

Regional Information Report No. 1J16-07

2016 Yakutat Set Gillnet Fishery Management Plan

by

Nicole L. Zeiser

August 2016

Alaska Department of Fish and Game

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

REGIONAL INFORMANTION REPORT 1J16-07

2016 YAKUTAT SET GILLNET FISHERY MANAGEMENT PLAN

by
Nicole L. Zeiser
Alaska Department of Fish and Game, Division of Commercial Fisheries, Yakutat

Alaska Department of Fish and Game
Division of Commercial Fisheries, Publications Section
802 3rd Street, Douglas, AK 99824

August 2016

The Regional Information Report Series was established in 1987 and was redefined in 2006 to meet the Division of Commercial Fisheries regional need for publishing and archiving information such as project operational plans, area management plans, budgetary information, staff comments and opinions to Board of Fisheries proposals, interim or preliminary data and grant agency reports, special meeting or minor workshop results and other regional information not generally reported elsewhere. Reports in this series may contain raw data and preliminary results. Reports in this series receive varying degrees of regional, biometric and editorial review; information in this series may be subsequently finalized and published in a different department reporting series or in the formal literature. Please contact the author or the Division of Commercial Fisheries if in doubt of the level of review or preliminary nature of the data reported. Regional Information Reports are available through the Alaska State Library and on the Internet at: <http://www.sf.adfg.ak.us/statewide/divreprots/html/intersearch.cfm>.

*Nicole L. Zeiser
Alaska Department of Fish and Game, Division of Commercial Fisheries,
1 Fish and Game Plaza
P.O. Box 49
Yakutat, AK 99689, USA*

This document should be cited as:

Zeiser, N. L. 2016. 2016 Yakutat set gillnet fishery management plan. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 1J16-07, Douglas.

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, 4040 N. Fairfax Drive, Suite 300 Webb, Arlington VA 22203

Office of Equal Opportunity, U.S. Department of the Interior, 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 Commercial Fisheries, P.O. Box 115526, Juneau AK 99811 (907)465-4210.

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	I
ABSTRACT	1
INTRODUCTION	1
Anticipated Salmon Returns	2
Fishery Management	2
2016 SUMMER MANAGEMENT PLAN	3
Alsek River	3
Dangerous River	5
Yakutat Bay and Manby Shore Ocean Fisheries	5
Situk-Ahrnklin Inlet and Lost Rivers.....	5
East Alsek-Doame Rivers.....	8
Akwe River.....	8
Manby Shore Inside Fishery	9
Italio River.....	9
Yakataga District	10
2016 FALL MANAGEMENT PLAN	10
Yakutat District	10
Yakataga District	11
2016 SALMON RUN EXPECTATIONS	11
Sockeye Salmon	11
Alsek River	11
East River	12
Akwe River.....	12
Italio River	12
Situk River	12
Coho Salmon	12
Tsiu/Kaliakh River.....	12
CHINOOK SALMON	12
Situk River	12
FISHERY CONTACTS	13

LIST OF TABLES

Table	Page
Table 1.–Yakutat area salmon escapement goals.	2
Table 2.–Opening dates for Yakutat Area fisheries in 2016.....	3

ABSTRACT

The 2016 Yakutat set gillnet fishing seasons and fishing periods will open by regulation on Sunday as specified in 5 AAC 30.310 and 5 AAC 30.320. The Alsek River will open on Sunday, June 5, Yakutat Bay and Dangerous River will open on Sunday, June 12, and the Situk-Ahrnklin Inlet and Manby Shore Outside Waters will open on Sunday, June 19. All Yakutat District fisheries will be open by Sunday, June 26 with the exception of the East Alsek River and the Italo rivers which will open by emergency order when sockeye escapement levels can be documented. The East Alsek River will be managed for sockeye salmon into September. Set gillnet fisheries are managed by adjusting fishing times and areas in response to inseason assessments of run strength. Management strategies will concentrate on sockeye and Chinook salmon in June and July. Following the first Sunday in August, fall fishing periods will go into effect and the emphasis for management strategies will transition to coho salmon. No formal preseason forecast program exists for the Yakutat salmon runs with the exception of Situk River Chinook salmon. The Division of Sport Fish provides a formal preseason forecast for Chinook salmon returning to the Situk River. The projected inriver run of Chinook salmon to the Situk River in 2016 is 684 large fish (range 216–1,022). Returns are expected to be average to above average for both sockeye and coho salmon.

Key words: Yakutat, set gillnet, fishing seasons, fishing periods, Chinook, sockeye, coho, pink and chum salmon, Biological Escapement Goals (BEGs), Sustainable Escapement Goals (SEGs), fishery management plan, preseason expectations.

INTRODUCTION

The Yakutat area encompasses the waters of Alaska between Cape Suckling and Cape Fairweather. The area is divided into two fishing districts: the Yakataga District between Cape Suckling and Icy Cape, and the Yakutat District between Icy Cape and Cape Fairweather. All five salmon species are harvested in the Yakutat area, with coho, sockeye, Chinook, and pink salmon comprising the majority of the catch in order of commercial value.

