2,885	331,991							3,078	1,637,114
29 Jul	303					18,228	1,307,841					18,228	1,655,342
30 Jul	43	85	2,961	1,021	333,012							1,106	1,656,448
1 Aug	228	17	2,978			5,125	1,312,966					5,142	1,661,590
2 Aug	1	17	2,995									17	1,661,607
5 Aug	89					357	1,313,323					357	1,661,964
8 Aug	52					190	1,313,513					190	1,662,154
12 Aug	37					177	1,313,690					177	1,662,331
15 Aug	32					168	1,313,858					168	1,662,499
19 Aug	8					17	1,313,875			1	1	18	1,662,517
21 Aug	1									1	2	1	1,662,518
22 Aug	7					13	1,313,888					13	1,662,531
23 Aug	7									4	6	4	1,662,535
26 Aug	9					20	1,313,908			3	9	23	1,662,558
30 Aug	2									1	10	1	1,662,559
2 Sep	2									1	11	1	1,662,560
11 Sep	1									1	12	1	1,662,561
12 Sep	1											0	1,662,561

Note: Days without data indicate days when there was no harvest.

Appendix A5.–Commercial coho salmon catch by area and date, Upper Cook Inlet, 2013.

Upper Subdistrict Set Gillnet																
Date	244-21		244-22		244-25		244-31		244-32		244-41		244-42		Total	
	Ninilchik		Cohoe		Kasilof Terminal		South K-Beach		North K-Beach		Salamatof		E. Forelands		Daily	Cum
27 Jun	1	1	1	1			1	1							3	3
30 Jun	1	2	2	3			2	3							5	8
1 Jul	1	3		3											1	9
4 Jul	10	13	8	11											18	27
6 Jul	5	18	5	16			2	5							12	39
8 Jul	3	21	5	21			3	8	2	2	36	36	34	34	83	122
10 Jul	6	27	5	26											11	133
11 Jul	6	33	3	29			2	10	4	6	54	90	49	83	118	251
15 Jul	11	44	16	45			10	20	7	13	176	266	250	333	470	721
17 Jul					9	9									9	730
18 Jul	26	70	33	78	2	11	8	28	3	16	102	368	47	380	221	951
20 Jul	27	97	38	116			11	39	11	27	103	471	90	470	280	1,231
21 Jul					14	25									14	1,245
22 Jul					14	39									14	1,259
23 Jul	43	140	42	158	11	50	13	52	29	56	137	608	149	619	424	1,683
24 Jul					13	63									13	1,696
25 Jul					19	82									19	1,715
26 Jul					34	116									34	1,749
27 Jul					56	172									56	1,805
28 Jul					127	299									127	1,932
29 Jul					22	321									22	1,954
30 Jul					48	369									48	2,002
1 Aug					82	451									82	2,084
2 Aug					182	633									182	2,266

-continued-

Appendix A5.–Page 2 of 7.

Central District - West Side Set Gillnet																						
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20		Total		
		Chinitna Bay		Silv. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East				
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
3 Jun																					0	0
5 Jun																					0	0
7 Jun																					0	0
10 Jun																					0	0
12 Jun																					0	0
14 Jun																					0	0
17 Jun																					0	0
19 Jun																					0	0
20 Jun																					0	0
21 Jun																					0	0
24 Jun					1	1															1	1
27 Jun						1															0	1
1 Jul					5	6										43	43				48	49
4 Jul					20	26										113	156	16	16		149	198
6 Jul					44	70															44	242
8 Jul					38	108			4	4						224	380	19	35		285	527
11 Jul					76	184			6	10						325	705	36	71		443	970
13 Jul					70	254															70	1,040
15 Jul					63	317			5	15	17	17				1,088	1,793	54	125		1,227	2,267

-continued-

Appendix A5.–Page 3 of 7.

Central District - West Side Set Gillnet																					
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20			
		Chinitna Bay		Silv. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East		Total	
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	
18 Jul					136	453			26	41						1,689	3,482	278	403	2,129	4,396
20 Jul					101	554														101	4,497
22 Jul					232	786			73	114	21	38	105	105	2,723	6,205	334	737	3,488		7,985
25 Jul					542	1,328			72	186					1,731	7,936	351	1,088	2,696		10,681
27 Jul					559	1,887														559	11,240
29 Jul					398	2,285			221	407					1,814	9,750	191	1,279	2,624		13,864
1 Aug	45	45			1,423	3,708			145	552					1,992	11,742	795	2,074	4,400		18,264
3 Aug					220	3,928														220	18,484
5 Aug					262	4,190			569	1,121					4,295	16,037	659	2,733	5,785		24,269
8 Aug					42	4,232			221	1,342					2,455	18,492	1,093	3,826	3,811		28,080
12 Aug	116	161				4,232			213	1,555					1,208	19,700	267	4,093	1,804		29,884
15 Aug	160	321													737	20,437	190	4,283	1,087		30,971
19 Aug	795	1,116													52	20,489			847		31,818
21 Aug	234	1,350																	234		32,052
23 Aug	473	1,823																	473		32,525
26 Aug	599	2,422																80	4,363	679	33,204
30 Aug	1,079	3,501																		1,079	34,283
2 Sep	73	3,574																		73	34,356
11 Sep	52	3,626																		52	34,408

-continued-

Northern District Set Gillnet

Date	247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90		Total		
	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	
3 Jun																				0	0
10 Jun																				0	0
17 Jun																				0	0
24 Jun																		1	1	1	1
27 Jun	9	9																1	2	10	11
1 Jul	24	33	17	17									5	5				2	4	48	59
4 Jul	24	57	232	249					1	1			49	54	6	6	21	25	333	392	
8 Jul	28	85	413	662	26	26			5	6	25	25	20	74	1	7	6	31	524	916	
11 Jul	21	106	433	1,095	132	158	12	12	21	27	68	93	57	131	5	12	6	37	755	1,671	
15 Jul	14	120	1,903	2,998	639	797	532	544	64	91	333	426	194	325	44	56	20	57	3,743	5,414	
18 Jul			659	3,657	565	1,362	240	784	171	262	63	489	269	594	59	115	12	69	2,038	7,452	
22 Jul	215	335	771	4,428	1,360	2,722	289	1,073	175	437	33	522	128	722	24	139	55	124	3,050	10,502	
25 Jul	19	354	842	5,270	515	3,237	151	1,224	165	602	194	716	80	802	17	156	57	181	2,040	12,542	

-continued-

Appendix A5.–Page 5 of 7.

Northern District Set Gillnet																					
Date	247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90		Total		
	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	
29 Jul	180	534	1,550	6,820	428	3,665	463	1,687	518	1,120	911	1,627	428	1,230	119	275	89	270	4,686	17,228	
1 Aug	558	1,092	1,641	8,461	571	4,236	732	2,419	711	1,831	818	2,445	488	1,718	119	394	150	420	5,788	23,016	
5 Aug	585	1,677	1,410	9,871	575	4,811	143	2,562	362	2,193	289	2,734	324	2,042	369	763	539	959	4,596	27,612	
8 Aug	442	2,119	742	10,613			160	2,722	325	2,518	785	3,519	283	2,325	62	825	184	1,143	2,983	30,595	
12 Aug	235	2,354	976	11,589			295	3,017	243	2,761	823	4,342	717	3,042	391	1,216	450	1,593	4,130	34,725	
15 Aug	8	2,362	475	12,064			98	3,115	353	3,114	399	4,741	593	3,635	628	1,844	718	2,311	3,272	37,997	
19 Aug			77	12,141					35	3,149	33	4,774	366	4,001	330	2,174	903	3,214	1,744	39,741	
22 Aug	5	2,367	111	12,252					12	3,161			106	4,107	329	2,503	632	3,846	1,195	40,936	
26 Aug	13	2,380	46	12,298	18	4,829					17	4,791	91	4,198	147	2,650	422	4,268	754	41,690	
29 Aug			86	12,384													41	4,309	127	41,817	
2 Sep													133	4,331	93	2,743	234	4,543	460	42,277	
5 Sep															29	2,772	84	4,627	113	42,390	
9 Sep																	23	4,650	23	42,413	

-continued-

Central District Drift Gillnet													
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total	
		Kasilof Terminal		Exp. Ken/Kas Section		District Wide		Kasilof Section		Chinitna Bay		Day	Cum
		Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
20 Jun	64											0	0
24 Jun	87					1	1					1	1
27 Jun	159					72	73					72	73
30 Jun	27											0	73
1 Jul	309					901	974					901	974
4 Jul	380					4,194	5,168					4,194	5,168
6 Jul	126							27	27			27	5,195
8 Jul	433					5,997	11,165					5,997	11,192
11 Jul	426			360	360							360	11,552
13 Jul	406			447	807							447	11,999
15 Jul	452					14,034	25,199					14,034	26,033
17 Jul	439	7	7	1,835	2,642							1,842	27,875
18 Jul	436					12,679	37,878					12,679	40,554
19 Jul	284			1,198	3,840							1,198	41,752
20 Jul	337			1,804	5,644							1,804	43,556
21 Jul	216	1	8	1,644	7,288							1,645	45,201
22 Jul	429	4	12			31,828	69,706					31,832	77,033
23 Jul	210			1,084	8,372							1,084	78,117

-continued-

Central District Drift Gillnet															
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total			
		Kasilof Terminal	Day	Cum	Exp. Ken/Kas Section	Day	Cum	District Wide	Day	Cum	Kasilof Section	Day	Cum	Chinitna Bay	Day
24 Jul	128	18	30	659	9,031									677	78,794
25 Jul	429					37,024	106,730							37,024	115,818
26 Jul	121	8	38	624	9,655									632	116,450
27 Jul	117		38	1,225	10,880									1,225	117,675
28 Jul	70	6	44	236	11,116									242	117,917
29 Jul	303					11,193	117,923							11,193	129,110
30 Jul	43			204	11,320									204	129,314
1 Aug	228	4	48			21,790	139,713							21,794	151,108
2 Aug	1	1	49											1	151,109
5 Aug	89					11,882	151,595							11,882	162,991
8 Aug	52					7,816	159,411							7,816	170,807
12 Aug	37					3,782	163,193							3,782	174,589
15 Aug	32					3,069	166,262							3,069	177,658
19 Aug	8					2,360	168,622			409	409	2,769		180,427	
21 Aug	1									234	643	234		180,661	
22 Aug	7					843	169,465					843		181,504	
23 Aug	7									449	1,092	449		181,953	
26 Aug	9					989	170,454			599	1,691	1,588		183,541	
30 Aug	2									1,079	2,770	1,079		184,620	
2 Sep	2									73	2,843	73		184,693	
11 Sep	1									52	2,895	52		184,745	
12 Sep	1					26	170,480							184,771	

Note: Days without data indicate days when there was no harvest.

Appendix A6.—Commercial pink salmon catch by area and date, Upper Cook Inlet, 2013.

Upper Subdistrict Set Gillnet																
Date	244-21		244-22		244-25		244-31		244-32		244-41		244-42		Total	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
27 Jun	15	15	11	11			3	3							29	29
30 Jun	27	42	17	28			5	8							49	78
1 Jul	25	67	13	41			4	12							42	120
4 Jul	176	243	84	125			28	40							288	408
6 Jul	315	558	545	670			78	118							938	1,346
8 Jul	115	673	361	1,031			39	157	52	52	82	82	66	66	715	2,061
10 Jul	295	968	337	1,368			121	278							753	2,814
11 Jul	412	1,380	480	1,848			120	398	151	203	183	265	183	249	1,529	4,343
15 Jul	765	2,145	895	2,743			94	492	18	221	150	415	287	536	2,209	6,552
17 Jul					106	106									106	6,658
18 Jul	308	2,453	740	3,483	6	112	116	608	52	273	194	609	163	699	1,579	8,237
20 Jul	320	2,773	718	4,201			87	695	64	337	250	859	244	943	1,683	9,920
21 Jul					583	695									583	10,503
22 Jul					882	1,577									882	11,385
23 Jul	599	3,372	852	5,053	118	1,695	278	973	127	464	278	1,137	303	1,246	2,555	13,940
24 Jul					251	1,946									251	14,191
25 Jul					26	1,972									26	14,217
26 Jul					103	2,075									103	14,320
27 Jul					37	2,112									37	14,357
28 Jul					133	2,245									133	14,490
29 Jul					20	2,265									20	14,510
30 Jul					58	2,323									58	14,568
1 Aug					43	2,366									43	14,611
2 Aug					60	2,426									60	14,671

-continued-

Central District - West Side Set Gillnet																						
Date	245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20		Total			
	Day	Cum	Day	Cum																		
3 Jun																				0	0	
5 Jun																					0	0
7 Jun																					0	0
10 Jun																					0	0
12 Jun																					0	0
14 Jun																					0	0
17 Jun																					0	0
19 Jun																					0	0
20 Jun																					0	0
21 Jun																3	3				3	3
24 Jun									2	2							3				2	5
27 Jun																	3				0	5
1 Jul					10	10										6	9	11	11		27	32
4 Jul					28	38			4	6						20	29	6	17		58	90
6 Jul					20	58															20	110
8 Jul					20	78			2	8						23	52				45	155
11 Jul					23	101			18	26						43	95	41	58		125	280
13 Jul					21	122															21	301
15 Jul					33	155			5	31						11	106	5	63		54	355

-continued-

Appendix A6.–Page 3 of 7.

Central District - West Side Set Gillnet																						
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20		Total		
		Chinitna Bay		Silv. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East				
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum		
18 Jul					42	197					8	39				180	286	9	72	239	594	
20 Jul					4	201														4	598	
22 Jul					9	210					7	46			5	5	57	343	22	94	100	698
25 Jul					3	213					9	55					79	422	3	97	94	792
27 Jul					13	226															13	805
29 Jul					15	241					1	56					103	525	9	106	128	933
1 Aug	1	1			14	255					5	61					19	544	3	109	42	975
3 Aug					2	257															2	977
5 Aug											3	64					21	565	2	111	26	1,003
8 Aug																	5	570	1	112	6	1,009
12 Aug																	4	574			4	1,013
15 Aug																					0	1,013
19 Aug	2	3																			2	1,015
21 Aug																					0	1,015
23 Aug	2	5																			2	1,017
26 Aug																					0	1,017
30 Aug																					0	1,017
2 Sep																					0	1,017
11 Sep																					0	1,017

-continued-

Northern District Set Gillnet																						
		247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90		Total		
		Trading Bay		Tyonek		Beluga		Su. Flats		Pt. McKenzie		Fire Island		Pt. Possesion		Birch Hill		#3 Bay				
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum		
3 Jun																				0	0	
10 Jun																				0	0	
17 Jun																				0	0	
24 Jun																			1	1	1	1
27 Jun																			1	2	1	2
1 Jul	22	22												9	9				1	3	32	34
4 Jul														82	91	65	65	28	31	175	209	
8 Jul			1	1	2	2			2	2				47	138			8	39	60	269	
11 Jul								2	2	5	7			102	240			17	56	126	395	
15 Jul			42	43	26	28	84	86	47	54				92	332	20	85	13	69	324	719	
18 Jul			2	45	18	46	36	122	17	71				235	567	79	164	28	97	415	1,134	
22 Jul					52	98	5	127	12	83				35	602	10	174	45	142	159	1,293	
25 Jul	1	23			26	124	8	135	10	93				44	646	7	181	59	201	155	1,448	

-continued-

Northern District Set Gillnet

Date	247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90		Total	
	Day	Cum	Day	Cum																
29 Jul					10	134	6	141	13	106	10	10	49	695	33	214	88	289	209	1,657
1 Aug	5	28	2	47			8	149	32	138			18	713	9	223	33	322	107	1,764
5 Aug	3	31						149	7	145			36	749	29	252	56	378	131	1,895
8 Aug	2	33					8	157	9	154			5	754	3	255	7	385	34	1,929
12 Aug							10	167	2	156			11	765	13	268	7	392	43	1,972
15 Aug							3	170	3	159			3	768			1	393	10	1,982
19 Aug									1	160			2	770					3	1,985
22 Aug																			0	1,985
26 Aug																			0	1,985
29 Aug																			0	1,985
2 Sep																			0	1,985
5 Sep																			0	1,985
9 Sep																			0	1,985

-continued-

Central District Drift Gillnet													
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total	
		Kasilof Terminal		Exp. Ken/Kas Section		District Wide		Kasilof Section		Chinitna Bay		Day	Cum
		Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
20 Jun	64					26	26					26	26
24 Jun	87					32	58					32	58
27 Jun	159					78	136					78	136
30 Jun	27							8	8			8	144
1 Jul	309					153	289					153	297
4 Jul	380					307	596					307	604
6 Jul	126							46	54			46	650
8 Jul	433					1,106	1,702					1,106	1,756
11 Jul	426			1,124	1,124							1,124	2,880
13 Jul	406			1,510	2,634							1,510	4,390
15 Jul	452					3,174	4,876					3,174	7,564
17 Jul	439	25	25	2,756	5,390							2,781	10,345
18 Jul	436					3,162	8,038					3,162	13,507
19 Jul	284			1,144	6,534							1,144	14,651
20 Jul	337			1,354	7,888							1,354	16,005
21 Jul	216	14	39	1,266	9,154							1,280	17,285
22 Jul	429	23	62			3,458	11,496					3,481	20,766
23 Jul	210	5	67	1,315	10,469							1,320	22,086

-continued-

Central District Drift Gillnet														
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total		
		Kasilof Terminal	Day	Cum	Exp. Ken/Kas Section	Day	Cum	District Wide	Day	Cum	Kasilof Section	Day	Cum	Chinitna Bay
24 Jul	128	95	162	877	11,346								972	23,058
25 Jul	429					3,576	15,072						3,576	26,634
26 Jul	121	9	171	389	11,735								398	27,032
27 Jul	117			474	12,209								474	27,506
28 Jul	70	7	178	316	12,525								323	27,829
29 Jul	303					1,957	17,029						1,957	29,786
30 Jul	43	2	180	134	12,659								136	29,922
1 Aug	228	2	182			533	17,562						535	30,457
2 Aug	1												0	30,457
5 Aug	89					54	17,616						54	30,511
8 Aug	52					36	17,652						36	30,547
12 Aug	37					25	17,677						25	30,572
15 Aug	32					18	17,695						18	30,590
19 Aug	8					4	17,699				1	1	5	30,595
21 Aug	1												0	30,595
22 Aug	7					5	17,704						5	30,600
23 Aug	7										2	3	2	30,602
26 Aug	9					3	17,707						3	30,605
30 Aug	2												0	30,605
2 Sep	2												0	30,605
11 Sep	1												0	30,605
12 Sep	1												0	30,605

Note: Days without data indicate days when there was no harvest.

Appendix A7.–Commercial chum salmon catch by area and date, Upper Cook Inlet, 2013.

Upper Subdistrict Set Gillnet																	
Date	244-21		244-22		244-25		244-31		244-32		244-41		244-42		Total		
	Daily	Cum	Daily	Cum													
27 Jun																0	0
30 Jun																0	0
1 Jul																0	0
4 Jul	1	1	1	1			1	1								3	3
6 Jul				1												0	3
8 Jul			1	2					1	1	5	5	2	2		9	12
10 Jul				2												0	12
11 Jul	2	3		2			1	2		1	6	11		2		9	21
15 Jul	2	5	2	4				2		1	20	31	8	10		32	53
17 Jul					1	1										1	54
18 Jul	2	7		4				2		1	17	48	5	15		24	78
20 Jul	4	11	1	5				2		1	4	52	4	19		13	91
21 Jul					1	2										1	92
22 Jul																0	92
23 Jul	2	13		5				2		1	6	58	2	21		10	102
24 Jul																0	102
25 Jul																0	102
26 Jul																0	102
27 Jul																0	102
28 Jul																0	102
29 Jul																0	102
30 Jul																0	102
1 Aug																0	102
2 Aug																0	102

-continued-

Appendix A7.-Page 2 of 7.

Central District - West Side Set Gillnet																					
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20			
		Chinitna Bay		Silv. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East		Total	
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	
3 Jun																				0	0
5 Jun																				0	0
7 Jun																				0	0
10 Jun																				0	0
12 Jun																				0	0
14 Jun																				0	0
17 Jun																				0	0
19 Jun																				0	0
20 Jun																				0	0
21 Jun																				0	0
24 Jun																				0	0
27 Jun																				0	0
1 Jul					5	5														5	5
4 Jul					16	21									2	2	1	1		19	24
6 Jul					22	43														22	46
8 Jul					27	70									17	19		1		44	90
11 Jul					67	137										19		1		67	157
13 Jul					95	232														95	252
15 Jul					220	452									4	23		1		224	476

-continued-

Appendix A7.-Page 3 of 7.

Central District - West Side Set Gillnet																					
		245-10		245-20		245-30		245-40		245-50		245-55		245-60		246-10		246-20		Total	
		Chinitna Bay		Sily. Salmon		Tuxedni Bay		Polly Cr.		L. J. Slough		Big River		W. Forelands		Kalgin - West		Kalgin - East			
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	
18 Jul					433	885			2	2					175	198	3	4	613	1,089	
20 Jul					65	950													65	1,154	
22 Jul					65	1,015			3	5			24	222	5	9			97	1,251	
25 Jul					112	1,127			5	10			117	339		9			234	1,485	
27 Jul					473	1,600													473	1,958	
29 Jul					699	2,299			8	18			131	470	17	26			855	2,813	
1 Aug	106	106			877	3,176			8	26			46	516	14	40			1,051	3,864	
3 Aug					112	3,288													112	3,976	
5 Aug					153	3,441			5	31			49	565	5	45			212	4,188	
8 Aug					19	3,460			2	33			21	586	4	49			46	4,234	
12 Aug	198	304			17	3,477			1	34			6	592		49			222	4,456	
15 Aug	338	642											22	614	4	53			364	4,820	
19 Aug	85	727												614					85	4,905	
21 Aug	17	744																	17	4,922	
23 Aug	76	820																	76	4,998	
26 Aug	8	828															4	57	12	5,010	
30 Aug	8	836																	8	5,018	
2 Sep	4	840																	4	5,022	
11 Sep	1	841																	1	5,023	

-continued-

Northern District Set Gillnet

Northern District Set Gillnet																						
		247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90		Total		
		Trading Bay		Tyonek		Beluga		Su. Flats		Pt. McKenzie		Fire Island		Pt. Possesion		Birch Hill		#3 Bay				
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
3 Jun																					0	0
10 Jun																					0	0
17 Jun																					0	0
24 Jun																					0	0
27 Jun																					0	0
1 Jul	1	1												2	2						3	3
4 Jul														10	12						10	13
8 Jul			21	21	6	6			2	2	35	35	14	26							78	91
11 Jul					7	13	16	16	5	7	73	108	48	74							149	240
15 Jul			43	64	51	64	121	137	85	92	45	153	66	140	4	4					415	655
18 Jul			2	66	30	94	184	321	130	222	17	170	87	227	9	13					459	1,114
22 Jul					167	261	19	340	46	268			4	231	2	15					238	1,352
25 Jul					20	281	34	374	135	403	8	178	4	235			1	1			202	1,554

-continued-

Northern District Set Gillnet																						
		247-10		247-20		247-30		247-41		247-42		247-43		247-70		247-80		247-90		Total		
		Trading Bay		Tyonek		Beluga		Su. Flats		Pt. McKenzie		Fire Island		Pt. Possession		Birch Hill		#3 Bay				
Date	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
29 Jul				66	22	303	13	387	26	429	6	184	26	261	1	16	2	3	96	1,650		
1 Aug	12	13	11	77			37	424	63	492	9	193	56	317	9	25	2	5	199	1,849		
5 Aug	4	17	3	80			12	436	26	518	8	201	13	330	12	37	11	16	89	1,938		
8 Aug							14	450	20	538	6	207	18	348			2	18	60	1,998		
12 Aug			2	82			12	462	27	565	32	239	28	376	6	43			107	2,105		
15 Aug							7	469	11	576	4	243	22	398	3	46	1	19	48	2,153		
19 Aug									5	581			51	449			2	21	58	2,211		
22 Aug																			0	2,211		
26 Aug											2	245	3	452			1	22	6	2,217		
29 Aug																			0	2,217		
2 Sep													13	465			1	23	14	2,231		
5 Sep																	6	29	6	2,237		
9 Sep																			0	2,237		

-continued-

Central District Drift Gillnet													
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total	
		Kasilof Terminal		Exp. Ken/Kas Section		District Wide		Kasilof Section		Chinitna Bay		Day	Cum
		Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
20 Jun	64					69	69					69	69
24 Jun	87					69	138					69	138
27 Jun	159					477	615					477	615
30 Jun	27							1	1			1	616
1 Jul	309					2,792	3,407					2,792	3,408
4 Jul	380					8,716	12,123					8,716	12,124
6 Jul	126							10	11			10	12,134
8 Jul	433					16,613	28,736					16,613	28,747
11 Jul	426			1,033	1,033							1,033	29,780
13 Jul	406			1,376	2,409							1,376	31,156
15 Jul	452					14,823	43,559					14,823	45,979
17 Jul	439	12	12	3,360	5,769							3,372	49,351
18 Jul	436					15,605	59,164					15,605	64,956
19 Jul	284			1,785	7,554							1,785	66,741
20 Jul	337			2,482	10,036							2,482	69,223
21 Jul	216			2,658	12,694							2,658	71,881
22 Jul	429					19,440	78,604					19,440	91,321
23 Jul	210			1,297	13,991							1,297	92,618

-continued-

Central District Drift Gillnet													
Date	Deliveries	244-26		244-56		244-60		244-61		245-10		Total	
		Kasilof Terminal		Exp. Ken/Kas Section		District Wide		Kasilof Section		Chinitna Bay		Day	Cum
		Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum	Day	Cum
24 Jul	128	8	20	1,467	15,458							1,475	94,093
25 Jul	429					18,405	97,009					18,405	112,498
26 Jul	121			632	16,090							632	113,130
27 Jul	117			1,622	17,712							1,622	114,752
28 Jul	70			306	18,018							306	115,058
29 Jul	303					11,348	108,357					11,348	126,406
30 Jul	43			267	18,285							267	126,673
1 Aug	228					3,817	112,174					3,817	130,490
2 Aug	1											0	130,490
5 Aug	89					288	112,462					288	130,778
8 Aug	52					194	112,656					194	130,972
12 Aug	37					76	112,732					76	131,048
15 Aug	32					259	112,991					259	131,307
19 Aug	8					625	113,616			57	57	682	131,989
21 Aug	1									17	74	17	132,006
22 Aug	7					49	113,665					49	132,055
23 Aug	7									74	148	74	132,129
26 Aug	9					22	113,687			8	156	30	132,159
30 Aug	2									8	164	8	132,167
2 Sep	2									4	168	4	132,171
11 Sep	1									1	169	1	132,172
12 Sep	1											0	132,172

Note: Days without data indicate days when there was no harvest.

Appendix A8.–Commercial salmon catch by gear, statistical area and species, Upper Cook Inlet, 2013.

Gear	District	Subdistrict	Stat Area	Permits ^a	Chinook	Sockeye	Coho	Pink	Chum	Total	
Drift	Central	All	All	496	493	1,662,561	184,771	30,605	132,172	2,010,602	
Setnet	Central	Upper	24421	91	330	225,551	140	3,372	13	229,406	
			24422	69	641	131,501	158	5,053	5	137,358	
			24425	98	358	64,150	633	2,426	2	67,569	
			24431	63	304	116,726	52	973	2	118,057	
			24432	43	407	101,306	56	464	1	102,234	
			24441	58	890	251,003	608	1,137	58	253,696	
			24442	28	58	31,296	619	1,246	21	33,240	
			All	350	2,988	921,533	2,266	14,671	102	941,560	
			Kalgin Is.	24610	24	361	37,445	20,489	574	614	59,483
				24620	10	1	5,140	4,363	112	57	9,673
		All		28	362	42,585	24,852	686	671	69,156	
		Chinitna	24510	<4		4	731	2	672	1,409	
			Western	24520	0						0
		24530		19	103	22,501	4,232	257	3,477	30,570	
		24540		0						0	
		24550		<4	1	7,496	1,555	64	34	9,150	
		All		21	104	29,997	5,787	321	3,511	39,720	
		Kustatan	24555	8	124	3,097	38			3,259	
			24560	<4		24	105	5		134	
			All	9	124	3,121	143	5	0	3,393	
All	All	All	408	3,578	997,240	33,779	15,685	4,956	1,055,238		
Northern	General	24710	11	504	969	2380	33	17	3,903		
		24720	8	73	5417	12,384	47	82	18,003		
		24730	7	1	3,257	4,829	134	303	8,524		
		24741	9	165	798	3,115	170	469	4,717		
		24742	10	185	889	3,161	160	581	4,976		
		24743	7	122	1,056	4,791	10	245	6,224		
		All	42	1,050	12,386	30,660	554	1,697	46,347		
		Eastern	24770	16	190	5,521	4,331	770	465	11,277	
	24780		12	52	2369	2,772	268	46	5,507		
	24790		7	35	3,147	4,650	393	29	8,254		
	All	28	277	11,037	11,753	1,431	540	25,038			
	All	All	All	70	1,327	23,423	42,413	1,985	2,237	71,385	
	All	All	All	All	476	4,905	1,020,663	76,192	17,670	7,193	1,126,623
	Seine	All	All	All	-	-	-	-	-	-	
All	All	All	All	972	5,398	2,683,224	260,963	48,275	139,365	3,137,225	

^a Permit totals may be less than the sum of individual statistical areas if some permits were fished in multiple statistical areas.

