

Fishery Management Report No. 11-03

**Annual Management Report of the 2009 Yakutat Area
Commercial Salmon Fisheries**

by

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and

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February 2011

Alaska Department of Fish and Game

Divisions of Sport Fish and Commercial Fisheries



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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	all commonly accepted professional titles	e.g., Dr., Ph.D., R.N., etc.	base of natural logarithm	e
hectare	ha	at	@	catch per unit effort	CPUE
kilogram	kg	compass directions:		coefficient of variation	CV
kilometer	km	east	E	common test statistics	(F, t, χ^2 , etc.)
liter	L	north	N	confidence interval	CI
meter	m	south	S	correlation coefficient (multiple)	R
milliliter	mL	west	W	correlation coefficient (simple)	r
millimeter	mm	copyright	©	covariance	cov
		corporate suffixes:		degree (angular)	$^\circ$
Weights and measures (English)		Company	Co.	degrees of freedom	df
cubic feet per second	ft ³ /s	Corporation	Corp.	expected value	E
foot	ft	Incorporated	Inc.	greater than	>
gallon	gal	Limited	Ltd.	greater than or equal to	\geq
inch	in	District of Columbia	D.C.	harvest per unit effort	HPUE
mile	mi	et alii (and others)	et al.	less than	<
nautical mile	nmi	et cetera (and so forth)	etc.	less than or equal to	\leq
ounce	oz	exempli gratia (for example)	e.g.	logarithm (natural)	ln
pound	lb	Federal Information Code	FIC	logarithm (base 10)	log
quart	qt	id est (that is)	i.e.	logarithm (specify base)	\log_2 , etc.
yard	yd	latitude or longitude	lat. or long.	minute (angular)	'
		monetary symbols (U.S.)	\$, ¢	not significant	NS
Time and temperature		months (tables and figures): first three letters	Jan, ..., Dec	null hypothesis	H_0
day	d	registered trademark	®	percent	%
degrees Celsius	°C	trademark	™	probability	P
degrees Fahrenheit	°F	United States (adjective)	U.S.	probability of a type I error (rejection of the null hypothesis when true)	α
degrees kelvin	K	United States of America (noun)	USA	probability of a type II error (acceptance of the null hypothesis when false)	β
hour	h	U.S.C.	United States Code	second (angular)	"
minute	min	U.S. state	use two-letter abbreviations (e.g., AK, WA)	standard deviation	SD
second	s			standard error	SE
				variance	
Physics and chemistry				population	Var
all atomic symbols				sample	var
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				

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COMMERCIAL SALMON FISHERIES**

by
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ABSTRACT

The 2009 Yakutat set gillnet fishery produced a cumulative harvest of 319,000 salmon; this was 1% above the 1999–2008 average. The total harvest included 1,500 Chinook, 105,800 sockeye, 133,800 coho, 77,000 pink, and 870 chum salmon. The salmon harvest was worth an approximate exvessel value of \$1,650,000 to 123 active permit holders. The number of active permits was 8% above the recent 10-year average and comprised 70% of the total setnet permits in Yakutat. The 2009 sockeye salmon harvest of 105,800 was 13% below the recent 10-year average. Sockeye salmon harvest was well below average in all fisheries in the Yakutat District. Biological Escapement Goals (BEG) for sockeye salmon were met in all of sockeye salmon producing systems in Yakutat except for the Lost and Italo Rivers and the Klukshu River weir. Yakutat Bay, Situk-Ahrnklin, and Alsek Rivers together produced almost all of the area sockeye salmon harvest. The area's total coho salmon harvest of 134,000 was 7% below the recent 10-year average. The Situk-Ahrnklin and the Tsiu River together produced 85% of the area coho salmon harvest. The areas Chinook salmon harvest of 1,500 was 39% below the recent 10-year average of 2,500. The top Chinook salmon producers were the Alsek River and Yakutat Bay. The Situk-Ahrnklin Inlet was open to the retention and sale of Chinook salmon on July 25 once the Situk River weir achieved the BEG. The pink salmon harvest of 77,000 fish was 49% above the recent 10-year average, and the chum salmon harvest of 870 was 12% below average. The Situk-Ahrnklin Inlet and Yakutat Bay fisheries produced most of the pink salmon, which were incidental to the sockeye salmon harvest.

Key words: management, AMR, Annual Management Report, setnet, set gillnet, 2009 season, Chinook, sockeye, pink, chum, coho, salmon, Yakutat, Yakataga, fish ticket, Situk River, Situk-Ahrnklin Inlet, Yakutat Bay, Tsiu River, Alsek River, East River, BEG, Biological Escapement Goal, CPUE, catch per unit effort.

INTRODUCTION

The Yakutat set gillnet fisheries (Figure 1) are divided into 2 fishing districts; the Yakutat District, which extends from Cape Fairweather to Icy Cape, and the Yakataga District, which extends from Icy Cape to Cape Suckling. Yakutat District set gillnet fisheries primarily target sockeye and coho salmon although all 5 species of salmon are harvested. The Yakataga District fisheries only target coho salmon.

While the bulk of the Yakutat salmon harvest is usually reported from 4 or 5 major fisheries (the Alsek, Situk-Ahrnklin, and Tsiu Rivers, and Yakutat Bay), upward of 25 different areas are open to commercial fishing each year. With few exceptions, set gillnetting is confined to the intertidal area inside the mouths of the various rivers and streams, and to the ocean waters immediately adjacent to each. Due to the terminal nature of these fisheries, the department has been able to develop escapement goals for most of the major and several of the minor fisheries (Table 1).

Escapement counts performed inseason become the driving force in establishing openings, closures, and fishing times for each fishery. The fisheries are managed to ensure that escapement goals are met. In the case of glacial systems, it is often either difficult to see escapement, or escapement does not become visible until long after the fishery has occurred. Fisheries performance data, in the form of catch per unit of effort (CPUE), are compared with historical data to estimate run strength for management purposes. Two ocean fisheries, the Manby Shore and the Yakutat Bay fishery, occur within Yakutat Bay. Historical stock analysis of these fisheries indicates that the majority of sockeye salmon harvested, especially during the first 6 or 7 weeks of the season, are of Situk-Ahrnklin origin. These fisheries are managed in accordance with Situk-Ahrnklin escapement goals.

YAKUTAT AREA SUMMARY

OVERVIEW

The 2009 Yakutat set gillnet fishery produced a cumulative harvest of 319,000 salmon. This was only 1% above the recent 10-year average (Tables 2 and 3). Of the 179 Yakutat set gillnet permits, 123 were active this season which was 8% above the recent 10-year average. The average Yakutat permit holder earned \$13,300 for the 2009 season; this was 5% above the 10-year average (Table 4). Sockeye salmon harvests were 13% below the 10-year average. The sockeye salmon harvest for almost every system in Yakutat was below average. The coho salmon harvest was 7% below the recent 10-year average. The Situk-Ahrnklin Inlet accounted for 52% of the coho salmon harvest while the Tsiu River accounted for 33% (Table 5). Almost all of the remote systems, although open to fishing, received very little effort for coho salmon in 2009. A buying station was maintained on the Tsiu River for the fifth time since 2001 and 43,700 coho salmon were harvested from the Tsiu. Coho salmon accounted for 42% of the total Yakutat area salmon harvest. The return of pink salmon to the Situk River was above average in 2009. There is little economic incentive to harvest pink salmon so they are harvested incidentally to sockeye and coho salmon. The harvest of 46,600 pink salmon in the Situk-Ahrnklin Inlet was 36% above average. The chum salmon harvest in the Yakutat area was 13% below the recent average, and the Chinook salmon harvest of 1,500 was 40% below the recent average.