Set gillnet gear is the only net gear permitted in the Yakutat area. A power and hand-troll fishery also occurs and is managed out of the Sitka Fish and Game office. About 170 commercial setnet entry permits are renewed annually. Setnet permit holders in the Yakutat area do not have registered sites and may fish in any open fishing area. They may also move between fishing areas during the season as long as not more than one area is fished concurrently.

There are 25 unique set gillnet fisheries in the Yakutat area. Most of these fisheries target sockeye salmon from mid-June through July and coho salmon in August and September. The only targeted pink salmon fishery occurs in the southeast portion of Yakutat Bay on fish returning to Humpback Creek, although effort is usually determined by the size of the pink salmon run. Set gillnet fisheries in the Yakataga District primarily harvest coho salmon.

In January 2006 the Alaska Board of Fisheries (BOF) adopted two regulations that permanently changed the weekly fishing periods and fishing seasons for the Yakutat Management Area from Monday to Sunday of each week starting in June. This regulation is still in effect today. In 2016 the Alsek River will open on the first Sunday in June (June 5), Yakutat Bay and Dangerous River will open on the second Sunday in June (June 12), and Situk-Ahrnklin Inlet and Manby Shore Outside Waters will open on the third Sunday in June (June 19). By the fourth Sunday in June (June 26) all fisheries in the Yakutat District will be open with the exception of the East River and the Italo rivers, which will open by emergency order if expected returns are surplus to escapement needs. The East River will open when the lower end of the sockeye salmon escapement goal (~13,000 sockeye salmon) has been observed.

ANTICIPATED SALMON RETURNS

No formal preseason forecast program exists for the Yakutat salmon runs except for Situk River Chinook salmon. Preseason expectations are based on parent-year spawning escapements, commercial catch trends, local observations of rearing conditions, and information on year-class strength. The projected inriver Chinook salmon run to the Situk River is 684 large (three year ocean age or older) fish (range 82–1,287). The 2016 Yakutat Area salmon runs are expected to be average to above average for sockeye salmon and average to above average for coho salmon. Detailed projections by specific drainage area are presented on pages 11–12.

FISHERY MANAGEMENT

Set gillnet fisheries in the Yakutat area are managed by adjusting fishing times and areas in response to inseason assessments of run strength. These actions are taken to provide adequate spawning escapements and to allow harvests of salmon that are surplus to escapement goals. Inseason assessment methods include both fishery performance and spawning escapement information. In the glacial systems, fishery performance data is utilized for management because poor visibility prevents the accurate observation of spawning escapements. Biological Escapement Goals (BEG) and Sustainable Escapement Goals (SEG) have been established for all major index areas and salmon species in the Yakutat Area (Table 1). Ground and aerial surveys are conducted annually on rivers with established BEGs or SEGs to monitor escapement and assure escapement goals are achieved.

Table 1.–Yakutat area salmon escapement goals.

Species	System	Range	Year Established.
Chinook	Klukshu River (Alsek River)	800–1,200	2011
	Alsek River (total)	3,500–5,300	2011
	Situk River	450–1,050	2003
Sockeye	East Alsek-Doame River	13,000–26,000	2003
	Klukshu River	7,500–11,000	2011
	Lost River	1,000	2009
	Situk River	30,000–70,000	2003
Coho	Lost River	2,200	1994
	Situk River	3,300–9,800	1994
	Tsiu/Tsivat Rivers	10,000–29,000	1994
Pink	Situk River*	33,000	2011

Note: The Lost River sockeye and coho salmon, and Situk River pink salmon escapement goals are SEGs.

* The escapement goal is for 33,000 pink salmon through the weir by August 5.

During 2016, the major fishing areas can be expected to open on the dates shown in Table 2.

Table 2.–Opening dates for Yakutat Area fisheries in 2016.

Yakutat District		
Area	Opening Date	
Alsek River	5 June	
Dangerous River	12 June	
Yakutat Bay (south of 59°40' N lat.)	12 June	
Manby Shore Ocean	19 June	
Situk-Ahrnklin Inlet	19 June	
Lost River	by Emergency Order	
East River	by Emergency Order	
Akwe River	26 June	
Manby Shore Inside	26 June	
Remainder of the Yakutat District	26 June	
Italio River	by Emergency Order	
Yakataga District		
Season	Area	Opening Date
Sockeye salmon	All areas	by Emergency Order
Coho salmon	Kaliakh River	7 August
	Tsiu River	by Emergency Order (around August 18)

2016 SUMMER MANAGEMENT PLAN

This management plan concentrates on the major fisheries in the Yakutat Area. Information on areas that are fished only occasionally is available from the Yakutat area management biologists listed at the end of the plan. Most Yakutat gillnet openings for sockeye salmon will generally run from 6:00 a.m. Sunday through 6:00 p.m. Tuesday, with the exception of the Alsek River which initially opens from 12:01 p.m., Sunday through 12:00 noon, Monday unless extensions are deemed necessary. The East River will open when the lower bound biological escapement goal (BEG) of 13,000 sockeye salmon has been attained.