Appendix A9.–Commercial salmon catch per permit by statistical area, Upper Cook Inlet, 2013.

Gear	District	Subdistrict	Stat Area	Permits ^a	Chinook	Sockeye	Coho	Pink	Chum	Total		
Drift	Central	All	All	496	1	3,352	373	62	266	4,054		
Set	Central	Upper	24421	91	4	2,479	2	37	0	2,521		
			24422	69	9	1,906	2	73	0	1,991		
			24425	98	4	655	6	25	0	689		
			24431	63	5	1,853	1	15	0	1,874		
			24432	43	9	2,356	1	11	0	2,378		
			24441	58	15	4,328	10	20	1	4,374		
			24442	28	2	1,118	22	45	1	1,187		
			All	350	9	2,633	6	42	0	2,690		
		Kalgin Is.	24610	24	15	1,560	854	24	26	2,478		
			24620	10	0	514	436	11	6	967		
			All	28	13	1,521	888	25	24	2,470		
		Chinitna	24510	<4	na	na	na	na	na	na		
		Western	24520	0	na	na	na	na	na	na		
			24530	19	5	1,184	223	14	183	1,609		
			24540	0	na	na	na	na	na	na		
			24550	<4	na	na	na	na	na	na		
			All	21	5	1,428	276	15	167	1,891		
		Kustatan	24555	8	16	387	5	0	0	407		
			24560	<4	na	na	na	na	na	na		
			All	9	14	347	16	1	0	377		
		All	All	All	408	9	2,444	83	38	12	2,586	
Northern	General	24710	11	46	88	216	3	2	355			
		24720	8	9	677	1,548	6	10	2,250			
		24730	7	0	465	690	19	43	1,218			
		24741	9	18	89	346	19	52	524			
		24742	10	19	89	316	16	58	498			
		24743	7	17	151	684	1	35	889			
		All	42	25	295	730	13	40	1,104			
		Eastern	24770	16	12	345	271	48	29	705		
			24780	12	4	197	231	22	4	459		
			24790	7	5	450	664	56	4	1,179		
			All	28	10	394	420	51	19	894		
		All	All	All	70	19	335	606	28	32	1,020	
		All	All	All	All	476	10	2,144	160	37	15	2,367
		Seine	All	All	All	-	-	-	-	-	-	
		All	All	All	All	972	6	2,761	268	50	143	3,228

^a Permit totals may be less than the sum of individual statistical areas if some permits were fished in multiple statistical areas.

Appendix A10.—Commercial fishing emergency orders issued during the 2013 Upper Cook Inlet fishing season.

Emergency Order No.	Effective Date	Action	Reason
1	27 May	Closed commercial salmon fishing in the Northern District of Upper Cook Inlet on Monday, May 27, 2013. Reduced the open fishing time from 12 to 6 hours per day for the four remaining commercial king salmon fishing periods scheduled in the Northern District of Upper Cook Inlet for the 2013 season. This Emergency Order also closed that portion of the General Subdistrict of the Northern District from a point at the wood chip dock located approximately 2 miles south of Tyonek at 61° 02.77' N. lat., 151° 10.04' W. long., to the Susitna River to commercial king salmon fishing for the 2013 directed king salmon fishery. The fishing periods affected by this announcement occurred on June 3, June 10, June 17, and June 24, 2013.	The AK Board of Fisheries found Chuitna River king salmon to be a stock of management concern. As a result, sport fishing in the Chuitna River was closed, which, according to the Northern District King Salmon Management Plan, required a closure of the commercial fishery from the wood chip dock to the Susitna River. Additionally, predicted low abundance of Northern District king salmon stocks required conservative management for the 2013 season.
3	27 Jun	Extended commercial fishing with set gillnets in the Kasilof Section of the Upper Subdistrict from 7:00 p.m. to 9:00 p.m. on Thursday, June 27, 2013. Opened commercial fishing with drift gillnets in the Kasilof Section of the Upper Subdistrict from 7:00 p.m. to 9:00 p.m. on Thursday, June 27, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.
4	30 Jun	Opened commercial fishing with set gillnets in the Kasilof Section of the Upper Subdistrict from 5:00 a.m. until 1:00 p.m. on Sunday, June 30, 2013. Opened drift gillnetting in the Kasilof Section of the Upper Subdistrict from 5:00 a.m. until 1:00 p.m. on Sunday, June 30, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.
5	1 Jul	Opened commercial salmon fishing with set gillnets in that portion of the Western Subdistrict of the Central District south of the latitude of Redoubt Point from 6:00 a.m. until 10:00 p.m. on Mondays, Thursdays, and Saturdays each week until further notice.	To reduce the escapement rate of Crescent River sockeye salmon.

-continued-

Appendix A10.-Page 2 of 6.

Emergency Order No.	Effective Date	Action	Reason
6	6 Jul	Opened commercial fishing with set gillnets in the Kasilof Section of the Upper Subdistrict from 10:00 a.m. until 6:00 p.m. on Saturday, July 6, 2013. Opened drift gillnetting in the Kasilof Section of the Upper Subdistrict from 10:00 a.m. until 6:00 p.m. on Saturday, July 6, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.
7	10 Jul	Opened commercial fishing with set gillnets in the Kasilof Section of the Upper Subdistrict within 1/2 mile of the mean high tide mark on the Kenai Peninsula shoreline from 12:00 p.m. until 8:00 p.m. on Wednesday, July 10, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.
8	11 Jul	Opened commercial fishing with set gillnets in the Kenai, Kasilof, and East Forelands Sections of the Upper Subdistrict from 10:00 a.m. to 10:00 p.m. on Thursday, July 11, 2013. Opened drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 10:00 a.m. until 10:00 p.m. on Thursday, July 11, 2013.	To facilitate an orderly fishery and to comply with the Central District Drift Gillnet Fishery Management Plan.
9	13 Jul	Opened commercial fishing with drift gillnets in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 9:00 a.m. until 9:00 p.m. on Saturday, July 13, 2013.	To reduce the escapement rate of Kenai River and Kasilof River sockeye salmon.
10	15 Jul	Extended set gillnetting in the Kenai, Kasilof, and East Forelands Sections of the Upper Subdistrict from 7:00 p.m. until 11:00 p.m. on Monday, July 15, 2013. Extended drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 7:00 p.m. until 11:00 p.m. on Monday, July 15, 2013.	To reduce the escapement rate of Kenai River and Kasilof River sockeye salmon.
11	17 Jul	Opened commercial fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 5:00 a.m. on Wednesday, July 17, 2013 until 7:00 a.m. on Thursday, July 18, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.
12	17 Jul	Opened commercial fishing with drift gillnets in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 10:00 a.m. until 10:00 p.m. on Wednesday, July 17, 2013.	To reduce the escapement rate of Kenai River and Kasilof River sockeye salmon.

-continued-

Emergency Order No.	Effective Date	Action	Reason
13	18 Jul	Opened drift gillnetting in Drift Gillnet Area 1 on Thursday, July 18, 2013, from 7:00 a.m. until 7:00 p.m.	To comply with the Central District Drift Gillnet Fishery Management Plan
14	18 Jul	Extended set gillnetting in the Kenai, Kasilof, and East Forelands Sections of the Upper Subdistrict from 7:00 p.m. until 9:00 p.m. on Thursday, July 18, 2013. Opened drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 7:00 p.m. until 9:00 p.m. on Thursday, July 18, 2013 and from 9:00 a.m. until 9:00 p.m. on Friday, July 19, 2013.	To reduce the escapement rate of Kenai River and Kasilof River sockeye salmon.
15	20 Jul	Opened set gillnetting in the Kenai, Kasilof, and East Forelands Sections of the Upper Subdistrict from 11:00 a.m. until 7:00 p.m. on Saturday, July 20, 2013. Opened drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 11:00 a.m. until 11:00 p.m. on Saturday, July 20, 2013.	To reduce the escapement rate of Kenai River and Kasilof River sockeye salmon.
16	20 Jul	Extended set gillnetting in the Kenai, Kasilof, and East Forelands Sections of the Upper Subdistrict from 7:00 p.m. until 11:00 p.m. on Saturday, July 20, 2013.	To reduce the escapement rate of Kenai River and Kasilof River sockeye salmon.
17	21 Jul	Opened commercial fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 5:00 a.m. on Sunday, July 21, 2013 until 7:00 a.m. on Monday, July 22, 2013. Opened drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 5:00 a.m. until 11:00 p.m. on Sunday, July 21, 2013	To reduce the escapement rate of Kenai River and Kasilof River sockeye salmon.
18	22 Jul	Reduced legal gear to one set gillnet per permit, measuring no more than 35 fathoms in length, in the Northern District of Upper Cook Inlet during all regular Monday and Thursday fishing periods from 7:00 a.m. until 7:00 p.m. on July 22, July 25, and July 29, 2013.	To comply with the Northern District Salmon Management Plan and the Susitna River Sockeye Salmon Action Plan.
19	22 Jul	Opened drift gillnetting in Drift Gillnet Area 1 on Monday, July 22, 2013, from 7:00 a.m. until 7:00 p.m.	To harvest sockeye salmon bound for the Kenai and Kasilof Rivers while conserving Northern District salmon

-continued-

Emergency Order No.	Effective Date	Action	Reason
20	22 Jul	Moved regular scheduled fishing period for set gillnetting in the Kenai, Kasilof, and East Forelands Sections of the Upper Subdistrict to 8:00 a.m. until 8:00 p.m. on Tuesday, July 23, 2013. Extended fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 7:00 a.m. on Monday, July 22, 2013 until 7:00 a.m. on Tuesday, July 23, 2013	To maximize the harvest of Kenai and Kasilof River sockeye salmon.
21	23 Jul	Opened drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 8:00 a.m. until 11:00 p.m. on Tuesday, July 23, 2013 and from 5:00 a.m. until 11:00 p.m. on Wednesday, July 24, 2013.	To reduce the escapement rate of Kenai River and Kasilof River sockeye salmon.
22	24 Jul	Opened commercial fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 6:00 a.m. until 8:00 p.m. on Wednesday, July 24.	To reduce the escapement rate of Kasilof River sockeye salmon.
23	25 Jul	Closed set gillnetting in the Kenai, Kasilof, and East Forelands Sections of the Upper Subdistrict from 7:00 a.m. until 7:00 p.m. on Thursday, July 25, 2013.	To conserve Kenai River late-run king salmon.
24	25 Jul	Opened drift gillnetting in Drift Gillnet Area 1 and the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict on Thursday, July 25, 2013, from 7:00 a.m. until 7:00 p.m.	To conserve Northern District coho salmon.
25	25 Jul	Opened commercial fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 3:00 p.m. until 10:00 p.m. on Thursday, July 25, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.

-continued-

Emergency Order No.	Effective Date	Action	Reason
26	25 Jul	Extended commercial fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 10:00 p.m. on Thursday, July 25, 2013 until 10:00 p.m. on Friday, July 26, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.
27	26 Jul	Opened drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 8:00 a.m. until 8:00 p.m. on Friday, July 26, 2013 and from 9:00 a.m. until 9:00 p.m. on Saturday, July 27, 2013.	To reduce the escapement rate of Kenai and Kasilof River sockeye salmon.
28	26 Jul	Closed set gillnetting in the Kenai, Kasilof, and East Forelands Sections of the Upper Subdistrict until further notice. Closed drift gillnetting within one mile of the Kenai Peninsula shoreline north of the Kenai River and within one and one-half miles of the Kenai Peninsula shoreline south of the Kenai River until further notice.	To comply with the Kenai River late-run king salmon management plan.
29	27 Jul	Opened commercial fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 4:00 p.m. on Saturday, July 27, 2013 until 10:00 p.m. on Sunday, July 28, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.
30	28 Jul	Opened drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 9:00 a.m. until 9:00 p.m. on Sunday, July 28, 2013.	To reduce the escapement rate of Kenai and Kasilof River sockeye salmon.
31	29 Jul	Opened drift gillnetting in Drift Gillnet Area 1 and the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 7:00 a.m. until 7:00 p.m. on Monday, July 29, 2013.	To comply with the Central District Drift Gillnet Fishery Management Plan.
32	29 Jul	Opened commercial fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 5:00 p.m. on Monday, July 29, 2013 until 11:00 p.m. on Tuesday, July 30, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.

-continued-

Emergency Order No.	Effective Date	Action	Reason
33	30 Jul	Opened drift gillnetting in the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict from 6:00 a.m. until 6:00 p.m. on Tuesday, July 30, 2013.	To reduce the escapement rate of Kenai and Kasilof River sockeye salmon.
34	1 Aug	Modified Emergency Order 2S-18-13, issued on July 21, 2013, which reduced legal gear to one set gillnet per permit, measuring no more than 35 fathoms in length, in the Northern District of Upper Cook Inlet beginning at 7:00 a.m. on Monday, July 22, 2013. Legal gear for that portion of the General Subdistrict of the Northern District, south of the Susitna River, was limited to no more than two set gillnets per permit, with the aggregate length not to exceed 70 fathoms, from 7:00 a.m. until 7:00 p.m. on Thursday, August 1, 2013 and from 7:00 a.m. until 7:00 p.m. on Monday, August 5, 2013. Legal gear in the remainder of the Northern District was limited to no more than one set gillnet per permit, measuring no more than 35 fathoms in length, for both the August 1 and August 5 regular fishing periods.	To comply with the Northern District Salmon Management Plan and the Susitna River Sockeye Salmon Action Plan.
35	1 Aug	Opened commercial fishing with set and drift gillnets in the Kasilof River Special Harvest Area from 11:00 a.m. on Thursday, August 1, 2013 until 4:00 p.m. on Friday, August 2, 2013.	To reduce the escapement rate of Kasilof River sockeye salmon.
36	3 Aug	Rescinded Emergency Order 2S-05-13 and closed set gillnetting in that portion of the Western Subdistrict south of the latitude of Redoubt Point at 10:00 p.m. on Saturday, August 3. This area reopened to set gillnetting during regular fishing periods only, on Mondays and Thursdays from 7:00 a.m. to 7:00 p.m., beginning on Monday, August 5, 2013.	To reduce harvest of Crescent Lake sockeye salmon.
37	19 Aug	Opened set and drift gillnetting in the Chinitna Bay Subdistrict of the Central District on Mondays, Wednesdays, and Fridays from 7:00 a.m. until 7:00 p.m., beginning on Monday, August 19, 2013, for the remainder of the 2013 season.	To harvest surplus Clearwater Creek and Chinitna River chum salmon.

Appendix A11.–Commercial salmon fishing periods, Upper Cook Inlet, 2013.

Date	Day	Time	Set Gill Net	Drift Gill Net
3 Jun	Mon	0700–1900	Kustatan - Big River - Kalgin Island	
		0700–1300	Northern District	
5 Jun	Wed	0700–1900	Kustatan - Big River - Kalgin Island	
7 Jun	Fri	0700–1900	Kustatan - Big River - Kalgin Island	
10 Jun	Mon	0700–1900	Kustatan - Big River - Kalgin Island	
		0700–1300	Northern District	
12 Jun	Wed	0700–1900	Kustatan - Big River - Kalgin Island	
14 Jun	Fri	0700–1900	Kustatan - Big River - Kalgin Island	
17 Jun	Mon	0700–1900	Kustatan - Big River - Kalgin Isl - W Subdist.	
		0700–1300	Northern District	
19 Jun	Wed	0700–1900	Kustatan - Big River - Kalgin Island	
20 Jun	Thu	0700–1900	Kustatan - Big River - Kalgin Isl - W Subdist.	All
21 Jun	Fri	0700–1900	Kustatan - Big River - Kalgin Island	
22 Jun	Fri	0700–1900	Kustatan - Big River - Kalgin Island	
24 Jun	Mon	0700–1900	Kustatan - Big River - Kalgin Isl - W Subdist.	All
		0700–1300	Northern District	
27 Jun	Thu	0700–1900	All except Kenai & E. Forelands Sections	
		1900–2100	Kasilof Section	All
30 Jun	Sun	0500–1300	Kasilof Section	Kasilof Section
1 Jul	Mon	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	All except Kenai & E. Forelands Sections	All
4 Jul	Thu	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	All except Kenai & E. Forelands Sections	All
6 Jul	Sat	0600–2400	Western Subdistrict south of Redoubt Pt.	
		1000–1800	Kasilof Section	Kasilof Section
8 Jul	Mon	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	All	All
10 Jul	Wed	1200–2000	Kasilof Section 1/2 mile	
11 Jul	Thu	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	Kustatan - Kalgin Isl - W Subdist. - N District	
		1000–2200	Kenai, Kasilof, and E. Forelands	Expanded Kenai/Kasilof Sections
13 Jul	Sat	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0900–2100		Expanded Kenai/Kasilof Sections
15 Jul	Mon	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	All	Drift Area 1 & Narrow Corridor
		1900–2300	Kenai, Kasilof, and E. Forelands	Expanded Kenai/Kasilof Sections
17 Jul	Wed	0500–2400	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
		1000–2200		Expanded Kenai/Kasilof Sections

-continued-

Date	Day	Time	Set Gill Net	Drift Gill Net
18 Jul	Thu	0000–0700	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
		0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	All	Drift Area 1
		1900–2100	Kenai, Kasilof, and E. Forelands	Expanded Kenai/Kasilof Sections
19 Jul	Fri	0900–2100		Expanded Kenai/Kasilof Sections
20 Jul	Sat	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–2300	Kenai, Kasilof, and E. Forelands	Expanded Kenai/Kasilof Sections
21 Jul	Sun	0500–2400	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
		0500–2300		Expanded Kenai/Kasilof Sections
22 Jul	Mon	0000–2400	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
		0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	Kustatan - Kalgin Isl - W Subdist. - N District	Drift Area 1
23 Jul	Tue	0000–0700	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
		0800–2000	Kenai, Kasilof, & East Forelands Sections	
		0800–2300		Expanded Kenai/Kasilof Sections
24 Jul	Wed	0500–2300		Expanded Kenai/Kasilof Sections
		0600–2000	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
25 Jul	Thu	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	All except Upper Subdistrict	Drift Area 1 & Expanded Corridor
		1500–2400	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
26 Jul	Fri	0000–2200	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
		0800–2000		Expanded Kenai/Kasilof Sections
27 Jul	Sat	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0900–2100		Expanded Kenai/Kasilof Sections
		1600–2400	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
28 Jul	Sun	0000–2200	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
		0900–2100		Expanded Kenai/Kasilof Sections
29 Jul	Mon	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	All except Upper Subdistrict	Drift Area 1 & Expanded Corridor
		1700–2400	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
30 Jul	Tue	0000–2300	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
		0600–1800		Expanded Kenai/Kasilof Sections
1 Aug	Thu	0600–2200	Western Subdistrict south of Redoubt Pt.	
		0700–1900	All except Upper Subdistrict	All
		1100–2400	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
2 Aug	Fri	0000–1600	Kasilof River Special Harvest Area	Kasilof River Special Harvest Area
3 Aug	Sat	0600–2200	Western Subdistrict south of Redoubt Pt.	
5 Aug	Mon	0700–1900	All except Upper Subdistrict	All
8 Aug	Thu	0700–1900	All except Upper Subdistrict	All

-continued-

Appendix A11.–Page 3 of 3.

Date	Day	Time	Set Gill Net	Drift Gill Net
12 Aug	Mon	0700–1900	All except Upper Subdistrict	All
15 Aug	Thu	0700–1900	All except Upper Subdistrict	All
19 Aug	Mon	0700–1900	All except Upper Subdistrict	Drift Areas 3, 4 & Chinitna
21 Aug	Wed	0700–1900	Chinitna Bay	Chinitna Bay
22 Aug	Thu	0700–1900	All except Upper Subdistrict & Chinitna	Drift Areas 3 & 4
23 Aug	Fri	0700–1900	Chinitna Bay	Chinitna Bay
26 Aug	Mon	0700–1900	All except Upper Subdistrict	Drift Areas 3, 4 & Chinitna
28 Aug	Wed	0700–1900	Chinitna Bay	Chinitna Bay
29 Aug	Thu	0700–1900	All except Upper Subdistrict & Chinitna	Drift Areas 3 & 4
30 Aug	Fri	0700–1900	Chinitna Bay	Chinitna Bay
2 Sep	Mon	0700–1900	All except Upper Subdistrict	Drift Areas 3, 4 & Chinitna
4 Sep	Wed	0700–1900	Chinitna Bay	Chinitna Bay
5 Sep	Thu	0700–1900	All except Upper Subdistrict & Chinitna	Drift Areas 3 & 4
6 Sep	Fri	0700–1900	Chinitna Bay	Chinitna Bay
9 Sep	Mon	0700–1900	All except Upper Subdistrict	Drift Areas 3, 4 & Chinitna
11 Sep	Wed	0700–1900	Chinitna Bay	Chinitna Bay
12 Sep	Thu	0700–1900	All except Upper Subdistrict & Chinitna	Drift Areas 3 & 4

Appendix A12.–Susitna River sockeye salmon studies, 2006–2013.

Yentna River Passage	2006	2007	2008	2009	2010	2011	2012	2013
Bendix	92,051	79,901	90,146	28,428				
DIDSON-adjusted	166,697	125,146	131,772	43,972–153,910	53,399–144,949	62,231–140,445	30,462–89,957	76,227–212,125
Weir Data	2006	2007	2008	2009	2010	2011	2012	2013
Chelatna	18,433	41,290	73,469	17,865	37,784	70,353	36,577	70,555
Judd	40,633	58,134	54,304	43,153	18,361	39,997	18,303	14,088
Larson	57,411	47,736	35,040	41,929	20,324	12,413	16,708	21,821
Weir Totals	116,477	147,160	162,813	102,947	76,469	122,763	71,588	106,464
Susitna Population Estimates	2006	2007	2008	2009	2010	2011	2012 ^a	2013 ^b
Mark Recapture	418,197	327,732	304,449	219,041	190,460	314,447	141,804	ND
MR : Weirs ratio	3.6	2.2	1.9	2.1	2.5	2.6	2.0	ND
MR : Bendix ratio	4.5	4.1	3.4	9.7	ND	ND	ND	ND

^a Mark–recapture estimates from 2012 are preliminary values.

^b Data not available at the time this report was published.

Appendix A13.–Age composition (in percent) of sockeye salmon escapements, Upper Cook Inlet, 2013.

Stream	Age Group											Total		
	0.2	0.3	1.1	1.2	2.1	1.3	2.2	1.4	2.3	2.4	3.1		3.2	3.3
Kenai River			0.2	12.0	0.4	54.8	7.2	0.6	24.2	0.6				100.0
Kasilof River	0.2		2.0	34.5	1.2	26.7	31.8		3.6					100.0
Yentna River	2.8	2.8	5.4	22.7	4.5	52.5	4.7	0.3	4.3					100.0
Fish Creek ^a			5.1	75.9	0.3	8.2	8.8		1.7					100.0
Hidden Creek ^a			0.3	57.1		25.1	13.2	0.3	4.0					100.0

^a Preliminary values

Appendix A14.–Upper Cook Inlet salmon average weights (in pounds) by area, 2013.

Fishery	Chinook	Sockeye	Coho	Pink	Chum
Upper Cook Inlet Total	13.9	6.3	6.1	3.2	7.4
A. Northern District Total	11.6	5.6	5.7	3.1	7.2
1. Northern District West	11.5	5.7	5.5	2.9	7.4
a. Trading Bay 247-10	11.6	6.0	6.0	3.8	6.5
b. Tyonek 247-20	11.5	5.7	5.2	3.0	6.5
c. Beluga 247-30	21.0	6.0	5.8	3.3	5.9
d. Susitna Flat 247-41	10.7	5.4	5.8	2.1	7.5
e. Pt. Mackenzie 247-42	11.4	5.3	5.7	3.2	7.7
f. Fire Island 247-43	11.8	5.3	5.5	4.0	8.2
2. Northern District East	12.3	5.5	6.2	3.2	6.7
a. Pt. Possession 247-70	13.1	5.4	5.8	3.2	6.8
b. Birch Hill 247-80	9.8	5.5	6.5	3.1	6.2
c. Number 3 Bay 247-90	11.5	5.7	6.3	3.1	6.1
B. Central District Total	14.7	6.3	6.2	3.2	7.4
1. East Side Set Total	14.9	5.9	5.7	2.9	7.1
a. Salamatof/East Foreland	12.9	5.6	5.2	2.9	7.4
1. Salamatof 244-41	15.8	6.8	5.9	3.2	7.3
2. East Forelands 244-42	11.0	6.3	5.7	3.2	6.8
b. Kalifonsky Beach	16.1	5.5	5.7	2.8	5.0
1. South K. Beach 244-31	13.5	5.0	5.4	2.8	4.0
2. North K. Beach 244-32	15.1	6.6	6.1	3.1	6.0
c. Kasilof Terminal 244-25	19.4	4.5	5.7	2.7	5.5
d. Cohoe/Ninilchik	12.9	5.6	5.2	2.9	7.4
1. Cohoe 244-22	11.5	5.5	5.1	2.8	7.4
2. Ninilchik 244-21	15.6	5.6	5.3	3.1	7.5

-continued-

Appendix A14.–Page 2 of 2.

Fishery	Chinook	Sockeye	Coho	Pink	Chum
2. West Side Set Total	17.8	5.6	5.9	3.0	7.2
a. Little Jack Slough 245-50	18.0	5.0	6.1	2.7	6.4
b. Polly Creek 245-40					
c. Tuxedni Bay 245-30	17.8	5.8	5.8	3.0	7.2
3. Kustatan Total	19.7	5.0	5.9	3.0	
a. Big River 245-55	19.7	5.0	5.5		
b. West Foreland 245-60		4.4	6.0	3.0	
4. Kalgin Island Total	17.2	5.8	5.9	3.5	6.9
a. West Side 246-10	17.2	5.8	5.9	3.3	6.9
b. East Side 246-20	18.0	5.8	6.0	4.6	7.3
5. Chinitna Bay Total	7.0	5.4	6.9	2.8	7.0
a. Set 245-10		6.5	6.0	2.5	7.0
b. Drift 245-10	7.0	5.1	7.1	3.0	7.2
5. Central District Set Total	15.4	5.9	5.9	2.9	7.1
6. Central District Drift Total	9.8	6.5	6.3	3.3	7.4
a. District Wide 244-60	9.3	6.5	6.3	3.3	7.5
b. Kasilof Section 244-61	9.7	6.5	5.7	3.6	7.8
c. Expanded Corridor 244-56	9.8	6.5	6.1	3.3	7.3
d. Kasilof Terminal 244-26	20.2	4.5	5.5	2.9	7.3

Note: Average weights determined from total pounds of fish divided by numbers of fish from commercial harvest tickets.

Appendix A15.—Age composition of Chinook salmon harvested in the Upper Subdistrict set gillnet fishery, Upper Cook Inlet, Alaska, 1987–2013.

Year	Sample Size	Percent Composition by Age Class (%)														Total
		0.2	1.1	0.3	1.2	2.1	0.4	1.3	2.2	1.4	2.3	1.5	2.4	2.5	1.6	
1987	1,212	0.08	2.06	0.08	14.69			33.01	0.17	48.50	0.25	1.07	0.08			100
1988	870		3.22		10.81		0.23	14.25	0.35	68.50	0.12	1.83	0.69			100
1989	854		0.94		15.11			21.08	0.23	53.28		9.37				100
1990	437	0.22	1.14	0.22	29.48	0.92	0.46	28.99	0.46	32.66	0.43	3.43	1.59			100
1991	446	0.22	0.67		24.90	0.22	0.45	32.06		38.54	0.67	2.02	0.22			100
1992	688		2.46		14.97			27.62	0.58	49.56	0.88	3.78	0.15			100
1993	992		3.33		14.01			20.76	0.10	56.46	0.80	4.04	0.50			100
1994	1,502		3.53		12.28	0.08		14.67	0.25	61.28	0.45	5.81	1.59		0.05	100
1995	1,508		2.73		22.35	0.09		32.88	0.76	34.95	0.11	5.90	0.19	0.05		100
1996	2,186		3.25		15.83	0.06		34.87	0.15	42.34	1.55	1.49	0.46			100
1997	1,691		6.38		13.51	0.27		31.08	0.27	45.64	0.72	0.73	1.40			100
1998	911	0.46	11.75	0.22	23.18	0.34	0.10	21.06	1.57	38.38	0.54	1.87	0.56			100
1999	1,818	0.05	2.32		26.30	0.16		24.52		43.46	0.40	2.78				100
2000	991		9.15	0.08	12.19	0.88		38.65	0.33	37.61	0.27	0.77	0.08			100
2001	989		11.68		40.04			14.53		32.52		1.23				100
2002	1,224		10.60	0.04	29.28			36.68		22.57		0.71	0.12			100
2003	678		3.83		51.77			23.60	0.30	18.73		1.77				100
2004	1,409		3.54		19.83	0.07		48.22		27.64	0.04	0.67				100
2005	482	0.21	2.90		26.97			20.13	0.42	47.50		1.66	0.21			100
2006	560		12.86		35.35			21.96	0.18	27.14		2.50				100
2007	789		4.82		42.71			22.44	0.13	28.51		1.27	0.13			100
2008	380		10.27		19.73			27.64		40.78		1.59				100
2009	487		13.76		51.34			12.31		21.98		0.61				100
2010	743		18.27		24.62			35.95	0.11	20.06	0.16	0.82				100
2011	1,187		4.56		33.70			25.18		35.27	0.09	1.20				100
2012	167		9.59		17.98			36.64		35.79						100
2013	668		22.35		43.52			15.51		18.61						100
Mean		0.05	6.74	0.02	25.42	0.11	0.05	26.53	0.24	38.08	0.28	2.18	0.30	0.00	0.00	100

Appendix A16.–Major buyers and processors of Upper Cook Inlet fishery products, 2013.