SOCKEYE SALMON

The sockeye salmon harvest of 106,000 was 13% below the recent 10-year average of 121,500 fish. The 2009 harvest of 49,000 Situk-Ahrnklin sockeye salmon was 26% above the recent 5-year average of 39,000. The Situk-Ahrnklin Inlet was the peak producer for the area and accounted for 46% of the sockeye salmon harvest. The Situk River weir count of 84,000 sockeye salmon was above the Biological Escapement Goal (BEG) range of 30,000 to 70,000. The sockeye salmon return to the East Alsek River (East River) was within BEG range of 13,000-26,000 and the fishery opened to commercial fishing during statistical week 30. The East River harvest of 7,400 sockeye was 59% below the recent 5-year average.

The Alsek River also recorded a below-average sockeye salmon return in 2009. However, the Alsek River set gillnet fishery harvested 13,000 sockeye; this was 10% above the recent 5-year average of 11,700 fish (Table 6 and 7). Yakutat Bay, with a harvest of 15,300 sockeye accounted for 15% of the total sockeye salmon harvest. The Akwe River harvest of 7,000 sockeye salmon was 28% below the recent average. The Dangerous River harvest of 8,700 sockeye was well above the recent 5-year average, and was the highest harvest during that period of time. Manby Shore and Sudden Stream combined harvested approximately 5,000 sockeye salmon.

COHO SALMON

The 2009 coho salmon harvest of 133,000 was 7% below the recent 10-year average of 143,000 fish. Coho salmon returns during the period 1990–2002 were the strongest in the history of the Yakutat Area. The Situk-Ahrnklin Inlet harvest of 70,000 coho salmon was 16% below the recent average of 83,400 fish. The only other major coho salmon producer in Yakutat in 2009 was the Tsiu River. The presence of a buying station on the river again prompted sustained effort on the Tsiu for the fifth year in a row. The Tsiu River harvest of 43,700 coho salmon was near the long-term historical average and comparable to the 2008 harvest. Minimal effort was

recorded on the Yahtse River in 2009 with 6,800 coho salmon harvested. The Alsek, East, and Akwe Rivers, along with Yakutat Bay, all contributed small numbers of coho salmon to the total harvest.

CHINOOK SALMON

With the exception of the winter troll fishery, there are no directed fisheries for Chinook salmon in the Yakutat Area, so all Chinook salmon are harvested incidentally in the sockeye salmon set gillnet fisheries. The principle producers of Chinook salmon are the Situk-Ahrnklin Inlet, the Alsek River, Yakutat Bay, and the Akwe River. The preseason projection for the Situk River was for a below average return. The “non-sale” of Chinook salmon remained in effect in the Situk-Ahrnklin Inlet for most of the season as mandated by 5 AAC 30.365, the Situk-Ahrnklin Inlet and Lost River King Salmon Fisheries Management Plan. In 2009, the Situk River weir achieved the BEG of 450-1,050 Chinook salmon and fisherman were allowed to retain and sell Chinook salmon from July 25 through the end of the Chinook salmon season. The preseason projection for the Alsek River was for an average to slightly above average Chinook salmon return, but the actual return was well below average. The Alsek River harvest of 600 Chinook salmon was 9% below the recent average of 730 fish. The Yakutat Bay harvest of approximately 400 Chinook salmon was 23% below the recent 5-year average for the Bay. The Alsek River and Yakutat Bay accounted for 64% of all Chinook salmon harvested in the Yakutat Area. The total harvest of 1,500 Chinook salmon was 40% below the recent 10-year average.

PINK SALMON

The pink salmon harvest of 77,000 fish was 49% above the recent 10-year average of 51,600 fish. Pink salmon prices were \$0.25 per pound this season, and pink salmon in Yakutat Bay and the Situk-Ahrnklin Inlet were the top 2 producers for the area. The 2 fisheries together accounted for almost all of the pink salmon harvest. The Situk-Ahrnklin Inlet harvest of 66,600 pink salmon was 36% above the recent 5-year average. The Yakutat Bay harvest of 9,300 pink salmon was 38% below the recent 5-year average. Pink salmon harvested in Yakutat Bay are predominantly of Situk River and Humpback Creek origin. Pink salmon returns to the Yakutat Area were above the historical average. Final escapement in the Situk River was approximately 100,000 pink salmon.

CHUM SALMON

Chum salmon are a non-target species in the Yakutat Area due to the combination of low abundance and low price, and the harvest is entirely incidental. The East River had been the only major producer of chum in the Yakutat Area; however the chum salmon run in the East River has been in decline during the past decade, probably due to changes in habitat. In 2009, the East River fishery had a small harvest of almost 300 chum salmon as opposed to no fish at all in 2008. The area-wide harvest of 870 chum salmon was 12% below the recent 10-year average. The East River and Yakutat Bay accounted for almost all of the harvest.

YAKUTAT DISTRICT FISHERIES

ALSEK RIVER

Alsek River salmon management is conducted in cooperation with the Canadian Department of Fisheries and Oceans (DFO) under the auspices of the Pacific Salmon Commission (PSC). In

February, 2005, the PSC reached bilateral agreement to allow directed Chinook salmon fisheries in the Taku and Stikine Rivers to begin in early May. Agreement was not reached to open the Alsek River Chinook salmon fishery until such time as run projections improved. The department was granted permission to conduct a test fishery for Chinook salmon. This test fishery was conducted in 2005 through 2008 but was discontinued in 2009 due to poor Chinook returns. The goal of the test fishery is to enable the department to develop a method for determining the abundance of Chinook salmon on an inseason basis using test fishery catch per unit of effort (CPUE) as an index of abundance. Biological data was collected during the test fisheries for age, size, sex, and genetic baseline information. The department has adopted regulatory language concerning a directed Chinook salmon fishery on the Alsek River pending bilateral agreement by the PSC.

In 2009, the Chinook salmon harvest of 600 was 9% below the recent 5-year average of 660 fish. The majority of these fish were harvested during the first three weeks of the season. The Klukshu weir escapement of approximately 1,600 Chinook salmon met the recommended escapement goal range of 1,100 to 2,300. This was the first time in two years that the bottom end of the BEG range for Chinook salmon was attained.

