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2018 Yakutat Set Gillnet Fishery Management Plan

by

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and

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Alaska Department of Fish and Game **Division of Commercial Fisheries**

Symbols and Abbreviations

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Weights and measures (metric)

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

Weights and measures (English)

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

Time and temperature

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

Physics and chemistry

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

General

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

Mathematics, statistics

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

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ABSTRACT

This management plan provides an overview of the expected salmon runs, spawning escapement goals, harvest projections, and management measures to be used during the 2018 Yakutat commercial set gillnet fisheries. The Yakutat set gillnet fishing season and fishing periods will open by regulation as described in 5 AAC 30.310 and 5 AAC 30.320, or by emergency order. Dangerous River and Yakutat Bay will open June 10, Alsek River, Situk-Ahrnklin Inlet, and Manby Shore Outside Waters will open June 17. All Yakutat District fisheries will be opened by Sunday, June 24, except for the East Alsek, Akwe, and Italio rivers which will open by emergency order when desired sockeye salmon escapement levels can be documented. The Yakataga District coho salmon fisheries will also open by emergency order. Set gillnet fisheries are managed by adjusting fishing times and areas in response to inseason assessments of run strength. Management strategies will focus on sockeye (*Oncorhynchus nerka*) and Chinook salmon (*Oncorhynchus tshawytscha*) in June and July. Following the first Sunday in August, fall fishing periods will go into effect and the management emphasis will transition to coho salmon. No formal preseason forecasting exists for the Yakutat salmon runs except Situk River Chinook salmon. Canada provides numerical forecasts for Alsek River sockeye and Chinook salmon. The 2018 Situk River Chinook salmon preseason forecast is for a total run size of 730 large fish. Continued poor productivity of these stocks warrants conservative fishery management in 2018. Returns are expected to be average to above average for sockeye and coho salmon.

Key words: Yakutat, Yakutat Management Area (YMA), commercial 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 run expectations, forecasts, 2018.

INTRODUCTION

This management plan provides an overview of the expected salmon run outlooks, spawning escapement goals, harvest projections, and management measures to be used during the 2018 Yakutat commercial set gillnet fisheries.

The Yakutat Management Area (YMA) 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 species of salmon are harvested in the Yakutat area, with sockeye, Chinook, coho, and pink salmon comprising the majority of the harvest 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 occur and is managed out of the Alaska Department of Fish and Game (ADF&G) office in Sitka. Approximately 167 commercial set gillnet limited entry permits are renewed annually and up to 118 permits have been actively fished in the recent decade. Set gillnet 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 YMA (Figure 1), although only about half of the available fisheries have been actively fished in recent history. Most of these fisheries target sockeye salmon from June through July and coho salmon in August and September. Historically, Humpback Creek supported a prolific commercial pink salmon fishery but there has been no reported harvest since 1996. With boom and bust returns and average prices of less than $.05/lb., fishermen target other species of higher commercial value. The Situk-Ahrnklin Inlet is the most productive fishery in the YMA and normally supports the largest concentration of fishing effort (up to 100 permits). Set gillnet fisheries in the Yakataga District predominantly harvest coho salmon. The primary fisheries for coho salmon occur in the Situk and Tsiu rivers. The commercial fishing

effort on the Tsiu River has substantially declined in the last five years due to dramatic geological changes in the river's channeling that decreased the fishable area.

With the exception of the troll fisheries, there are no directed set gillnet fisheries for Chinook salmon in the YMA. All Chinook salmon are harvested incidentally in the sockeye salmon set gillnet fisheries. The principle producers of Chinook salmon are the Situk and Alsek rivers and Yakutat Bay.

2018 SALMON RUN EXPECTATIONS

The department does not produce formal salmon run forecasts in the YMA except for Situk River Chinook salmon. Area managers prepare harvest projections or harvest outlooks for the other major fisheries in the YMA. Outlooks are qualitative with reference to brood-year escapements, trends in the commercial harvest, rearing conditions, and information on year-class strength, and should not be considered official department forecasts. Fisheries and Oceans, Canada (DFO) provides numerical forecasts for Alsek and Klukshu rivers sockeye and Chinook salmon. Yakutat Area salmon runs are expected to be average to above average. The Alsek River Chinook salmon run is expected to be below average.