Buyer/Processor	Code	Plant Site	Contact	Address
Alaska Salmon Purchasers	F4665	Kenai	Mark Powell	46655 Kenai Spur Hwy. Kenai, AK 99611
The Auction Block	F8162	Homer	Heather Binster	4501 Ice Dock Rd. Homer, AK 99603
BeachM Fishery	F7424	Kenai	Liz Chase	2101 Bowpicker Ln Kenai, AK 99611
Coal Point Seafood Co.	F8772	Homer	Nancy Hilstrand	PO Box 674 Homer, AK 99603
Copper R. Seafoods/Anchorage	F6426	Kasilof	Shelly Lamb	1118 E. 5th Ave. Anchorage, AK 99501
Echo Lake Meats	F4732	Soldotna	James Clark	P.O. Box 346 Soldotna, AK 99669
Favco	F0398	Anchorage	Bill Buck	P.O. Box 190968 Anchorage, AK 99519
Fish Factory	F4449	Homer	Mike McCune	800 Fish Dock Rd. Homer, AK 99603
Fishhawk Fisheries	F1540	Kenai	Steve Fick	P.O. Box 715 Astoria Or. 97103
Great Pacific Seafoods	F9207	Kenai	Danny DeMatteis	PO Box 81165 Seattle Wa. 98108
Icicle Seafoods	F0135	Seward	Kelly Glidden	842 Fish Dock Rd. Homer, AK 99603
Inlet Fisheries Inc.	F4682	Kenai	Perry Hendricks	P.O. Box 114 Kenai Ak. 99611
Inlet Fish Producers	F2806	Kenai	Robert Utrup	P.O. Box 114 Kenai, AK 99611
Kenai Red Fish Co.	F9848	Kenai	Clint Benson	1723 NE Thompson St. Portland, OR 97212
Pacific Star Seafoods	F1834	Kenai	Dan Foley	P.O. Box 190 Kenai, AK 99611
Peninsula Processing	F6618	Soldotna	Ariel Vail	720 K. Beach Rd. Soldotna, AK 99669
Snug Harbor Seafoods	F3894	Kenai	Paul Dale	P.O. Box 701 Kenai, AK 99611
Tanner Fresh Fish	F9070	Ninilchik	Rory Tanner	PO Box 39752 Ninilchik, AK 99639
V- Blue OX 57544	F7452	Homer	Matthew Oxford	PO Box 15201 Fritz Creek, AK 99603

Appendix A17.—Number of salmon harvested by gear, area, and species in personal use fisheries, Upper Cook Inlet, 2013.

Fishery	Harvest					Total
	Chinook	Sockeye	Coho	Pink	Chum	
Kasilof Gillnet	46	14,439	129	3	5	14,622
Kasilof Dip Net	18	85,528	1,666	683	339	88,234
Kenai Dip Net	11	347,222	3,169	3,625	701	354,728
Fish Creek Dip Net	-	-	-	-	-	-
Beluga Dip Net	0	30	55	2	1	88
No Site Reported	9	7,126	155	113	8	7,411
Total	84	454,345	5,174	4,426	1,054	465,083

Note: Preliminary estimates.

Appendix A18.-Personal use sockeye salmon harvest by day, 2013.

Date	Kasilof Gillnet		Kasilof Dip Net		Kenai Dip Net		Fish Creek Dip Net	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
15 Jun	2,436	2,436						
16 Jun	2,133	4,569						
17 Jun	2,027	6,596						
18 Jun	2,458	9,054						
19 Jun	2,530	11,584						
20 Jun								
21 Jun								
22 Jun								
23 Jun								
24 Jun								
25 Jun			1,780	1,780				
26 Jun			1,095	2,875				
27 Jun			742	3,617				
28 Jun			1,098	4,715				
29 Jun			1,741	6,456				
30 Jun			527	6,983				
1 Jul			201	7,184				
2 Jul			835	8,019				
3 Jul			1,734	9,753				
4 Jul			546	10,299				
5 Jul			732	11,031				
6 Jul			552	11,583				
7 Jul			690	12,273				
8 Jul			567	12,840				
9 Jul			1,313	14,153				

-continued-

Appendix A18.–Page 2 of 2.

Date	Kasilof Gillnet		Kasilof Dip Net		Kenai Dip Net		Fish Creek Dip Net	
	Daily	Cum	Daily	Cum	Daily	Cum	Daily	Cum
10 Jul			1,310	15,463	2,887	2,887		
11 Jul			644	16,107	1,120	4,007		
12 Jul			2,021	18,128	1,966	5,973		
13 Jul			5,606	23,734	5,831	11,804		
14 Jul			6,138	29,872	8,704	20,508		
15 Jul			4,036	33,908	29,204	49,712		
16 Jul			6,104	40,012	39,682	89,394		
17 Jul			3,532	43,544	31,107	120,501		
18 Jul			3,115	46,659	24,071	144,572		
19 Jul			6,706	53,365	33,354	177,926		
20 Jul			4,214	57,579	24,201	202,127		
21 Jul			1,271	58,850	8,787	210,914		
22 Jul			780	59,630	7,343	218,257		
23 Jul			731	60,361	5,267	223,524		
24 Jul			693	61,054	3,896	227,420		
25 Jul			835	61,889	5,436	232,856		
26 Jul			909	62,798	11,864	244,720		
27 Jul			1,393	64,191	11,750	256,470		
28 Jul			394	64,585	7,338	263,808		
29 Jul			298	64,883	4,895	268,703		
30 Jul			259	65,142	4,881	273,584		
31 Jul			447	65,589	3,547	277,131		
1 Aug			116	65,705				
2 Aug			163	65,868				
3 Aug			275	66,143				
4 Aug			223	66,366				
5 Aug			134	66,500				
6 Aug			153	66,653				
7 Aug			73	66,726				

Note: Data presented are for “known” permits during legal harvest dates only.

Appendix A19.–Age, weight, sex, and size distribution of Pacific herring sampled by gillnet in Upper Cook Inlet, 2013.

Sample date = May 8, 2013

Sample Period	Age	No. of Fish						Percent of Total	Weight		Length				
		Male	Imm. Female	Ripe Female	Spawned Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured	
ESSN	3	–	–	–	–	–	0	0	–	–	0	–	–	0	
	4	–	–	2	–	–	2	3	87	2.4	2	195	1.4	2	
	5	5	–	12	–	–	17	29	122	14.7	17	209	6.0	17	
	6	8	–	15	–	–	23	39	129	26.4	23	211	9.6	23	
	7	3	–	7	–	–	10	17	144	24.7	10	222	9.2	10	
	8	1	–	6	–	–	7	12	185	21.8	7	234	6.0	7	
	9	–	–	–	–	–	0	0	–	–	0	–	–	0	
	Sample Total		17	0	42	0	0	59	100	135	18.0	59	214	6.4	59
	Sex Composition		29%	0%	71%	0%	0%								

129

Sample date = May 15, 2013

Sample Period	Age	No. of Fish						Percent of Total	Weight		Length				
		Male	Imm. Female	Ripe Female	Spawned Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured	
ESSN	3	–	–	–	–	–	0	–	–	–	–	–	–	–	
	4	2	–	1	–	–	3	6	57	8.4	3	176	4.6	3	
	5	2	–	11	–	–	13	27	127	16.9	13	214	19.2	13	
	6	3	–	4	1	–	8	16	137	29.6	8	223	11.8	8	
	7	5	–	7	3	–	15	31	157	24.7	15	230	11.5	15	
	8	3	–	5	2	–	10	20	174	22.7	10	233	9.9	10	
	9	–	–	–	–	–	0	0	–	–	0	–	–	0	
	Sample Total		15	0	28	6	0	49	100	143	20.5	49	222	11.4	49
	Sex Composition		31%	0%	57%	12%	0%								

-continued-

Appendix A19.–Page 2 of 4.

Sample date = May 21, 2013 & May 29, 2013

Sample Period	Age	No. of Fish					Total	Percent Total	Weight		Length			
		Imm.	Ripe	Spawned	Mean (g)	SD			Number Weighed	Mean (mm)	SD	Number Measured		
		Male	Female	Female									Female	Unknown
ESSN	3	–	–	–	–	–	0	0	–	–	0	–	–	0
	4	–	–	–	1	–	1	2	151	–	1	220	–	1
	5	3	–	3	2	–	8	12	116	29.7	8	212	14.3	8
	6	8	–	1	5	–	14	22	131	26.5	14	222	14.1	14
	7	12	–	4	7	–	23	35	143	23.7	23	227	12.1	23
	8	11	–	2	5	–	18	28	149	27.0	17	234	11.2	18
	9	1	–	–	–	–	1	2	176	–	1	235	–	1
Sample Total		35	0	10	20	0	65	100	139	26.7	64	226	12.9	65
Sex Composition		54%	0%	15%	31%	0%								

Sample date = May 6–10, 2013

Sample Period	Age	No. of Fish					Total	Percent Total	Weight		Length			
		Imm.	Ripe	Spawned	Mean (g)	SD			Number Weighed	Mean (mm)	SD	Number Measured		
		Male	Female	Female									Female	Unknown
Chinitna	3	–	–	–	–	–	0	0	–	–	0	–	–	0
Bay	4	–	–	–	–	–	0	0	–	–	0	–	–	0
	5	3	–	5	–	–	8	11	147	18.2	8	221	9.2	8
	6	24	–	27	–	–	51	73	156	20.0	51	224	7.3	51
	7	2	–	4	–	–	6	9	179	43.4	6	237	16.0	6
	8	4	–	1	–	–	5	7	222	23.5	4	309	132.7	5
	9	–	–	–	–	–	0	0	–	–	0	–	–	0
Sample Total		33	0	37	0	0	70	100	161	26.3	69	231	41.3	70
Sex Composition		47%	0%	53%	0%	0%								

-continued-

Sample date = May 14–17, 2013

Sample Period	Age	No. of Fish						Percent of Total	Weight		Length			
		Imm. Male	Imm. Female	Ripe Female	Spawnd Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
Chinitna	3	–	–	–	–	–	0	0	–	–	0	–	–	0
Bay	4	–	–	–	–	–	0	0	–	–	0	–	–	0
	5	3	–	1	–	–	4	9	145	11.4	4	220	6.2	4
	6	18	–	10	–	–	28	64	163	17.9	28	230	7.6	28
	7	2	–	3	–	–	5	11	179	21.5	5	235	8.7	5
	8	4	–	2	–	–	6	14	180	20.5	5	243	8.9	6
	9	1	–	–	–	–	1	2	243	–	1	250	–	1
Sample Total		28	0	16	0	0	44	100	161	17.8	43	226	7.9	44
Sex Composition		64%	0%	36%	0%	0%								

Sample date = May 20–24, 2013

Sample Period	Age	No. of Fish						Percent of Total	Weight		Length			
		Imm. Male	Imm. Female	Ripe Female	Spawnd Female	Unknown	Total		Mean (g)	SD	Number Weighed	Mean (mm)	SD	Number Measured
Chinitna	3	–	–	–	–	–	0	0	–	–	0	–	–	0
Bay	4	–	–	–	–	–	0	0	–	–	0	–	–	0
	5	3	–	9	–	–	12	26	142	16.8	12	221	8.6	12
	6	11	–	14	–	–	25	54	150	25.2	25	226	9.5	25
	7	1	–	3	–	–	4	9	171	27.0	4	237	9.6	4
	8	2	–	3	–	–	5	11	186	30.3	5	236	10.3	5
	9	–	–	–	–	–	0	0	–	–	0	–	–	0
Sample Total		17	0	29	0	0	46	100	154	24.8	46	227	9.5	46
Sex Composition		37%	0%	63%	0%	0%								

-continued-

Appendix A19.–Page 4 of 4.

Sample date = May 27–31, 2013

Sample Period	Age	No. of Fish						Percent of Total	Weight		Length			
		Imm. Male	Ripe Female	Spawnd Female	Unknown	Total	Mean (g)		SD	Number Weighed	Mean (mm)	SD	Number Measured	
Chinitna	3	–	–	–	–	–	0	0	–	–	0	–	–	0
Bay	4	2	–	–	–	–	2	6	140	45.6	2	230	19.8	2
	5	–	–	2	–	–	2	6	125	6.7	2	216	4.2	2
	6	9	–	16	–	–	25	71	150	21.8	25	227	9.3	25
	7	–	–	2	–	–	2	6	182	38.0	2	239	9.2	2
	8	3	–	1	–	–	4	11	194	10.9	4	244	9.5	4
	9	–	–	–	–	–	0	0	–	–	0	–	–	0
Sample Total		14	0	21	0	0	35	100	155	24.6	35	229	10.4	35
Sex Composition		40%	0%	60%	0%	0%								

Appendix A20.–Age, sex, and size distribution of eulachon (smelt) from Upper Cook Inlet commercial dip net fishery, 2006–2013.

2006					2007				
Age	Sex	Length (mm)	No. Sampled	%	Age	Sex	Length (mm)	No. Sampled	%
3	Male	185	1	1%	3	Male	179	10	9%
	Female	–	–	–		Female	174	5	5%
4	Male	194	46	54%	4	Male	188	65	60%
	Female	186	22	26%		Female	186	23	21%
5	Male	200	14	16%	5	Male	201	4	4%
	Female	203	2	2%		Female	192	1	1%
Avg	Male	196	61	72%	Avg	Male	188	79	73%
	Female	187	24	28%		Female	184	29	27%
Avg - All		193			Avg - All		187		

2008					2009				
Age	Sex	Length (mm)	No. Sampled	%	Age	Sex	Length (mm)	No. Sampled	%
3	Male	194	3	3%	3	Male	195	12	7%
	Female	185	10	10%		Female	191	18	10%
4	Male	201	37	37%	4	Male	203	74	41%
	Female	193	36	36%		Female	194	58	32%
5	Male	208	12	12%	5	Male	203	13	7%
	Female	206	3	3%		Female	203	5	3%
Avg	Male	202	52	51%	Avg	Male	202	99	55%
	Female	192	49	49%		Female	194	81	45%
Avg - All		197			Avg - All		198		

-continued-

Appendix A20.–Page 2 of 2.

2010				
Age	Sex	Length (mm)	No. Sampled	%
3	Male	189.4	14	7%
	Female	193.6	10	5%
4	Male	197.2	61	31%
	Female	204.1	105	53%
5	Male	204.0	3	2%
	Female	203.2	6	3%
Avg	Male	196	78	39%
	Female	203	121	61%
Avg - All		200		

2011				
Age	Sex	Length (mm)	No. Sampled	%
3	Male	192	25	13%
	Female	185	47	24%
4	Male	205	48	24%
	Female	203	41	21%
5	Male	210	28	14%
	Female	208	11	6%
Avg	Male	203	101	51%
	Female	195	99	50%
Avg - All		199		

2012				
Age	Sex	Length (mm)	No. Sampled	%
3	Male	191	20	11%
	Female	198	19	10%
4	Male	204	50	27%
	Female	207	88	47%
5	Male	208	2	1%
	Female	215	7	4%
Avg	Male	201	72	39%
	Female	206	114	61%
Avg - All		204		

2013				
Age	Sex	Length (mm)	No. Sampled	%
3	Male	212	7	4%
	Female	216	7	4%
4	Male	219	78	50%
	Female	212	37	24%
5	Male	224	22	14%
	Female	217	5	3%
Avg	Male	220	107	69%
	Female	213	49	31%
Avg - All		218		

Appendix A21.--Seldovia District tide tables, May through August, 2013.

MAY											
HIGH TIDES						LOW TIDES					
Date	Day	A.M.		P.M.		Date	Day	A.M.		P.M.	
		Time	Feet	Time	Feet			Time	Feet	Time	Feet
1	Wed	7:07A	17.2	8:28P	15.9	1	Wed	1:05A	3.4	1:44P	-0.3
2	Thu	8:18A	15.6	9:40P	15.6	2	Thu	2:14A	4.3	2:53P	1.1
3	Fri	9:41A	14.6	10:50P	15.9	3	Fri	3:34A	4.4	4:07P	2
4	Sat	11:06A	14.5	11:50P	16.6	4	Sat	4:57A	3.6	5:18P	2.3
5	Sun	-	-	12:18P	15	5	Sun	6:05A	2.2	6:18P	2.3
6	Mon	0:40A	17.4	1:15P	15.8	6	Mon	6:59A	0.7	7:07P	2.1
7	Tue	1:22A	18	2:03P	16.5	7	Tue	7:44A	-0.6	7:49P	2
8	Wed	2:00A	18.6	2:44P	17.1	8	Wed	8:23A	-1.6	8:27P	1.9
9	Thu	2:34A	18.9	3:23P	17.4	9	Thu	8:59A	-2.2	9:03P	2.0
10	Fri	3:07A	19	3:59P	17.5	10	Fri	9:33A	-2.5	9:38P	2.2
11	Sat	3:40A	18.8	4:35P	17.3	11	Sat	10:07A	-2.3	10:14P	2.6
12	Sun	4:13A	18.4	5:11P	16.8	12	Sun	10:41A	-1.8	10:50P	3.2
13	Mon	4:47A	17.7	5:48P	16.1	13	Mon	11:17A	-1.1	11:27P	4
14	Tue	5:22A	16.8	6:28P	15.3	14	Tue	11:54A	-0.1	-	-
15	Wed	6:01A	15.7	7:13P	14.6	15	Wed	0:08A	4.8	12:34P	1
16	Thu	6:47A	14.5	8:03P	14	16	Thu	0:55A	5.6	1:19P	2.1
17	Fri	7:43A	13.4	8:59P	13.9	17	Fri	1:51A	6.1	2:13P	3.1
18	Sat	8:54A	12.7	9:58P	14.2	18	Sat	3:00A	6.0	3:14P	3.7
19	Sun	10:13A	12.7	10:53P	15	19	Sun	4:13A	5.2	4:20P	3.9
20	Mon	11:26A	13.5	11:43P	16.2	20	Mon	5:19A	3.7	5:21P	3.6
21	Tue	-	-	12:28P	14.7	21	Tue	6:15A	1.8	6:17P	3
22	Wed	0:30A	17.6	1:23P	16.1	22	Wed	7:04A	-0.4	7:08P	2.3
23	Thu	1:15A	19.1	2:14P	17.5	23	Thu	7:50A	-2.4	7:56P	1.5
24	Fri	2:00A	20.3	3:02P	18.6	24	Fri	8:35A	-4.1	8:43P	0.9
25	Sat	2:46A	21.2	3:49P	19.3	25	Sat	9:20A	-5.2	9:30P	0.5
26	Sun	3:32A	21.6	4:37P	19.6	26	Sun	10:05A	-5.7	10:17P	0.5
27	Mon	4:19A	21.4	5:25P	19.4	27	Mon	10:51A	-5.4	11:06P	0.9
28	Tue	5:09A	20.6	6:15P	18.8	28	Tue	11:39A	-4.4	11:58P	1.5
29	Wed	6:01A	19.2	7:07P	18.1	29	Wed	-	-	12:29P	-2.8
30	Thu	6:58A	17.4	8:04P	17.3	30	Thu	0:55A	2.3	1:23P	-1
31	Fri	8:02A	15.6	9:04P	16.7	31	Fri	1:59A	3	2:22P	0.8

-continued-

JUNE											
HIGH TIDES						LOW TIDES					
Date	Day	A.M.		P.M.		Date	Day	A.M.		P.M.	
		Time	Feet	Time	Feet			Time	Feet	Time	Feet
1	Sat	0:00	14.3	10:07P	16.4	1	Sat	3:11A	3.2	3:27P	2.3
2	Sun	10:38A	13.7	11:06P	16.5	2	Sun	4:28A	2.9	4:34P	3.4
3	Mon	11:54A	13.8	---	---	3	Mon	5:38A	2.1	5:38P	4.0
4	Tue	0:00	16.7	12:56P	14.3	4	Tue	6:36A	1.0	6:33P	4.1
5	Wed	0:47A	17.1	1:48P	15.0	5	Wed	7:24A	0.0	7:21P	4.0
6	Thu	1:28A	17.4	2:31P	15.7	6	Thu	8:04A	-0.8	8:03P	3.8
7	Fri	2:06A	17.8	3:09P	16.3	7	Fri	8:41A	-1.4	8:41P	3.5
8	Sat	2:42A	18.1	3:45P	16.7	8	Sat	9:15A	-1.9	9:18P	3.3
9	Sun	3:17A	18.2	4:20P	16.9	9	Sun	9:49A	-2.1	9:55P	3.2
10	Mon	3:53A	18.1	4:55P	16.9	10	Mon	10:23A	-2.0	10:32P	3.2
11	Tue	4:28A	17.8	5:30P	16.7	11	Tue	10:57A	-1.6	11:09P	3.5
12	Wed	5:05A	17.2	6:06P	16.3	12	Wed	11:32A	-1.0	11:49P	3.9
13	Thu	5:43A	16.3	6:43P	15.9	13	Thu	---	---	12:08P	-0.1
14	Fri	6:25A	15.3	7:23P	15.5	14	Fri	0:31A	4.3	12:47P	1.0
15	Sat	7:14A	14.2	8:07P	15.3	15	Sat	1:20A	4.6	1:31P	2.1
16	Sun	8:15A	13.3	8:57P	15.3	16	Sun	2:17A	4.6	2:22P	3.1
17	Mon	9:28A	12.8	9:53P	15.8	17	Mon	3:22A	4.2	3:23P	3.9
18	Tue	10:46A	13.0	10:51P	16.5	18	Tue	4:32A	3.2	4:30P	4.3
19	Wed	11:59A	13.9	11:48P	17.6	19	Wed	5:37A	1.6	5:36P	4.2
20	Thu	---	---	1:02P	15.3	20	Thu	6:36A	-0.3	6:37P	3.6
21	Fri	0:43A	18.9	1:58P	16.8	21	Fri	7:29A	-2.3	7:33P	2.6
22	Sat	1:37A	20.1	2:49P	18.1	22	Sat	8:18A	-4.0	8:26P	1.6
23	Sun	2:29A	21.1	3:37P	19.2	23	Sun	9:06A	-5.2	9:15P	0.7
24	Mon	3:19A	21.6	4:24P	19.9	24	Mon	9:52A	-5.8	10:04P	0.1
25	Tue	4:09A	21.6	5:10P	20.1	25	Tue	10:37A	-5.6	10:53P	0.0
26	Wed	4:59A	20.9	5:56P	19.9	26	Wed	11:22A	-4.7	11:44P	0.3
27	Thu	5:49A	19.5	6:42P	19.2	27	Thu	---	---	12:09P	-3.1
28	Fri	6:42A	17.8	7:30P	18.3	28	Fri	0:37A	0.9	12:56P	-1.2
29	Sat	7:39A	15.9	8:22P	17.4	29	Sat	1:34A	1.7	1:47P	1.0
30	Sun	8:45A	14.2	9:17P	16.5	30	Sun	2:38A	2.5	2:43P	3.0

-continued-

JULY											
HIGH TIDES						LOW TIDES					
Date	Day	A.M.		P.M.		Date	Day	A.M.		P.M.	
		Time	Feet	Time	Feet			Time	Feet	Time	Feet
1	Mon	10:02A	13.1	10:17P	15.9	1	Mon	3:49A	2.8	3:46P	4.6
2	Tue	11:24A	12.8	11:17P	15.8	2	Tue	5:04A	2.7	4:54P	5.5
3	Wed	---	---	12:36P	13.2	3	Wed	6:11A	2.0	6:00P	5.8
4	Thu	0:12A	15.9	1:33P	14.0	4	Thu	7:04A	1.2	6:56P	5.6
5	Fri	1:01A	16.4	2:17P	14.8	5	Fri	7:47A	0.3	7:43P	5.0
6	Sat	1:44A	16.9	2:55P	15.7	6	Sat	8:24A	-0.5	8:23P	4.3
7	Sun	2:23A	17.5	3:29P	16.4	7	Sun	8:58A	-1.2	9:01P	3.6
8	Mon	3:00A	18.0	4:01P	17.0	8	Mon	9:31A	-1.8	9:37P	3.0
9	Tue	3:37A	18.3	4:33P	17.4	9	Tue	10:03A	-2.0	10:13P	2.6
10	Wed	4:12A	18.3	5:04P	17.5	10	Wed	10:35A	-2.0	10:49P	2.4
11	Thu	4:48A	17.9	5:36P	17.5	11	Thu	11:07A	-1.5	11:26P	2.5
12	Fri	5:25A	17.2	6:08P	17.3	12	Fri	11:41A	-0.8	---	---
13	Sat	6:05A	16.3	6:42P	17.0	13	Sat	0:05A	2.7	12:16P	0.3
14	Sun	6:49A	15.2	7:21P	16.7	14	Sun	0:48A	2.9	12:56P	1.6
15	Mon	7:43A	14.0	8:07P	16.4	15	Mon	1:39A	3.2	1:42P	3.0
16	Tue	8:52A	13.1	9:03P	16.3	16	Tue	2:39A	3.2	2:39P	4.3
17	Wed	10:14A	12.9	10:08P	16.5	17	Wed	3:51A	2.8	3:50P	5.1
18	Thu	11:37A	13.5	11:18P	17.3	18	Thu	5:06A	1.7	5:06P	5.2
19	Fri	---	---	12:47P	14.9	19	Fri	6:15A	0.1	6:17P	4.4
20	Sat	0:24A	18.4	1:45P	16.5	20	Sat	7:13A	-1.7	7:19P	3.1
21	Sun	1:24A	19.7	2:36P	18.2	21	Sun	8:05A	-3.4	8:13P	1.6
22	Mon	2:18A	20.9	3:22P	19.5	22	Mon	8:52A	-4.7	9:03P	0.2
23	Tue	3:10A	21.6	4:05P	20.5	23	Tue	9:36A	-5.3	9:50P	-0.8
24	Wed	3:58A	21.7	4:47P	20.9	24	Wed	10:19A	-5.1	10:37P	-1.2
25	Thu	4:45A	21.1	5:28P	20.7	25	Thu	11:01A	-4.2	11:23P	-1.0
26	Fri	5:32A	19.9	6:09P	20.0	26	Fri	11:42A	-2.7	---	---
27	Sat	6:20A	18.1	6:51P	18.9	27	Sat	0:11A	-0.3	12:25P	-0.6
28	Sun	7:11A	16.1	7:35P	17.6	28	Sun	1:01A	0.8	1:09P	1.6
29	Mon	8:09A	14.2	8:24P	16.3	29	Mon	1:57A	2.1	1:59P	3.8
30	Tue	9:21A	12.8	9:23P	15.2	30	Tue	3:02A	3.1	2:58P	5.7
31	Wed	10:50A	12.2	10:32P	14.7	31	Wed	4:20A	3.6	4:11P	6.8

-continued-

AUGUST											
HIGH TIDES						LOW TIDES					
Date	Day	A.M.		P.M.		Date	Day	A.M.		P.M.	
		Time	Feet	Time	Feet			Time	Feet	Time	Feet
1	Thu	12:14A	12.6	11:41P	14.8	1	Thu	5:41A	3.3	5:31P	7.0
2	Fri	---	---	1:14P	13.5	2	Fri	6:43A	2.5	6:37P	6.4
3	Sat	0:39A	15.4	1:57P	14.6	3	Sat	7:29A	1.5	7:26P	5.4
4	Sun	1:26A	16.3	2:32P	15.6	4	Sun	8:05A	0.4	8:06P	4.3
5	Mon	2:06A	17.3	3:03P	16.6	5	Mon	8:37A	-0.5	8:42P	3.1
6	Tue	2:44A	18.1	3:33P	17.5	6	Tue	9:08A	-1.3	9:16P	2.1
7	Wed	3:19A	18.7	4:02P	18.2	7	Wed	9:38A	-1.8	9:51P	1.3
8	Thu	3:55A	18.9	4:31P	18.6	8	Thu	10:09A	-1.9	10:25P	0.8
9	Fri	4:30A	18.8	5:01P	18.8	9	Fri	10:40A	-1.6	11:00P	0.6
10	Sat	5:06A	18.3	5:31P	18.7	10	Sat	11:13A	-0.8	11:38P	0.8
11	Sun	5:45A	17.3	6:04P	18.3	11	Sun	11:48A	0.4	---	---
12	Mon	6:28P	16.1	6:41P	17.8	12	Mon	0:19A	1.2	12:26P	1.8
13	Tue	7:20A	14.8	7:26P	17.1	13	Tue	1:06A	1.8	1:12P	3.4
14	Wed	8:28A	13.6	8:25P	16.5	14	Wed	2:05A	2.4	2:10P	4.9
15	Thu	9:54A	13.1	9:40P	16.2	15	Thu	3:19A	2.6	3:25P	5.9
16	Fri	11:24A	13.7	11:01P	16.7	16	Fri	4:42A	2.1	4:50P	5.8
17	Sat	---	---	12:35P	15.2	17	Sat	5:59A	0.8	6:07P	4.7
18	Sun	0:15A	17.9	1:31P	16.9	18	Sun	7:00A	-0.9	7:09P	2.9
19	Mon	1:17A	19.3	2:17P	18.6	19	Mon	7:50A	-2.4	8:02P	1.0
20	Tue	2:11A	20.5	3:00P	20.0	20	Tue	8:35A	-3.5	8:50P	-0.7
21	Wed	3:00A	21.3	3:40P	21.0	21	Wed	9:16A	-4.0	9:34P	-1.9
22	Thu	3:45A	21.5	4:18P	21.4	22	Thu	9:56A	-3.8	10:17P	-2.3
23	Fri	4:29A	21.0	4:55P	21.1	23	Fri	10:35A	-2.9	10:59P	-2.1
24	Sat	5:12A	19.9	5:32P	20.3	24	Sat	11:13A	-1.4	11:42P	-1.2
25	Sun	5:56A	18.3	6:09P	19.1	25	Sun	11:52A	0.5	---	---
26	Mon	6:41A	16.4	6:47P	17.5	26	Mon	0:26A	0.2	12:33P	2.7
27	Tue	7:33P	14.5	7:31P	15.9	27	Tue	1:14A	1.9	1:18P	4.8
28	Wed	8:39A	12.9	8:27P	14.6	28	Wed	2:11A	3.4	2:13P	6.6
29	Thu	10:09A	12.2	9:43P	13.8	29	Thu	3:26A	4.4	3:30P	7.7
30	Fri	11:42A	12.5	11:09P	13.9	30	Fri	4:59A	4.5	5:03P	7.7
31	Sat	---	---	12:45P	13.5	31	Sat	6:12A	3.7	6:17P	6.8

Appendix A22.—Total sockeye salmon harvest from all sources in Upper Cook Inlet, 1996–2013.