A total of 17 permit holders on the Alsek River harvested 600 Chinook, 13,000 sockeye, and 3,500 coho salmon in 2009. Virtually no pink or chum salmon were harvested (Table 6). The sockeye salmon harvest was 10% above the recent 5-year average, but was significantly higher than the harvest in 2008 (Table 7). The 2008 harvest of 2,900 sockeye salmon was the record low harvest for the Alsek River. The Alsek was opened to commercial fishing during stat week 24, the first Sunday in June. Adjustments to weekly fishing periods during the sockeye salmon season rely heavily on fishery performance data; the decision to extend any given period is generally based on CPUE data gathered during that period. Parent-year escapement information is also considered when determining the weekly fishing periods. From the start of the season CPUE indicated a very weak return, and the fishery was maintained at one 24-hour period each week for the first 2 weeks. The fishing period was extended to 2 days for 5 of the next 7 weeks of the fishery. The Klukshu River is an important tributary in the upper Alsek River drainage in Canada. The Klukshu River weir count of 5,700 sockeye salmon was below the recommended escapement goal range of 7,500 to 15,000 and was 53% below the recent 10-year average of 12,200 sockeye salmon (Table 8). Aerial escapement surveys of sockeye salmon are typically conducted on the Tanis River, Cabin, and Basin Creeks. Of these systems, Tanis River was surveyed only one time for sockeye and once for coho salmon with insignificant numbers to report.

The coho salmon harvest of 3,400 was well above the recent 5-year average, and was the highest harvest recorded during that period of time. Effort levels in the Alsek generally plummet during coho salmon season, and only 5 permits fished during the coho salmon season. The river was fished into the last week in September. It was not fished during the final two weeks of the season. Inclement weather during the fall makes it very difficult to obtain accurate escapement counts in local tributaries. The Klukshu weir escapement of 420 coho salmon was well below the recent 5-year average. The weir is usually removed prior to the completion of the coho salmon return and does not include fish that migrate after mid-October.

EAST RIVER

The East River experienced a harsh reversal of fortunes in 2008 and was by far the poorest return on record and was not open to commercial fishing for sockeye salmon. By contrast, the 2009

escapement surveys indicated a strong return and the river was opened to commercial fishing on July 25. The sockeye salmon harvest of 7,400 was below the recent 5-year average, but that average contains one year, 2007, with an abnormally high harvest of 63,000 fish. The 2009 sockeye salmon harvest was near the average for the other years in the past 5 years. The peak escapement count of 12,000 fish was recorded on August 11. This was close to the BEG range of 13,000 to 26,000 fish and it was assumed the actual sockeye salmon escapement eventually achieved that range. The East River opened initially during the first week of September for coho salmon. Effort remained minimal and the river was only fished for 5 weeks of the season. A total of 22 permits harvested 7,400 sockeye and 1,050 coho salmon (Tables 9 and 10). Although the East River is considered the only major producer of chum salmon in the Yakutat area, chum salmon were not targeted due to transportation costs. Only 4 pink salmon were harvested. The East River was surveyed only once for coho salmon on September 9 with an escapement count of 700 fish. Historical East River sockeye salmon return-per-spawner data is presented in Table 11.

AKWE RIVER

The Akwe River sockeye salmon harvest of 7,200 fish was 28% below the recent 5-year average of 10,100 fish (Table 12). The coho salmon harvest of 2,300 fish was 18% below the recent 5-year average of 2,800 fish. Effort remained minimal during the coho salmon season. A total of 5 permits fished the Akwe in 2009. Aerial surveys of the Akwe River are of little value in determining escapement due to the turbidity of the river. However, on August 11, the river was flown and 1,500 sockeye were recorded, which met the BEG of 600-1,500 fish. Weekly fishing times are announced at 2.5 days and then adjusted inseason according to fishery performance.

Markers were placed on the Akwe River one-half mile upstream of the mean low tide level to reduce the problem of fishing mixed stocks in the Italo and Akwe confluence. Some milling of all species may occur, and it is probable that some of the New Italo River stocks are intercepted in the Akwe River fishery.

ITALIO RIVERS

Three different rivers comprise the Italo River system: the Old, Middle, and New Italo Rivers. The Old Italo River has always been a separate river flowing into the Gulf of Alaska just east of the mouth of the Dangerous River. Geological changes in the mid-1980s changed the Italo River and created two distinct rivers where only one had existed before. The main river is now called the New Italo, and the original river channel is the Middle Italo. All three systems support coho populations, and the New Italo River also has a small run of sockeye salmon. No sockeye salmon were observed during any surveys of the New Italo, and that river remained closed to commercial fishing all season. A survey flown on August 28 revealed the BEG 1,400-3,600 fish had been attained for coho salmon in the Old and Middle Italo Rivers. Both rivers were open to commercial fishing for coho in 2009. Fewer than 3 permits fished, and harvest records are confidential. The Middle Italo was fished for 3 weeks and the Old Italo for 1 week during the season. No late fall surveys were flown on these systems due to inclement weather.

DANGEROUS RIVER

The Dangerous River was opened to commercial fishing on June 20. A total of 8,700 sockeye salmon were harvested. Small numbers of Chinook, coho, pink, and chum salmon were harvested incidentally in the sockeye salmon fishery. The Dangerous River was not fished for coho salmon this year (Table 13). A total of 5 permits fished the Dangerous in 2009. Escapement

surveys of the Dangerous River are ineffective due to the glacially occluded water. Weekly fishing times are announced at 2.5 days and then adjusted in accordance with fishery performance. Fishing times started at 2.5 days, were then increased to 3.5 days for 3 weeks, and fluctuated thereafter. Fishing time remained at 3.0 days for the coho salmon season.

SITUK-AHRNKLIN INLET

The Situk-Ahrnklin Inlet fishery recorded above average harvests of Chinook, sockeye, and pink salmon, and a below average harvest of coho during the 2009 season (Table 14, Table 15). The sale of Chinook salmon was prohibited until the BEG was attained in accordance with 5 AAC 30.365, the Situk-Ahrnklin Inlet and Lost River King Salmon Fisheries Management Plan. The Situk-Ahrnklin fishery generated 52% of the Yakutat area set gillnet income (Table 16, Table 17). The total value of \$1,600,000 was 11% above average. The harvest of 49,000 sockeye salmon was 26% above the recent average; that average does contain one year with the third lowest recorded harvest. Situk-Ahrnklin sockeye accounted for 46% of the area sockeye salmon harvest. The coho harvest of 70,000 was 16% below average, and accounted for 52% of the area's total coho salmon harvest. The pink salmon return to the Situk was average, and the harvest of 66,600 was 36% above average.

The Situk River weir was installed in the lower river for the 22nd consecutive year and used for inseason management of the sockeye and Chinook salmon fisheries (Table 18). This was the 16th year that the resistance board or “floating” weir was used. Heavy rains and subsequent flooding are typical of the fall coho season and the weir is not maintained during the coho salmon run.

The Situk-Ahrnklin Inlet fishery opened by regulation on the third Sunday in June. Early fishery performance and weir counts indicated the sockeye salmon run was not strong, and fishing time remained at 2.5 days for the first 3 weeks of the season. As the run continued developing slowly, fishing time was then increased to 4.5 days for one week, 6.75 days the following week, and for 7 days during statistical week 31 when the BEG was attained. The last two weeks of the sockeye season were opened to fishing for 6.75 days before the coho season started. A total of 84,000 sockeye salmon passed through the weir in 2009, thus exceeding the BEG of 30,000 to 70,000. The peak count of 56 permits was recorded during fourth week of the sockeye salmon season. This effort level was well below the historical average.