SOCKEYE SALMON

Alsek River

The overall Alsek River drainage sockeye salmon run is expected to be 28,000 fish; below the recent 10-year average run size estimate of 61,000 sockeye salmon. Principal contributing brood years will be 2013 (Klukshu River escapement of 3,800 sockeye salmon) and 2014 (Klukshu River escapement of 12,000 sockeye salmon); the 10-year average Klukshu River sockeye salmon escapement is approximately 14,000 fish.

East River

The parent year (2014) escapement was approximately 9,800 sockeye salmon. A normal run this year could lead to a harvest of 12,000–18,000 fish.

Akwe River

The parent year (2013) sockeye salmon harvest was 16,000 fish with a peak escapement count of 13,600 fish. The Akwe River has shown below average sockeye salmon escapements since 2015. The fishery will not open until desired levels of escapement are observed. A harvest of 3,000–10,000 sockeye salmon is expected based on parent-year performance and recent fishery trends.

Italio River

The 2013 and 2014 parent-year escapements were 900 and 2,500 fish respectively. It is unlikely there will be a directed sockeye salmon fishery in the Italio River until adequate escapement levels are documented.

Situk River

The parent-year (2013) escapement was 102,300 sockeye salmon and above the BEG range of 30,000–70,000 fish. A harvest of 40,000–75,000 with an escapement of approximately 80,000 sockeye salmon is expected. Sockeye salmon harvest and escapement may be affected by Chinook salmon conservation measures.

COHO SALMON

Tsiu/Tsivat River

The Tsiu/Tsivat parent-year (2014) escapement was 27,000 coho salmon and within the BEG range of 10,000–29,000 fish. If there is any effort, a harvest of over 30,000 coho may be possible in the Tsiu River in 2018.

Kaliakh River

In the Kaliakh River, a harvest of 1,000–5,000 salmon is possible.

Areawide

Parent-year escapements were average to above average in most systems. Based on recent trends in the fishery, coho salmon runs are expected to be average to above average in 2018. The areawide set gillnet harvest is expected to be 90,000–140,000 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 2018 Situk River Chinook salmon preseason forecast is for a total run of 730 large (3-ocean age and older) fish. If the run comes back as projected, the Situk River Chinook salmon escapement goal will not be achieved if normal fisheries are prosecuted. Commercial, sport, and subsistence Chinook salmon fisheries in the Situk River will remain **closed** until the escapement objective for Chinook salmon is attained.

Alsek River

The Alsek River Chinook salmon stock projection is <40% of the recent 10-year average and below the BEG range of 800–1,200 fish. The Canadian preseason forecast is for an escapement range of 700–1,250 Chinook salmon through the Klukshu River weir.

FISHERY MANAGEMENT

Set gillnet fisheries in the Yakutat area are managed by adjusting fishing time and area in response to inseason assessments of run strength. During periods of poor production, managers often must curtail or even close fisheries to enough fish to the spawning grounds. Inseason assessment methods include both fishery performance in terms of catch per unit effort (CPUE), 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. Formal escapement goals have been established for many major index areas and salmon species in the YMA (Table 1). Ground and aerial surveys are conducted annually on several drainages to monitor escapement and assure escapement goals are achieved. The major fishing areas can be expected to open on the dates shown in Table 2.

The Situk and Alsek rivers Chinook salmon stocks are two of the seven Pacific Salmon Treaty (treaty) indicator stocks in Southeast Alaska (SEAK). The SEAK Transboundary River (TBR), and Northern British Colombia Chinook salmon stocks are experiencing unprecedented levels of poor production. In 2016, none of these stocks met their spawning objectives. Record low runs were observed for many of these stocks in 2017 and ADF&G restricted the retention of Chinook

salmon throughout SEAK. Situk River Chinook salmon stock was the only wild indicator stock that not only achieved but exceeded the BEG in 2017. The 2018 Chinook salmon forecasts indicate returns to SEAK systems, particularly to the Stikine and Taku rivers, will be at an all-time low. Management actions are being taken across all Southeast Alaska fisheries, including sport, commercial, personal use, and subsistence, to reduce harvest of wild Chinook salmon.