Year	Commercial			Sport ^{a,b,c}			Personal Use				Subsistence/Educational		Total		
	Drift	Set	Test Fishery	Kenai River	All Other UCI	Kas. Gillnet	Kas. Dipnet	Ken. Dipnet	Other ^d	All	Subsistence ^e	Education ^e			
1996	2,205,067	1,683,855	2,424	3,891,346	205,959	16,863	222,822	9,506	11,197	102,821	22,021	145,545	259	2,405	4,262,377
1997	2,197,736	1,979,002	2,301	4,179,039	190,629	23,591	214,220	17,997	9,737	114,619	6,587	148,940	593	3,076	4,545,868
1998	599,202	620,040	5,456	1,224,698	189,885	23,477	213,362	15,975	45,161	103,847	11,598	176,581	636	3,567	1,618,844
1999	1,413,995	1,266,515	11,766	2,692,276	233,768	26,078	259,846	12,832	37,176	149,504	9,077	208,589	599	3,037	3,164,347
2000	656,427	666,055	9,450	1,331,932	261,779	32,194	293,973	14,774	23,877	98,262	12,354	149,267	442	2,933	1,778,547
2001	846,257	980,576	3,381	1,830,214	219,478	30,953	250,431	17,201	37,612	150,766	13,109	218,688	686	4,633	2,304,652
2002	1,367,251	1,405,867	37,983	2,811,101	259,733	21,770	281,503	17,980	46,769	180,028	14,846	259,623	623	3,722	3,356,572
2003	1,593,638	1,882,521	13,968	3,490,127	314,408	36,076	350,484	15,706	43,870	223,580	15,675	298,831	544	5,993	4,145,979
2004	2,528,910	2,397,310	10,677	4,936,897	317,233	28,823	346,056	25,417	48,315	262,831	13,527	350,090	484	5,237	5,638,764
2005	2,520,300	2,717,868	12,064	5,250,232	312,835	21,826	334,661	26,609	43,151	295,496	4,520	369,776	238	7,134	5,962,041
2006	784,771	1,407,959	10,698	2,203,428	203,602	24,517	228,119	28,867	56,144	127,630	3,406	216,047	408	5,444	2,653,446
2007	1,823,481	1,493,298	10,649	3,327,428	326,307	28,504	354,811	14,943	43,293	291,270	6,729	356,235	567	5,773	4,044,814
2008	983,303	1,396,832	16,957	2,397,092	254,359	30,155	284,514	23,432	54,051	234,109	6,890	318,482	450	4,761	3,005,299
2009	968,075	1,077,544	13,948	2,059,567	287,806	29,790	317,596	26,646	73,035	339,993	18,006	457,680	253	7,064	2,842,160
2010	1,587,682	1,240,685	6,670	2,835,037	316,870	23,589	340,459	21,924	70,774	389,552	32,052	514,302	865	5,652	3,696,315
2011	3,201,035	2,076,405	5,660	5,283,100	400,451	22,507	422,958	26,780	49,766	537,765	16,068	630,379	700	11,166	6,348,303
2012	2,924,144	209,657	11,839	3,145,640	471,094	20,168	491,262	15,638	73,419	526,992	13,304	629,353	441	4,370	4,271,066
2013	1,662,561	1,020,663	5,283	2,688,507	300,000	32,300	332,300	14,439	85,528	347,222	7,126	454,315	160	8,012	3,483,294

^a Sport harvest in the Kenai River includes late-run stock only; early-run Russian River sockeye salmon harvest is excluded.

^b Sport harvest is estimated from annual harvest surveys.

^c Sport harvest in 2013 is unknown until harvest surveys are finalized; these figures are estimates based on size of 2013 sockeye salmon run.

^d Area of harvest not identified on permits, other than Fish Creek dip net, which was open from 1996 to 2001 and 2009 to 2011 and Beluga dip net (2008–2013).

^e See Appendices B15 and B16 for individual fishery harvests.

Appendix A23.–Daily commercial harvest of razor clams, Upper Cook Inlet, 2013.

Date	Lbs	No. Diggers	Date	Lbs	No. Diggers
5/6/2013	3,013	18	6/20/2013	6,583	18
5/7/2013	3,180	18	6/21/2013	7,671	18
5/8/2013	5,218	17	6/22/2013	7,720	18
5/9/2013	5,326	17	6/23/2013	7,250	18
5/10/2013	5,382	16	6/24/2013	6,532	18
5/11/2013	5,926	16	6/25/2013	7,570	18
5/12/2013	5,117	18	6/26/2013	6,426	18
5/13/2013	5,962	18	6/27/2013	5,891	18
5/14/2013	6,341	18	6/28/2013	5,203	18
5/15/2013	5,475	18	6/29/2013	3,138	18
5/21/2013	5,259	17	7/4/2013	4,318	18
5/22/2013	6,243	18	7/5/2013	4,110	18
5/23/2013	7,050	18	7/6/2013	4,113	18
5/24/2013	7,096	18	7/7/2013	4,149	18
5/25/2013	7,290	17	7/8/2013	4,170	16
5/26/2013	7,651	17	7/9/2013	5,978	18
5/27/2013	7,104	18	7/10/2013	5,220	17
5/28/2013	5,070	16	7/11/2013	4,855	18
5/29/2013	8,057	18	7/12/2013	4,986	18
5/30/2013	6,300	18	7/13/2013	5,179	18
5/31/2013	6,608	18	7/14/2013	5,606	18
6/4/2013	4,230	18	7/18/2013	3,908	18
6/5/2013	6,336	18	7/19/2013	5,917	18
6/6/2013	7,769	18	7/20/2013	7,875	18
6/7/2013	8,389	18	7/21/2013	8,654	18
6/8/2013	7,430	18	7/22/2013	7,793	18
6/9/2013	7,049	18	7/23/2013	8,405	18
6/10/2013	7,085	18	7/25/2013	6,872	18
6/11/2013	6,877	18	7/26/2013	6,560	18
6/12/2013	5,020	18	7/27/2013	5,840	18
6/13/2013	6,330	17			
6/14/2013	7,007	18			
6/19/2013	4,230	18			
Total for Year = 380,912 lbs					

APPENDIX B: HISTORICAL DATA

Appendix B1.—Upper Cook Inlet commercial Chinook salmon harvest by gear type and area, 1966–2013.

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set Gillnet		Kalgin/West Side Set Gillnet		Set Gillnet		
	Number	%	Number	%	Number	%	Number	%	
1966	392	4.6	7,329	85.8	401	4.7	422	4.9	8,544
1967	489	6.2	6,686	85.1	500	6.4	184	2.3	7,859
1968	182	4.0	3,304	72.8	579	12.8	471	10.4	4,536
1969	362	2.9	5,834	47.1	3,286	26.5	2,904	23.4	12,386
1970	356	4.3	5,368	64.4	1,152	13.8	1,460	17.5	8,336
1971	237	1.2	7,055	35.7	2,875	14.5	9,598	48.6	19,765
1972	375	2.3	8,599	53.5	2,199	13.7	4,913	30.5	16,086
1973	244	4.7	4,411	84.9	369	7.1	170	3.3	5,194
1974	422	6.4	5,571	84.5	434	6.6	169	2.6	6,596
1975	250	5.2	3,675	76.8	733	15.3	129	2.7	4,787
1976	690	6.4	8,249	75.9	1,469	13.5	457	4.2	10,865
1977	3,411	23.1	9,730	65.8	1,084	7.3	565	3.8	14,790
1978	2,072	12.0	12,468	72.1	2,093	12.1	666	3.8	17,299
1979	1,089	7.9	8,671	63.1	2,264	16.5	1,714	12.5	13,738
1980	889	6.4	9,643	69.9	2,273	16.5	993	7.2	13,798
1981	2,320	19.0	8,358	68.3	837	6.8	725	5.9	12,240
1982	1,293	6.2	13,658	65.4	3,203	15.3	2,716	13.0	20,870
1983	1,125	5.5	15,042	72.9	3,534	17.1	933	4.5	20,634
1984	1,377	13.7	6,165	61.3	1,516	15.1	1,004	10.0	10,062
1985	2,048	8.5	17,723	73.6	2,427	10.1	1,890	7.8	24,088
1986	1,834	4.7	19,824	50.5	2,108	5.4	15,488	39.5	39,254
1987	4,561	11.6	21,159	53.6	1,029	2.6	12,700	32.2	39,449

-continued-

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set		Kalgin/West Side Set		Set Gillnet		
	Number ^b	%	Number ^b	%	Number ^b	%	Number ^b	%	
1988	2,237	7.7	12,859	44.2	1,148	3.9	12,836	44.1	29,080
1989	0	0.0	10,914	40.8	3,092	11.6	12,731	47.6	26,737
1990	621	3.9	4,139	25.7	1,763	10.9	9,582	59.5	16,105
1991	246	1.8	4,893	36.1	1,544	11.4	6,859	50.6	13,542
1992	615	3.6	10,718	62.4	1,284	7.5	4,554	26.5	17,171
1993	765	4.1	14,079	74.6	720	3.8	3,307	17.5	18,871
1994	464	2.3	15,575	78.0	730	3.7	3,193	16.0	19,962
1995	594	3.3	12,068	67.4	1,101	6.2	4,130	23.1	17,893
1996	389	2.7	11,564	80.8	395	2.8	1,958	13.7	14,306
1997	627	4.7	11,325	85.2	207	1.6	1,133	8.5	13,292
1998	335	4.1	5,087	62.6	155	1.9	2,547	31.4	8,124
1999	575	4.0	9,463	65.8	1,533	10.7	2,812	19.6	14,383
2000	270	3.7	3,684	50.1	1,089	14.8	2,307	31.4	7,350
2001	619	6.7	6,009	64.6	856	9.2	1,811	19.5	9,295
2002	415	3.3	9,478	74.5	926	7.3	1,895	14.9	12,714
2003	1,240	6.7	14,810	80.0	770	4.2	1,683	9.1	18,503
2004	1,104	4.1	21,684	80.5	2,208	8.2	1,926	7.2	26,922
2005	1,958	7.1	21,597	78.1	739	2.7	3,373	12.2	27,667
2006	2,782	15.4	9,956	55.2	1,030	5.7	4,261	23.6	18,029
2007	912	5.2	12,292	69.7	603	3.4	3,818	21.7	17,625
2008	653	4.9	7,573	56.8	1,124	8.4	3,983	29.9	13,333
2009	859	9.8	5,588	63.9	672	7.7	1,631	18.6	8,750
2010	538	5.4	7,059	71.3	553	5.6	1,750	17.7	9,900
2011	593	5.3	7,697	68.4	659	5.9	2,299	20.4	11,248
2012	218	8.6	704	27.9	555	22.0	1,049	41.5	2,526
2013	493	9.1	2,988	55.4	590	10.9	1,327	24.6	5,398
1966-12 Avg ^a	992	6.4	9,748	65.4	1,277	9.3	3,151	18.9	15,169
2003-12 Avg	1,086	7.3	10,896	65.2	891	7.4	2,577	20.2	15,450

Note: Harvest data prior to 2012 reflect minor adjustments to historical catch database.

^a 1989 not used in average because the drift fleet did not fish due to the *Exxon Valdez* oil spill; this had an effect on all other fisheries.

Appendix B2.—Upper Cook Inlet commercial sockeye salmon harvest by gear type and area, 1966–2013.

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set Gillnet		Kalgin/West Side Set Gillnet		Set Gillnet		
	Number	%	Number	%	Number	%	Number	%	
1966	1,103,261	60	485,330	26	132,443	7	131,080	7	1,852,114
1967	890,152	65	305,431	22	66,414	5	118,065	9	1,380,062
1968	561,737	51	317,535	29	85,049	8	140,575	13	1,104,896
1969	371,747	54	210,834	30	71,184	10	38,050	6	691,815
1970	460,690	63	142,701	19	62,723	9	66,458	9	732,572
1971	423,107	66	111,505	18	61,144	10	40,533	6	636,289
1972	506,281	58	204,599	23	83,176	9	85,755	10	879,811
1973	375,695	56	188,816	28	59,973	9	45,614	7	670,098
1974	265,771	53	136,889	28	52,962	11	41,563	8	497,185
1975	368,124	54	177,336	26	73,765	11	65,526	10	684,751
1976	1,055,786	63	476,376	29	62,338	4	69,649	4	1,664,149
1977	1,073,098	52	751,178	37	104,265	5	123,750	6	2,052,291
1978	1,803,479	69	660,797	25	105,767	4	51,378	2	2,621,421
1979	454,707	49	247,359	27	108,422	12	113,918	12	924,406
1980	770,247	49	559,812	36	137,882	9	105,647	7	1,573,588
1981	633,380	44	496,003	34	60,217	4	249,662	17	1,439,262
1982	2,103,429	65	971,423	30	66,952	2	118,060	4	3,259,864
1983	3,222,428	64	1,508,511	30	134,575	3	184,219	4	5,049,733
1984	1,235,337	59	490,273	23	162,139	8	218,965	10	2,106,714
1985	2,032,957	50	1,561,200	38	285,081	7	181,191	4	4,060,429
1986	2,837,857	59	1,658,671	35	153,714	3	141,830	3	4,792,072
1987	5,638,916	60	3,457,724	37	208,036	2	164,572	2	9,469,248

-continued-

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set		Kalgin/West Side Set		Set Gillnet		
	Number ^b	%	Number ^b	%	Number ^b	%	Number ^b	%	
1988	4,139,358	60.5	2,428,385	35.5	146,377	2.1	129,713	1.9	6,843,833
1989	5	0.0	4,543,492	90.7	186,828	3.7	280,801	5.6	5,011,126
1990	2,305,742	64.0	1,117,621	31.0	84,949	2.4	96,398	2.7	3,604,710
1991	1,118,138	51.3	844,603	38.8	99,855	4.6	116,201	5.3	2,178,797
1992	6,069,495	66.6	2,838,076	31.2	131,304	1.4	69,478	0.8	9,108,353
1993	2,558,732	53.8	1,941,798	40.8	108,181	2.3	146,633	3.1	4,755,344
1994	1,901,475	53.3	1,458,162	40.9	85,830	2.4	120,142	3.4	3,565,609
1995	1,773,873	60.1	961,227	32.6	107,898	3.7	109,098	3.7	2,952,096
1996	2,205,067	56.7	1,483,008	38.1	96,719	2.5	104,128	2.7	3,888,922
1997	2,197,961	52.6	1,832,856	43.9	48,723	1.2	97,455	2.3	4,176,995
1998	599,396	49.2	512,306	42.0	47,165	3.9	60,650	5.0	1,219,517
1999	1,413,995	52.8	1,092,946	40.8	114,454	4.3	59,123	2.2	2,680,518
2000	656,427	49.6	529,747	40.1	92,477	7.0	43,831	3.3	1,322,482
2001	846,275	46.3	870,019	47.6	59,709	3.3	50,848	2.8	1,826,851
2002	1,367,251	49.3	1,303,158	47.0	69,609	2.5	33,100	1.2	2,773,118
2003	1,593,638	45.8	1,746,841	50.3	87,193	2.5	48,489	1.4	3,476,161
2004	2,529,642	51.3	2,235,810	45.4	134,356	2.7	27,276	0.6	4,927,084
2005	2,520,327	48.1	2,534,345	48.4	157,612	3.0	26,415	0.5	5,238,699
2006	784,771	35.8	1,301,275	59.3	94,054	4.3	12,630	0.6	2,192,730
2007	1,823,481	55.0	1,353,407	40.8	122,424	3.7	17,467	0.5	3,316,779
2008	983,303	41.3	1,303,236	54.8	67,366	2.8	26,230	1.1	2,380,135
2009	968,075	47.3	905,853	44.3	131,214	6.4	40,652	2.0	2,045,794
2010	1,587,657	56.1	1,085,789	38.4	114,719	4.1	40,177	1.4	2,828,342
2011	3,201,035	60.7	1,877,939	35.6	163,539	3.1	35,482	0.7	5,277,995
2012	2,924,144	93.3	96,639	3.1	90,440	2.9	22,580	0.7	3,133,803
2013	1,662,561	62.0	921,533	34.3	75,707	2.8	23,423	0.9	2,683,224
1966-12 Avg ^a	1,657,771	55.7	1,060,323	34.8	104,226	5.0	87,614	4.5	2,904,970
2003-12 Avg	1,891,607	53.5	1,444,067	42.5	116,292	3.5	29,740	0.9	3,445,684

Note: Harvest data prior to 2012 reflect minor adjustments to historical catch database.

^a 1989 not used in average because the drift fleet did not fish due to the *Exxon Valdez* oil spill; this had an effect on all other fisheries.

Appendix B3.–Upper Cook Inlet commercial coho salmon harvest by gear type and area, 1966–2013.

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set Gillnet		Kalgin/West Side Set Gillnet		Set Gillnet		
	Number	%	Number	%	Number	%	Number	%	
1966	80,901	27.9	68,877	23.8	59,509	20.5	80,550	27.8	289,837
1967	53,071	29.9	40,738	22.9	40,066	22.5	43,854	24.7	177,729
1968	167,383	35.8	80,828	17.3	63,301	13.5	156,648	33.5	468,160
1969	33,053	32.8	18,988	18.9	28,231	28.0	20,412	20.3	100,684
1970	110,070	40.0	30,114	10.9	52,299	19.0	82,722	30.1	275,205
1971	35,491	35.4	16,589	16.5	26,188	26.1	22,094	22.0	100,362
1972	21,577	26.7	24,673	30.5	15,300	18.9	19,346	23.9	80,896
1973	31,784	30.4	23,901	22.9	24,784	23.7	23,951	22.9	104,420
1974	75,640	37.8	36,837	18.4	40,610	20.3	47,038	23.5	200,125
1975	88,579	39.0	46,209	20.3	59,537	26.2	33,051	14.5	227,376
1976	80,712	38.7	47,873	22.9	42,243	20.2	37,835	18.1	208,663
1977	110,184	57.2	23,693	12.3	38,093	19.8	20,623	10.7	192,593
1978	76,259	34.8	34,134	15.6	61,711	28.2	47,089	21.5	219,193
1979	114,496	43.2	29,284	11.0	68,306	25.8	53,078	20.0	265,164
1980	89,510	33.0	40,281	14.8	51,527	19.0	90,098	33.2	271,416
1981	226,366	46.7	36,024	7.4	88,390	18.2	133,625	27.6	484,405
1982	416,274	52.5	108,393	13.7	182,205	23.0	85,352	10.8	792,224
1983	326,965	63.3	37,694	7.3	97,796	18.9	53,867	10.4	516,322
1984	213,423	47.4	37,166	8.3	84,618	18.8	114,786	25.5	449,993
1985	357,388	53.6	70,657	10.6	147,331	22.1	91,837	13.8	667,213
1986	506,818	66.9	76,495	10.1	85,932	11.4	88,108	11.6	757,353
1987	202,506	44.8	74,981	16.6	74,930	16.6	97,062	21.9	449,479

-continued-

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set		Kalgin/West Side Set		Set Gillnet		
	Number ^b	%	Number ^b	%	Number ^b	%	Number ^b	%	
1988	278,828	49.6	54,975	9.9	77,403	13.8	149,742	26.7	560,948
1989	856	0.2	82,333	24.1	81,004	23.9	175,738	51.8	339,931
1990	247,453	49.3	40,351	8.0	73,429	14.6	140,506	28.0	501,643
1991	176,245	41.2	30,436	7.1	87,515	20.6	132,302	31.0	426,487
1992	267,300	57.0	57,078	12.2	53,419	11.4	91,133	19.4	468,930
1993	121,829	39.7	43,098	14.0	35,661	11.6	106,294	34.6	306,882
1994	310,114	52.7	68,449	11.9	61,166	10.5	144,064	24.8	583,793
1995	241,473	54.0	44,751	10.0	71,606	16.0	89,300	20.0	447,130
1996	171,434	53.3	40,724	12.6	31,405	9.8	78,105	24.3	321,668
1997	78,666	51.6	19,668	12.9	16,705	11.0	37,369	24.5	152,408
1998	83,338	51.9	18,677	11.6	24,286	15.1	34,387	21.4	160,688
1999	64,814	51.5	11,923	9.3	17,725	14.1	31,643	25.1	126,105
2000	131,478	55.5	11,078	4.7	22,840	9.6	71,475	30.2	236,871
2001	39,418	34.8	4,246	3.7	23,719	20.9	45,928	40.5	113,311
2002	125,831	51.1	35,153	14.3	35,005	14.2	50,292	20.4	246,281
2003	52,432	51.5	10,171	10.0	15,138	14.9	24,015	23.6	101,756
2004	199,587	64.2	30,154	9.7	36,498	11.7	44,819	14.4	311,058
2005	144,753	64.4	19,543	8.7	29,502	13.1	30,859	13.7	224,657
2006	98,473	55.4	22,167	12.5	36,845	20.7	20,368	11.5	177,853
2007	108,703	61.3	23,610	13.3	23,495	13.2	21,531	12.1	177,339
2008	89,428	52.0	21,823	12.7	18,441	10.7	42,177	24.5	171,869
2009	82,096	53.6	11,435	7.5	22,050	14.4	37,629	24.6	153,210
2010	110,275	53.2	32,683	15.8	26,281	12.7	38,111	18.4	207,350
2011	40,858	42.9	15,560	16.3	16,760	17.6	22,113	23.2	95,291
2012	74,678	69.9	6,537	6.1	12,354	11.6	13,206	12.4	106,775
2013	184,771	70.8	2,266	0.9	31,513	12.1	42,413	16.3	260,963
1966-12 Avg ^a	146,912	47.4	36,494	13.2	50,047	17.3	63,922	22.1	297,372
2003-12 Avg	100,128	56.8	19,368	11.3	23,736	14.1	29,483	17.8	172,716

Note: Harvest data prior to 2011 reflect minor adjustments to historical catch database.

^a 1989 not used in average because the drift fleet did not fish due to the *Exxon Valdez* oil spill; this had an effect on all other fisheries.

Appendix B4.—Upper Cook Inlet commercial pink salmon harvest by gear type and area, 1966–2013.

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set Gillnet		Kalgin/West Side Set Gillnet		Set Gillnet		
	Number	%	Number	%	Number	%	Number	%	
1966	593,654	29.6	969,624	48.3	70,507	3.5	371,960	18.5	2,005,745
1967	7,475	23.2	13,038	40.5	3,256	10.1	8,460	26.2	32,229
1968	880,512	38.7	785,887	34.5	75,755	3.3	534,839	23.5	2,276,993
1969	8,233	25.3	10,968	33.7	5,711	17.6	7,587	23.3	32,499
1970	334,737	41.1	281,067	34.5	24,763	3.0	174,193	21.4	814,760
1971	6,433	18.1	18,097	50.8	2,637	7.4	8,423	23.7	35,590
1972	115,117	18.3	403,706	64.2	18,913	3.0	90,830	14.5	628,566
1973	91,901	28.2	80,596	24.7	16,437	5.0	137,250	42.1	326,184
1974	140,432	29.0	291,408	60.2	9,014	1.9	42,876	8.9	483,730
1975	113,868	33.9	112,423	33.4	19,086	5.7	90,953	27.0	336,330
1976	599,594	47.7	479,024	38.1	30,030	2.4	148,080	11.8	1,256,728
1977	286,308	51.7	125,817	22.7	25,212	4.6	116,518	21.0	553,855
1978	934,442	55.3	372,601	22.1	54,785	3.2	326,614	19.3	1,688,442
1979	19,554	26.8	19,983	27.4	7,061	9.7	26,382	36.1	72,980
1980	964,526	54.0	299,444	16.8	47,963	2.7	474,488	26.6	1,786,421
1981	53,888	42.4	15,654	12.3	4,276	3.4	53,325	41.9	127,143
1982	270,380	34.2	432,715	54.7	14,242	1.8	73,307	9.3	790,644
1983	26,629	37.9	18,309	26.0	3,785	5.4	21,604	30.7	70,327
1984	273,565	44.3	220,895	35.8	16,708	2.7	106,284	17.2	617,452
1985	34,228	39.0	17,715	20.2	5,653	6.4	30,232	34.4	87,828
1986	615,522	47.3	530,955	40.8	15,460	1.2	139,002	10.7	1,300,939
1987	38,714	35.4	47,243	43.2	5,229	4.8	18,203	16.6	109,389

-continued-

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set		Kalgin/West Side Set		Set Gillnet		
	Number ^b	%	Number ^b	%	Number ^b	%	Number ^b	%	
1988	227,885	48.4	176,043	37.4	12,938	2.7	54,210	11.5	471,076
1989	2	0.0	37,982	56.3	5,580	8.3	23,878	35.4	67,442
1990	323,955	53.7	225,429	37.3	10,302	1.7	43,944	7.3	603,630
1991	5,791	39.5	2,670	18.2	1,049	7.2	5,153	35.1	14,663
1992	423,738	60.9	244,068	35.1	4,250	0.6	23,805	3.4	695,861
1993	46,463	46.0	41,690	41.3	2,313	2.3	10,468	10.4	100,934
1994	256,248	49.0	234,827	44.9	3,178	0.6	29,181	5.6	523,434
1995	64,632	48.4	53,420	40.0	3,813	2.9	11,713	8.8	133,578
1996	122,728	50.5	95,717	39.4	3,792	1.6	20,674	8.5	242,911
1997	29,920	42.2	32,055	45.2	4,701	6.6	4,269	6.0	70,945
1998	200,382	36.3	332,484	60.3	7,231	1.3	11,640	2.1	551,737
1999	3,552	22.0	9,357	57.8	2,674	16.5	593	3.7	16,176
2000	90,508	61.8	23,746	16.2	11,983	8.2	20,245	13.8	146,482
2001	31,219	43.0	32,998	45.5	3,988	5.5	4,355	6.0	72,560
2002	224,229	50.2	214,771	48.1	1,736	0.4	6,224	1.4	446,960
2003	30,376	62.3	16,474	33.8	375	0.8	1,564	3.2	48,789
2004	235,524	65.8	107,838	30.1	12,560	3.5	2,017	0.6	357,939
2005	31,230	64.5	13,619	28.1	2,747	5.7	823	1.7	48,419
2006	212,808	52.7	184,990	45.8	4,684	1.2	1,629	0.4	404,111
2007	67,398	45.8	69,918	47.6	6,177	4.2	3,527	2.4	147,020
2008	103,867	61.3	59,620	35.2	2,357	1.4	3,524	2.1	169,368
2009	139,676	65.2	55,845	26.1	12,246	5.7	6,554	3.1	214,321
2010	164,005	56.0	121,817	41.6	3,106	1.1	3,778	1.3	292,706
2011	15,333	44.9	15,527	45.5	2,424	7.1	839	2.5	34,123
2012	303,216	64.6	159,003	33.9	3,376	0.7	4,003	0.9	469,598
2013	30,605	63.4	14,671	30.4	1,014	2.1	1,985	4.1	48,275
1966-12 Avg ^a	212,269	44.3	175,459	37.4	13,054	4.3	71,220	14.1	472,003
2003-12 Avg	130,343	58.3	80,465	36.8	5,005	2.9	2,826	1.8	218,639

Note: Harvest data prior to 2011 reflect minor adjustments to historical catch database.

^a 1989 not used in average because the drift fleet did not fish due to the *Exxon Valdez* oil spill; this had an effect on all other fisheries.

Appendix B5.—Upper Cook Inlet commercial chum salmon harvest by gear type and area, 1966–2013.