Prior to the start of the season the department projected an inriver return of 451 to 750 large fish. 5 AAC 30.365(3)(A) directs the department to implement a “non-sale” Chinook salmon season in the Situk-Ahrnklin Inlet and Lost River fisheries under this scenario. The “non-sale” of Chinook salmon was implemented during the first opening of the season on June 19, and remained in effect until July 25. Effective 12:01 a.m. on July 25, Chinook salmon could not be retained or sold throughout the rest of the salmon season in order to get as many Chinook salmon through the Situk River weir. Dead Chinook salmon could be retained for personal use. A total of 900 large Chinook salmon were counted through the Situk River weir in 2009; attaining the BEG range of 450–1,050 large Chinook. A total of 300 Chinook salmon were retained in the commercial fishery for personal use and recorded on fish tickets.

The harvest of 70,000 coho salmon was 16% below the recent 5-year average of 83,400. The 14-year period from 1992–2005 was the most productive in the history of the Situk-Ahrnklin Inlet coho salmon fishery, with 10 of the 14 years recording a harvest in excess of 100,000 coho salmon. Seven of those fourteen years recorded harvests in excess of 150,000 fish. There has

been a downturn in this level of production since 2003, and the 2009 harvest was the third highest since 2004. The long-term historical record yields a different perspective. During the 30-year period 1961–1991 the average coho salmon harvest in the Situk-Ahrnklin Inlet fishery was 31,500, and only 4 of those years produced a harvest of over 50,000 coho salmon. Escapement survey conditions were fair throughout most of the 2009 season. A peak Situk River escapement survey of approximately 6,000 coho salmon was recorded on October 14, meeting the BEG of 3,300-9,800 fish. The commercial fishing period remained at 3 days for most of the season, and then extended to 4 days for the last 2 weeks of the coho salmon season. A peak count of 64 permits fished during the first and second weeks of September, and this effort was above average for recent coho salmon seasons. This year continues the recent reversal of historical effort patterns. Prior to 2000 peak effort levels in the Situk-Ahrnklin Inlet were recorded during the sockeye salmon season when as many as 90 permits fished the Inlet. Effort then dropped to about 50 permits during the fall when some effort was removed to some of the more remote coho salmon systems. Now, more effort is remaining in Yakutat Bay during the sockeye salmon season. And with economics limiting the remote coho salmon fisheries, more effort is now being seen in the Inlet during the fall.

The pink salmon harvest of 66,600 was 36% above the recent 5-year average of 49,000 fish. In 2009, 62,300 pink salmon passed through the Situk weir, achieving the odd-year pink salmon BEG of 59,000-200,000 fish. The peak of the pink run occurs between the end of the sockeye season and the onset of the coho salmon season. Effort levels always diminish during this time, as fewer permits are willing to fish for pink salmon because of the comparatively low price. In 2009 the pink salmon price was 25 cents per pound. Over 100,000 pink salmon were observed in the Situk River on September 6. It is estimated that pink salmon escapement reached 150,000 fish. The chum salmon harvest of fewer than 200 fish was 73% below the recent 5-year average.

LOST RIVER

Because of the shift of the Lost River in 1999 that resulted in the river changing from discharging directly into the Gulf of Alaska to discharging into the Situk-Ahrnklin estuary, 5AAC 39.220 was implemented to protect Lost River stocks. Beginning in the 1999 season, regulatory markers have been placed in the Situk-Ahrnklin estuary to delineate areas that closed the Lost River to commercial fishing. This closure forced the displacement of some traditional fishing sites and many of these fishermen have elected to transfer their enterprises to either the Situk-Ahrnklin Inlet or to Yakutat Bay.

The Lost River was not opened to commercial set gillnetting in 2009. The peak sockeye salmon escapement count of 160 fish was well below the low end of the Sustainable Escapement Goal (SEG) of 1,000 fish for the Lost River. The peak coho salmon escapement count of 5,800 was above the SEG range of 2,000 fish. That survey was conducted during inclement weather, and staff felt they were seeing less than 50% of the fish that were actually there. It is assumed that Lost River salmon stocks are harvested in the Situk-Ahrnklin fishery. The lower end of the Situk-Ahrnklin estuary appears highly mutable and the conservation measures enacted from 1999–2009 will continue to be necessary in the future.

YAKUTAT BAY

Yakutat Bay recorded harvests of 400 Chinook, 15,400 sockeye, 3,200 coho, 9,300 pink, and only 350 chum salmon in 2009 (Table 19). The sockeye salmon harvest of 15,400 fish was 45%

below the recent 5-year average (Table 20). A total of 56 different permits fished Yakutat Bay in 2009, with a peak effort of 48 permits fished during the first week of the season. The southern half of Yakutat Bay opened on June 20, and fishing time remained at 2.5 days for the first 4 weeks of the season. Fishing time was then increased to 4.5 days for the next 3 weeks of the season as sockeye salmon harvests and escapement levels remained steady. Chinook salmon are harvested incidentally to the sockeye fishery, and the harvest of 400 Chinook salmon was 23% below the recent 5-year average.

The Yakutat Bay sockeye salmon harvest of 15,400 fish did not exceed the Situk-Ahrnklin Inlet harvest; however, it was the second best sockeye salmon producer for the area in 2009. The Bay harvested 15% of all sockeye salmon harvested in Yakutat. In a very short period of time the dynamics of the Yakutat Bay fishery have changed and this change is responsible for the high catch figures and for the fact that the Bay fishery is now taking a higher percentage of the total area sockeye salmon production. Historically effort was high in the Bay only during the first week of the season. With the Situk-Ahrnklin Inlet fishery opening 1 week later, effort then declined in the Bay as permits moved down to the Inlet. Now, effort in Yakutat Bay remains high throughout the sockeye salmon season. For most of the 2009 season less effort was directed in Yakutat Bay than in the Situk-Ahrnklin Inlet. Gear placement within the bay is a critical factor in this change in fishery dynamics.

Sockeye salmon pass through Yakutat Bay on their journey to all of the river systems east of the bay, the Lost, the Situk-Ahrnklin, the Dangerous, the Italios and the Akwe, and to a lesser extent, to both the Alsek and East Rivers. The migration route carries the fish around Ocean Cape, and from there eastward they stay just outside the outermost breakers all the way down the coast. The years 2007 and 2008 saw a proliferation of 75-fathom Yakutat Bay gillnets clustered off Ocean Cape in the middle of that migration route. There is a line that delineates where a 75-fathom net can be fished in the bay that runs from the southernmost point of Ocean Cape to Point Manby, and those nets must be north and west of that line. Nets began crowding this line, and they are now found south and east of the line. The waters east and south of the line do not open to fishing as the remainder of the district until the fourth Sunday in June, and legal gear there is one 15-fathom net, not a 75-fathom net.

During the initial opening for the Bay on the second Sunday in June, department staff monitored the Ocean Cape fishery from the marker position at the southernmost point of Ocean Cape. A total of 14 nets were observed, and of those 14 nets, 10 were observed to be fishing in closed waters outside the line from the southernmost point of Ocean Cape to Point Manby. The Alaska Wildlife Troopers had no personnel in the Yakutat Area, and this developing fishery had become an illegal fishery. Following the initial fishing period closure, the marker was moved by emergency order from the southernmost point of Ocean Cape to Ocean Cape itself. The new line delineates the waters inside Yakutat Bay, from Ocean Cape to Point Manby, and eliminates waters outside the Bay being fished by 75-fathom Yakutat Bay gillnets. The marker remained in this position for the remainder of the salmon season. It is anticipated that the Alaska Wildlife Troopers will reopen the Yakutat post in 2010. When it becomes possible to enforce closed waters regulations, the marker will be moved back to the original position at the southernmost point of Ocean Cape.