2018 SUMMER MANAGEMENT PLAN

This management plan concentrates on the major fisheries in the YMA. Information on areas that are fished only occasionally is available from the Yakutat Area management biologists listed at the end of this report. Most Yakutat gillnet openings for sockeye salmon will generally be 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 announced. Yakutat Bay and Dangerous River will open on the second Sunday in June (June 10) and the Alsek River, Situk-Ahrnklin Inlet, and Manby Shore Outside Waters will open on the third Sunday in June (June 17). By the fourth Sunday in June (June 24), all fisheries in the Yakutat District will be open with the exceptions of the East Alsek and the Italio rivers, which will open by emergency order if returns are surplus to escapement needs.

ALSEK RIVER

U.S. Alsek River harvests have been less than 1,000 Chinook salmon each year since 1981 with a historical average harvest of approximately 400 Chinook salmon. The 2017 harvest of 124 Chinook salmon was the lowest harvest on record and the 2018 harvest is unlikely to exceed average harvests. The 2017 Alsek River sockeye salmon harvest of just under 5,000 fish was the second lowest harvest since 2007.

Commercial salmon landings from the Alsek River commercial fisheries averaged approximately 13,800 sockeye, 160 coho, and 400 Chinook salmon annually from 2013 through 2017. Canada's subsistence and sport harvest has averaged approximately 75 Chinook, 1,000 sockeye, and small numbers of 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.

A large and variable proportion of the drainage-wide escapements of Alsek River Chinook and sockeye salmon stocks are enumerated at a counting weir on the Klukshu River operated by DFO. The current Klukshu River sockeye salmon BEG is 7,500–11,000 fish, plus 3,000 sockeye salmon as per the 2009–2018 agreement reached during the U.S./Canada Pacific Salmon Treaty negotiations in February 2008. Sockeye salmon escapements to the Klukshu River have been variable in recent years. Escapement exceeded the BEG range in 2012 but fell below the range in 2013, 2016, and 2017. The 2018 overall Alsek River drainage sockeye salmon run is expected to be approximately 28,000 fish; less than half the recent 10-year average run size of approximately 61,000 sockeye salmon. The outlook for 2018 is based on a predicted run of 6,500 Klukshu River sockeye salmon. The 10-year average Klukshu River sockeye salmon escapement is approximately 14,000 fish. Principal contributing brood years will be 2013 (Klukshu River escapement of 3,800 sockeye salmon) and 2014 (Klukshu River escapement of 12,000 sockeye salmon).

Chinook salmon returns to the Klukshu River have also been variable with signs of poor productivity. The Klukshu River Chinook salmon BEG range is 800–1,200 fish. The goal was not achieved in 2005–2008, 2012, and 2016–2017. The Klukshu River brood year escapements

in 2013 and 2014 were 1,261 and 842 Chinook salmon, respectively. Based on these primary brood year escapements, the preseason forecast for 2018 is 700–1,250 Klukshu River Chinook salmon; below the recent 10-year average of approximately 1,400 fish but bracketing the BEG range.

The U.S. commercial Alsek River sockeye salmon fishery traditionally opens for a 24-hour period beginning noon on the first Sunday in June (June 3; SW 23). Historically, inseason management decisions have been made by monitoring fishery performance data and comparing it to historical CPUE for a given opening to adjust time and area openings. Parent-year escapement information and harvest trends are also considered when determining the weekly fishing periods. Based on uncertainties with forecasts, and escapement goals not being achieved for both Klukshu River sockeye and Chinook salmon stocks, the Alsek River commercial set gillnet fishery will be curtailed in 2018. Restrictions will include a delay of the initial opening by two weeks and a six-inch maximum mesh restriction will be in effect through July 1 in order to facilitate Chinook salmon escapement. **The Alsek River commercial set gillnet fishery will open at noon on July 17 for a 24-hour period. T**he department recommends that all live and healthy Chinook salmon caught be released immediately. Management actions will remain conservative through SW 29 until it can be ascertained that the BEG range will be achieved.

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.

Beginning in mid-August, management of the set gillnet fishery will be based on the run strength of coho salmon. Inseason management will be based on evaluation of fishery harvest trends, fishing effort, and CPUE relative to historical levels, similar to the management plan for sockeye salmon. Recent years have seen a decline in fishing effort during the coho salmon season on the Alsek River, mainly due to economic struggles and lack of aircraft charters to transport fish to town. It is anticipated that there will be minimal fishing effort for harvesting coho salmon again in 2018.