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set Gillnet		Kalgin/West Side Set Gillnet		Set Gillnet		
	Number	%	Number	%	Number	%	Number	%	
1966	424,972	79.8	7,461	1.4	64,725	12.1	35,598	6.7	532,756
1967	233,041	78.5	399	0.1	25,013	8.4	38,384	12.9	296,837
1968	1,002,900	90.5	1,563	0.1	44,986	4.1	58,454	5.3	1,107,903
1969	238,497	89.1	399	0.1	16,954	6.3	11,836	4.4	267,686
1970	678,448	90.4	1,228	0.2	48,591	6.5	22,507	3.0	750,774
1971	274,567	84.8	128	0.0	32,647	10.1	16,603	5.1	323,945
1972	564,726	90.2	1,727	0.3	40,179	6.4	19,782	3.2	626,414
1973	605,738	90.7	1,965	0.3	29,019	4.3	30,851	4.6	667,573
1974	344,496	86.8	506	0.1	15,346	3.9	36,492	9.2	396,840
1975	886,474	93.2	980	0.1	33,347	3.5	30,787	3.2	951,588
1976	405,769	86.5	1,484	0.3	47,882	10.2	14,045	3.0	469,180
1977	1,153,454	93.5	1,413	0.1	54,708	4.4	23,861	1.9	1,233,436
1978	489,119	85.5	4,563	0.8	40,946	7.2	37,151	6.5	571,779
1979	609,239	93.8	867	0.1	30,342	4.7	9,310	1.4	649,758
1980	339,970	87.7	2,147	0.6	28,970	7.5	16,728	4.3	387,815
1981	756,922	91.0	2,386	0.3	26,461	3.2	46,208	5.6	831,977
1982	1,348,510	94.1	4,777	0.3	36,647	2.6	43,006	3.0	1,432,940
1983	1,044,636	93.7	2,822	0.3	38,079	3.4	29,321	2.6	1,114,858
1984	568,097	83.5	3,695	0.5	34,207	5.0	74,727	11.0	680,726
1985	700,848	90.7	4,133	0.5	31,746	4.1	36,122	4.7	772,849
1986	1,012,669	89.2	7,030	0.6	39,078	3.4	76,040	6.7	1,134,817
1987	211,745	60.7	16,733	4.8	53,558	15.3	66,901	19.2	348,937

-continued-

Year	Central District						Northern District		Total
	Drift Gillnet		Upper Subdistrict Set		Kalgin/West Side Set		Set Gillnet		
	Number ^b	%	Number ^b	%	Number ^b	%	Number ^b	%	
1988	582,699	82.0	11,763	1.7	40,425	5.7	75,728	10.7	710,615
1989	72	0.1	12,326	10.1	27,705	22.7	81,948	67.1	122,051
1990	289,521	82.4	4,611	1.3	21,355	6.1	35,710	10.2	351,197
1991	215,476	76.9	2,387	0.9	22,974	8.2	39,393	14.1	280,230
1992	232,955	84.9	2,867	1.0	13,180	4.8	25,301	9.2	274,303
1993	88,826	72.4	2,977	2.4	5,566	4.5	25,401	20.7	122,770
1994	249,748	82.4	2,927	1.0	10,443	3.4	40,059	13.2	303,177
1995	468,224	88.4	3,711	0.7	13,826	2.6	43,667	8.2	529,428
1996	140,987	90.1	1,448	0.9	2,314	1.5	11,771	7.5	156,520
1997	92,163	89.4	1,222	1.2	1,770	1.7	7,881	7.6	103,036
1998	88,080	92.0	688	0.7	2,953	3.1	3,983	4.2	95,704
1999	166,612	95.5	373	0.2	3,567	2.0	4,002	2.3	174,554
2000	118,074	92.9	325	0.3	4,386	3.5	4,284	3.4	127,069
2001	75,599	89.5	248	0.3	6,445	7.6	2,202	2.6	84,494
2002	224,587	94.4	1,790	0.8	6,671	2.8	4,901	2.1	237,949
2003	106,468	88.2	1,933	1.6	7,883	6.5	4,483	3.7	120,767
2004	137,041	93.8	2,019	1.4	4,957	3.4	2,148	1.5	146,165
2005	65,671	94.2	710	1.0	2,632	3.8	727	1.0	69,740
2006	59,965	93.6	347	0.5	3,241	5.1	480	0.7	64,033
2007	74,836	96.9	521	0.7	1,275	1.7	608	0.8	77,240
2008	46,010	91.4	433	0.9	2,243	4.5	1,629	3.2	50,315
2009	77,073	93.1	319	0.4	2,339	2.8	3,080	3.7	82,811
2010	216,977	94.8	3,035	1.3	4,947	2.2	3,904	1.7	228,863
2011	111,082	85.8	1,612	1.2	9,995	7.7	6,718	5.2	129,407
2012	264,513	98.1	49	0.0	2,872	1.1	2,299	0.9	269,733
2013	132,172	94.8	102	0.1	4,854	3.5	2,237	1.6	139,365
1966-12 Avg ^a	393,218	88.4	2,537	0.7	21,993	5.1	24,458	5.8	442,207
2003-12 Avg	115,964	93.0	1,098	0.9	4,238	3.9	2,608	2.2	123,907

Note: Harvest data prior to 2011 reflect minor adjustments to historical catch database.

^a 1989 not used in average because the drift fleet did not fish due to the *Exxon Valdez* oil spill; this had an effect on all other fisheries.

Appendix B6.—Upper Cook Inlet commercial salmon harvest by species, 1966–2013.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1966	8,544	1,852,114	289,837	2,005,745	532,756	4,688,996
1967	7,859	1,380,062	177,729	32,229	296,837	1,894,716
1968	4,536	1,104,896	468,160	2,276,993	1,107,903	4,962,488
1969	12,386	691,815	100,684	32,499	267,686	1,105,070
1970	8,336	732,572	275,205	814,760	750,774	2,581,647
1971	19,765	636,289	100,362	35,590	323,945	1,115,951
1972	16,086	879,811	80,896	628,566	626,414	2,231,773
1973	5,194	670,098	104,420	326,184	667,573	1,773,469
1974	6,596	497,185	200,125	483,730	396,840	1,584,476
1975	4,787	684,751	227,376	336,330	951,588	2,204,832
1976	10,865	1,664,149	208,663	1,256,728	469,180	3,609,585
1977	14,790	2,052,291	192,593	553,855	1,233,436	4,046,965
1978	17,299	2,621,421	219,193	1,688,442	571,779	5,118,134
1979	13,738	924,406	265,164	72,980	649,758	1,926,046
1980	13,798	1,573,588	271,416	1,786,421	387,815	4,033,038
1981	12,240	1,439,262	484,405	127,143	831,977	2,895,027
1982	20,870	3,259,864	792,224	790,644	1,432,940	6,296,542
1983	20,634	5,049,733	516,322	70,327	1,114,858	6,771,874
1984	10,062	2,106,714	449,993	617,452	680,726	3,864,947
1985	24,088	4,060,429	667,213	87,828	772,849	5,612,407
1986	39,254	4,792,072	757,353	1,300,939	1,134,817	8,024,401
1987	39,449	9,469,248	449,479	109,389	348,937	10,416,502
1988	29,080	6,843,833	560,948	471,076	710,615	8,615,552
1989	26,737	5,011,121	339,818	67,441	122,051	5,567,168
1990	16,105	3,604,259	501,643	603,434	351,123	5,076,564

-continued-

Appendix B6.–Page 2 of 2.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1991	13,542	2,178,797	426,498	14,663	280,230	2,913,730
1992	17,171	9,108,353	468,930	695,861	274,303	10,564,618
1993	18,871	4,755,344	306,882	100,934	122,770	5,304,801
1994	19,962	3,565,609	583,793	523,434	303,177	4,995,975
1995	17,893	2,952,096	447,130	133,578	529,428	4,080,125
1996	14,306	3,888,922	321,668	242,911	156,520	4,624,327
1997	13,292	4,176,995	152,408	70,945	103,036	4,516,403
1998	8,124	1,219,517	160,688	551,737	95,704	2,034,940
1999	14,383	2,680,518	126,105	16,176	174,554	3,011,516
2000	7,350	1,322,482	236,871	146,482	127,069	1,840,254
2001	9,295	1,826,851	113,311	72,560	84,494	2,106,492
2002	12,714	2,773,118	246,281	446,960	237,949	3,717,022
2003	18,503	3,476,161	101,756	48,789	120,767	3,765,976
2004	26,922	4,927,084	311,058	357,939	146,165	5,769,168
2005	27,667	5,238,699	224,657	48,419	69,740	5,609,182
2006	18,029	2,192,730	177,853	404,111	64,033	2,856,756
2007	17,625	3,316,779	177,339	147,020	77,240	3,736,003
2008	13,333	2,380,135	171,869	169,368	50,315	2,785,020
2009	8,750	2,045,794	153,210	214,321	82,811	2,504,886
2010	9,900	2,828,342	207,350	292,706	228,863	3,567,161
2011	11,248	5,277,995	95,291	34,123	129,407	5,548,064
2012	2,526	3,133,803	106,775	469,598	269,733	3,982,435
2013	5,398	2,683,224	260,963	48,275	139,365	3,137,225
1966-2012 Avg	15,169	2,909,944	297,382	472,003	442,211	4,136,681
2003-2012 Avg	15,450	3,481,752	172,716	218,639	123,907	4,012,465

Note: Catch statistics prior to 2012 reflect minor adjustments to harvest database.

Appendix B7.—Approximate exvessel value of Upper Cook Inlet commercial salmon harvest by species, 1960–2013.

Year	Chinook	%	Sockeye	%	Coho	%	Pink	%	Chum	%	Total
1960	\$ 140,000	5.0%	\$ 1,334,000	47.9%	\$ 307,000	11.0%	\$ 663,000	23.8%	\$ 343,000	12.3%	\$ 2,787,000
1961	\$ 100,000	4.7%	\$ 1,687,000	79.4%	\$ 118,000	5.6%	\$ 16,000	0.8%	\$ 204,000	9.6%	\$ 2,125,000
1962	\$ 100,000	2.5%	\$ 1,683,000	42.3%	\$ 342,000	8.6%	\$ 1,274,000	32.0%	\$ 582,000	14.6%	\$ 3,981,000
1963	\$ 89,000	4.6%	\$ 1,388,000	72.3%	\$ 193,000	10.1%	\$ 13,000	0.7%	\$ 236,000	12.3%	\$ 1,919,000
1964	\$ 20,000	0.5%	\$ 1,430,000	38.9%	\$ 451,000	12.3%	\$ 1,131,000	30.8%	\$ 646,000	17.6%	\$ 3,678,000
1965	\$ 50,000	2.0%	\$ 2,099,000	82.1%	\$ 109,000	4.3%	\$ 70,000	2.7%	\$ 230,000	9.0%	\$ 2,558,000
1966	\$ 50,000	1.2%	\$ 2,727,000	64.4%	\$ 295,000	7.0%	\$ 823,000	19.4%	\$ 338,000	8.0%	\$ 4,233,000
1967	\$ 49,000	1.9%	\$ 2,135,000	82.6%	\$ 187,000	7.2%	\$ 13,000	0.5%	\$ 202,000	7.8%	\$ 2,586,000
1968	\$ 30,000	0.7%	\$ 1,758,000	40.4%	\$ 515,000	11.8%	\$ 1,209,000	27.8%	\$ 843,000	19.4%	\$ 4,355,000
1969	\$ 70,000	4.0%	\$ 1,296,697	73.9%	\$ 134,003	7.6%	\$ 18,291	1.0%	\$ 236,404	13.5%	\$ 1,755,394
1970	\$ 89,382	3.0%	\$ 1,190,303	39.9%	\$ 468,179	15.7%	\$ 456,354	15.3%	\$ 780,622	26.2%	\$ 2,984,840
1971	\$ 189,504	9.2%	\$ 1,250,771	61.0%	\$ 137,815	6.7%	\$ 18,402	0.9%	\$ 454,483	22.2%	\$ 2,050,974
1972	\$ 224,396	6.3%	\$ 1,863,177	52.6%	\$ 137,315	3.9%	\$ 478,246	13.5%	\$ 840,057	23.7%	\$ 3,543,192
1973	\$ 121,156	2.0%	\$ 3,225,847	52.3%	\$ 318,950	5.2%	\$ 362,658	5.9%	\$ 2,135,025	34.6%	\$ 6,163,635
1974	\$ 209,712	3.2%	\$ 3,072,221	46.8%	\$ 843,048	12.8%	\$ 919,916	14.0%	\$ 1,517,637	23.1%	\$ 6,562,535
1975	\$ 63,990	1.0%	\$ 2,628,036	39.2%	\$ 838,859	12.5%	\$ 419,173	6.3%	\$ 2,752,555	41.1%	\$ 6,702,612
1976	\$ 274,172	2.0%	\$ 8,668,095	63.4%	\$ 819,006	6.0%	\$ 1,874,915	13.7%	\$ 2,041,225	14.9%	\$ 13,677,413
1977	\$ 523,776	2.4%	\$ 13,318,720	61.8%	\$ 932,540	4.3%	\$ 767,273	3.6%	\$ 5,995,611	27.8%	\$ 21,537,920
1978	\$ 661,375	2.0%	\$ 26,167,741	80.3%	\$ 1,380,312	4.2%	\$ 2,154,176	6.6%	\$ 2,217,510	6.8%	\$ 32,581,114
1979	\$ 616,360	4.2%	\$ 8,093,280	55.3%	\$ 1,640,277	11.2%	\$ 82,339	0.6%	\$ 4,199,765	28.7%	\$ 14,632,021
1980	\$ 414,771	3.2%	\$ 7,937,699	61.7%	\$ 891,098	6.9%	\$ 2,114,283	16.4%	\$ 1,513,960	11.8%	\$ 12,871,810
1981	\$ 424,390	2.3%	\$ 11,080,411	60.1%	\$ 2,623,598	14.2%	\$ 170,038	0.9%	\$ 4,150,158	22.5%	\$ 18,448,596
1982	\$ 763,267	2.4%	\$ 25,154,115	80.0%	\$ 4,080,570	13.0%	\$ 553,635	1.8%	\$ 886,129	2.8%	\$ 31,437,716
1983	\$ 590,730	2.0%	\$ 24,016,294	81.8%	\$ 1,601,976	5.5%	\$ 41,338	0.1%	\$ 3,109,814	10.6%	\$ 29,360,152
1984	\$ 310,899	1.8%	\$ 12,450,532	71.8%	\$ 2,039,681	11.8%	\$ 522,795	3.0%	\$ 2,011,253	11.6%	\$ 17,335,160

-continued-

Appendix B7.–Page 2 of 2.

Year	Chinook	%	Sockeye	%	Coho	%	Pink	%	Chum	%	Total
1985	\$ 799,318	2.3%	\$ 27,497,929	80.0%	\$ 3,359,824	9.8%	\$ 57,412	0.2%	\$ 2,644,995	7.7%	\$ 34,359,478
1986	\$ 915,189	2.0%	\$ 38,683,950	83.3%	\$ 2,909,043	6.3%	\$ 724,367	1.6%	\$ 3,197,973	6.9%	\$ 46,430,522
1987	\$ 1,609,777	1.6%	\$ 95,915,522	94.9%	\$ 2,373,254	2.3%	\$ 84,439	0.1%	\$ 1,116,165	1.1%	\$ 101,099,156
1988	\$ 1,120,885	0.9%	\$ 111,537,736	91.3%	\$ 4,738,463	3.9%	\$ 650,931	0.5%	\$ 4,129,002	3.4%	\$ 122,177,017
1989	\$ 803,494	1.4%	\$ 56,194,753	95.0%	\$ 1,674,393	2.8%	\$ 86,012	0.1%	\$ 415,535	0.7%	\$ 59,174,188
1990	\$ 436,822	1.1%	\$ 35,804,485	88.0%	\$ 2,422,214	6.0%	\$ 512,591	1.3%	\$ 1,495,827	3.7%	\$ 40,671,938
1991	\$ 348,522	2.3%	\$ 12,249,200	80.4%	\$ 1,996,049	13.1%	\$ 5,478	0.0%	\$ 643,400	4.2%	\$ 15,242,649
1992	\$ 634,466	0.6%	\$ 96,026,864	96.0%	\$ 2,261,862	2.3%	\$ 404,772	0.4%	\$ 740,294	0.7%	\$ 100,068,258
1993	\$ 617,092	2.1%	\$ 27,969,409	93.1%	\$ 1,081,175	3.6%	\$ 36,935	0.1%	\$ 322,205	1.1%	\$ 30,026,815
1994	\$ 642,291	1.9%	\$ 29,441,442	85.5%	\$ 3,297,865	9.6%	\$ 240,545	0.7%	\$ 831,121	2.4%	\$ 34,453,264
1995	\$ 474,475	2.2%	\$ 19,168,077	87.1%	\$ 1,295,353	5.9%	\$ 53,114	0.2%	\$ 1,023,926	4.7%	\$ 22,014,944
1996	\$ 402,980	1.4%	\$ 28,238,578	95.0%	\$ 800,423	2.7%	\$ 44,386	0.1%	\$ 225,751	0.8%	\$ 29,712,117
1997	\$ 365,316	1.1%	\$ 31,439,536	97.1%	\$ 434,327	1.3%	\$ 12,004	0.0%	\$ 143,244	0.4%	\$ 32,394,427
1998	\$ 181,318	2.1%	\$ 7,686,993	88.5%	\$ 497,050	5.7%	\$ 187,759	2.2%	\$ 132,025	1.5%	\$ 8,685,145
1999	\$ 337,482	1.6%	\$ 20,095,838	95.5%	\$ 329,164	1.6%	\$ 5,995	0.0%	\$ 265,026	1.3%	\$ 21,033,505
2000	\$ 183,368	2.2%	\$ 7,115,614	87.2%	\$ 626,287	7.7%	\$ 47,065	0.6%	\$ 186,385	2.3%	\$ 8,158,719
2001	\$ 169,634	2.2%	\$ 7,136,593	92.3%	\$ 297,328	3.8%	\$ 20,317	0.3%	\$ 111,093	1.4%	\$ 7,734,965
2002	\$ 326,051	2.8%	\$ 10,682,051	91.7%	\$ 329,031	2.8%	\$ 84,922	0.7%	\$ 224,148	1.9%	\$ 11,646,203
2003	\$ 358,940	2.8%	\$ 12,284,753	95.3%	\$ 132,079	1.0%	\$ 8,660	0.1%	\$ 99,850	0.8%	\$ 12,884,282
2004	\$ 662,550	3.2%	\$ 19,407,784	93.8%	\$ 416,196	2.0%	\$ 65,861	0.3%	\$ 129,795	0.6%	\$ 20,682,185
2005	\$ 688,908	2.2%	\$ 30,159,190	95.2%	\$ 708,793	2.2%	\$ 12,783	0.0%	\$ 101,123	0.3%	\$ 31,670,797
2006	\$ 617,133	4.4%	\$ 12,301,215	88.5%	\$ 679,754	4.9%	\$ 174,576	1.3%	\$ 121,343	0.9%	\$ 13,894,021
2007	\$ 629,521	2.7%	\$ 21,905,667	93.6%	\$ 683,110	2.9%	\$ 53,074	0.2%	\$ 141,156	0.6%	\$ 23,412,528
2008	\$ 544,120	3.3%	\$ 15,525,621	93.0%	\$ 482,608	2.9%	\$ 64,529	0.4%	\$ 75,774	0.5%	\$ 16,692,652
2009	\$ 266,548	1.8%	\$ 13,720,261	94.1%	\$ 399,704	2.7%	\$ 71,582	0.5%	\$ 115,899	0.8%	\$ 14,573,994
2010	\$ 349,102	1.0%	\$ 32,112,265	93.1%	\$ 943,909	2.7%	\$ 235,990	0.7%	\$ 837,590	2.4%	\$ 34,478,856
2011	\$ 634,617	1.2%	\$ 51,359,744	96.7%	\$ 406,677	0.8%	\$ 27,511	0.1%	\$ 688,876	1.3%	\$ 53,117,425
2012	\$ 121,652	0.4%	\$ 31,964,791	92.2%	\$ 480,488	1.4%	\$ 624,565	1.8%	\$ 1,458,716	4.2%	\$ 34,650,212
2013	\$ 210,638	0.5%	\$ 37,787,069	93.9%	\$ 1,362,395	3.4%	\$ 53,754	0.1%	\$ 828,113	2.1%	\$ 40,241,970

Appendix B8.—Commercial herring harvest by fishery, Upper Cook Inlet, 1973–2013.

Year	Upper Subdistrict	Harvest (Tons)			Total
		Chinitna Bay	Tuxedni Bay	Kalgin Isl	
1973	13.8	—	—	—	13.8
1974	36.7	—	—	—	36.7
1975	6.2	—	—	—	6.2
1976	5.8	—	—	—	5.8
1977	17.3	—	—	—	17.3
1978	8.3	55.3	—	—	63.6
1979	67.3	96.2	24.8	—	188.3
1980	37.4	20	86.5	—	143.9
1981	86.2	50.5	84.9	—	221.6
1982	60.2	91.8	50.2	—	202.2
1983	165.3	49.2	238.2	—	452.7
1984	117.5	90.6	159	—	367.1
1985	136.3	46.1	215.9	—	398.4
1986	142.6	111.1	191.9	—	445.6
1987	126.5	65.1	152.5	—	344.1
1988	50.7	23.4	14.1	—	88.1
1989	55.2	122.3	34.3	—	211.8
1990	55.4	55.9	16.1	—	127.5
1991	13.4	15.7	1.6	—	30.7
1992	24.7	10.4	—	—	35.2
1993	—	—	—	—	—
1994	—	—	—	—	—
1995	—	—	—	—	—
1996	—	—	—	—	—
1997	—	—	—	—	—
1998	19.5	—	—	—	19.4
1999	10.4	—	—	—	10.4
2000	14.7	—	—	—	16.3
2001	9.9	—	—	—	10.4
2002	16.2	1.9	0	—	18.1
2003	3.7	0	0	—	3.7
2004	6.7	0.1	0	—	6.8
2005	17.1	0.2	0	0	17.3
2006	14.4	0	0	0	14.4
2007	12.6	0	0	0	12.6
2008	13.5	0	0	0	13.5
2009	9.2	0	0	0	9.2
2010	16.4	0.2	0	0	16.6
2011	13.7	2.5	0	0	16.2
2012	16.7	7.0	0	0	23.8
2013	29.6	6.0	0	0	35.6

Note: For years where fisheries were closed, harvest is reported as a dash.

Appendix B9.—Commercial harvest of razor clams in Upper Cook Inlet, 1919–2013.

Year	Pounds	Year	Pounds
1919	76,963	1967	0
1920	11,952	1968	0
1921	72,000	1969	0
1922	510,432	1970	0
1923	470,280	1971	14,755
1924	156,768	1972	31,360
1925	0	1973	34,415
1926	0	1974	0
1927	25,248	1975	10,020
1928	0	1976	0
1929	0	1977	1,762
1930	0	1978	45,931
1931	No Record	1979	144,358
1932	93,840	1980	140,420
1933	No Record	1981	441,949
1934	No Record	1982	460,639
1935	No Record	1983	269,618
1936	No Record	1984	261,742
1937	8,328	1985	319,034
1938	No Record	1986	258,632
1939	No Record	1987	312,349
1940	No Record	1988	399,376
1941	0	1989	222,747
1942	0	1990	323,602
1943	0	1991	201,320
1944	0	1992	296,727
1945	15,000	1993	310,481
1946	11,424	1994	355,165
1947	11,976	1995	248,358
1948	2,160	1996	355,448
1949	9,672	1997	366,532
1950	304,073	1998	371,877
1951	112,320	1999	352,910
1952	0	2000	369,397
1953	0	2001	348,917
1954	0	2002	338,938
1955	0	2003	411,403
1956	0	2004	419,697
1957	0	2005	371,395
1958	0	2006	368,953
1959	0	2007	283,085
1960	372,872	2008	390,999
1961	277,830	2009	361,388
1962	195,650	2010	379,547
1963	0	2011	189,172
1964	0	2012	307,409
1965	0	2013	380,912
1966	0		

Appendix B10.—Enumeration goals and counts of sockeye salmon in selected streams of Upper Cook Inlet, 1978–2013.

Year	Kenai River		Kasilof River		Fish Creek	
	Enumeration Goal ^{a,b}	Enumeration Estimate ^{a,c}	Enumeration Goal ^{a,c}	Enumeration Estimate ^b	Enumeration Goal	Enumeration Estimate ^{c,d}
1978	350,000–500,000	398,900	75,000–150,000	116,600	–	3,555
1979	350,000–500,000	285,020	75,000–150,000	152,179	–	68,739
1980	350,000–500,000	464,038	75,000–150,000	184,260	–	62,828
1981	350,000–500,000	407,639	75,000–150,000	256,625	–	50,479
1982	350,000–500,000	619,831	75,000–150,000	180,239	50,000	28,164
1983	350,000–500,000	630,340	75,000–150,000	210,271	50,000	118,797
1984	350,000–500,000	344,571	75,000–150,000	231,685	50,000	192,352
1985	350,000–500,000	502,820	75,000–150,000	505,049	50,000	68,577
1986	350,000–500,000	501,157	75,000–150,000	275,963	50,000	29,800
1987	400,000–700,000	1,596,871	150,000–250,000	249,250	50,000	91,215
1988	400,000–700,000	1,021,469	150,000–250,000	204,000 ^e	50,000	71,603
1989	400,000–700,000	1,599,959	150,000–250,000	158,206	50,000	67,224
1990	400,000–700,000	659,520	150,000–250,000	144,289	50,000	50,000
1991	400,000–700,000	647,597	150,000–250,000	238,269	50,000	50,500
1992	400,000–700,000	994,798	150,000–250,000	184,178	50,000	71,385
1993	400,000–700,000	813,617	150,000–250,000	149,939	50,000	117,619
1994	400,000–700,000	1,003,446	150,000–250,000	205,117	50,000	95,107
1995	450,000–700,000	630,447	150,000–250,000	204,935	50,000	115,000
1996	550,000–800,000	797,847	150,000–250,000	249,944	50,000	63,160
1997	550,000–825,000	1,064,818	150,000–250,000	266,025	50,000	54,656
1998	550,000–850,000	767,558	150,000–250,000	273,213	50,000	22,853
1999	750,000–950,000	803,379	150,000–250,000	312,587	50,000	26,667
2000	600,000–850,000	624,578	150,000–250,000	256,053	50,000	19,533
2001	600,000–850,000	650,036	150,000–250,000	307,570	50,000	43,469
2002	750,000–950,000	957,924	150,000–250,000	226,682	20,000 – 70,000	90,483
2003	750,000–950,000	1,181,309	150,000–250,000	359,633	20,000 – 70,000	92,298
2004	850,000–1,100,000	1,385,981	150,000–250,000	577,581	20,000 – 70,000	22,157
2005	850,000–1,100,000	1,376,452	150,000–250,000	348,012	20,000 – 70,000	14,215
2006	750,000–950,000	1,499,692	150,000–250,000	368,092	20,000 – 70,000	32,566
2007	750,000–950,000	867,572	150,000–250,000	336,866	20,000 – 70,000	27,948
2008	650,000–850,000	614,946	150,000–250,000	301,469	20,000 – 70,000	19,339
2009	650,000–850,000	745,170	150,000–250,000	297,125	20,000 – 70,000	83,477
2010	750,000–950,000	970,662	150,000–250,000	267,013	20,000 – 70,000	126,829
2011	1,100,000–1,350,000	1,599,217	160,000–390,000	245,721	20,000 – 70,000	66,678
2012	1,100,000–1,350,000	1,581,555	160,000–390,000	374,523	20,000 – 70,000	18,813
2013	1,000,000–1,200,000	1,359,893	160,000–390,000	489,654	20,000 – 70,000	18,912

-continued-

Year	Yentna River		Crescent River		Packers Creek	
	Enumeration Goal ^f	Enumeration Estimate ^c	Enumeration Goal	Enumeration Estimate ^{c,h}	Enumeration Goal	Enumeration Estimate ^{c,i}
1978	100,000	–	–	–	–	–
1979	100,000	–	50,000	86,654	–	–
1980	100,000	–	50,000	90,863	–	16,477
1981	100,000	139,401	50,000	41,213	–	13,024
1982	100,000	113,847	50,000	58,957	–	15,687
1983	100,000	104,414	50,000	92,122	–	18,403
1984	100,000	149,375	50,000	118,345	–	30,684
1985	100,000	107,124	50,000	128,628	–	36,850
1986	100,000–150,000	92,076	50,000	20,385	–	29,604
1987	100,000–150,000	66,054	50,000–100,000	120,219	15,000–25,000	35,401
1988	100,000–150,000	52,330	50,000–100,000	57,716	15,000–25,000	18,607
1989	100,000–150,000	96,269	50,000–100,000	71,064	15,000–25,000	22,304
1990	100,000–150,000	140,290	50,000–100,000	52,238	15,000–25,000	31,868
1991	100,000–150,000	109,632	50,000–100,000	44,578	15,000–25,000	41,275
1992	100,000–150,000	66,054	50,000–100,000	58,229	15,000–25,000	28,361
1993	100,000–150,000	141,694	50,000–100,000	37,556	15,000–25,000	40,869
1994	100,000–150,000	128,032	50,000–100,000	30,355	15,000–25,000	30,788
1995	100,000–150,000	121,479	50,000–100,000	52,311	15,000–25,000	29,473
1996	100,000–150,000	90,781	50,000–100,000	28,729	15,000–25,000	19,095
1997	100,000–150,000	157,822	50,000–100,000	70,768	15,000–25,000	33,846
1998	100,000–150,000	119,623	50,000–100,000	62,257	15,000–25,000	17,732
1999	100,000–150,000	99,029	25,000–50,000	66,519	15,000–25,000	25,648
2000	100,000–150,000	133,094	25,000–50,000	56,599	15,000–25,000	20,151
2001	100,000–150,000	83,532	25,000–50,000	78,081	15,000–25,000	–
2002	90,000–160,000	78,591	25,000–50,000	62,833	15,000–30,000	–
2003	90,000–160,000	180,813	25,000–50,000	122,457	15,000–30,000	–
2004	90,000–160,000	71,281	25,000–50,000	103,201	15,000–30,000	–
2005	75,000–180,000	36,921	30,000–70,000	125,623	–	22,000 ^g
2006	90,000–160,000	92,896	30,000–70,000	92,533	–	–
2007	90,000–160,000	79,901	30,000–70,000	79,406	15,000–30,000	46,637
2008	90,000–160,000	90,146	30,000–70,000	62,030	15,000–30,000	25,247
2009	– ^g	– ^g	30,000–70,000	–	15,000–30,000	16,473 ^j
2010	– ^g	– ^g	30,000–70,000	86,333	15,000–30,000	–
2011	– ^g	– ^g	30,000–70,000	81,952	15,000–30,000	–
2012	– ^h	– ^g	30,000–70,000	58,838	15,000–30,000	–
2013	– ^g	– ^g	30,000–70,000	ND	15,000–30,001	–

^a From 1978 to 2010 enumeration and goals were derived from Bendix sonar; from 2011 to 2013 enumeration and goals were derived from DIDSON.