ALSEK RIVER

The Alsek River, located 45 miles southeast of Yakutat, is a major transboundary river that drains a large area east of the coastal mountain range and is located near the southeastern end of the Yakutat forelands. The Alsek River extends approximately 130 miles from its mouth upriver into the Yukon Territory of Canada. The U.S./Canada border is approximately 40 miles upstream from the river mouth. The river supports large populations of Chinook, sockeye, and coho salmon, and small populations of pink and chum salmon. Alaska set gillnet fisheries target sockeye and coho salmon. Canada's subsistence and sport fisheries target sockeye and Chinook salmon.

Commercial salmon landings from the Alaska portion of the Alsek River averaged approximately 20,000 sockeye, 450 coho, and 570 Chinook salmon annually from 2011 through 2015. Canada's subsistence and sport harvest has averaged approximately 100 Chinook, 1,300 sockeye, and 15 coho salmon during the same period. Subsistence and sport fisheries in the Alaska portion of the river are relatively minor, harvesting about 200 salmon annually.

Historically, the set gillnet fishery targeted Chinook salmon during May in the Alaska portion of the Alsek River. However, due to what was thought to be depressed runs, the directed Chinook salmon fishery has been closed since 1962 and Chinook salmon have been harvested only incidentally during the sockeye salmon fishery in early June. In 2005 the Transboundary River Panel of the Pacific Salmon Commission reached bilateral agreement to reopen the Stikine and Taku Inlet gillnet fisheries. At that time they also established a test fishery for the Alsek River that took place in late May of 2005–2008, 2011 and 2012. Because the lower end of the Chinook salmon escapement goal range of 1,100 fish in place at the time of the fisheries was not attained from 2005 through 2008, the test fishery was suspended in 2009 and 2010. Escapements improved from 2009 through 2011 and were within the desired objectives. The Chinook salmon escapement goal was not attained in 2012 but was attained in 2013. Test fishing for Chinook salmon was not conducted in 2013–2015, and will not be conducted in 2016. It is anticipated that the Transboundary River Panel will at some point reach bilateral agreement to reopen the Alsek River to commercial fishing for Chinook salmon in May if run strength allows. In January 2006 the BOF adopted regulatory language to allow for this fishery should an agreement be reached.

The principal escapement monitoring tool for Chinook salmon stocks in the Alsek River is the Klukshu River weir. The escapement goal of 1,100 to 2,300 Chinook salmon through the Klukshu weir was recently re-examined. A revised joint escapement goal for the Klukshu stock was agreed on by Fisheries and Oceans Canada (FOC) and ADF&G in 2011, and it recommends an escapement goal range of 800 to 1,200 Chinook salmon in the Klukshu drainage. In February 2013 the bilateral TTC and bilateral Transboundary River Panel agreed to the revised BEG for Alsek River Chinook salmon and both Canadian and U.S. managers have managed the Alsek River fisheries to meet the new goal since 2013. The 2016 Chinook salmon run is expected to produce fish surplus to the Klukshu River escapement goal.

The 2016 overall Alsek drainage sockeye salmon run is expected to be approximately 83,000 fish; above the recent 10-year average of approximately 68,000 fish. The principal contributing brood years will be 2011 (Klukshu escapement of 21,402 sockeye salmon) and 2012 (Klukshu escapement of 17,694 sockeye salmon). Both the early and late run segments of the Alsek River sockeye salmon run are expected to be above average in 2016. ADF&G will manage the Alsek River commercial set gillnet fishery to achieve the agreed upon escapement goal range of 7,500 to 11,000 plus 3,000 sockeye salmon in accordance with the 2009–2018 agreement reached during the U.S./Canada Pacific Salmon Treaty (PST) negotiations in February 2008. The sockeye salmon BEG was attained during the three-year period of 2010 through 2012. The BEG was not attained in 2013 and was the second lowest escapement in the previous 10 years. The sockeye salmon BEG was attained in 2014 and was above the escapement goal range in 2015. In 2016 the Alsek River commercial set gillnet fishery will be managed conservatively until it can be ascertained that the BEG will be met. The Alsek will open downstream from a marker located three miles below the southern end of Alsek Basin on the first Sunday in June (June 5). Weekly openings will initially be set at 24 hours. The duration of weekly fishing periods will be based on a comparison of inseason fishery performance data (CPUE) to historical fishery performance

data, as well as Klukshu River weir data. Historically, set gillnets have been restricted to a maximum mesh size of six inches through July 1 to minimize Chinook salmon harvest. The mesh restriction was lifted in 2013 and 2014. The six inch mesh restriction was reinstated in 2015 and will again be implemented in 2016 to ensure drainage-wide Chinook salmon escapement levels are achieved. Adjustments to inseason fishing regimes in the fisheries will be made if deemed necessary. Fishing times may be extended when CPUE warrants. The Alsek River surf fishing area is expected to be open during the same periods as the inriver fishery. The surf fishing area includes the shoreline three-quarters of a mile each side of the river mouth seaward to the outermost bar at mean low tide.