DANGEROUS RIVER

The Dangerous River will open downstream from the Dangerous River Bridge on June 10. Weekly openings will be from 6:00 a.m., Sunday, through 6:00 p.m., Tuesday, until closed by emergency order. Harvest data and fishing effort for this system has been sporadic in the last 10 years. Less than three permits fished in 2015–2017 and harvest information is confidential. The Dangerous River is seldom fished for coho salmon. Marine waters adjacent to the river mouth will be open for the same fishing periods as the Dangerous River.

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 June 10 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 June 17 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 June 24 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 salmon 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 in accordance with 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 local area stocks.

SITUK-AHRNKLIN INLET

The Situk-Ahrnklin Inlet is located approximately nine miles by road from Yakutat and is the oldest and historically most productive fishery in the YMA. The fishery 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 during the fall. Situk-Ahrnklin Inlet harvests have averaged 51,000 sockeye, 104,000 coho, and 33,000 pink salmon in the last five-year period. The Situk-Ahrnklin Inlet commercial fishery for Chinook salmon has been closed since 2010 due to several years of poor productivity low escapements.

The 2013 parent-year escapement was 118,600 sockeye salmon; above the BEG range of 30,000–70,000 fish established for the Situk River drainage. Recent trends and return-per-spawner data indicates that the 2018 Situk River sockeye salmon run could approach 150,000 fish. A mid-range escapement of 50,000 could leave approximately 100,000 fish available for harvest. The Situk-Ahrnklin Inlet will open initially on Sunday, June 17. Fishing periods will be based on fishery performance and escapement through the Situk River weir. Escapements of Chinook and sockeye salmon through the weir serve as an inseason indicator of run 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 River Chinook salmon abundance.

The Chinook salmon commercial, subsistence, and sport fisheries in the Situk River drainage are managed under the guidelines of the *Situk-Ahrnklin Inlet and Lost River King Salmon Fisheries Management Plan* (5 AAC 30.365). The Division of Sport Fish provides a formal preseason forecast for Chinook salmon returning to the Situk River. The point estimate for the preseason Situk River Chinook salmon forecast in 2018 is 730 large (3-ocean age and older) fish with a standard error of 351 fish. The Situk River drainage is managed for a BEG range of 450–1,050 large Chinook salmon. Given recent poor production and low escapements, a run of that size in the Situk River is not expected to achieve the escapement goal if normal fisheries are prosecuted. The department plans to implement conservative management actions in 2018.

From 2010 through 2012, and again in 2015 and 2016, the Situk River Chinook salmon stock failed to achieve the BEG. Conservative management actions have been implemented every season since 2010 and during those eight years of conservation, the escapement goal has been achieved three times.

The department will continue to protect and rebuild the Situk River Chinook salmon stocks in 2018. Management actions taken to conserve Situk River Chinook salmon will be highly restrictive in attempts to achieve the Chinook salmon BEG. Efforts to reduce impacts on these

stocks will focus on the high abundance Chinook salmon areas and migration corridors in the Situk-Ahrnklin Inlet near the mouth of the Situk River. Management measures anticipated by the department for Chinook salmon conservation during the sockeye salmon fishery in 2018 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 **AND** subsistence fishing will be 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 (59°26.27′ N. latitude, 139°32.62′ W. longitude), to a regulation marker directly across the Inlet on Black Sand Spit (59°25.77′ N. latitude, 139°33.18′ W. longitude), to a regulation marker westward along the beach of Black Sand Spit (59°26.49′ N. latitude, 139°35.01′ W. longitude), to a regulation marker west of the Yakutat Seafoods buying station (59°26.72′ N. latitude, 139°34.61′ W. longitude). **All waters of Johnson Slough will be closed** to commercial fishing until the Chinook salmon run is over, as announced in an ADF&G news release.
b) Chinook salmon may not be sold or 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 all live, healthy Chinook salmon. The department has no regulatory authority to enforce this measure, but the alternative may be a closure of the sockeye salmon fishery.
d) Subsistence fishing for Chinook salmon will be closed until the Chinook salmon BEG is attained. All subsistence permit holders in the Situk-Ahrnklin Inlet must closely attend their gear at all times when it is being used to take salmon (5AAC 01.670(c)).
e) The commercial set gillnet fishery in the Situk-Ahrnklin Inlet will open by regulation on June 17 for a 60-hour period (2.5 days). Subsequent weekly fishing periods may be adjusted as the effectiveness of this plan is evaluated inseason. Management actions may be adjusted inseason if the Chinook salmon BEG is met before the run is over.