^b Inriver goal

^c Enumeration estimates prior to 2012 reflect minor adjustments to the escapement database.

^d Weir counts.

^e Combined counts from weirs on Bear and Glacier Flat Creeks and surveys of remaining spawning streams; Bendix sonar count was 151,856.

^f Yentna River escapement goal only.

^g Yentna River SEG replaced with lake goals at Judd, Chelatna, and Larson Lakes.

^h Derived from Bendix sonar.

ⁱ Escapement estimates via remote camera; an unknown number of salmon escaped into the lake after the camera was removed.

^j Counts through 16 July only.

Appendix B11.—Average price paid for commercially-harvested salmon, Upper Cook Inlet, 1970–2013.

Year	Chinook	Sockeye	Coho	Pink	Chum
1970	0.40	0.28	0.25	0.14	0.14
1971	0.37	0.30	0.21	0.15	0.15
1972	0.47	0.34	0.27	0.19	0.20
1973	0.62	0.65	0.50	0.30	0.42
1974	0.88	0.91	0.66	0.46	0.53
1975	0.54	0.63	0.54	0.35	0.41
1976	0.92	0.76	0.61	0.37	0.54
1977	1.26	0.86	0.72	0.38	0.61
1978	1.16	1.32	0.99	0.34	0.51
1979	1.63	1.41	0.98	0.34	0.88
1980	1.15	0.85	0.57	0.34	0.53
1981	1.46	1.20	0.83	0.38	0.65
1982	1.27	1.10	0.72	0.18	0.49
1983	0.97	0.74	0.45	0.18	0.36
1984	1.08	1.00	0.64	0.21	0.39
1985	1.20	1.20	0.70	0.20	0.45
1986	0.90	1.40	0.60	0.15	0.38
1987	1.40	1.50	0.80	0.22	0.45
1988	1.30	2.47	1.20	0.37	0.76
1989	1.25	1.70	0.75	0.40	0.47
1990	1.20	1.55	0.75	0.25	0.60
1991	1.20	1.00	0.77	0.12	0.35
1992	1.50	1.60	0.75	0.15	0.40
1993	1.20	1.00	0.60	0.12	0.45
1994	1.00	1.45	0.80	0.12	0.40
1995	1.00	1.15	0.45	0.12	0.27
1996	1.00	1.15	0.40	0.05	0.19
1997	1.00	1.15	0.45	0.05	0.19
1998	1.00	1.15	0.45	0.09	0.19
1999	1.00	1.30	0.45	0.12	0.19
2000	1.10	0.85	0.40	0.09	0.19
2001	1.00	0.65	0.40	0.08	0.19
2002	1.15	0.60	0.20	0.05	0.12
2003	0.95	0.60	0.20	0.05	0.12
2004	1.00	0.65	0.20	0.05	0.12
2005	1.00	0.95	0.50	0.08	0.20
2006	1.75	1.10	0.60	0.10	0.25
2007	1.75	1.05	0.60	0.10	0.25
2008	1.75	1.10	0.40	0.10	0.20
2009	1.75	1.10	0.40	0.10	0.20
2010	1.75	1.75	0.80	0.25	0.55
2011	2.80	1.50	0.75	0.25	0.80
2012	2.80	1.50	0.75	0.35	0.80
2013	2.80	2.25	0.85	0.35	0.80

Note: Price is expressed as dollars per pound. Data source: 1969–1983: Commercial Fisheries Entry Commission; 1984–2012: random fish ticket averages, which do not include bonuses or postseason adjustments.

Appendix B12.—Average weight (pounds) of commercially-harvested salmon, Upper Cook Inlet, 1970–2013.

Year	Chinook	Sockeye	Coho	Pink	Chum
1970	26.8	5.8	6.8	4.0	7.2
1971	25.9	6.6	6.5	3.4	9.3
1972	29.7	6.2	6.3	4.0	6.7
1973	37.6	7.4	6.1	3.7	7.6
1974	36.1	6.8	6.4	4.1	7.2
1975	24.8	6.1	6.8	3.6	7.1
1976	27.4	6.9	6.4	4.0	8.1
1977	28.1	7.6	6.7	3.7	8.0
1978	33.0	7.6	6.4	3.8	7.6
1979	27.5	6.2	6.3	3.3	7.3
1980	26.1	5.9	5.8	3.5	7.3
1981	23.8	6.4	6.5	3.5	7.7
1982	28.8	7.0	7.1	3.9	8.2
1983	29.5	6.4	6.9	3.3	7.8
1984	28.6	5.9	7.1	4.0	7.6
1985	27.7	5.6	7.2	3.3	7.6
1986	25.9	5.8	6.4	3.7	7.4
1987	29.0	6.7	6.6	3.5	7.1
1988	29.7	6.6	7.1	3.7	7.7
1989	24.0	6.6	6.6	3.2	7.2
1990	22.6	6.4	6.5	3.4	7.1
1991	21.5	5.6	6.1	3.1	6.6
1992	24.6	6.6	6.4	3.9	6.8
1993	27.5	5.9	5.9	3.1	5.8
1994	31.6	5.7	7.1	3.9	6.9
1995	26.6	5.7	6.4	3.3	7.2
1996	28.3	6.3	6.2	3.7	7.6
1997	27.6	6.6	6.3	3.4	7.3
1998	22.8	5.5	6.9	3.8	7.3
1999	23.9	5.8	5.8	3.1	8.0
2000	22.7	6.3	6.6	3.6	7.7
2001	18.3	6.0	6.6	3.5	6.9
2002	22.3	6.4	6.7	3.8	7.9
2003	20.4	5.9	6.5	3.6	6.9
2004	24.6	6.1	6.7	3.7	7.4
2005	24.9	6.1	6.3	3.3	7.3
2006	19.6	5.1	6.4	4.3	7.6
2007	20.4	6.3	6.4	3.6	7.3
2008	23.3	5.9	7.0	3.8	7.5
2009	17.4	6.1	6.5	3.3	7.0
2010	20.7	6.2	6.6	4.3	6.8
2011	20.2	6.5	5.7	3.2	6.7
2012	17.2	6.8	6.0	3.8	8.0
1970-2012 Avg	25.6	6.3	6.5	3.6	7.4
2013	13.9	6.3	6.1	3.2	7.4

Note: Total poundage divided by numbers of fish from fish ticket totals.

Appendix B13.—Registered units of gillnet fishing effort by gear type in Cook Inlet, 1974–2012.

Year	Drift Gillnet			Set Gillnet			Total
	Resident	Non-Resident	Subtotal	Resident	Non-Resident	Subtotal	
1974	436	149	585	698	54	752	1,337
1975	539	245	784	695	63	758	1,542
1976	410	186	596	675	44	719	1,315
1977	387	188	575	690	43	733	1,308
1978	401	190	591	701	46	747	1,338
1979	410	189	599	705	44	749	1,348
1980	407	190	597	699	48	747	1,344
1981	412	186	598	687	60	747	1,345
1982	413	178	591	695	53	748	1,339
1983	415	172	587	684	61	745	1,332
1984	423	165	588	670	74	744	1,332
1985	418	173	591	669	76	745	1,336
1986	412	176	588	665	78	743	1,331
1987	415	171	586	662	81	743	1,329
1988	421	164	585	660	83	743	1,328
1989	415	170	585	645	98	743	1,328
1990	412	173	585	644	99	743	1,328
1991	412	172	584	642	103	745	1,329
1992	404	179	583	636	109	745	1,328
1993	398	185	583	633	112	745	1,328
1994	395	187	582	628	117	745	1,327
1995	393	189	582	622	123	745	1,327
1996	392	190	582	621	124	745	1,327
1997	392	189	581	621	124	745	1,326
1998	393	186	579	621	124	745	1,324
1999	390	185	575	621	124	745	1,320
2000	394	182	576	621	124	745	1,321
2001	395	179	574	625	119	744	1,318
2002	396	176	572	620	123	743	1,315
2003	400	172	572	617	125	742	1,314
2004	402	169	571	616	123	739	1,310
2005	404	167	571	609	128	737	1,308
2006	400	169	570	614	124	738	1,308
2007	400	171	571	609	129	738	1,309
2008	405	166	571	613	125	738	1,309
2009	401	169	570	608	130	738	1,308
2010	407	162	569	604	132	736	1,305
2011	409	160	569	609	127	736	1,305
2012	410	159	569	620	116	736	1,305

Source: 1974–2012 Commercial Fisheries Entry Commission. <http://www.cfec.state.ak.us/pstatus/14052012.htm>

Appendix B14.–Forecast and projected commercial harvests of salmon by species, Upper Cook Inlet, 1985–2013.

Year	Sockeye			Coho			Pink			Chum			Chinook		
	Forecast ^a	Actual ^{b,d}	Error	Projected	Actual ^{c,d}	Error									
1985	3,700,000	4,248,506	15%	250,000	667,213	167%	112,500	87,828	-22%	700,000	772,849	10%	17,500	24,088	38%
1986	4,200,000	4,981,255	14%	450,000	757,353	68%	1,250,000	1,300,958	4%	900,000	1,134,817	26%	32,500	39,256	21%
1987	4,800,000	9,859,418	98%	500,000	449,750	-10%	150,000	109,389	-27%	1,000,000	349,150	-65%	30,000	39,440	32%
1988	5,300,000	7,087,976	29%	400,000	561,048	40%	400,000	471,080	17%	800,000	710,615	-11%	35,000	29,080	-17%
1989	2,500,000	5,443,946	100%	400,000	339,931	-15%	100,000	67,443	-33%	800,000	122,051	-85%	30,000	26,738	-11%
1990	4,300,000	3,822,864	-16%	250,000	501,739	101%	600,000	603,630	1%	400,000	351,197	-12%	25,000	16,105	-36%
1991	3,200,000	2,472,589	-32%	400,000	426,498	7%	90,000	14,663	-84%	500,000	280,230	-44%	20,000	13,542	-32%
1992	3,600,000	9,502,392	153%	400,000	468,930	17%	400,000	695,861	74%	350,000	274,303	-22%	20,000	17,171	-14%
1993	2,500,000	5,042,799	90%	450,000	306,882	-32%	25,000	100,934	304%	350,000	122,770	-65%	15,000	18,871	26%
1994	2,000,000	3,826,508	78%	400,000	583,793	46%	600,000	523,434	-13%	250,000	303,177	21%	15,000	19,962	33%
1995	2,700,000	3,224,087	9%	400,000	447,130	12%	100,000	133,578	34%	250,000	529,428	112%	15,000	17,893	19%
1996	3,300,000	4,262,377	18%	400,000	321,668	-20%	600,000	242,911	-60%	350,000	156,520	-55%	15,000	14,306	-5%
1997	5,300,000	4,545,868	-21%	400,000	152,408	-62%	100,000	70,945	-29%	250,000	103,036	-59%	15,000	13,292	-11%
1998	2,500,000	1,618,844	-51%	300,000	160,688	-46%	300,000	551,737	84%	200,000	95,704	-52%	17,000	8,124	-52%
1999	2,000,000	3,164,347	58%	300,000	126,105	-58%	75,000	16,176	-78%	200,000	174,554	-13%	16,000	14,383	-10%
2000	3,000,000	1,778,547	-41%	150,000	236,871	58%	500,000	146,482	-71%	200,000	127,069	-36%	15,000	7,350	-51%
2001	2,700,000	2,304,652	-15%	300,000	113,311	-62%	50,000	72,560	45%	250,000	84,494	-66%	13,000	9,295	-29%
2002	2,200,000	3,356,572	53%	160,000	246,281	54%	170,000	446,960	163%	120,000	237,949	98%	10,000	12,714	27%
2003	2,400,000	4,145,979	73%	170,000	101,756	-40%	80,000	48,789	-39%	140,000	120,767	-14%	10,000	18,503	85%
2004	3,700,000	5,638,764	52%	160,000	311,058	94%	380,000	357,939	-6%	150,000	146,165	-3%	10,000	26,922	169%
2005	4,100,000	5,962,041	45%	200,000	224,657	12%	70,000	48,419	-31%	140,000	69,740	-50%	10,000	27,667	177%
2006	2,100,000	2,653,446	26%	200,000	177,853	-11%	350,000	404,111	15%	140,000	64,033	-54%	20,000	18,029	-10%
2007	3,300,000	4,044,814	23%	210,000	177,339	-16%	50,000	147,020	194%	130,000	77,240	-41%	20,000	17,625	-12%
2008	3,900,000	3,005,299	-23%	200,000	171,869	-14%	380,000	169,368	-55%	100,000	50,315	-50%	20,000	13,333	-33%
2009	3,000,000	2,842,160	-5%	210,000	153,210	-27%	70,000	214,321	206%	80,000	82,811	4%	20,000	8,750	-56%
2010	2,300,000	3,696,315	61%	179,000	207,350	16%	305,000	292,706	-4%	70,000	228,863	227%	17,000	9,900	-42%
2011	4,600,000	6,348,303	38%	178,000	95,276	-46%	106,000	34,030	-68%	101,000	129,202	28%	14,000	11,248	-20%
2012	4,400,000	4,271,066	-3%	159,000	108,006	-32%	334,000	468,177	40%	113,000	269,585	139%	12,000	2,526	-79%
2013	4,900,000	3,483,294	-29%	147,000	260,963	78%	99,000	48,275	-51%	152,000	139,365	-8%	9,000	5,398	-40%
Avg.	3,396,552	4,366,725	27%	287,000	305,412	10%	270,569	272,059	18%	316,759	252,000	-5%	17,862	17,293	2%

^a Harvest forecasts have typically been prepared using average return per spawner values, parent-year escapements, and average marine maturity schedules or time series modeling tempered by available juvenile production data or combinations of these data sets.

^b Sockeye salmon harvest estimates include commercial, sport, personal use, educational, and subsistence fisheries.

^c Harvest projections are prepared using subjective estimates of parent-year escapements, gross trends in harvest, and expected intensity of fishery.

^d Actual harvests prior to 2013 reflect minor adjustments to the harvest database.

Appendix B15.–Upper Cook Inlet subsistence fisheries salmon harvest, 1980–2013.

Year	Tyonek Subsistence Fishery							
	No. of Permits		Chinook	Sockeye	Coho	Pink	Chum	Total
	Issued	Returned						
1980	67	NA	1,757	235	0	0	0	1,992
1981	70	NA	2,002	269	64	32	15	2,382
1982	69	NA	1,590	310	113	14	4	2,031
1983	75	NA	2,665	187	59	0	6	2,917
1984	75	NA	2,200	266	79	3	23	2,571
1985	76	NA	1,472	164	91	0	10	1,737
1986	65	NA	1,676	203	223	50	46	2,198
1987	64	61	1,610	166	149	10	24	1,959
1988	47	42	1,587	91	253	8	12	1,951
1989	49	47	1,250	85	115	0	1	1,451
1990	42	37	781	66	352	20	12	1,231
1991	57	54	902	26	58	0	0	986
1992	57	44	907	75	234	7	19	1,242
1993	62	54	1,370	57	77	19	17	1,540
1994	58	49	770	85	101	0	22	978
1995	70	55	1,317	45	153	0	15	1,530
1996	73	49	1,039	68	137	21	7	1,272
1997	70	42	639	101	137	0	8	885
1998	74	49	978	163	64	1	2	1,208
1999	77	54	1,230	144	94	32	11	1,511
2000	60	59	1,157	63	87	6	0	1,313
2001	84	58	976	172	49	4	6	1,207
2002	101	71	1,080	209	115	9	4	1,417
2003	87	74	1,183	111	44	7	10	1,355
2004	97	75	1,345	93	130	0	0	1,568
2005	78	66	982	61	139	0	2	1,184
2006	82	55	943	20	14	0	1	978
2007	84	67	1,281	200	123	3	2	1,609
2008	94	76	1,509	140	196	15	10	1,870
2009	89	69	636	184	258	1	2	1,081
2010	97	74	890	190	155	0	4	1,239
2011	116	56	554	102	19	7	7	689
2012	106	48	565	162	46	1	0	774

-continued-

Yentna Subsistence Fishery								
Year	No. of Permits		Chinook	Sockeye	Coho	Pink	Chum	Total
	Issued	Returned						
Personal Use								
1996	NR	14	0	191	36	88	40	355
1997	NR	21	0	492	61	21	8	582
Subsistence								
1998	28	21	0	473	147	33	20	673
1999	NR	21	0	455	43	15	11	524
2000	NR	20	0	379	92	4	7	482
2001	NR	16	0	514	47	9	4	574
2002	NR	25	0	414	116	14	28	572
2003	NR	15	0	433	76	2	13	524
2004	NR	22	0	391	132	0	2	525
2005	NR	21	0	177	42	24	25	268
2006	26	23	0	388	178	15	27	608
2007	22	22	0	367	66	17	18	468
2008	16	16	0	310	57	23	7	397
2009	17	16	0	253	14	0	6	273
2010	20	18	0	675	52	41	18	786
2011	25	25	0	598	90	3	21	712
2012	24	24	0	279	24	21	19	343
2013	22	23	0	160	92	128	32	412

Note: 2013 harvest estimates were not available at the time this report was published. Harvest estimated from returned permits only, not expanded for non-returned permits.

Appendix B16.—Upper Cook Inlet educational fisheries salmon harvest, 1994–2013.

Year	Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
1994	Kenaitze	57	1,907	829	134		2,927
	NTC			119			119
	NND						0
	Knik						29
	Eklutna						172
	Total	57	1,907	948	134	0	3,247
1995	Kenaitze	40	1,498	868	35		2,441
	NTC			85			85
	NND						0
	Knik	5	21	1	0	1	28
	Eklutna	14	55	37	6	42	154
	Total	59	1,574	991	41	43	2,708
1996	Kenaitze	105	2,242	592	211		3,150
	NTC			56			56
	NND						0
	Knik	5	163	45	3	62	278
	Eklutna						0
	Total	110	2,405	693	214	62	3,484
1997	Kenaitze	142	2,410	191	5		2,748
	NTC	94	474	99	55		722
	NND						0
	Knik	19	153	34	0	15	221
	Eklutna	7	39	14	16	7	83
	Total	262	3,076	338	76	22	3,774
1998	Kenaitze	133	2,621	638	58		3,450
	NTC	67	506	95	57		725
	NND	52	139	110	20		321
	Knik	31	186	153	0	85	455
	Eklutna	32	104	116	6	51	309
	Tyonek	0	11	41	3	1	56
	Total	315	3,567	1,153	144	137	5,316

-continued-

Appendix B16.–Page 2 of 6.

Year	Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
1999	Kenaitze	118	1,944	530	5	0	2,597
	NTC	109	442	84	5	0	640
	NND	56	302	76	18	0	452
	Knik	42	177	120	0	55	394
	Eklutna	11	80	25	3	20	139
	Tyonek	0	100	0	0	0	100
	Total	336	3,047	835	31	75	4,322
2000	Kenaitze	130	2,088	656	617	0	3,491
	NTC	50	439	59	57	0	605
	NND	51	199	96	15	0	361
	Knik	65	34	63	0	18	180
	Eklutna	17	76	85	21	51	250
	Tyonek	0	97	0	0	0	97
	Total	302	2,920	983	701	69	4,984
2001	Kenaitze	204	3,441	572	107	0	4,324
	NTC	75	760	123	42	0	1,000
	NND	74	309	110	17	0	510
	Knik	32	71	34	0	0	137
	Eklutna	58	52	95	56	34	295
	Tyonek	0	0	0	0	0	0
	Total	443	4,633	934	222	34	6,266
2002	Kenaitze	70	2,889	921	482	0	4,362
	NTC	65	339	106	52	0	562
	NND	65	138	95	11	0	309
	Knik	55	136	99	5	36	331
	Eklutna	58	220	156	40	76	550
	Tyonek	0	0	0	0	0	0
	Total	313	3,722	1,377	590	112	6,114
2003	Kenaitze	151	4,651	439	63		5,304
	NTC	87	426	100	15		628
	NND	69	98	77	13		257
	Knik	34	654	87	3	45	823
	Eklutna	69	160	49	14	21	313
	Tyonek	0	0	0	0	0	0
	Total	410	5,985	752	108	66	7,329

-continued-

Appendix B16.–Page 3 of 6.

Year	Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
2004	Kenaitze	10	4,113	765	417		5,305
	NTC	73	395	83	0		551
	NND	78	199	79	14		370
	NES	1	77	0	9		87
	Knik	105	142	207	20	29	503
	Eklutna	50	311	297	4	71	733
	Tyonek	0	0	0	0	0	0
	Total	317	5,237	1,431	464	100	7,549
2005	Kenaitze	100	6,317	490	12	0	6,919
	NTC	70	264	83	0	0	417
	NND	88	84	78	15	0	265
	NES	0	5	0	0	0	5
	Knik	25	200	80	9	16	330
	Eklutna	72	166	242	8	29	517
	Tyonek						0
	Big Lake	61	98	99	56	34	348
	Total	416	7,134	1,072	100	79	8,801
2006	Kenaitze	85	4,380	223	702	0	5,390
	NTC	75	550	100	0	0	725
	NND	64	55	99	10	0	228
	NES	0	0	0	0	0	0
	Knik	24	197	75	12	7	315
	Eklutna	43	59	199	11	7	319
	Tyonek	0	0	0	0	0	0
	Big Lake	8	68	12	1	3	92
	Intertribal	12	135	95	85	21	348
	Total	311	5,444	803	821	38	7,417
2007	Kenaitze	25	3,941	543	119		4,628
	NTC	300	1,363	483	2	0	2,148
	NND	65	210	102	12	0	389
	NES	0	0	0	0	0	0
	APVFW	0	77	76	0	0	153
	Knik	19	7	75		16	117
	Eklutna						0
	Tyonek	0	0	0	0	0	0
	Big Lake	17	100	46	14		177
	Intertribal						0
	O'Brien	49	104	126	8	4	291
	Total	475	5,773	1,428	156	20	7,903

-continued-

Appendix B16.–Page 4 of 6.

Year	Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
2008	Kenaitze	58	3,374	525	503	0	4,460
	NTC	199	857	200	248	0	1,504
	NND	69	192	150	69	0	480
	NES	0	0	0	0	0	0
	APVFW	1	106	79	15	0	201
	Kasilof H.A.	3	20	42	12	0	77
	Knik	12	79	70	0	0	161
	Eklutna	16	19	178	3	0	216
	Tyonek	2	0	0	0	0	2
	Big Lake	20	9	62	0	6	97
	Intertribal	0	0	0	0	0	0
	O'Brien	8	82	105	6	0	201
	Fish Creek	8	23	200	0	17	248
	Total	396	4,761	1,611	856	23	7,647
2009	Kenaitze	53	5,683	769	63	0	6,568
	NTC	32	788	454	123	0	1,397
	NND	20	276	56	34	0	386
	NES	0	0	0	0	0	0
	APVFW	0	103	75	6	0	184
	Kasilof H.A.	4	61	32	0	0	97
	Knik	0	66	79	1	8	154
	Big Lake	0	35	70	4	1	110
	Eklutna	0	135	221	20	23	399
	Tyonek	3	0	0	0	0	3
	O'Brien	10	43	30	12	4	99
	Total	122	7,190	1,332	263	36	9,397
2010	Kenaitze	60	5,382	839	170	0	6,451
	NTC	83	643	500	263		1,489
	NND						0
	NES						0
	APVFW		46	47	25	1	119
	Kasilof H.A.	1	9	37	0	0	47
	SCF	0	3	27	0	0	30
	Knik	0	72	94	21	61	248
	Big Lake		94	100	6	16	216
	Eklutna						0
	Tyonek	0	1	0	0	0	1
	O'Brien	14	45	30	19	0	108
		Total	75	5,652	1,174	241	78

-continued-

Appendix B16.–Page 5 of 6.

Year	Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
2011	Kenaitze	47	6,873	439	5		7,364
	NTC	64	500	181	131	876	1,752
	NND	29	185	84	37	335	670
	NES						0
	Homer VFW	39	35	74			148
	APVFW	47	41	21	109		218
	Kasilof H.A.	3	25	39			67
	SCF	34	5	39			78
	Knik	0	8	61	1	0	70
	Big Lake	0	6	4	3	3	16
	Eklutna		343	282	32	57	714
	Tyonek						0
	O'Brien	6	27	32	4		69
	Total		269	8,048	1,256	322	1,271
Year	Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
2012	Kenaitze	14	3,445	553	140	0	4,152
	NTC	67	247	406	253	1	974
	NND	17	65	145	25	0	252
	NES	1	37	0	2	0	40
	Homer VFW	0	65	39	0	0	104
	APVFW	0	66	25	15	0	106
	Kasilof H.A.	2	81	27	2	0	112
	SCF	0	76	36	0	0	112
	Knik	48	0	6	0	0	54
	Big Lake						0
	Eklutna	0	218	242	10	63	533
	Tyonek						0
	O'Brien	4	70	14	1	10	99
	Total		153	4,370	1,493	448	74

-continued-

Appendix B16.–Page 6 of 6.

Year	Fishery	Chinook	Sockeye	Coho	Pink	Chum	Total
2013	Kenaitze	19	4,837	566	24	0	5,446
	NTC	62	623	434	56	0	1,175
	NND	16	195	128	26	0	365
	NES	13	141	50	23	0	227
	Homer VFW	0	67	24	0	0	91
	APVFW	0	50	21	40	1	112
	Kasilof H.A.	0	1	44	0	0	45
	SCF	0	0	30	0	0	30
	Knik	0	26	31	4	52	113
	Big Lake	0	21	9	0	0	30
	Eklutna	0	124	52	2	18	196
	Tyonek						0
	O'Brien	7	100	31	33	11	182
	Total	117	6,185	1,420	208	82	8,012

Note: Harvest data include both early- and late-run Kenai River Chinook and sockeye salmon.

Appendix B17.—Effort and harvest in Upper Cook Inlet personal use salmon fisheries, 1996–2013.

Kasilof River Gillnet															
Year	Days	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
	Open	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	5	582	16	9,506	156	46	3	0	0	8	0	1	0	9,561	157
1997	5	815	26	17,997	231	65	2	1	0	102	7	3	1	18,168	233
1998	5	1,075	24	15,975	425	126	7	0	0	15	4	12	10	16,128	426
1999	10	1,287	39	12,832	371	442	27	25	2	10	0	10	0	13,319	374
2000	13	1,252	23	14,774	275	514	15	9	0	17	2	10	0	15,324	276
2001	8	1,001	20	17,201	394	174	6	6	0	11	0	7	5	17,399	397
2002	10	1,025	16	17,980	274	192	5	12	0	30	2	13	4	18,227	277
2003	10	1,206	17	15,706	277	400	13	107	0	9	0	4	0	16,226	284
2004	10	1,272	10	25,417	203	163	4	58	13	6	1	0	0	25,644	205
2005	11	1,506	6	26,609	104	87	1	326	5	16	1	1	0	27,039	104
2006	10	1,724	5	28,867	91	287	2	420	16	11	0	6	0	29,591	94
2007	10	1,570	7	14,943	66	343	3	68	4	2	0	0	0	15,356	66
2008	10	1,534	7	23,432	107	151	2	65	3	35	4	23	3	23,706	107
2009	10	1,761	9	26,646	167	127	2	165	0	14	1	11	2	26,963	167
2010	10	1,855	13	21,924	170	136	3	23	5	23	5	1	0	22,106	170
2011	10	1,864	16	26,780	244	167	4	47	10	23	1	3	0	27,020	244
2012	10	1,696	21	15,638	197	103	3	161	19	53	19	15	1	15,970	199
2013	5	1,082	13	14,439	187	46	2	129	32	3	0	5	1	14,621	187
Min.	5	582		9,506		46		0		2		0		9,561	
Mean	9	1,339		19,259		198		90		22		7		19,576	
Max.	13	1,864		28,867		514		420		102		23		29,591	

Kasilof River Dip Net															
Year	Days	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
	Open	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	27	1,300	23	11,197	127	50	1	334	18	103	2	17	0	11,701	130
1997	27	1,091	32	9,737	150	35	2	90	3	19	2	19	1	9,900	153
1998	27	3,421	33	45,161	525	134	3	731	18	610	25	74	32	46,710	528
1999	27	3,611	43	37,176	507	127	5	286	50	264	12	52	8	37,905	511
2000	27	2,622	36	23,877	403	134	7	1,004	16	841	39	34	0	25,890	407
2001	27	3,382	37	37,612	505	138	6	766	25	307	14	23	0	38,846	511
2002	44	4,020	38	46,769	530	106	6	1,197	59	1,862	73	139	7	50,073	553
2003	44	3,874	28	43,870	440	57	4	592	49	286	21	30	1	44,835	447
2004	44	4,432	19	48,315	259	44	3	668	21	396	15	90	5	49,513	263
2005	44	4,500	9	43,151	100	16	1	538	16	658	12	102	2	44,465	103
2006	44	5,763	10	56,144	113	55	1	1,057	15	992	8	105	4	58,353	117
2007	44	4,627	9	43,293	105	35	1	487	8	383	6	136	2	44,334	106
2008	44	5,552	14	54,051	153	46	3	509	11	787	10	143	4	55,536	154
2009	44	7,650	21	73,035	246	34	1	1,441	30	1,274	19	173	3	75,957	248
2010	44	7,588	27	70,774	303	31	2	1,768	45	974	24	279	9	73,826	307
2011	44	6,571	35	49,766	351	24	3	977	39	652	40	144	14	51,562	355
2012	44	6,536	32	73,419	448	16	1	1,170	42	896	38	147	11	75,648	452
2013	44	8,556	36	85,528	473	18	1	1,666	84	683	19	339	15	88,233	481
Min.	27	1,091		9,737		16		90		19		17		9,900	
Mean	38	4,728		47,381		61		849		666		114		49,072	
Max.	44	8,556		85,508		138		1,768		1,862		339		88,233	

-continued-

Appendix B17.–Page 2 of 4.