DANGEROUS RIVER

The Dangerous River will open downstream from the Dangerous River Bridge on June 12. Catch and effort from this system has been sporadic. During the parent year of 2011, 5 permits fished the Dangerous River and approximately 4,000 sockeye salmon were harvested. This harvest was slightly below the recent five-year average of 5,000 fish. In 2015 only two permits fished and harvest information is confidential. The Dangerous River is seldom fished for coho salmon. Marine waters adjacent to the mouth of the Dangerous will be open to the same fishing periods as the Dangerous River itself.

YAKUTAT BAY AND MANBY SHORE OCEAN FISHERIES

Three separate set gillnet fisheries occur in Yakutat Bay. The Yakutat Bay fishery occurs in the ocean waters of Yakutat Bay south of 59°40' N. latitude and will open on the second Sunday of June (June 12) for 2.5 days. The Manby Shore Ocean fishery encompasses the ocean waters of Yakutat Bay north of 59°40' N. latitude and will open the third Sunday of June (June 19) for 2.5 days. Weekly fishing periods will depend on Situk River sockeye salmon run strength. The Manby Shore Inside Waters fishery will open on the fourth Sunday of June (June 26) in streams along the northern shore of Yakutat Bay.

Both the Yakutat Bay and Manby Shore ocean fisheries harvest mixed stocks of sockeye salmon. Tag recovery data collected in 1987 indicated that a major portion of the Yakutat Bay sockeye harvest was of Situk River origin. Because of the high Situk River sockeye salmon contribution to the Yakutat Bay and Manby Shore ocean fisheries, both fisheries will be managed to conserve or harvest Situk River sockeye salmon from the third week in June through the third week of July. The weekly fishing period will be limited to a maximum of 4.5 days due to the mixed stock nature of the ocean fisheries and the potentially adverse impact on weaker Yakutat area stocks.

SITUK-AHRNKLIN INLET AND LOST RIVERS

The Situk-Ahrnklin Inlet is the site of the oldest and, historically, most productive fishery in the Yakutat area. Located about nine miles by road from Yakutat, the Situk-Ahrnklin fishery normally supports the largest concentration of fishing effort in Yakutat (up to 100 permits). Fishing occurs primarily in the inlet, although some fishing occurs at the river mouth and in the adjoining surf-fishing area. Sockeye salmon make up the major portion of the harvest during the summer and coho salmon dominate the catch during the fall. Situk-Ahrnklin Inlet harvests have averaged about 58,000 sockeye, 93,000 coho, and 58,000 pink salmon (2011–2015). The Situk-Ahrnklin Inlet commercial fishery for Chinook salmon has been closed since 2010.

The 2011 Situk River sockeye salmon escapement was approximately 90,000 fish. This was above the BEG range of 30,000 to 70,000 sockeye salmon established for the Situk River drainage. Recent trends and return per spawner data indicates that the 2016 Situk River sockeye salmon run could approach 225,000 fish. A mid-range escapement of 50,000 could leave 150,000 fish available for harvest. The Situk-Ahrnklin Inlet will open initially on Sunday, June 19. Fishing periods will be based on fishery performance and escapement through the Situk River weir. The escapement of Chinook and sockeye salmon through the weir serve as an inseason indicator of stock strength. Adjustment to the Situk-Ahrnklin Inlet commercial set gillnet fisheries may be made on the basis of these counts. A run-timing model will be used to estimate the total Situk River sockeye salmon run after several weeks of harvest and escapement data are available. A similar model will be used to project Situk Chinook salmon abundance.