Management options for maximizing harvest of Situk River pink salmon are limited due to the overlap in run timing with sockeye and coho salmon. In 1995, ADF&G established biological escapement goal ranges for even- and odd-year returns of Situk River pink salmon of 42,000–105,000 fish and 54,000–200,000 fish, respectively (Clark 1995). Pink salmon have been counted annually at the Situk River weir since 1976 and more sporadically during boat surveys. Weir counts greatly underestimated escapements in all years because the weir is taken out of the river well before the pink salmon run peaks in late August–early September (Piston and Heinl 2011). In 2012, ADF&G adopted a lower bound sustainable escapement goal (SEG) of 33,000 pink salmon counted at the weir through August 5 in an effort to provide a consistent early season index of abundance and to maintain a goal for fisheries management (Piston and Heinl 2011). In practice, however, the escapement goal has not been useful for management, because pink salmon escapement changes too dramatically in early August for weir counts to provide a meaningful indication of overall abundance. In January 2018, the escapement goal review committee recommended eliminating the Situk River pink salmon escapement goal, given the limited utility of available escapement information and the low harvest rates on this stock.

Steelhead trout in post-spawning condition occasionally accumulate in the Situk River prior to emigrating 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 a commercial fishery closure.

LOST RIVER

During the winter of 1998-1999, the Lost River changed course and discharged into the Situk/Ahrnklin Inlet instead of the Gulf of Alaska and continues to flow into the Situk/Ahrnklin Inlet today. Lost River stocks have since been harvested incidentally in the Situk-Ahrnklin set gillnet fishery. This change made it impossible to manage the commercial fishery for a goal specific to the Lost River because peak survey counts are usually obtained well after the peak of sockeye salmon harvest in the commercial fishery. Since 1999, an area 100–500 yards on either side of the mouth of the Lost River has been closed to commercial fishing to conserve Lost River sockeye and coho salmon (5 AAC 30.350(a)(7)). In 2017, the area downstream of the outlet into the Situk/Ahrnklin Inlet was increased to 1,000 yards during sockeye salmon management and similar closures should be expected in 2018. Sockeye salmon productivity in the Lost River has been declining from various causes. In addition to some incidental harvest by the Situk River commercial fishery, evident geological changes are occurring in the drainage.

Since 2009, the Lost River has been managed to achieve a lower-bound SEG of 1,000 sockeye salmon and an SEG of 1,400–4,200 coho salmon. The Lost River sockeye salmon escapement goal was not attained in 2007–2009 or 2012–2017. The escapement goal review committee recently recommended eliminating the Lost River sockeye salmon escapement goal because survey methods were not standardized; the survey type (aerial, foot, boat), area (Tawah Creek, Ophir Creek, or Summit Lake, or combinations of multiple areas), and timing have varied considerably over the decades. Although the sockeye salmon SEG was eliminated, the department will continue to monitor and protect the stocks in the Lost River. Restrictions in time and area near the mouth of the Lost River will be implemented until the department can observe desired levels of escapement.

Returns of Lost River sockeye salmon in 2018 are expected to be below average based on parent-year escapement and recent low productivity. The Lost River inriver fishery will remain closed to commercial fishing for the entire season. The area closed to commercial fishing by regulation (5 AAC 30.350 (a)(7)) will likely be enlarged and announced by ADF&G news release. The intent of this closure is to protect declining Lost River sockeye salmon stocks 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.

During coho salmon management, the markers will be moved back to the location in regulation (500 yards on either side of the Lost River terminus).