Yakutat Bay has never been a major coho producer, perhaps due to the concentration of effort elsewhere during coho salmon season. The 2009 coho salmon harvest of 3,200 fish was 17% below the recent 5-year average. That average contains 3 years of very good coho salmon

harvests, and the 2009 harvest was only slightly below the long-term average. Effort levels always remain low in Yakutat Bay for coho salmon, and a peak count of 17 permits fished the Bay during the first week of September.

The Yakutat Bay pink salmon harvest of 9,300 fish was 38% below the recent average. Pink salmon have not been targeted in Yakutat bay in recent years due to the decline of the Humpback Creek fishery. Also, prices paid for pink salmon in recent years have made them an “incidental take” species. An aerial survey of the intertidal area adjacent to the mouth of Humpback Creek was flown on August 11 with a recorded estimate of 6,500 pink salmon. Most of the pink salmon targeted in the Bay were harvested from inside the islands in the vicinity of Humpback Creek.

MANBY FISHERIES

The Manby Shore ocean fishery is located along the western shore of Yakutat Bay. This fishery harvests stocks that are destined for the Situk River and the Manby Shore streams. Historical data is difficult to interpret because, prior to the mid-1980s, harvests from the ocean fishery were combined with harvests from the area’s inside waters. Also, before 1950, all the Manby Shore and Manby streams’ harvests were recorded with those from Yakutat Bay. It is likely that the ocean fishery for sockeye developed in 1977 since fairly consistent sockeye salmon harvests begin to appear in the record at that time. Weekly fishing periods are usually adjusted according to Situk River escapement needs. Fishing time remained at 2.5 days throughout the six weeks of the sockeye season, and was fished 5 of those 6 weeks. A total of 15 permits harvested 2,800 sockeye salmon, and this harvest was 25% below the recent average (Table 21).

The Manby Shore stream fisheries include the waters of Manby Stream, Sudden Stream, Spoon River, and Esker Creek. The fishing history of these systems is imprecise because some, or none, may be fished in any given year. Sudden and Manby Streams produce both sockeye and coho, while the Esker Creek and Spoon River fisheries target only coho salmon. In 2009 Sudden River was fished for sockeye salmon. Fewer than 3 permits fished, and catch records are confidential. Escapement counts are limited due to the glacial nature of most Manby area streams and no surveys of these inside waters were conducted in 2009. Escapement goals have not been formulated for the inside waters along the Manby Shore.

YANA RIVER TO ICY BAY

The Yahtse River was fished for 6 weeks during the coho salmon season by fewer than 3 permits, and harvest information is confidential. Yana River and Jetty Creek were not fished in 2009.

YAKATAGA DISTRICT FISHERIES

OVERVIEW

The Yakataga District opened on August 2 in 2009. The Tsiu River sustained a normal commercial fishery for the fifth year in a row. The Kaliakh River was not fished in 2009 and small effort in prior years produced confidential information so historical data is not given. Tashalich River, and Eight Mile Creek were open, but not fished in 2009. Seal Creek was fished by fewer than 3 permits and harvest information is confidential. Historical harvest and effort data for the Tsiu River is presented in Table 22.

TSIU RIVER

The Tsiu River is remote from processors and fish have been transported from the site in DC-3 or similar aircraft. In 2009 Yakutat Seafoods maintained a buying station on the Tsiu River and flew fish to Yakutat with a DC-3. This marked the fifth time since 2001 that a processor maintained a presence on the Tsiu. A total of 10 permits harvested 44,000 coho salmon and the harvest was above the recent 5-year average (Table 22). This was slightly below historical harvest levels, but harvest on the Tsiu is a function of effort, and effort levels were well below historical levels. A peak aerial escapement survey on October 14 revealed 28,000 coho salmon which met the BEG range of 10,000–29,000 fish.

TABLES AND FIGURES

Table 1.–Summary of Yakutat salmon stock biological escapement goals (BEG) and source documentation.

Species	Stock	Type	Escapement Goal	BEG Document
Sockeye	Situk River	Weir-Total Count	30,000–70,000	ADFG-RIR No. 1J95-22
Sockeye	Akwe River	Aerial Survey Index	600–1,500	ADFG-RIR No. 1J95-16
Sockeye	East Alsek River	Aerial Survey Index	13,000–26,000	SPEC-PUB No. 03-04
Sockeye	Italio River	Aerial Survey Index	Not Established	Not Established
Sockeye	Lost River	Aerial Survey Index	1,000*	ADFG-RIR No. 1J95-16
Sockeye	Klukshu River	Weir-Total Count	7,500–15,000	ADFG-RIR No. 1J00-24
Chinook	Klukshu River	Weir-Total Count	1,100–2,300	ADFG-F. Man. No. 98-2
Chinook	Situk River	Weir-Total Count	450–1,050	SPEC-PUB No. 03-01
Pink	Situk-Even Year	Weir	42,000–105,000	ADFG-RIR NO. 1J95-08
Pink	Situk-Odd Year	Weir	54,000–200,000	ADFG-RIR NO. 1J95-08
Pink	Humpy Cr. Even	Aerial Survey Index	3,300–8,000	ADFG-RIR NO. 1J95-08
Pink	Humpy Cr. Odd	Aerial Survey Index	7,000–18,000	ADFG-RIR NO. 1J95-08
Coho	E. Alsek-Doame	Aerial Survey Index	2,500–8,500	ADFG-RIR No. 1J94-14
Coho	Akwe River	Aerial Survey Index	1,800–5,000	ADFG-RIR No. 1J94-14
Coho	Italio River	Aerial Survey Index	1,400–3,600	ADFG-RIR No. 1J94-14
Coho	Situk River	Aerial Survey Index	3,300–9,800	ADFG-RIR No. 1J94-14
Coho	Lost River	Aerial Survey Index	2,200*	ADFG-RIR No. 1J94-14
Coho	Kaliakh River	Aerial Survey Index	4,000–14,000	ADFG-RIR No. 1J94-14
Coho	Tsiu/Tsivat	Aerial Survey Index	10,000–29,000	ADFG-RIR No. 1J94-14

Note: All escapement goals are Biological Escapement Goals (BEG) except two. The Lost River sockeye and Coho escapement goals are considered SEG's (sustainable escapement goal).

Table 2.–Total salmon harvest by species in the Yakutat area set gillnet fishery by fishing period, 2009.