Chinook salmon are taken incidentally in the set gillnet fishery and the Situk-Ahrnklin Inlet commercial harvest of Chinook salmon is largely dependent on fishing time allowed for sockeye salmon. The point estimate for the preseason Situk River Chinook salmon forecast in 2016 is 684 large (3-ocean age and older) fish, with a range of 82–1,287 fish. This year's estimate is below the 2015 forecast of 826 fish. In 2015, the Situk River Chinook salmon escapement estimate again fell below the BEG range due to a very small total run of large fish (175), far below the preseason forecast. The BEG for Situk River Chinook salmon is 730 3-ocean age and older fish, with a range of 450–1,050 fish. Over the most recent 10-year period, Situk River Chinook salmon escapements did not meet the BEG in five of those years: 2008, 2010, 2011, 2012, and 2015. The Situk-Ahrnklin Inlet and Lost River King Salmon Fisheries Management Plan (5 AAC 30.365) describes management measures to be implemented at various preseason forecasted inriver run (i.e., escapement) levels of 3-ocean-age or older fish (<350, 350-450, 451-730, 730-1,050, and >1,050). If the preseason projection is below 451–730 fish, the Commissioner **shall implement management measures for conservation purposes by restricting** the sport, subsistence, personal use, commercial set gillnet, and troll fisheries for Chinook salmon. No personal use fishery exists in the Situk-Ahrnklin Inlet. During the commercial set gillnet fishery for sockeye salmon, Chinook salmon may not be retained. The troll fishery in the marine waters adjacent to the mouth of the Situk-Ahrnklin Inlet will close at the start of the summer season on July 1, 2015. The Situk-Ahrnklin Inlet and Lost River King Salmon Fisheries Management Plan (5 AAC 30.365) makes no mention of sockeye salmon management strategies during periods of low Chinook salmon abundance. The projected Chinook salmon escapement for 2016 is below 730 fish. Chinook salmon abundance in the Situk River has been in decline for several years so strict management actions have been implemented for the past five years to protect and rebuild the Situk River Chinook salmon stocks. Efforts to reduce impacts on Chinook salmon will focus on the high abundance Chinook salmon areas and migration corridors in the Situk-Ahrnklin Inlet. Although the department's conservative plan has been successful in some years, with high variability in recent survivals and uncertainty in accurate forecasts the department will again manage the fisheries conservatively in an attempt to achieve both Chinook and sockeye salmon escapement goals. Management measures anticipated by the department for Chinook salmon conservation during the sockeye salmon fishery in 2016 include:

- a) The area at the mouth of the Situk River that is closed by regulation will be enlarged to encompass the area of high Chinook salmon abundance in the Inlet. Commercial set gillnet fishing is prohibited near the mouth of the Situk River west of a line from an ADF&G regulation marker located at the southeast end of Johnson Slough at 59°26.29' N. latitude, 139°32.69' W. longitude, to a regulation marker directly across the Inlet on Black Sand Spit at 59°25.78' N.

latitude, 139°33.16' W. longitude, to a regulation marker westward along the beach of Black Sand Spit at 59°26.51' N. latitude, 139°35.08' W. longitude, and to a regulation marker west of the Yakutat Seafoods buying station at 59°26.72' N. latitude, 139°34.62' W. longitude. **All waters of Johnson Slough are closed** to commercial fishing until the Chinook salmon run is over.

- b) Chinook salmon may not be retained in the commercial fishery for individual personal use. Dead Chinook salmon may be delivered to the buying stations at the time of sockeye salmon delivery for distribution to the Yakutat Senior Center and other needy in the community (blind, disabled, or 65 years of age or older).
- c) The department requests that permit holders closely attend their gear when it is in fishing configuration and release Chinook salmon alive. The department has no regulatory authority to enforce this measure, but the alternative may be a closure of the fishery for sockeye salmon. If you, as a permit holder, want to fish for sockeye salmon, stay on your gear when it is in fishing configuration.
- d) Subsistence fishing for Chinook salmon will be closed until Chinook salmon escapements warrants. It is a condition of the subsistence permit that subsistence fishermen in the Situk-Ahrnklin Inlet must closely attend their gear at all times when it is fishing. Chinook salmon may not be retained.
- e) The commercial set gillnet fishery in the Situk-Ahrnklin Inlet will open by regulation on the third Sunday in June (June 19) for a 60-hour period (2.5 days). Subsequent weekly fishing periods may be adjusted as the effectiveness of this plan is evaluated inseason.
- f) The sport fishery for Chinook salmon in the Situk River will be closed due to low projected abundance. Management measures may be adjusted inseason if Chinook returns meet escapement goals.

Management options for maximizing harvest of Situk River pink salmon are limited due to the overlap in run timing with sockeye and coho salmon. The historical biological escapement goals for pink salmon in the Situk River of 42,000–105,000 in even years and 54,000–200,000 in odd years was reevaluated in 2010. Given uncertainties regarding total escapements, the revised spawning escapement goal for Situk River pink salmon is now based on a more stable index of escapement. The recommended goal is a lower bound sustainable escapement goal (SEG) of 33,000 pink salmon counted through the Situk River weir by August 5 (Piston and Heintz 2011). The parent year (2014) escapement past the Situk weir was approximately 134,000 pink salmon.

Steelhead trout in post-spawning condition occasionally accumulate in the Situk River prior to the time they emigrate to the ocean. When the emigration is late, there is a potential for the Situk River set gillnet fishery to harvest a larger than normal number of adults. The rate of emigration of spawned-out steelhead often increases following periods of heavy rainfall. If a major emigration is expected to occur during a scheduled gillnet fishing period, the opening may be delayed for a few days to reduce the incidental harvest of steelhead. Alternately, steelhead may be held upstream from the weir for release during the commercial fishery closure.