EAST ALSEK-DOAME RIVERS

The East Alsek River is located on the Alsek River flood plain approximately 90 km southeast of Yakutat. The commercial harvest has averaged 11,000 fish since 2003 and fishing effort has declined substantially. Since 2003, the fishery has been managed to achieve a BEG range of 13,000–26,000 sockeye salmon. This goal was for a combined East Alsek-Doame River

escapement goal. The escapement goal review committee recommended eliminating the combined East Alsek-Doame rivers goal and replacing it with a sustainable escapement goal range of 9,000–24,000 sockeye salmon which was counted on a peak survey of the East Alsek River. An escapement goal based on the dominant East Alsek River sockeye salmon run is more consistent and simplifies management of the set gillnet fishery. In 2018, the East Alsek commercial set gillnet fishery will be managed to achieve this new goal of 13,000–26,000 sockeye salmon. Returns to the East Alsek River are predominantly age-4 (0.3). The 2014 parent-year escapement was below the BEG range with a peak count of 9,800 sockeye salmon observed on June 28. Escapement will be closely monitored throughout the run and the East Alsek River will not open to commercial fishing until the lower bound of the SEG range is attained. The East Alsek River will be managed for sockeye salmon into September. 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 2013–2017 average Akwe River harvest was approximately 5,800 sockeye and 30 Chinook salmon. Historically, the Akwe coho salmon harvest has averaged approximately 4,000 fish, but the recent five-year average is less than 1,000 fish. The reduced harvest is a result of a decline in fishing effort due to limited air transportation and the high cost of fishing a remote fishery.

The sockeye salmon run to the Akwe River is expected to be above average in 2018 based on parent-year fishery performance and effort. The 2013 parent-year harvest of 15,900 sockeye salmon was well above the recent five-year average of 5,800 fish. 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. BEG (peak aerial count) of 600–1,500 sockeye salmon was established for the Akwe River but was eliminated in 2006 as a result of the inability to adequately assess escapement.

In 2018, the sockeye salmon fishery will not open until adequate levels of spawning abundance is observed. If a commercial fishery is announced, 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 fishery will take place upstream of regulatory markers located approximately 500 yards upstream from the confluence of the New Italio River to the upper markers located 2.5 miles downstream from the westernmost extent of the sand dunes, 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 sockeye 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 25. Additional fishing periods will depend on fishery performance.

ITALIO RIVER

The Italio River is located adjacent to the Akwe River. The Italio supports small runs of sockeye and coho salmon. The course of the Italio 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 Italio and Akwe salmon stocks are present in this area and for some distance upstream in each river. Determination of Akwe or Italio run strengths based on fishing success in the junction area is not possible. Therefore, to protect Italio River stocks, fishing is closed to set gillnets from the mouth to 500 yards upstream from the confluence of the "New" Italio River. The New Italio River is the main river that empties into the Italio/Akwe rivers estuary. The Italio River sockeye salmon fishery has not been open since 1987. When the Italio River changed course and entered the Akwe River lagoon, the homing ability of Italio River sockeye salmon may have been affected. As a result, it may take additional time for the productivity of the Italio River stock to return to historical levels. The Italio River fishery may open by emergency order if adequate escapement is observed. Prior to 2002, an escapement goal of 2,500–7,000 sockeye was established for the Italio River. Based on an analysis completed in the winter of 2002–2003, the escapement goal 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 Italio River sockeye salmon stocks appear to be rebuilding according to recent surveys.

YAKATAGA DISTRICT

The Yakataga District is not expected to be open during the sockeye salmon season in 2018. It will open by emergency order in early August based on coho salmon escapement.

2018 FALL MANAGEMENT PLAN

The fall fishing season generally begins on the first Sunday of August. At that time, the regulatory weekly fishing period changes in most areas to 12:01 p.m. opening and 12:00 noon closing times. 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 YMA were above average in the parent year (2014). The Situk River peak escapement count of 8,200 coho salmon fell within the BEG range of 3,300–9,800 fish. The 2014 parent-year peak escapement count for Tsiu River coho salmon of 27,000 fish was also within the BEG range of 10,000–29,000 fish. The 2018 coho salmon run is expected to be average to above average areawide.

A potential concern regarding Yakutat area coho salmon is based on both climatic and geological effects. The land is rising away from the water table due to some of the highest rates of isostatic rebound 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 5 in the Yakutat District, except in the East Alsek 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 through SW 34 (August 25). 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 streams 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 1,400–4,200 fish).