Week	Ending Date	Chinook	Sockeye	Coho	Pink	Chum	Total
24	6/13	216	1,091	0	0	0	1,307
25	6/20	282	4,535	24	0	64	4,905
26	6/27	326	11,884	158	6	108	12,482
27	7/04	285	17,832	414	49	92	18,672
28	7/11	160	11,956	151	73	23	12,363
29	7/18	116	16,492	355	1,991	33	18,987
30	7/25	42	12,824	268	3,432	18	16,584
31	8/01	71	10,797	175	9,474	31	20,548
32	8/08	13	11,259	345	20,431	25	32,073
33	8/15	9	5,125	2,610	32,928	69	40,741
34	8/22	0	497	1,043	2,632	5	4,177
35	8/29	3	1,102	13,348	4,833	113	19,399
36	9/05	0	253	22,187	670	140	23,250
37	9/12	6	155	31,685	389	130	32,365
38	9/19	0	18	22,699	37	9	22,763
39	9/26	4	0	13,243	0	4	13,251
40	10/03	0	4	14,626	11	6	14,647
41	10/10	0	0	8,306	0	1	8,307
42	10/17	0	1	2,171	0	0	2,172
Totals		1,533	105,825	133,808	76,956	871	318,993

Table 3.—Ten-year comparison of Yakutat area set gillnet effort and salmon harvest.

Year	Active						Total
	Permits	Chinook	Sockeye	Coho	Pink	Chum	
1999	129	5,105	128,743	187,052	29,554	928	351,382
2000	125	2,460	99,182	170,948	64,349	1,185	338,124
2001	115	2,633	141,534	205,265	32,230	406	328,068
2002	88	2,510	112,656	200,888	15,590	204	331,848
2003	104	3,847	154,441	74,343	48,418	542	281,591
2004	112	2,734	88,282	196,930	23,207	1,555	312,708
2005	115	1,140	79,443	82,887	60,436	525	224,431
2006	105	1,330	138,734	86,085	88,864	1,225	316,218
2007	120	1,879	236,869	76,550	87,997	2,782	406,077
2008	129	1,309	35,282	153,712	65,227	546	256,076
2009	123	1,533	105,825	133,808	76,956	871	318,993
1999–2008 Avg.	114	2,495	121,517	143,466	51,587	990	315,047
2009 Deviation ^a	+8%	-39%	-13%	-7%	+49%	-12%	+1%

^aPercentage deviation from 10-year average.

Table 4.—Average earnings from set gillnet fishing, Yakutat area, 1980–2009.

Year	Yakutat Setnet Income	Active Setnet Permits	Aver. Earning Per Permit	Previous 10-Year-Aver. Income
1980	\$1,929,752	150	\$12,865	-
1981	\$2,333,300	152	\$15,351	-
1982	\$2,084,140	149	\$13,988	-
1983	\$1,355,470	131	\$10,347	-
1984	\$2,375,790	137	\$17,342	-
1985	\$3,010,580	149	\$20,225	\$13,944
1986	\$1,981,807	153	\$12,953	\$15,283
1987	\$5,077,589	155	\$32,759	\$15,607
1988	\$8,944,228	160	\$55,901	\$17,302
1989	\$4,174,510	164	\$25,454	\$21,124
1990	\$4,493,681	161	\$27,911	\$22,018
1991	\$2,248,558	162	\$13,880	\$23,223
1992	\$5,238,058	165	\$31,745	\$23,076
1993	\$2,916,782	158	\$18,461	\$23,852
1994	\$3,331,851	151	\$22,065	\$25,663
1995	\$2,968,274	148	\$20,055	\$26,135
1996	\$2,375,047	140	\$16,925	\$26,118
1997	\$2,975,854	142	\$20,957	\$26,516
1998	\$1,350,752	144	\$9,380	\$25,335
1999	\$1,960,794	129	\$15,200	\$24,306
2000	\$1,478,049	125	\$11,824	\$23,171
2001	\$1,130,969	115	\$9,830	\$18,044
2002	\$747,218	88	\$8,491	\$17,636
2003	\$1,135,551	104	\$10,919	\$15,319
2004	\$1,606,082	112	\$14,340	\$14,565
2005	\$911,193	115	\$7,923	\$13,792
2006	\$1,695,830	105	\$16,150	\$12,579
2007	\$2,479,100	120	\$20,659	\$12,501
2008	\$1,693,845	129	\$13,131	\$12,472
2009	\$1,640,016	123	\$13,333	\$12,847
Average 1999–2008	\$1,483,863	114	\$12,847	\$16,439

Table 5.–Harvest of salmon in the Yakutat area set gillnet fishery by fishing area, 2009.

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
Alsek	602	12,906	3,454	0	20	16,982
East	10	7,388	1,042	4	275	8,719
Akwe	90	7,251	2,270	56	15	9,682
Italio	Closed					
Middle Italio	^a	^a	^a	^a	^a	^a
Old Italio	^a	^a	^a	^a	^a	^a
Dangerous	44	8,747	256	498	31	9,576
Situk	307	49,016	69,978	66,640	147	186,042
Lost	Closed					
Yakutat Bay	380	15,367	3,246	9,258	348	28,599
Manby Shore	100	2,830	60	378	33	3,401
Manby Stream	Not fished					
Spoon	Not fished					
Sudden	0	2,246	167	1	0	2,414
Esker	Not fished					
Yahtse	0	0	6,791	0	0	6,791
Yana	Not fished					
Jetty Creek	Closed					
Big River	Closed					
Kaliakh	Not fished					
Tsiu	0	74	43,723	121	2	43,920
Seal River ^b	^a	^a	^a	^a	^a	^a
Tashalich	Not fished					
Kiklukh	Not fished					
Totals	1,533	105,753	133,808	76,956	871	318,993

^a Fewer than 3 permits, all catch figures are confidential.

^b Experimental fishery for sockeye but few fish were harvested.

Table 6.–Harvest of salmon in the Alek River set gillnet fishery by fishing period, 2009.

Week	Ending Date	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
24	13-Jun	14	216	1,091	0	0	0	1,307	1.0
25	20-Jun	14	132	348	0	0	0	480	1.0
26	27-Jun	12	200	2,210	0	0	0	2,410	2.0
27	4-Jul	14	47	3,628	0	0	0	3,675	2.0
28	11-Jul	12	5	2,058	0	0	0	2,063	1.0
29	18-Jul	13	1	1,041	0	0	0	1,042	1.0
30	25-Jul	7	1	1,503	8	0	0	1,512	2.0
31	1-Aug	4	0	611	0	0	0	611	2.0
32-33	15-Aug	3	0	340	6	0	0	346	5.0
34	22-Aug	Not	Fished						3.0
35-36	5-Sep	7	0	33	382	0	1	416	6.0
37	12-Sep	5	0	30	1,538	0	15	1,583	3.0
38	19-Sep	3	0	3	905	0	2	910	3.0
39	26-Sep	4	0	0	380	0	1	381	3.0
40	3-Oct	3	0	0	235	0	1	236	3.0
41-42	17-Oct	Not	fished						6.0
Totals		17	602	12,906	3,454	0	20	16,982	38.0

Table 7.–Harvest of salmon in the Alek River set gillnet fishery, 2009 and 5-year catch comparison.

Year	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
2004	24	656	18,030	2,475	0	2	21,163	83.0
2005	20	662	7,794	1,196	0	0	9,652	43.0
2006	20	700	10,066	701	2	3	11,437	45.0
2007	21	685	20,057	134	0	1	22,028	47.0
2008	20	593	2,870	2,668	0	2	6,133	33.0
2009	17	602	12,906	3,454	0	20	16,982	38.0
2004–2008 Average	21	659	11,763	1,435	0	2	14,083	50.2
2009 Deviation ^a		-9%	+10%	+141%	0%	+900%	+21%	-24%

^a Percentage deviation from 5-year average.