During the winter of 1998/1999 the Lost River changed course and discharged into the Situk/Ahrnklin Inlet instead of the Gulf of Alaska. The Lost River continues to flow into the Situk/Ahrnklin Inlet. Prior to the 1999 fishing season ADF&G developed a management plan for the Lost River and Situk/Ahrnklin Inlet with the intent of meeting escapement requirements for the Lost River. This plan closed the Lost River and the North bank of the Situk/Ahrnklin Estuary between an ADF&G regulatory marker approximately 100 yards above the confluence of the Lost River and the Situk/Ahrnklin Estuary and a marker located 100 yards below the confluence.

Sockeye salmon are never seen during escapement surveys in Tawah Creek prior to the week of July 10. During the week of July 10 both markers will be moved out to 500 yards from the confluence to protect sockeye salmon stocks returning to the Lost River drainage. This marker configuration was adopted in regulation at the 2015 BOF meeting (5 AAC30.350 (a)(7)), and remains in effect through the coho salmon season. While coho salmon escapement goals for both the Lost River and the Situk/Ahrnklin system have been met using this management scenario, the escapement goal of 1,000 sockeye salmon for the Lost River was not attained in 2007–2009, or 2012–2015. Although the sockeye salmon escapement goals were achieved in 2010 and 2011, sockeye salmon productivity in the Lost River appears to be declining due to geological changes in the system. It is anticipated that the Lost River will remain closed to commercial fishing for the entire season. The intent of this closure is to achieve the SEG for both sockeye and coho salmon, while providing for a normal fishery in the Situk-Ahrnklin Inlet. Regulatory marker placement at the mouth of the Lost River may change by emergency order during the course of the season as escapement or river channel movement warrants.

EAST ALSEK-DOAME RIVERS

The East Alsek River is a short, clear river originating from upwelling Alsek River water and local drainage of the eastern portion of Dry Bay. The Doame River is a tributary of the East Alsek River. The Doame River is a clear water system that drains from two lakes. Anadromous fish returning to the Doame River system must enter the East Alsek River and pass through the East Alsek commercial fishery area before branching off to return to spawn in the Doame River system. Although the East Alsek and Doame Rivers are part of the same drainage and escapement count, they have two different sockeye salmon stocks with distinctly different run timing. The area open to inriver commercial fishing extends from the mouth of the East River to two miles upstream; the adjacent ocean waters within two miles of the mouth in each direction out to 500 yards from the shore at low tide are also open to commercial fishing. The surf and ocean areas are open during the same periods as the inriver fishery but that area is no longer fished.

Prior to 1994 the East River was one of the most productive sockeye salmon fisheries in the Yakutat area, however due to geological changes the system is drying up and productivity has declined. The river was closed to commercial fishing for sockeye salmon from 1999 through 2002 and again in 2008. Prior to 1995 the BEG was 23,000–53,000 sockeye salmon. As productivity continued to decline a new BEG of 13,000–26,000 sockeye salmon was established in 2003. The East River sockeye salmon stocks appear to be adapting to changes in the system, and escapement has fluctuated dramatically over the years.

The East River will be managed to achieve the BEG of 13,000–26,000 sockeye salmon. Returns to the East River are predominantly age-4 (0.3). The 2012 parent-year escapement was above the BEG with a peak count of 18,500 sockeye salmon observed on July 28. Escapement will be closely monitored, and the East River will not open until the lower end of the BEG is attained. The duration of the weekly fishing periods will be based on escapement observations.

AKWE RIVER

The Akwe River is a glacial river system located about 35 miles south of Yakutat. The lower seven miles of the river are wide and shallow and flow parallel to the beach before entering the ocean. The commercial fishery occurs in this lower portion of the river. The 2011–2015 average

Akwe River harvest was approximately 9,500 sockeye salmon and 70 Chinook salmon. Historically, the Akwe coho salmon harvest has averaged approximately 4,000 fish, but the recent average of 1,200 has been due to decreased effort because of market conditions and lack of air transportation in the fall.

The sockeye salmon run to the Akwe River is expected to be average to above average in 2016 based on parent-year fishery performance and effort. The 2011 parent-year harvest of 21,000 sockeye salmon was well above the recent five-year average, and is the highest recorded harvest during that time. Parent-year escapement counts were minimal due to the turbidity of the river. The system has undergone geologic change in the last two decades resulting in an increase in water flow from a glacial tributary and a reduction in water clarity that has limited the usefulness of aerial surveys in assessing escapement. An escapement goal (peak aerial count) of 600 to 1,500 sockeye salmon was once established for the Akwe River. In 2006, the BEG was eliminated as a result of the inability to adequately assess escapement.

The sockeye salmon fishery in the Akwe River is scheduled to open on Sunday, June 26 and the season will extend through early August. Inseason management will be based on fishery performance and index escapement counts; reductions in the normal 1.5-day weekly fishing period may be necessary to ensure adequate escapement. The Akwe River will be open upstream of regulatory markers located approximately 500 yards upstream from the confluence of the New Italo River to the upper markers located 2.5 miles downstream from the westernmost end of the sand dunes, a fishing area of about 3.5 river miles.