Kenai River Dip Net															
Year	Days	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
	Open	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	27	10,503	60	102,821	367	295	5	1,932	29	2,404	33	175	10	107,627	375
1997	22	11,023	87	114,619	439	364	13	559	21	619	14	58	5	116,219	448
1998	18	10,802	59	103,847	716	254	10	1,011	62	1,032	62	85	3	106,229	724
1999	22	13,738	79	149,504	1,084	488	13	1,009	108	1,666	64	102	13	152,769	1,094
2000	22	12,354	69	98,262	752	410	18	1,449	62	1,457	75	193	31	101,771	762
2001	22	14,772	66	150,766	909	638	15	1,555	105	1,326	37	155	19	154,440	926
2002	22	14,840	56	180,028	844	606	11	1,721	64	5,662	102	551	36	188,568	874
2003	22	15,263	50	223,580	891	1,016	18	1,332	68	1,647	98	249	22	227,824	905
2004	22	18,513	35	262,831	583	792	7	2,661	66	2,103	27	387	12	268,774	905
2005	22	20,977	18	295,496	273	997	3	2,512	24	1,806	12	321	2	301,132	275
2006	20	12,685	16	127,630	183	1,034	3	2,235	15	11,127	37	551	9	142,577	203
2007	22	21,908	23	291,270	335	1,509	4	2,111	24	1,939	23	472	17	297,301	337
2008	22	20,772	27	234,109	338	1,362	10	2,609	21	10,631	49	504	8	249,215	343
2009	22	26,171	35	339,993	524	1,189	7	2,401	29	5,482	27	285	7	349,350	525
2010	22	28,342	44	389,552	702	865	7	2,870	56	3,655	28	508	15	397,451	705
2011	22	32,818	60	537,765	1,105	1,243	10	4,745	107	3,914	86	915	47	548,583	1,115
2012	22	34,374	61	526,992	1,109	40	3	4,008	117	3,770	102	425	15	535,235	1,120
2013	22	33,193	63	347,222	821	11	16	3,169	74	3,625	49	701	29	354,727	827
Min.	18	10,503		98,262		40		559		619		58		101,771	
Mean	22	19,614		248,683		729		2,216		3,548		369		255,544	
Max.	27	34,374		537,765		1,509		4,745		11,127		915		548,583	

Unknown Fishery															
Year	Days	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
	Open	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	–	472	33	4,761	463	24	7	131	37	127	37	4	3	5,047	467
1997	–	1,003	50	3,310	276	0	0	64	14	51	21	4	3	3,429	282
1998	–	921	39	7,562	287	34	5	294	77	196	19	20	0	8,106	301
1999	–	684	20	7,994	352	51	5	76	7	126	2	4	0	8,251	353
2000	–	648	23	5,429	274	44	13	218	60	84	11	24	15	5,799	282
2001	–	1,339	34	12,673	380	188	17	292	30	175	24	90	34	13,418	394
2002	–	1,339	26	14,846	353	166	10	341	25	916	81	54	8	16,323	380
2003	–	1,325	21	15,675	247	238	25	219	14	140	9	88	9	16,360	254
2004	–	1,143	13	13,527	179	99	3	366	25	210	10	25	4	14,227	185
2005	–	270	2	4,520	38	32	1	39	1	40	2	4	0	4,635	38
2006	–	371	2	3,406	34	29	1	47	2	304	16	84	0	3,870	41
2007	–	534	3	6,729	52	37	1	61	3	28	1	6	0	6,861	52
2008	–	622	4	6,890	63	41	2	66	3	412	9	58	3	7,467	64
2009	–	719	7	7,968	84	25	1	144	10	133	4	57	5	8,327	85
2010	–	760	8	8,300	125	15	1	168	7	109	2	12	1	8,605	125
2011	–	836	11	10,695	136	17	1	80	5	135	17	72	7	10,962	137
2012	–	937	14	13,295	219	4	1	173	25	127	9	36	5	13,635	221
2013	–	867	15	7,126	154	9	2	155	17	113	8	8	2	7,411	154
Min.		270		3,310		0		39		28		4		3,429	
Mean		822		8,595		58		163		190		36		9,041	
Max.		1,339		15,675		238		366		916		90		16,360	

-continued-

Appendix B17.–Page 3 of 4.

Fish Creek Dip Net															
Year	Days Open	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	22	3,749	41	17,260	161	37	8	2,414	25	331	9	153	5	20,195	168
1997	13	991	34	3,277	76	0	0	63	5	53	7	4	1	3,397	84
1998	15	1,141	21	4,036	113	1	0	649	19	80	10	29	2	4,795	117
1999	16	432	16	1,083	138	0	0	17	3	12	7	0	0	1,112	139
2000	16	1,054	25	6,925	211	0	0	958	72	83	12	29	3	7,995	225
2001	3	131	7	436	40	0	0	18	7	2	0	1	0	457	41
2009	7	1,436	8	9,898	73	10	0	53	6	66	3	33	5	10,060	73
2010	8	2,843	14	23,705	161	12	2	3,576	84	1,721	28	290	9	29,303	184
2011	3	1,379	14	5,236	86	2	0	905	29	155	10	72	7	6,371	92
Min.	3	131		436		0		17		2		0		457	
Mean	11	1,462		7,984		7		961		278		68		9,298	
Max.	22	3,749		23,705		37		3,576		1,721		290		29,303	

Note: fishery not open 2001–2008, 2012–2013.

Beluga River Dip Net															
Year	Days Open	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
2008	43			31		0		35		0		0		66	
2009	43			140		0		78		7		0		225	
2010	43			47		0		1		0		5		53	
2011	43			137		0		17		0		5		159	
2012	43			9		0		7		0		0		16	
2013	43			30		0		55		2		0		88	
Min.	43			9		0		1		0		0		16	
Mean	43			66		0		32		2		2		101	
Max.	43			140		0		78		7		5		225	

-continued-

Appendix B17.–Page 4 of 4.

Upper Cook Inlet Personal Use Fisheries Total															
Year	Days Open	Days Fished		Sockeye		Chinook		Coho		Pink		Chum		Total	
		Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE	Est.	SE
1996	–	16,606	85	145,545	644	452	12	4,811	56	2,973	50	350	12	154,131	655
1997	–	14,923	114	148,940	592	464	13	777	26	844	27	88	6	151,113	604
1998	–	17,360	84	176,581	1,032	549	14	2,685	102	1,933	70	220	34	181,968	1,043
1999	–	19,752	101	208,589	1,309	1,108	31	1,413	119	2,078	66	168	15	213,356	1,320
2000	–	17,930	88	149,267	961	1,102	28	3,638	114	2,482	86	290	35	156,779	976
2001	–	20,625	86	218,688	1,176	1,138	24	2,637	112	1,821	46	276	39	224,560	1,197
2002	–	21,224	74	259,623	1,092	1,070	17	3,271	91	8,470	149	757	38	273,191	1,136
2003	–	21,668	63	298,831	1,061	1,711	34	2,250	85	2,082	101	371	24	305,245	1,079
2004	–	25,360	43	350,091	678	1,098	9	3,754	75	2,715	32	502	14	358,158	689
2005	–	27,253	21	369,776	311	1,132	3	3,415	29	2,520	17	428	3	377,271	314
2006	–	20,543	20	216,047	236	1,405	4	3,759	27	12,434	41	746	10	234,391	242
2007	–	28,677	29	356,717	386	1,924	5	2,727	26	2,352	24	614	17	364,334	388
2008	–	28,491	34	318,513	412	1,600	11	3,284	24	11,865	52	728	10	335,990	416
2009	–	37,754	46	457,680	629	1,385	7	4,282	45	6,976	34	559	13	470,882	631
2010	–	41,387	56	514,302	808	1,059	8	8,406	113	6,482	47	1,095	20	531,344	818
2011	–	43,450	72	630,379	1,176	1,453	11	6,754	122	4,880	100	1,169	50	644,635	1,187
2012	–	43,543	74	629,344	1,232	164	5	5,512	128	4,846	111	623	19	640,489	1,244
2013	–	43,698	73	454,314	958	83	16	5,119	122	4,424	53	1,053	35	464,992	968
Min.		14,923		145,545		83		777		844		88		151,113	
Mean		27,236		327,957		1,050		3,805		4,565		558		337,935	
Max.		43,698		630,379		1,924		8,406		12,434		1,169		644,635	

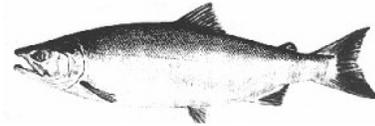
APPENDIX C: SALMON OUTLOOK AND FORECAST

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES

NEWS RELEASE



Cora Campbell, Commissioner
Jeff Regnart, Director



Contact:
Pat Shields, Area Management Biologist
Aaron Dupuis, Assistant Area Management Biologist
Phone: (907) 262-9368
Fax: (907) 262-4709

Soldotna ADF&G
43961 Kalifornsky Beach Rd.
Suite B
Soldotna, AK 99669
Date Issued: 4/19/2013

UPPER COOK INLET
2013 OUTLOOK FOR COMMERCIAL SALMON FISHING
SALMON FISHING

SOCKEYE SALMON

A run of 6.7 million sockeye salmon is forecasted to return to Upper Cook Inlet (UCI) in 2013, with a harvest by all user groups of 4.9 million. The forecasted harvest in 2013 is 1.1 million fish above the 20-year average harvest of 3.8 million by all user groups.

The run forecast for the Kenai River is approximately 4.4 million fish, or 13% greater than the 20-year average run of 3.8 million. Age-1.3 salmon typically comprise about 56% of the Kenai River run. A sibling model was used to forecast age-1.3 adults because the 10-year Mean Absolute Percent Error (MAPE) was lower for the sibling model (26%) than the fry model (53%). A fry-smolt model was used to predict a return of 1.5 million age-2.3 salmon, 194% greater than the 20-year average return for this age class. Age-2.3 salmon typically comprise about 20% of the Kenai River run. The predominant age classes of the 2013 Kenai River run are projected to be age 1.3 (45%), age 1.2 (9%), and age 2.3 (34%). The 10-year MAPE for the set of models used for the 2013 Kenai sockeye salmon run forecast was 23%.

The Kasilof River sockeye salmon run forecast is 903,000 and is 5% less than the 20-year average run of 947,300. Age-1.3 salmon typically comprise about 34% of the Kasilof River run and are forecast to be 274,000 fish, which is 15% less than the 20-year average return (322,000). Age-1.2 salmon typically comprise about 30% of the run. The age-1.2 salmon forecast is 248,000 and is 13% less than the 20-year average return (285,000) for this age class. Age-2.2 salmon typically comprise about 24% of the run and is forecast to be 307,000 fish, which is 34% greater than the 20-year average return (228,000) for this age class. The predominant age classes of the 2013 run are projected to be age 1.2 (27%), age 1.3 (30%), and age 2.2 (34%). The 10-year MAPE for the set of models used for the 2013 Kasilof sockeye salmon run forecast was 21%.

-continued-

The Susitna River sockeye salmon run forecast is estimated at 363,000, 20% less than the 6-year average of 452,000. This forecast was derived using mean return per spawner by age class for brood years 2006–2007 and mark–recapture estimates of spawner abundance in 2007–2009. Sonar and age composition catch allocation models were not used because mark–recapture studies have shown that the Yentna sonar project underestimated sockeye salmon escapement, causing estimates of adult returns to also be underestimated. The 6-year (2006–2011) average run was calculated using mark–recapture estimates of inriver run and genetic estimates of commercial harvests.

The Fish Creek sockeye salmon run forecast is 61,000, 52% less than the 20-year average run of 127,000. Age-1.2 and -1.3 salmon typically comprise 72% of the Fish Creek run. Age-1.2 are forecast to be 12% less than the 20-year average return (60,000) while age-1.3 are forecast to be 80% less than the 20-year average return (31,000) for this age class. Predominant age classes of the 2013 run are projected to be age 1.2 (76%) and age 1.3 (10%).

The Crescent River sockeye salmon run forecast is 110,000 and is equal to the 20-year average. Age-1.3 and -2.3 salmon typically comprise 63% of the Crescent River run. The predominant age classes of the 2013 run are projected to be age 1.3 (54%) and age 2.3 (26%).

Forecast runs to individual freshwater systems are as follows:

System	Run	Goals ^a
Crescent River	110,000	30,000–70,000
Fish Creek	61,000	20,000–70,000
Kasilof River ^{b,c}	903,000	160,000–340,000
Kenai River ^{b,d}	4,374,000	1,000,000–1,200,000
Susitna River	363,000	
Larson Lake	N/A	15,000–50,000
Chelatna Lake	N/A	20,000–65,000
Judd Lake	N/A	25,000–55,000
Unmonitored Systems ^e	872,000	N/A
Total	6,683,000	

^a Goals listed here are as follows, Crescent River: BEG; Fish Creek: SEG; Kasilof River: BEG; Kenai River: Inriver; and Susitna River: SEG (weir goals).

^b Kasilof and Kenai rivers escapement goals are now DIDSON-based.

^c Kasilof River optimal escapement goal is 160,000 to 390,000 sockeye salmon.

^d Kenai River optimal escapement goal is 700,000 to 1,400,000.

^e Unmonitored systems are estimated to be 15% of monitored systems.

REGULATIONS AND FISHING STRATEGY

In October 2012, the Alaska Board of Fisheries (board) formed the UCI king salmon task force. The mission of the task force was to identify a set of recommended adjustments to the *Kenai River Late-Run King Salmon Management Plan* (5 AAC 21.359) that would provide all users opportunity to fish during periods of low king salmon abundance while still achieving king salmon escapement objectives. The task force met three times during the winter of 2012–2013 and developed a list of discussion points for the full board to address at the March 2013 Statewide Finfish board meeting. After much deliberation, the board voted to keep the king salmon management plan unchanged, other than accepting the new escapement goal developed by the department. The new Sustainable Escapement Goal (SEG) for Kenai River Late-Run king salmon will be 15,000–30,000 fish.

The following summary is for informational purposes only and is not a comprehensive review. Regulation booklets covering the UCI commercial fishery are currently available at the Anchorage, Soldotna, and Homer ADF&G offices.

Northern District Set Gillnet

- Management strategies implemented by the board in 2011 and actions taken by ADF&G through emergency orders during the 2012 fishing season to reduce king salmon harvest in Northern Cook Inlet were insufficient to achieve minimum escapement objectives. Therefore, additional harvest reductions are necessary in both sport and commercial fisheries in order to increase king salmon escapement throughout the region. In the directed king salmon commercial set gillnet fishery, the first period of the 2013 season, which occurs on Monday, May 27, will be closed. In addition, that area of beach from a point at the wood chip dock to the Susitna River remains closed to commercial king salmon fishing for 2013. Finally, the remaining four commercial king salmon fishing periods scheduled in 2013 will be reduced in duration from 12 hours per fishing period to 6 hours per period, and will be from 7:00 a.m. to 1:00 p.m. These fishing periods will occur on June 3, 10, 17, and 24. All of the Northern District will return to a regular fishing schedule beginning on Thursday, June 27.
- Susitna River sockeye salmon remain a stock of yield concern. As a result of this designation, restrictive actions to fisheries that harvest this stock were identified and placed into regulation. *The Northern District Salmon Management Plan* permits the department to reduce the legal complement of gear in the Northern District set gillnet fishery to no more than one net per permit from July 20 through August 6. At the 2011 board meeting, this provision was modified, allowing that portion of the General Subdistrict south of the Susitna River to fish with no more than two nets per permit after July 30. All areas in the Northern District return to a full complement of gear after August 6.

-continued-

Central District Fisheries

Upper Subdistrict Set Gillnet Fishery – Overview

The 2013 Kenai River late-run king salmon forecast projects a total run of approximately 29,000 fish. If realized, the 2013 run would rank 27th out of 28 years and be similar in abundance to the runs of 2009–2012, and would be approximately one-half the 1986–2012 average run of approximately 58,000 fish. Recent genetic stock identification analyses from commercial king salmon harvests suggest the average annual harvest rate on Kenai River stocks by the Upper Subdistrict set gillnet fishery is approximately 13%. When combined with all other harvesters of Kenai River king salmon, the average annual harvest rate is approximately 39%. The management strategy for 2013 will be designed to allow fishing opportunity and ensure adequate escapement relative to the SEG of 15,000–30,000 late-run Kenai River king salmon. If needed, restrictions to the Upper Subdistrict set gillnet fishery may include one or more of the following:

- Reduce allowable fishing time (by first limiting use of additional EO hours followed by restriction of regular fishing periods).
- Limit fishing within one-half mile of shore or closer in the Kasilof Section.
- Utilize drift gillnet fishermen if the Upper Subdistrict set gillnet fishery is not open.
- If the inriver sport fishery closes, the following actions are triggered automatically by regulation:
 - The Upper Subdistrict set gillnet fishery closes; and
 - The commercial drift gillnet fishery in the Central District closes within one mile of the Kenai Peninsula shoreline north of the River and within one and one-half miles of the Kenai Peninsula shoreline south of the Kenai River.

Upper Subdistrict Set Gillnet Fishery – Management

Kasilof Section Prior to July 8

- The Kasilof Section opens on the first regular period on or after June 25, unless the department estimates that 50,000 sockeye salmon are in the Kasilof River prior to that date, at which time the commissioner may open the fishery, by Emergency Order (EO); however, the fishery may not open earlier than June 20.
- From June 25 through July 7, the department may not allow more than 48 hours of additional fishing time per week (Sunday through Saturday) and must close the fishery for 36 consecutive hours per week, which will begin between 7:00 p.m. Thursday and 7:00 a.m. Friday.
- The Kasilof Section will be managed in concert with the Kenai and East Forelands Sections after these areas open for the season, which occurs on or after July 8.

Kenai, Kasilof and East Forelands Sections

The Kenai and East Forelands Sections fishing season opens on the first regular period on or after July 8. Once open, the following fishing scenarios are possible depending on Kenai River sockeye salmon run strength. For 2013, the Kenai River projection is 4.4 million

-continued-

sockeye salmon. Therefore, the season will be managed following guidelines outlined below for runs between 2.3 and 4.6 million fish. The Kenai River sockeye salmon run will be reassessed after July 20 to verify inseason run strength.

- If the inseason assessment shows the run to be **less than 2.3 million Kenai River sockeye salmon**, there will be no more than 24 hours of additional fishing time per week in the Upper Subdistrict and there are no mandatory window closures. If the Kenai and East Forelands Sections are not fished during regular or additional openings, the department may limit regular and additional periods in the Kasilof Section to within one-half mile of shore. If Kasilof escapement is projected to exceed 390,000 fish, 24-hours of additional fishing time per week is available after July 15 within one-half mile of shore in the Kasilof Section.
- If the inseason assessment is **between 2.3 and 4.6 million Kenai River sockeye salmon**, the department may allow up to 51 hours of additional fishing time per week and will close the Upper Subdistrict set gillnet fishery for a 36-hour period per week, which will begin between 7:00 p.m. Thursday and 7:00 a.m. Friday. In addition, there will be a second 24-hour closed period per week on Tuesday. If the Kenai and East Forelands Sections are not fished, the department may limit regular and extra periods in the Kasilof Section to within one-half mile of shore.
- If the inseason assessment changes to a run of **more than 4.6 million Kenai River sockeye salmon**, the department may allow up to 84 hours of additional fishing time per week and will close the Upper Subdistrict for a 36-hour closed period each week, which will begin between 7:00 p.m. Thursday and 7:00 a.m. Friday. There are no other mandatory windows at this run strength. If the Kenai and East Forelands Sections are not fished, the department may limit regular and extra periods in the Kasilof Section to within one-half mile of shore.
- The Upper Subdistrict set gillnet fishery will close no later than August 15 and all restrictions and additional time regulations from July carry over into August, except that the fishery is restricted to regular periods only from August 11–15. However, the season will close any time after July 31, if during two consecutive fishing periods (defined as a calendar day) the sockeye salmon harvest is less than 1% of the season total.

Central District Drift Gillnet Fishery – Overview

ADF&G manages the UCI drift gillnet fleet primarily under the guidance of 5 AAC 21.353, *Central District Drift Gillnet Fishery Management Plan*. The purpose of this management plan is to ensure adequate escapement of salmon into the Northern District drainages and to provide management guidelines to ADF&G. To meet these directives, there are two timeframes in July when drift fleet restrictions are implemented to pass fish through the Central District. First, from July 9–15, fishing during the first regular fishing period is restricted to the Expanded Kenai and Expanded Kasilof sections (corridor fishing); fishing during the second regular fishing period is restricted to the Kenai and Kasilof sections of the Upper Subdistrict and Drift Gillnet Area 1 (southern half of the Central District). From July 16–31, drift fleet restrictions are dependent upon the estimated size of the Kenai River sockeye salmon run, which is forecasted for a return of 4.4 million fish in 2013. For runs of this size, the drift management plan states that fishing during

-continued-

one regular 12-hour fishing period per week, from July 16–31, will be restricted to either the Expanded Kenai and Expanded Kasilof sections, or to Drift Gillnet Area 1.

During this timeframe, coho salmon also move through the Central District to their natal streams in northern Cook Inlet drainages. ADF&G is very cognizant of recent coho salmon escapement shortages and subsequent restrictions on various fisheries that harvest this stock. ADF&G will closely monitor inseason coho salmon assessment data in 2013 and will be prepared to take additional commercial fisheries restrictions to ensure adequate escapement. Examples of additional commercial fisheries restrictions include limiting the drift fleet to less fishing area and/or reducing the amount of drift fishing time.

Central District Drift Gillnet Fishery – Management

- The drift gillnet fishery opens the third Monday in June or June 19, whichever is later.
- From July 9 through July 15:
 - Drift gillnet fishing is restricted for the first regular fishing period to the Expanded Kenai and Expanded Kasilof Sections (Figure 1) described below.
 - Drift gillnet fishing is restricted for the second regular fishing period to the Kenai and Kasilof Sections (Figure 2) and Drift Area One (Figure 3) described below.
 - In runs of over 2.3 million Kenai River sockeye salmon, there may be one additional 12-hour period in the Kenai and Kasilof Sections of the Upper Subdistrict and in Drift Area One.
- From July 16 through July 31,
 - In runs of less than 2.3 million Kenai River sockeye salmon, there will be one regular 12-hour fishing period restricted to the Expanded Kenai and Expanded Kasilof Sections of the Upper Subdistrict.
 - In runs of between 2.3 and 4.6 million Kenai River sockeye salmon, there will be one regular 12-hour fishing period per week restricted to either or both the Expanded Kenai or the Expanded Kasilof Sections of the Upper Subdistrict, or the fishery will be restricted to Drift Area One. Drifting may not occur in both Drift Area One and the Expanded corridors together during this restricted fishing period.
 - In runs of greater than 4.6 million Kenai River sockeye salmon, there are no mandatory restrictions.
- From August 16 until closed by emergency order,
 - a. Drift Areas Three & Four (Figure 4) are open for regular periods.
 - b. Chinitna Bay may be opened by emergency order if chum salmon escapement objectives are achieved in Clearwater Creek.

Drift Gillnet Fishing Areas

- 1.) Expanded Kenai Section: all waters enclosed by a line from a point located on the shore at 60° 40.35' N. lat., 151° 23.00' W. long. then west to a point located at 60° 40.35' W. long., south to a point at the latitude of the Blanchard line located at 60° 27.10' N. lat., 151° 33.76' W. long. east to a point on the beach at 60° 27.10' N. lat., 151° 16.94' W. long.

-continued-

- 2.) Expanded Kasilof Section: all waters enclosed by a line from a point on the beach at 60° 27.10' N. lat., 151° 16.94' W. long., west to a point at the Blanchard line located at 60° 27.10' N. lat., 151° 33.76' W. long., south to a point located at 60° 04.02' N. lat., 151° 46.60' W. long., east to an ADF&G regulatory marker located at 60° 04.02' N. lat., 151° 38.90' W. long.

Other regulations include:

- Set gillnet permit stacking is allowed in all of UCI.
- After July 8, the Kasilof River Special Harvest Area may be fished up to 48 hours, followed by a 24-hour closure, without an escapement trigger, if fish are present in sufficient numbers.
- The sockeye salmon escapement trigger to open the Kasilof River Special Harvest Area to commercial fishing without limitation is 365,000 fish.
- In the Kasilof Section, beginning on July 8, if further restrictions beyond the one-half mile fishery are necessary to aid in achieving the lower end of the Kenai River escapement goal, this area may be further restricted to fishing within 600 feet of the high tide mark in the Kasilof Section.
- The Upper Subdistrict set gillnet fishery may close after July 31 based on the 1% rule. A fishing period is defined as a time period open to commercial fishing not to exceed 24-hours per calendar day.

SET NET REGISTRATION AND BUOY STICKERS

All Cook Inlet setnet fishermen are required to register prior to fishing for one of three areas of Cook Inlet: 1) the Upper Subdistrict of the Central District; 2) the Northern District; or, 3) all remaining areas of Cook Inlet (Greater Cook Inlet). Once registered for one of these three areas, fishermen may fish only in the area for which they are registered for the remainder of the year. No transfers will be permitted. Set gillnet permit holders fishing in the Northern District or the Greater Cook Inlet area can register at ADF&G offices in Soldotna, Homer, or Anchorage or by mail. Forms are available at area offices or on the department's homepage at <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareauci.salmon#/management>. Fishermen wishing to register in the Upper Subdistrict must register in the **Soldotna ADF&G office only** and must purchase buoy stickers at the time of registering.

SEASON OPENING DATES

Season opening dates in 2013 for the various fisheries around the inlet are as follows:

- *Big River Fishery*: June 3 and continuing through June 24, unless the 1,000 Chinook salmon harvest limit is reached prior to that date. Weekly fishing periods are Mondays, Wednesdays, and Friday from 7:00 a.m. to 7:00 p.m.

-continued-

- *Northern District King Salmon Fishery*: June 3. As explained earlier in this document, the fishing period originally scheduled for Monday, May 27, will be closed in 2013 to reduce the harvest of king salmon throughout the Northern District. The remaining fishing periods for the 2013 season will occur on June 3, 10, 17, and 24. Each fishing period will be open from 7:00 a.m. to 1:00 p.m. The area from a point at the wood chip dock to the Susitna River remains closed for the directed king salmon fishery in 2013.
- *Northern District Regular Season Salmon Fishery*: June 27.
- *Western Subdistrict Set Gillnet Fishery*: June 17.
- *All remaining set gillnet fisheries, except the Upper Subdistrict*: June 27.
- *Upper Subdistrict Set Gillnet Fishery*: June 27 for the Kasilof Section (that portion south of the Blanchard Line), unless opened earlier by EO (based on an inriver estimate of 50,000 Kasilof River sockeye salmon before the June 27 opener), but will not open before June 20. The Kenai and East Forelands Sections (that portion of the Upper Subdistrict north of the Blanchard Line) will open July 8. All Sections of the Upper Subdistrict will close for the season on or before August 15.
- *Drift Gillnet Fishery*: June 20.

GENERAL INFORMATION

The UCI commercial fisheries information line will again be available by calling 262-9611. The most recent emergency order announcement is always available on the recorded message line and catch, escapement and test fishing information is included whenever possible. All emergency order announcements are also faxed or emailed to processors as quickly as possible and posted to the UCI web page at <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareauci.salmon>. For very general information, we invite you to visit the Commercial Fisheries web page on the Internet at <http://www.adfg.alaska.gov/index.cfm?adfg=fishingCommercial.main>.

If, during the summer, fishermen have information or questions concerning the commercial fishery, the Soldotna Division of Commercial Fisheries staff can be reached by phone at 262-9368, by fax at 262-4709, or by mail at 43961 Kalifornsky Beach Road, Suite B, Soldotna, 99669.