Table 8.—Klukshu River Weir escapement, 1976–2009.

Year	Chinook^a	Sockeye^b	Coho^c
1976	1,278	1,691	1,572
1977	3,144	6,791	2,758
1978	2,976	6,867	30
1979	4,405	2,308	175
1980	2,637	1,739	704
1981	2,113	0,323	1,170
1982	2,369	3,699	189
1983	2,537	0,492	303
1984	1,672	2,727	1,402
1985	1,458	8,620	350
1986	2,708	4,880	62
1987	2,616	0,504	202
1988	2,037	9,341	2,774
1989	2,456	3,542	2,219
1990	1,915	5,995	315
1991	2,489	8,977	8,540
1992	1,366	0,215	1,145
1993	3,302	6,740	788
1994	3,735	5,038	1,232
1995	5,678	2,202	3,650
1996	3,602	8,317	3,465
1997	2,757	1,012	307
1998	1,347	3,580	1,961
1999	2,190	5,069	2,371
2000	1,365	5,551	4,832
2001	1,825	0,290	748
2002	2,240	5,711	9,921
2003	1,671	2,120	3,689
2004	2,525	5,348	750
2005	1,070	3,373	683
2006	568	3,455	420
2007	677	8,956	300
2008	436	2,731	4,275
2009	1,568	5,731	424
1999–2008 average	1,457	2,260	2,799

^a Chinook salmon escapement goal range is 1,100 to 2,300 fish.

^b Sockeye salmon escapement goal range is 7,500 to 15,000 fish.

^c Coho numbers are an index; weir is removed before run is over.

Table 9.–Harvest of salmon in the East River set gillnet fishery by fishing period, 2009.

Week	Ending Date	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
30	25-Jul	11	6	982	0	0	0	988	2.0
31	1-Aug	15	2	2,435	0	4	4	2,445	3.0
32	8-Aug	10	1	2,791	0	0	6	2,798	3.0
33	15-Aug	8	1	1,033	29	0	3	1,066	3.0
34	22-Aug	Not	fished						3.0
35	29-Aug	4	0	51	36	0	43	130	3.0
36	5-Sep	a	a	a	a	a	a	a	3.0
37	12-Sep	a	a	a	a	a	a	a	3.0
38	19-Sep	a	a	a	a	a	a	a	3.0
39	26-Sep	Not	fished						3.0
40	3-Oct	a	a	a	a	a	a	a	3.0
41-42	17-Oct	Not	fished						6.0
Totals		22	10	7,387	1,042	4	275	8,719	38

^a Fewer than 3 permits, all catch figures are confidential.

Table 10.–Harvest of salmon in the East River set gillnet fishery, 2009 and 5-year catch comparison.

Year	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
2004	9	6	4,590	21	0	34	4,651	68.5
2005	13	8	5,099	27	36	0	5,170	52.5
2006	15	4	14,848	316	0	5	15,173	49.5
2007	33	13	63,080	56	203	1,256	64,608	51.0
2008	3	0	1	165	0	0	166	18.0
2009	22	10	7,388	1,042	4	275	8,719	33.0
2004–2008 Average	15	6	17,524	117	48	259	17,954	47.9
2009 Deviation ^a	+47%	+67%	-59%	+791%	-97%	+6%	-51%	-31%

^a Percentage deviation from 5-year average.

Table 11.–East River return-per-spawner, 1975–2009.

Year	Total Return	Parent-Year Escapement	Return Per Spawner	Rank
1975	44,530	12,000	3.71	10
1976	79,816	10,000	7.98	1
1977	61,309	15,000	4.08	8
1978	56,003	35,000	1.60	24
1979	81,262	22,000	3.69	11
1980	66,530	50,000	1.33	27
1981	82,365	40,000	2.06	20
1982	177,785	25,000	7.11	3
1983	147,204	30,000	4.91	6
1984	68,023	18,000	3.78	9
1985	245,851	35,000	7.02	4
1986	120,355	80,000	1.50	25
1987	167,723	65,000	2.58	18
1988	99,483	29,000	3.43	13
1989	175,516	60,000	2.93	17
1990	203,378	44,000	4.62	7
1991	75,334	34,000	2.22	19
1992	187,300	38,000	4.93	5
1993	234,207	30,000	7.81	2
1994	131,848	42,000	3.14	15
1995	39,772	30,000	1.32	28
1996	83,025	43,000	1.96	21
1997	40,612	45,000	.90	30
1998	38,902	32,400	1.20	29
1999	19,500	28,000	.70	32
2000	21,000	28,000	.75	31
2001	17,000	28,000	.61	33
2002	14,200	30,400	.47	34
2003	33,617	19,500	1.72	22
2004	35,590	21,000	1.69	23
2005	55,499	17,000	3.26	12
2006	44,848	14,200	3.16	14
2007	103,180	34,300	3.01	16
2008	4,165	31,300	.13	35
2009	19,388	17,000	1.4	26
Average	87,889	32,374	2.9	-

Table 12.—Harvest of salmon in the Akwe River set gillnet fishery, 2009, and 5-year-catch comparison.

Year	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
2004	6	149	11,860	5,342	0	1	17,352	50.0
2005	6	108	5,529	287	2	2	5,928	40.0
2006	7	256	5,833	3,725	25	34	9,873	51.0
2007	9	238	24,087	1,987	0	10	26,322	45.0
2008	8	72	3,120	2,535	1	3	5,731	36.5
2009	5	90	7,251	2,270	56	15	9,682	32.0
2004–2008 Average	7	165	10,086	2,775	6	10	13,041	44.5
2009 Deviation ^a		-45%	-28%	-18%	+833%	+50%	-26%	-28%

^a Percent deviation from 5-year average.

Table 13.—Harvest of salmon in the Dangerous River set gillnet fishery, 2009, and 5-year catch comparison.

Year	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
2004	3	2	865	103	0	0	867	67.5
2005	^a	58.9						
2006	3	41	2,352	0	3	0	2,393	53
2007	5	4	5,768	18	2	0	5,792	41.5
2008	7	21	2,800	24	104	7	2,956	41.5
2009	22	44	8,747	256	498	31	9,576	55
2004–2008 Average	5	17	2,946	36	27	2	3,002	52
2009 Deviation ^b	340	159	197	611	1,745	1,450	219	6

^a Fewer than three permits, all catch figures are confidential.

^b Percent deviation from 5-year average.

Table 14.–Harvest of salmon in the Situk-Ahrnklin Inlet set gillnet fishery by fishing period, 2009.