Fishing time and area adjustments will be made for each river as needed. 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 target 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 with recent harvests averaging 22,200 coho salmon. The Kaliakh River has not been fished in the last seven years and had only minor effort in 2004 and 2006–2010. The Kaliakh River has not been surveyed since 2007. The Tsiu River recorded minor effort in 2004 and supported a more normal fishery from 2005 through 2013. Fishing effort has substantially declined the last four years due to changes in the river with fewer areas to fish and minimal air transportation. The parent-year (2014) escapement count of 27,000 coho salmon was within the BEG range of 10,000–29,000 fish. Surveys after September 2 were flown by a third party with a peak count of 38,000 on October 11. The current Tsiu River coho salmon escapement goal was met or exceeded in every year since 1973, with the exception of years when survey effort was curtailed by inclement weather. The escapement goal review committee recently recommended maintaining the current escapement goal of 10,000–29,000 coho salmon counted on a peak aerial survey but recommended reclassifying the goal from a BEG to an SEG based on percentiles of historical survey counts.

The 2018 coho salmon returns are 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. In 2013, dramatic geological changes occurred altering existing channels and creating new channels which altered coho salmon migratory patterns. One of the overflow channels from the Tsivat River cut across the sand flats inland of the Tsiu River and became a major tributary and new migration route for coho salmon. At the 2018 Alaska Board of Fisheries Southeast and Yakutat Finfish meeting, the department submitted a proposal to move the regulatory markers to a location that better reflected the current topography. The board amended 5 AAC 30.350(a)(12) and the new closed waters on the Tsiu/Tsivat rivers are north of 60° 5.34′ N. lat., and west of 143° 3.66′ W. long.

The Kaliakh River weekly fall fishing periods will be 9:00 a.m., Sunday, through 9:00 a.m., Wednesday, beginning on August 5. Market conditions will determine whether or not the Yakataga District is fished in 2018. 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.

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TABLES AND FIGURES

Table 1.–Opening dates for Yakutat Management Area commercial set gillnet fisheries in 2018.

Yakutat District	
Area	Opening Date
Alsek River	17 June
Dangerous River	10 June
Yakutat Bay (south of 59°40′ N. lat.)	10 June
Manby Shore Ocean	17 June
Situk-Ahrnklin Inlet	17 June
Lost River	by Emergency Order
East Alsek River	by Emergency Order
Akwe River	24 June or by Emergency Order
Manby Shore Inside	24 June
Remainder of the Yakutat District	24 June
Italio River	by Emergency Order
Yakataga District	
Area	Opening Date
All areas	by Emergency Order
Kaliakh River	5 August
Tsiu River	by Emergency Order

Table 2.–Yakutat Management Area salmon escapement goals.

Species	System	Escapement Goal	Goal Type	Year Established	Assessment Method
Chinook	Klukshu (Alsek) River[a,b,d]	800–1,200	BEG	2013	Weir
	Alsek River (total)[b]	3,500–5,300	BEG	2013	Expansion
	Situk River	450–1,050	BEG	2003	Weir
Sockeye	East Alsek River	9,000–24,000	SEG	2018	HS, IE
	Klukshu (Alsek) River	7,500–11,000	BEG	2013	Weir
	Alsek River[c,d]	24,000–33,500	BEG	2013	Run reconstruction
	Lost River[d]	1,000	SEG	2009	BS, IE
	Situk River	30,000–70,000	BEG	2003	Weir
Coho	Tawah Creek (Lost River)	1,400–4,200	SEG	2015	BS, IE
	Situk River	3,300–9,800	BEG	1994	BS, IE
	Tsiu/Tsivat Rivers	10,000–29,000	SEG	2018	AS, IE
Pink	Situk River[d]	≥33,000	SEG	2012	Weir, IE

Note: BEG = biological escapement goal, SEG = sustainable escapement goal, HS = helicopter survey, AS = aerial survey, IE = index escapement.

a Chinook salmon goals for Klukshu and Alsek rivers are for all fish; Situk River is for large fish (≥660 mm mid eye to fork length, or fish age 1.3 and older).

b Escapement to the Alsek River is calculated through expansion of the Klukshu River inriver run by a factor of 4.0 and subtraction of any inriver harvests above the weir and in Dry Bay in the lower Alsek River.

c Alsek River escapement estimates are based on an expansion of genetic stock identification information from the U.S. commercial set gillnet fishery in Dry Bay and Klukshu River weir counts (TTC 2017) and are not available on a timely basis. The management approach for the Alsek river continues to be based on meeting the Klukshu River BEG as measured at the weir (TTC 2017).

d The escapement goal review committee recommended the escapement goal to be eliminated based on poor quality and quantity of available data.