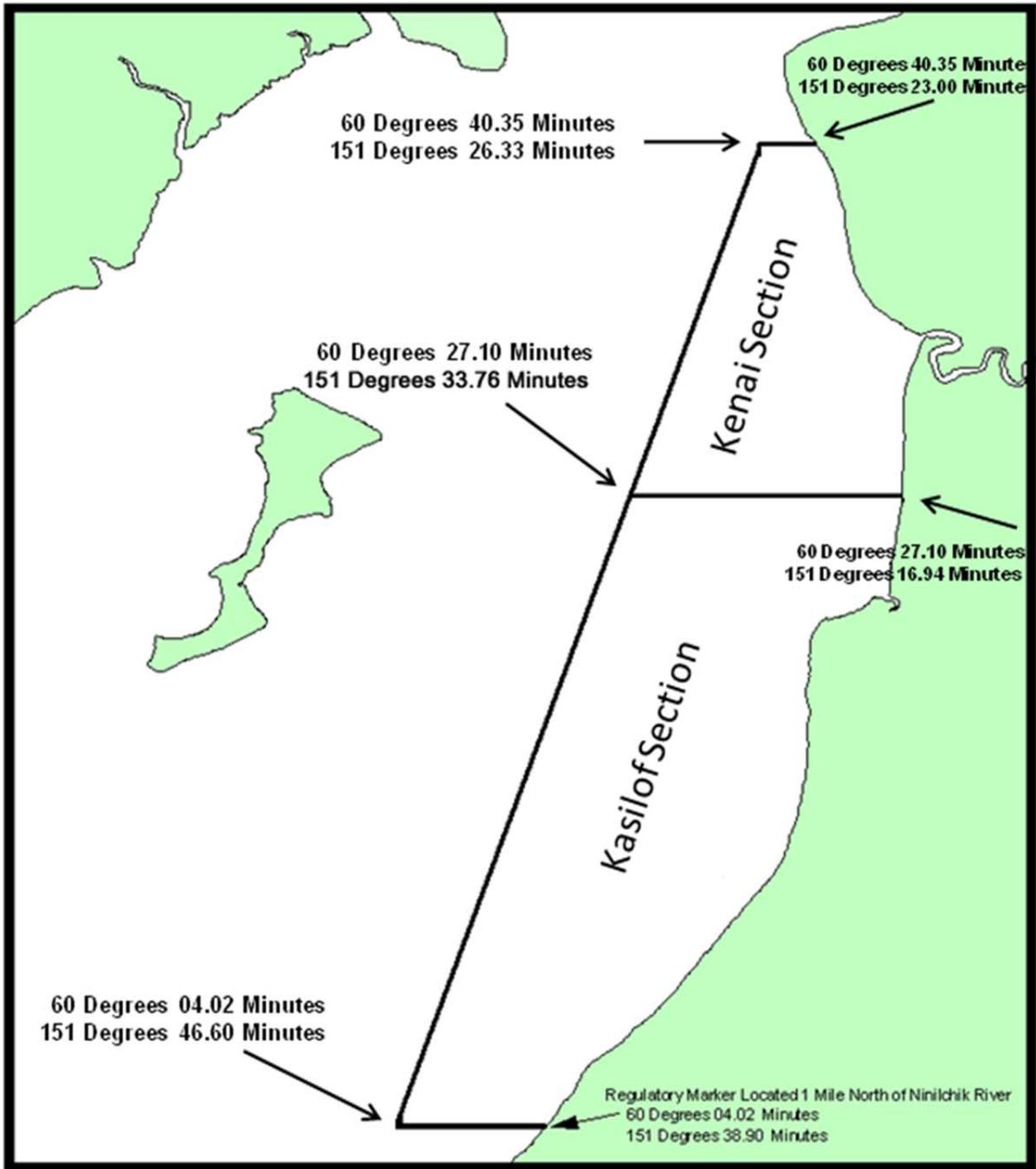


Figure 1. Map of the Expanded Kenai and Expanded Kasilof Sections with waypoint descriptions.

-continued-

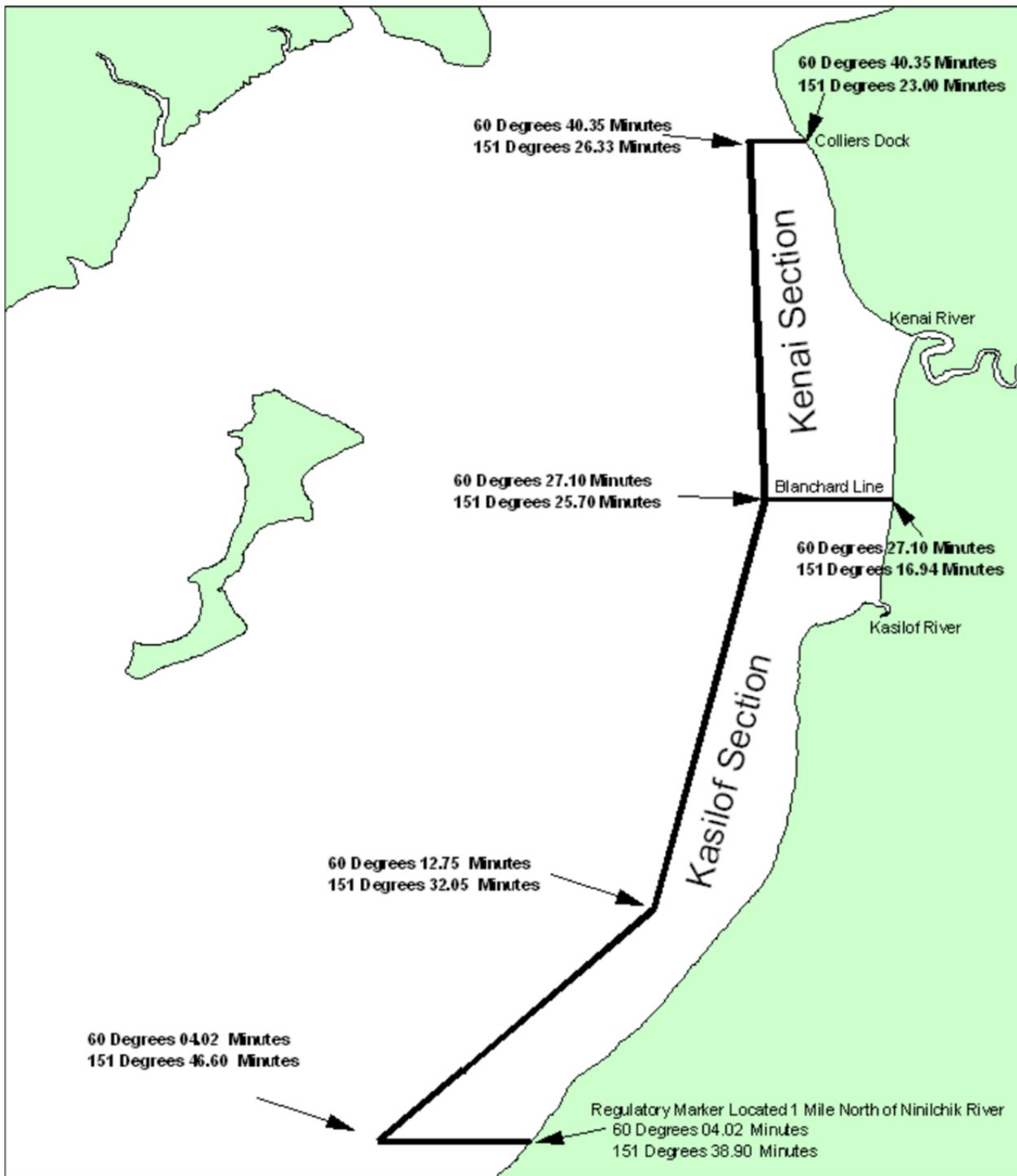


Figure 2. Map of the Kenai and Kasilof Sections with waypoint descriptions.

-continued-

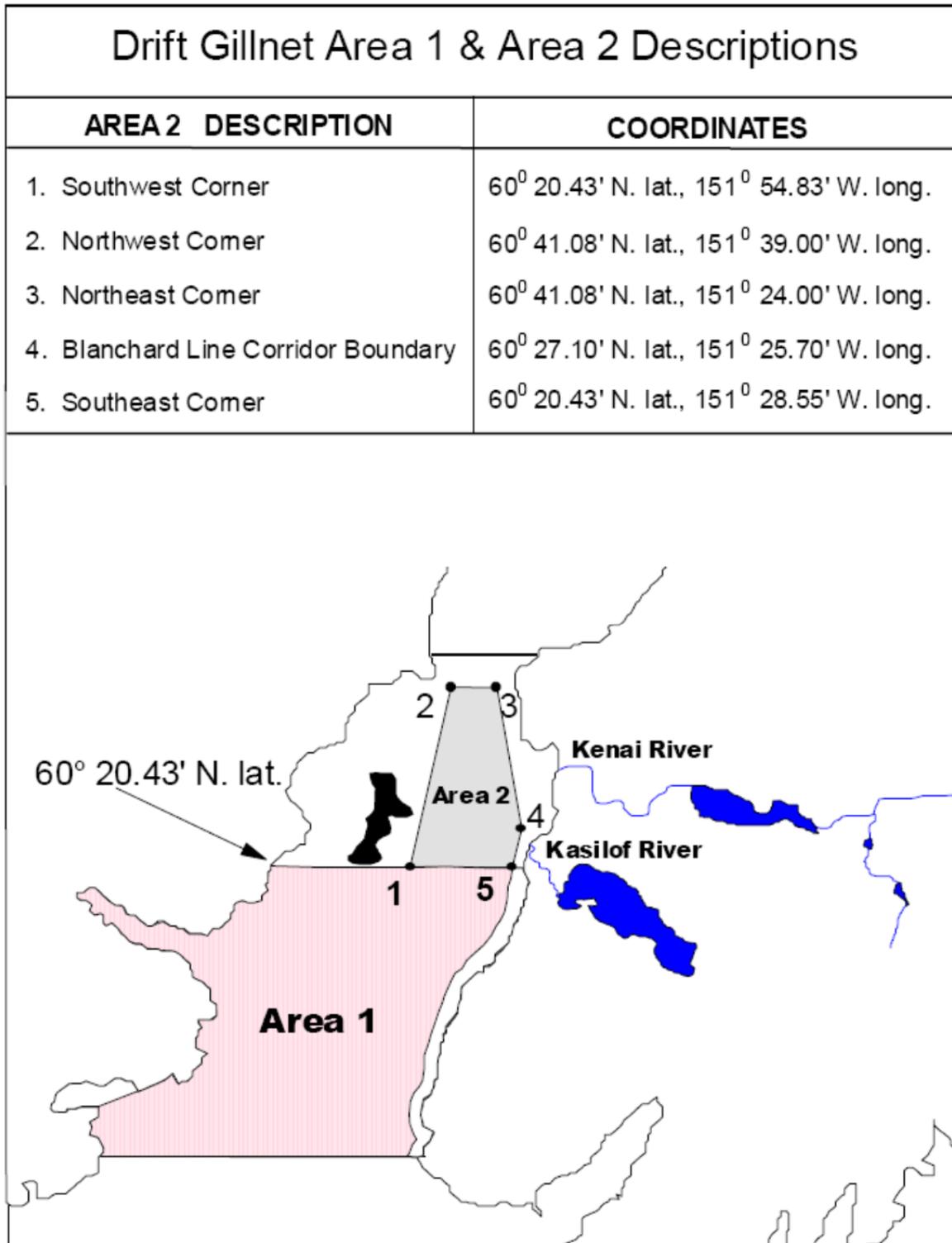


Figure 3. Map of drift gillnet fishing areas one and two.

-continued-

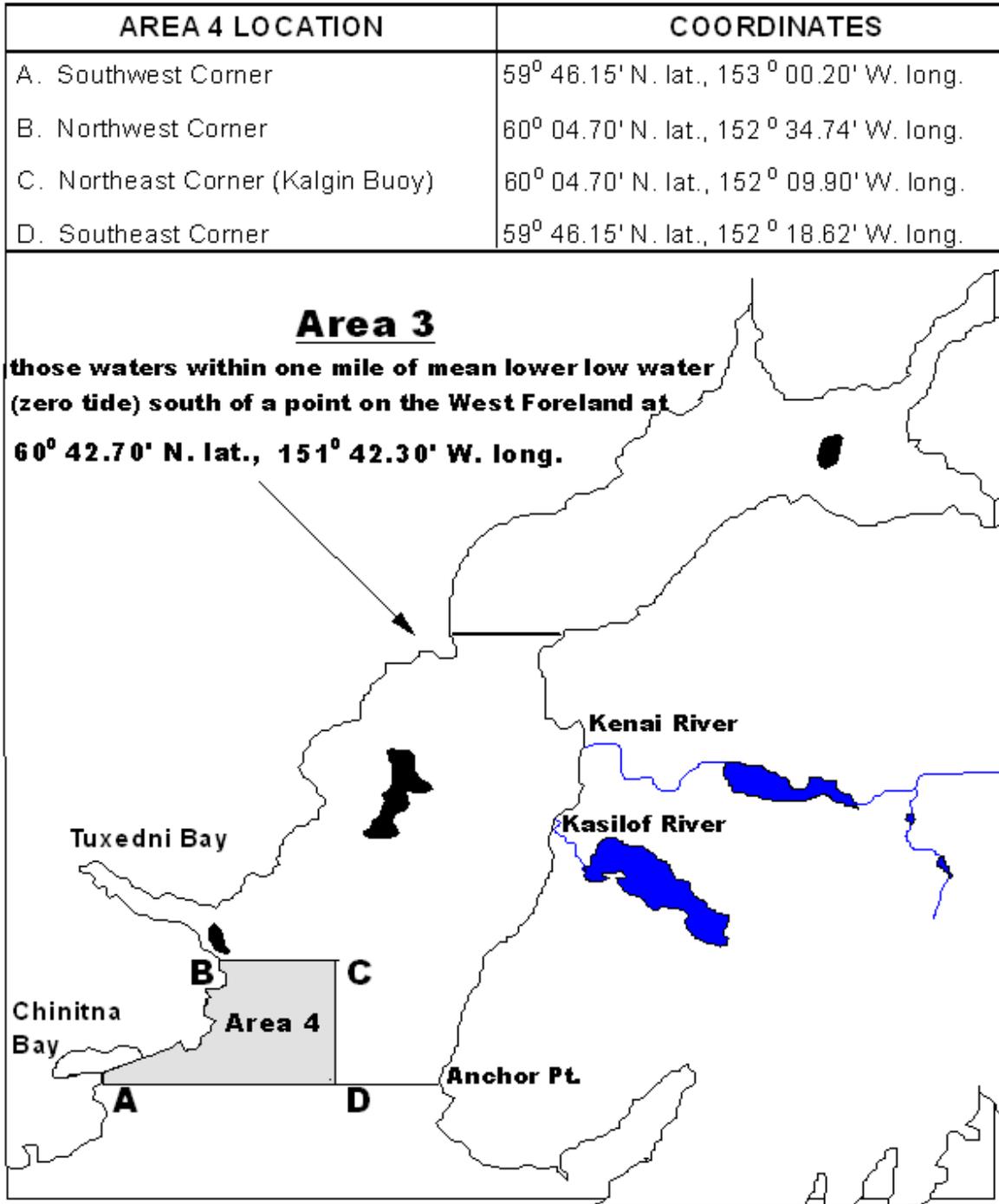
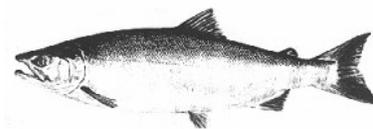


Figure 4. Map of the drift gillnet areas open beginning August 16.

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE



Cora Campbell, Commissioner
Sue Aspelund, Acting Director



Contact: Mark Willette, Research Project Leader
Aaron Dupuis and Pat Shields, Area Management Biologists
Phone: (907) 262-9368
Fax: (907) 262-4709

Soldotna ADF&G
43961 Kalifornsky Beach Rd.
Suite B
Soldotna, AK 99669
Date Issued: Nov. 19, 2013

2014 UPPER COOK INLET SOCKEYE SALMON FORECAST

The preliminary forecast of the 2014 Upper Cook Inlet sockeye salmon run is as follows:

	Forecast Estimate (millions)	Forecast Range (millions)
TOTAL PRODUCTION:		
Total Run	6.1	4.4-7.8
Escapement	1.8	
Harvest	4.3	

Forecast Methods

The major sockeye salmon systems in Upper Cook Inlet (UCI) are the Kenai, Kasilof, Susitna, and Crescent rivers, and Fish Creek. Escapement (spawner abundance), return, sibling, fry, and smolt data, if available, were examined for each system. Four models were evaluated to forecast the run of sockeye salmon to UCI in 2014: (1) the relationship between adult returns and spawners, (2) the relationship between adult returns and fall fry, (3) the relationship between adult returns and smolts and (4) the relationship between sibling adult returns. Several forecast models were evaluated for each stock and age class. Models providing the smallest mean absolute percent error (MAPE) between the forecast and actual runs over the past 10 years were generally used. Forecast model predictions based on spawners, fry, smolt, or siblings were compared to evaluate uncertainty.

The return of age-1.3 sockeye salmon to the Kenai River in 2014 was forecasted using a sibling model. For example, the sibling-model prediction of the return of age-1.3 salmon was based on

-continued-

the abundance of age-1.2 salmon in 2013. A spawner-recruit model prediction of the age-1.2 salmon return was based upon escapement in 2010. The return of age-2.3 salmon to the Kenai River was forecasted using a smolt model based upon age-2 smolt data available after brood year 2002. The returns of age-1.3 and 2.3 sockeye salmon to the Kasilof River were forecasted using sibling models based upon the abundance of age-1.2 and 2.2 salmon in 2013. A spawner-recruit model was used to forecast the return of age-2.2 salmon, and a smolt model was used to forecast the return of age-1.2 salmon to the Kasilof River.

The total run of Susitna River sockeye salmon was forecasted using mean return per spawner by age class for brood years 2006–2009. Mark–recapture estimates of inriver run and genetic estimates of commercial harvest were available for these brood years.

The sockeye salmon forecast for unmonitored systems in UCI was estimated as 15% of the aggregate forecast for the 5 major stocks. The fraction of the total run destined for unmonitored systems was estimated using genetic estimates of the stock composition of offshore test fishery harvests.

The 2014 total harvest by all user groups was estimated by subtracting the aggregate escapement from the total run forecast for all stocks. Aggregate escapements were estimated from the sum of the midpoints of the escapement goal ranges for each of the major sockeye salmon-producing systems in UCI and the escapement into unmonitored systems (estimated as 15% of the aggregate escapement into monitored systems). The estimated sport harvest upstream of the sonar at river mile 19 on the Kenai River was subtracted from the aggregate escapement into monitored systems. The total run forecast range was calculated by multiplying the forecast by the MAPE of the actual runs from published forecast runs from 2004 through 2013.

Forecast Discussion

In 2013, the harvest of sockeye salmon by all user groups in UCI (3.5 million) was 1.4 million less than the preseason forecast of 4.9 million. In 2013, the total run was 3.5 million to the Kenai River; 1,080,000 to the Kasilof River; 461,000 to the Susitna River; 80,000 to the Crescent River; and 25,000 to Fish Creek. The sockeye salmon escapement into Crescent River was estimated using a harvest rate model, because the sonar was not operated in 2013. The 2013 run forecast was 4.4 million to the Kenai River; 903,000 to the Kasilof River; 363,000 to the Susitna River; 110,000 to the Crescent River; and 61,000 to Fish Creek.

A run of 6.1 million sockeye salmon is forecasted to return to UCI in 2014, with a harvest by all user groups of 4.3 million. The forecasted harvest in 2014 is 0.6 million fish above the 20-year average harvest of 3.7 million by all user groups.

The run forecast for the Kenai River is approximately 3.8 million, which is equal to the 20-year average run. Age-1.3 salmon typically comprise about 57% of the run to the Kenai River. A sibling model based upon the return of age-1.2 salmon in 2013 (307,000; 20-year average is 369,000) predicted a return of 1.8 million age-1.3 salmon. A fry model based upon the abundance of age-0 fry rearing in Skilak and Kenai lakes in the fall of 2010 (17.8 million; 20-year average is 17.7 million) predicted a return of 1.9 million age-1.3 salmon. The sibling model

was used for this forecast, because the 10-year MAPE was lower for the sibling model (24%) than the fry model (49%). Age-2.3 salmon typically comprise about 18% of the run to the Kenai River. A sibling model based upon the return of age-2.2 salmon in 2013 (194,000; 20-year average is 252,000) predicted a return of 389,000 age-2.3 salmon in 2014. A smolt model based upon the abundance of age-2 smolt emigrating from the Kenai River in spring 2011 (4.8 million) predicted a return of 1.1 million age-2.3 salmon. The smolt model was used for this forecast due to the high age-2 smolt abundance in 2011 and the failure of the sibling model to accurately predict large returns of age-2.3 salmon like that seen in 2011–2013. The forecasted age-2.3 return is 150% greater than the 20-year average return for this age class (705,000). The predominant age classes in the 2014 run should be age 1.3 (47%), age 1.2 (11%), and age 2.3 (28%). The 5-year MAPE for the set of models used for the 2014 Kenai sockeye salmon run forecast was 11%. The 5-year MAPE was used for the Kenai sockeye salmon run forecast, because smolt data used for the age-2.3 forecast is only available for the past 5 brood years.

The sockeye salmon run forecast for the Kasilof River is 1,062,000, which is 11% greater than the 20-year average run of 953,000. Age-1.3 salmon typically comprise about 34% of the run to the Kasilof River. The forecast for age-1.3 salmon is 376,000, which is 17% greater than the 20-year average return (321,000) for this age class. A sibling model based upon the abundance of age-1.2 salmon in 2013 was used to forecast the return of age-1.3 salmon in 2014. The abundance of age-1.2 salmon in 2013 was 417,000, which is 39% greater than the 20-year average abundance (300,000) for this age class. A spawner-recruit model predicted a return of 370,000 age-1.3 salmon. The sibling model was used for this forecast because the 10-year MAPE was lower for the sibling model (36%) than the spawner-recruit model (81%). Age-1.2 salmon typically comprise about 31% of the run. The forecast for age-1.2 salmon is 279,000, which is 7% less than the 20-year average return (300,000) for this age class. A smolt model based upon age-1 smolt abundance (5.3 million) in 2012 was used to forecast the return of age-1.2 salmon in 2014. A sibling model based upon the abundance of age-1.1 salmon (6,600) in 2013 forecasted a return of 313,000 age-1.2 salmon. The smolt model was used for this forecast because the 10-year MAPE was lower for the smolt model (55%) than the sibling model (96%). Age-2.2 salmon typically comprise about 24% of the run. The forecast for age-2.2 salmon is 268,000, which is 17% greater than the 20-year average return (229,000) for this age class. A spawner-recruit model based upon spawner abundance in 2009 was used to forecast the return of age-2.2 salmon in 2014. The sibling model forecast for age-2.2 salmon was 219,000. The spawner-recruit model was used for this forecast, because the 10-year MAPE was lower for the spawner-recruit model (28%) than the sibling model (35%). The predominant age classes in the 2014 run should be age 1.2 (26%), age 1.3 (35%), and age 2.2 (25%). The 10-year MAPE for the set of models used for the 2014 Kasilof sockeye salmon run forecast was 24%.

The sockeye salmon run forecast for the Susitna River is 264,000, which is 39% less than the 7-year average run of 430,000. This forecast was derived using mean return per spawner by age class for brood years 2006–2009 and mark–recapture estimates of spawner abundance in 2006–2010. Sonar and age composition catch allocation models were not used, because mark–recapture studies have shown that the Yentna sonar project underestimated sockeye salmon escapement, causing estimates of adult returns to also be underestimated. This is the second year this forecast

-continued-

method has been used, so MAPE is not available. The 7-year average run (2006–2012) was calculated using mark–recapture estimates of inriver run and genetic estimates of commercial harvests.

The sockeye salmon run forecast for Fish Creek is 79,000, which is 26% less than the 20-year average run of 107,000. Age-1.2 and -1.3 salmon typically comprise 72% of the run to Fish Creek. A smolt model based upon the abundance of age-1 smolt emigrating from Fish Creek in 2012 (178,000; 9-year average: 229,000) predicted a return of 40,000 age-1.2 salmon. A smolt model based upon the abundance of age-1 smolt in 2011 (269,000) predicted a return of 20,000 age-1.3 salmon in 2014. The age-1.2 forecast is 23% less than the 20-year average return (52,000) for this age class, while the age-1.3 forecast is 21% less than the 20-year average return (26,000) for this age class. The predominant age classes in the 2014 run should be age 1.2 (50%) and age 1.3 (25%).

The sockeye salmon run forecast for Crescent River is 92,000, which is 17% less than the 20-year average run. Age-1.3 and -2.3 salmon typically comprise 75% of the run to Crescent River. Sibling models based upon returns of age-1.2 and -2.2 salmon in 2013 were used to forecast returns of age-1.3 (38,000) and -2.3 (33,000) salmon in 2014. The predominant age classes in the 2014 run should be age 1.3 (42%) and age 2.3 (36%). The sockeye salmon run forecast for Crescent River was pooled with unmonitored systems, because the Crescent River sonar project is no longer funded, and the department has recommended that the escapement goal for this stock be removed.

Run forecasts to individual freshwater systems are as follows:

System	Run	Goals ¹
Kenai River	3,792,000	1,000,000–1,200,000 ²
Kasilof River	1,062,000	160,000–340,000
Susitna River	264,000	NA ³
Larson Lake	NA	15,000–50,000
Chelatna Lake	NA	20,000–65,000
Judd Lake	NA	25,000–55,000
Fish Creek	79,000	20,000–70,000
Unmonitored Systems	885,000	NA
Total	6,082,000	

¹ Goals listed here are as follows, Kenai River: Inriver; Kasilof River: BEG; Sustina River: SEG (weir goals); and Fish Creek: SEG.

² This is the inriver sockeye salmon goal measured using sonar at river mile 19 on the Kenai River.

³ Susitna sockeye salmon are managed to achieve escapement goals at Larson, Chelatna, and Judd lakes.

-continued-

OTHER SALMON SPECIES

The preliminary forecast of the 2014 commercial harvest of other salmon species is as follows:

Commercial Harvest Forecasts	
Natural Production:	
Pink Salmon	338,000
Chum Salmon	170,000
Coho Salmon	165,000
Chinook Salmon	7,600

Forecast Methods

The recent 5-year average commercial harvest was used to forecast the harvest of chum, coho, and Chinook salmon in 2014. The forecast for pink salmon was based upon the average harvest during the past 5 even-numbered years.

Forecast Discussion

The recent 5-year average commercial harvest was used in the forecast, because regulatory changes have substantially restricted harvests of these species in recent years.

For more information contact Mark Willette or Pat Shields at the Soldotna ADF&G office at (907) 262-9368.

APPENDIX D: COMMERCIAL SMELT AND HERRING

ALASKA DEPARTMENT OF FISH AND GAME
DIVISION OF COMMERCIAL FISHERIES
NEWS RELEASE



Cora Campbell, Commissioner
Jeff Regnart, Director



Contact: Pat Shields, Area Management Biologist;
Aaron Dupuis, Asst. Area Management Biologist

43961 Kalifornsky Beach Rd, Suite B

Soldotna, AK 99669

Phone: (907) 262-9368

Fax: (907) 262-4709

Date Issued: April 16, 2013

Time: 1:00 p.m.

**2013 UPPER COOK INLET COMMERCIAL SMELT (HOOLIGAN)
AND HERRING FISHING SEASONS**

5AAC 21.505 Cook Inlet Smelt Fishery Management Plan allows for a small commercial fishery for smelt in the Northern District of Upper Cook Inlet. This fishery occurs in those waters located between the Chuit River and the Little Susitna River (in salt water only). The season is open from May 1 to June 30. Legal gear for the fishery is a hand-operated dip net, as defined in 5 AAC 39.105. The total harvest may not exceed 100 tons of smelt. Any salmon caught must be released immediately and returned to the water unharmed. To participate in this fishery, a miscellaneous finfish permit is required, as well as a commissioner's permit, which can be obtained from the ADF&G office in Soldotna. The commissioner's permit must be obtained prior to applying for the miscellaneous finfish permit.

The Central District Herring Management Plan (5 AAC 27.409) provides for a commercial herring fishery in the Central District of Upper Cook Inlet, including the Kalgin Island Subdistrict, Upper Subdistrict, Western Subdistrict, and Chinitna Bay Subdistrict, as described in 5 AAC 21.200(b)(2), (b)(3), (b)(5), and (b)(6). The legal gillnet mesh size can be no smaller than 2.0 inches or no greater than 2.5 inches. The season is open from April 20 to May 31 with one fishing period per week, from 6:00 a.m. on Monday until 6:00 p.m. on Friday; however, a fishing period may extend beyond May 31 if the fishing period began before May 31. In 2013, commercial fishing for herring will open at 6:00 a.m. on Monday, April 22 and close no later than 6:00 p.m. on Friday, May 31. In the Upper Subdistrict, the guideline harvest range is 0-40 tons and fishing for herring is not allowed any closer than 600 feet of the mean high tide mark on the Kenai Peninsula. In the Chinitna Bay Subdistrict, the department is to manage for a guideline harvest of 0-40 tons; in the Western Subdistrict, the guideline harvest range is 0-50 tons, and in the Kalgin Island Subdistrict, the guideline harvest range is 0-20 tons.

In the Central District, herring may be taken only by gillnet, as defined in 5 AAC 27.431, except that in the Chinitna Bay and Kalgin Island Subdistricts, herring may only be taken by set gillnets (5 AAC 27.430 (b)). Prior to fishing, all participants are required to register at the department's Soldotna office. Fishermen are also required to report fishing time and the amount of smelt and herring harvested, whether sold or retained for personal use, to the Soldotna office by 12:00 noon of the next day for each day fished. Fishermen are also reminded that fish tickets are to be filled out and either mailed or dropped off at the Soldotna ADF&G office within seven days of the time of landing (5 AAC 39.130 (c)). If you intend to sell your catch directly from your fishing site (beach or vessel), you must first obtain a catcher-seller permit from ADF&G.