MANBY SHORE INSIDE FISHERY

Management of the Manby Shore inside fisheries (waters upstream of the mean high tide line) will be based on the abundance of local stocks. During the summer, these fisheries harvest salmon primarily from Manby and Sudden Streams. A 2.5-day weekly fishing period can be expected during the initial opening period scheduled for June 26. Additional open periods will depend on fishery performance.

ITALIO RIVER

The Italo River is located adjacent to the Akwe River. The Italo supports small runs of sockeye and coho salmon. The course of the Italo River changed and began flowing into the lower Akwe River during the winter of 1986/1987 and both rivers now share a common mouth. Both Italo and Akwe salmon stocks are present in this area and for some distance upstream in each river. Determination of Akwe or Italo run strengths based on fishing success in the junction area is not possible. Therefore, in order to protect Italo River stocks, fishing is closed to set gillnets from the mouth up to 500 yards upstream from the confluence of the New Italo River. The Italo River sockeye salmon fishery has not been open since 1987. When the Italo River changed channel and entered the Akwe River lagoon, the homing ability of Italo River sockeye salmon may have been negatively affected. As a result, it may take several years for the productivity of the Italo River sockeye stock to return to historical levels. The Italo River fishery may open by emergency order if adequate escapement is observed. Prior to 2002 an escapement goal of 2,500 to 7,000 sockeye was established for the Italo River. Based on an analysis completed in the winter of 2002–2003 the escapement goal for the Italo was rescinded and no formal goal is in place due to changes in productivity of the system. Aerial surveys will be conducted throughout

the season to monitor run strength. The Italo River sockeye salmon stocks appear to be rebuilding according to recent historical surveys.

YAKATAGA DISTRICT

The Yakataga District is not expected to be open during the sockeye season in 2016. It will open by emergency order in early August based on coho escapement.

2016 FALL MANAGEMENT PLAN

Fall fishing is directed primarily at harvesting coho salmon, although sockeye as well as fall chum salmon can contribute to the catches on the East River. The fall fishing season generally will start on the first Sunday of August. At that time, the regulatory weekly fishing period changes in most areas to a 12:01 p.m. opening, and 12:00 noon closing time. During the fall, set gillnet fishing occurs in both the Yakutat and Yakataga Districts. In the Yakutat District, the fall coho salmon fishery occurs primarily in the same areas as the summer sockeye salmon fishery. In the Yakataga District, there are areas where only coho salmon fishing takes place.

Overall catches and escapements of coho salmon in the Yakutat area were slightly below average in the parent year (2012). Escapement survey conditions on the Situk River were not optimal and the peak escapement count of 3,000 coho salmon fell just under the BEG of 3,300-9,800 fish. The peak escapement count for Tsiu River coho salmon of 11,000 fish fell within the BEG range of 10,000–29,000 fish. The 2016 coho salmon run is expected to be average area-wide.

A potential concern regarding Yakutat area coho salmon is based on both climatic and geological effects. Yakutat has been in a drought stage for nearly a decade. The land is rising away from the water table due to some of the highest rates of isostatic rebound found in the world. These factors dramatically affect fresh water rearing habitat for coho salmon. Forest Highway 10 crosses many streams, tributaries of the Situk and Ahrnklin rivers and of Seal Creek. At least five of these streams, although listed in the Anadromous Waters Catalog as important for both spawning and rearing of coho salmon, no longer exist. These streams have not had any water in them at all for almost ten years. It is possible that these events will negatively impact coho salmon production in the Yakutat area.

YAKUTAT DISTRICT

Fall fishing will begin on Sunday, August 7 in the Yakutat District, except in the East River where management will continue to be based on sockeye salmon run strength through most of August and into September. The Alsek River will continue to be managed for sockeye salmon CPUE until statistical week 34 (~August 14). The initial fishing periods can be expected to extend from 12:01 p.m. Sunday through 12:00 noon Wednesday. Inseason management of all Yakutat District fall fisheries will be based on fishery performance data and inseason coho salmon escapement surveys.

BEGs were developed for seven Yakutat area coho salmon producers in 1994, based on stock-recruit analyses that contained several untested assumptions, including expansion factors for peak survey counts. Three of the systems have supported only minimal commercial fisheries in recent years and are no longer consistently surveyed for coho salmon escapements. The BEGs for Kaliakh, East Alsek, and Akwe rivers have been eliminated and currently only three systems have escapement goals for coho salmon, one of which is in the Yakataga District. The two coho

salmon stocks in the Yakutat District that have escapement goals are the Situk River (BEG of 3,300-9,800 fish) and the Lost River (SEG of 2,200 fish).

Fishing time and area adjustments will be made for each river as needed for conservation. A closed area can be expected in the Yahtse River to protect schools of milling coho salmon at tributary mouths. The actual closed water area will be based on inseason observations of coho schooling behavior, which is related to river flow conditions. Several small coho streams are located along the forelands west of the Yahtse River to Cape Yakataga. Most of these streams have very small numbers of spawning coho and cannot support inriver set gillnet fisheries. The area from the Yahtse River to Cape Yakataga will remain closed until harvestable surpluses are evident.