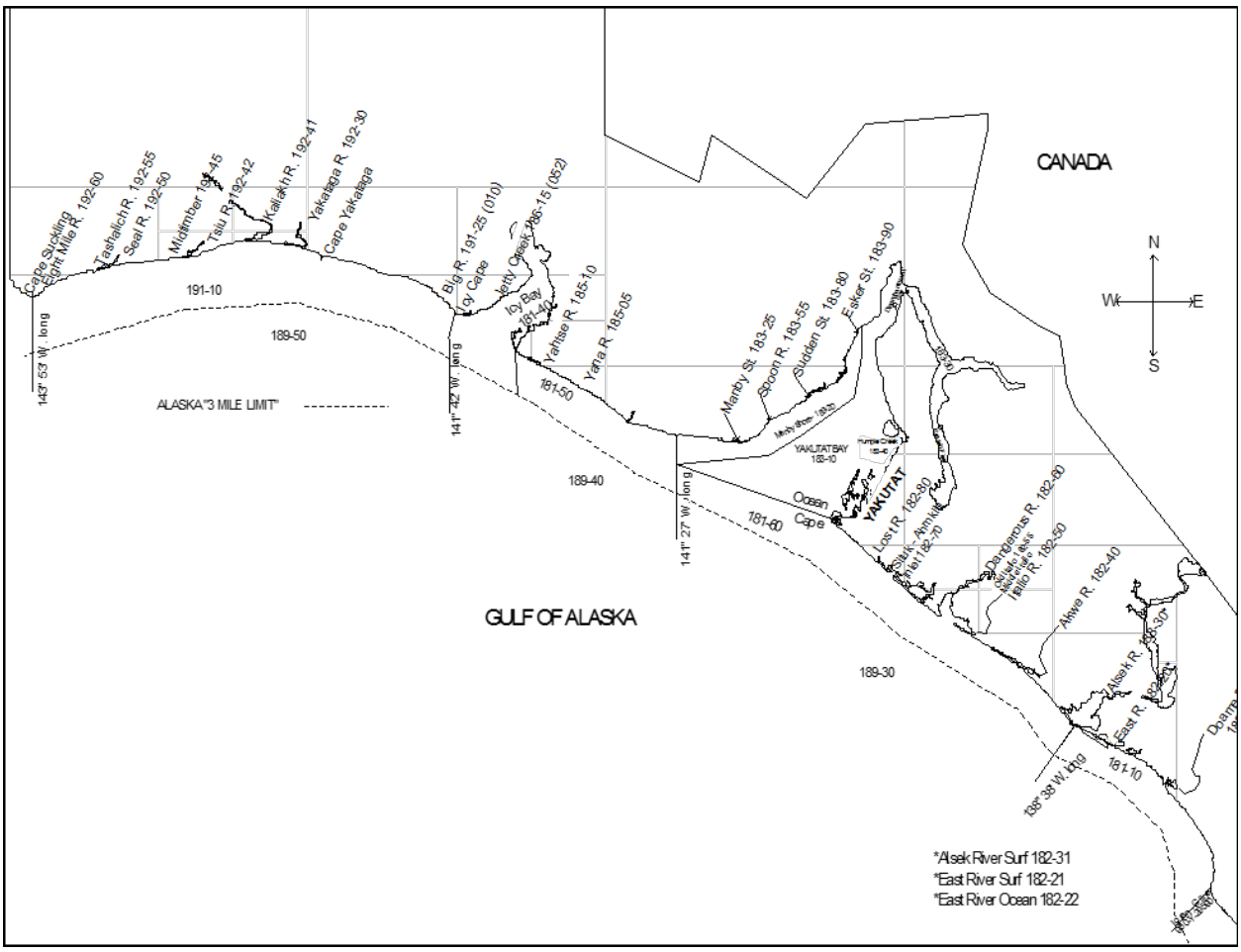

Figure 1.–Yakutat Management Area map, showing statistical reporting areas.