YAKATAGA DISTRICT

The major fisheries in the Yakataga District occur for coho salmon on the Kaliakh and Tsiu Rivers, located about 125 miles northwest of Yakutat. The Tsiu River is the more productive of the two rivers; in recent years, harvests have averaged about 36,000 coho salmon. The Kaliakh River has not been fished in the last five years and had only minor effort in 2004 and from 2006 through 2010. The Tsiu River recorded minor effort in 2004 and supported a more normal fishery from 2005 through 2013. Fishing effort has diminished the last two years due to geological changes and fewer fishing areas on the river. Prior to 2004 it had not been fished since 2001 due to market conditions. The parent-year (2012) escapement count of 11,000 coho salmon was within the BEG range of 10,000 to 29,000 fish. No later surveys were flown after September 12 due to inclement weather. The Kaliakh has not been surveyed since 2007. The 2016 coho salmon return is expected to be average to above average in both the Tsiu and Kaliakh Rivers.

The Tsiu River will open by emergency order and opening dates and fishing periods will be determined from observed escapements above and below the regulatory markers. Due to either extremely low water levels or major geological changes in the Tsiu River, the regulatory markers have been moved annually to ensure adequate escapement before opening the commercial fishery. Changes in the river occur annually and it should be expected that the regulatory markers will be moved again in 2016. The Kaliakh River weekly fall fishing periods will normally open from 9:00 a.m., Sunday through 9:00 a.m., Wednesday, beginning on August 7. Market conditions will determine whether or not the Yakataga District is fished in 2016. The area is remote and fish must be flown to Yakutat for processing at a high expense. It is possible that it will be economically unfeasible to fish the district.

2016 SALMON RUN EXPECTATIONS

As mentioned above, no formal preseason forecast program exists for the Yakutat salmon runs except for Situk River Chinook salmon. Expected returns of Yakutat salmon stocks are derived from parent-year escapements, trends in the commercial harvest, and rearing conditions.

SOCKEYE SALMON

Alsek River

The parent-year (2011) sockeye salmon escapement was approximately 21,400 through the Klukshu River Weir. A total catch of around 7,000 to 15,000 sockeye salmon is expected in 2016.

East River

The parent year (2012) escapement was approximately 16,000 sockeye salmon. A normal return this year could lead to a catch of approximately 10,000 to 15,000 fish.

Akwe River

The parent year (2011) sockeye salmon harvest was 21,000 fish with a peak escapement count of 6,000 fish. The Akwe has shown below average sockeye salmon production in the last few years. A catch of 3,000 to 7,000 sockeye salmon is expected based on parent year performance and recent fishery trends.

Italio River

Parent-year escapements were low and it is unlikely there will be a directed sockeye salmon fishery in the Italio River in 2016.

Situk River

The parent-year (2011) escapement was approximately 90,000 sockeye salmon. A catch of around 40,000 to 60,000 with an escapement of about 60,000 sockeye salmon is expected. Sockeye salmon harvest and escapement may be affected by Chinook salmon conservation measures.

COHO SALMON

Tsiu/Kaliakh River

If there is any effort, a catch of over 40,000 coho may be possible in the Tsiu River in 2016. In the Kaliakh River, a harvest of 1,000 to 3,000 coho salmon is possible.

Area wide

Parent-year escapements were average to above average in most places. Based on recent trends in the fishery, the run is expected to be average to above average. The area wide set gillnet harvest is expected to be about 80,000 to 120,000 coho salmon. Effort, and how it is distributed throughout the area, will largely determine how many coho salmon are harvested.

CHINOOK SALMON

Situk River

The point estimate for the preseason Situk River Chinook salmon forecast in 2016 is 684 large (3-ocean age and older) fish, with a range of 82–1,287 fish. Commercial, sport, and subsistence fisheries will remain closed until the BEG for Chinook salmon is attained.

Chinook salmon returns to the Alsek River are expected to be above average and the Canadian preseason forecast is for 1,900 Chinook at the Klukshu River weir.

FISHERY CONTACTS

The following Alaska Department of Fish and Game, Division of Commercial Fisheries staff may be contacted regarding this management plan:

Lowell Fair Region I Supervisor	802 3 rd Street Douglas, Alaska 99824 (907) 465-4250
Dan Gray Region I Management Coordinator	304 Lake St. Room 104 Sitka, Alaska 99835 (907) 747-6688
Nicole Zeiser Area Management Biologist	1 Fish and Game Plaza Yakutat, Alaska 99689 (907) 784-3255
Richard Hoffman Assistant Area Management Biologist	1 Fish and Game Plaza Yakutat, Alaska 99689 (907) 784-3255
Jim Craig Publications and Information Manager	802 3rd Street Douglas, Alaska 99824 (907) 465-4236