Week	Ending	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
	Date								
26	6/27	43	45	6,544	1	3	5	6,598	2.5
27	7/04	45	90	6,642	27	22	9	6,790	2.5
28	7/11	42	46	5,667	0	59	9	5,751	2.5
29	7/18	56	51	8,941	18	1,623	11	10,644	4.5
30	7/25	48	13	4,932	20	1,420	2	6,387	6.75
31	8/01	44	50	6,183	42	8,310	3	14,588	7.0
32	8/08	46	8	6,824	320	20,059	13	27,224	6.75
33	8/15	44	2	2,424	2,394	29,648	44	34,512	6.75
34	8/22	28	0	264	913	2,391	4	3,572	3.0
35	8/29	47	2	364	4,484	3,094	27	7,971	3.0
36	9/05	52	0	132	8,733	0	5	8,870	3.0
37	9/12	64	0	84	16,871	0	8	16,963	3.0
38	9/19	62	0	11	9,131	0	2	9,144	3.0
39	9/26	49	0	0	9,406	0	0	9,406	3.0
40	10/03	52	0	3	9,880	11	4	9,898	4.0
41	10/10	38	0	0	5,567	0	1	5,568	4.0
42	10/17	27	0	1	2,171	0	0	2,172	4.0
Total		84	307	49,016	69,978	66,640	147	186,088	69.25

Table 15.–Harvest of salmon in the Situk-Ahrnklin Inlet set gillnet fishery, 2009 and 5-year catch comparison.

Year	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
2004	90	1,222	27,518	178,804	19,842	1,386	228,485	98.0
2005	78	0	32,887	50,933	48,269	336	132,419	72.25
2006	74	6	62,118	49,336	72,139	457	184,056	79.0
2007	77	83	62,059	41,900	61,591	415	166,048	54.5
2008	80	91	10,625	95,874	43,250	166	150,006	45.0
2009	84	307	49,016	69,978	66,640	147	186,088	69.25
2004–2008 Average	80	280	39,041	83,369	49,018	552	172,203	69.8
2009 Deviation ^a	+5%	+10%	+26%	-16%	+36%	-73%	+8%	-0.7%

^a Percentage deviation from 5-year average.

Table 16.–Exvessel value of Situk-Ahrnklin set gillnet fishery relative to the total Yakutat area exvessel set gillnet fishery, 1975–2009.

Year	Yakutat Setnet Income	Situk Setnet Income	Percent Value of Situk
1975	\$ 713,860	\$ 256,760	36%
1976	1,214,550	485,680	40%
1977	2,065,055	890,630	43%
1978	2,669,791	767,690	29%
1979	3,239,000	715,280	22%
1980	1,929,752	419,070	22%
1981	2,333,300	612,050	26%
1982	2,084,140	372,000	18%
1983	1,355,470	205,750	15%
1984	2,375,790	575,120	24%
1985	3,010,580	524,560	17%
1986	1,981,807	180,677	9%
1987	5,077,589	1,248,984	25%
1988	8,944,228	2,601,441	29%
1989	4,174,510	1,244,788	30%
1990	4,493,681	1,189,260	26%
1991	2,248,558	1,183,752	53%
1992	5,238,058	2,063,143	39%
1993	2,916,782	1,192,148	41%
1994	3,331,851	1,686,803	51%
1995	2,968,274	1,716,842	58%
1996	2,375,047	1,351,005	57%
1997	2,975,854	1,687,084	57%
1998	1,350,752	652,129	48%
1999	1,960,794	1,097,412	56%
2000	1,487,207	740,165	50%
2001	1,130,969	705,325	62%
2002	745,218	601,704	80%
2003	1,135,551	782,143	69%
2004	1,606,082	1,156,074	72%
2005	911,193	488,192	54%
2006	1,695,830	889,519	52%
2007	2,479,100	911,724	37%
2008	1,693,845	1,092,913	64%
2009	1,641,422	858,377	52%
1999–2008 Average	1,484,579	846,517	58%
2009 Deviation ^a	+11%	+1%	-10%

^a Percentage deviation from average.

Table 17.—Dollar value of salmon harvest in the Situk-Ahrnklin set gillnet fishery, 1975–2009.

Year	Chinook	Sockeye	Coho	Pink	Chum	Total
1975	\$ 7,000	\$ 128,000	\$ 114,560	\$ 7,000	\$ 4	\$ 256,760
1976	24,000	345,300	108,000	8,300	80	485,680
1977	21,000	588,560	255,530	25,230	310	890,630
1978	10,000	333,150	417,270	7,140	126	767,690
1979	29,560	430,350	223,950	31,200	220	715,280
1980	22,540	155,130	218,190	23,100	106	419,070
1981	25,000	237,710	308,270	40,440	625	612,050
1982	5,610	170,940	191,240	3,800	410	372,000
1983	4,830	101,000	96,300	3,300	315	205,750
1984	12,310	50,740	498,530	10,640	2,400	575,120
1985	11,330	122,770	385,000	4,750	710	524,560
1986	3,276	59,771	116,648	688	294	180,677
1987	23,908	755,662	454,035	9,682	5,394	1,248,984
1988	10,350	1,018,060	1,522,176	40,223	10,632	2,601,441
1989	No Sale	899,505	283,090	58,445	3,748	1,244,788
1990	No Sale	816,615	352,937	18,638	1,070	1,189,260
1991	12,071	651,684	518,138	1,399	460	1,183,752
1992	29,404	929,241	1,093,096	9,816	1,586	2,063,143
1993	11,553	503,262	669,648	6,479	1,206	1,192,148
1994	27,336	309,766	1,342,174	7,102	425	1,686,803
1995	168,055	432,684	1,078,470	36,913	720	1,716,842
1996	58,024	578,758	703,278	10,342	603	1,351,005
1997	31,317	166,254	1,436,891	52,282	340	1,687,084
1998	24,845	196,850	390,977	39,163	93	652,129
1999	81,060	488,915	515,785	10,738	474	1,096,972
2000	28,905	222,598	464,086	22,852	584	740,165
2001	17,179	241,597	433,935	12,427	187	705,325
2002	4,832	180,146	413,938	2,751	38	601,704
2003	27,850	441,995	293,676	18,885	249	782,143
2004	22,693	165,665	963,105	3,400	1,211	1,156,074
2005	0	207,988	252,553	27,064	587	488,192
2006	20	432,874	411,629	44,637	386	889,519
2007	0	523,214	336,002	51,167	1,211	911,594
2008	0	87,572	949,730	55,204	407	1,092,913
2009	2,022	328,357	521,304	6,306	387	858,377
1999– 2008 Average	18,254	299,256	503,444	24,913	533	846,460

Table 18.—Situk Weir escapement counts, 1988–2009.

Year	Dates of Operation	Chinook^a	Sockeye^b	Coho^c	Pink^d	Chum
1988	6/7–8/21	885	46,404	1,694	78,754	228
1989	5/31–8/17	637	84,383	0	288,246	0
1990	6/1–7/28	1,274	61,375	0	0	0
1991	6/10–7/27	1,613	67,737	0	4,168	3
1992	4/18–8/5	1,985	63,877	0	29,278	0
1993	6/10–8/5	4,091	62,110	0	16,285	0
1994	5/21–8/4	4,416	72,474	4	79,055	4
1995	5/10–8/3	8,231	42,463	4	66,273	17
1996	5/6–8/6	4,151	61,269	65	157,012	15
1997	5/7–8/8	5,001	42,051	18	466,267	35
1998	5/3–8/5	5,329	50,546	8	97,392	0
1999	5/9–8/6	2,786	61,544	2	27,586	0
2000	5/10–8/8	3,091	41,544	189	332,510	53
2001	5/20–8/8	696	60,330	20	121,267	13
2002	5/10–8/8	1,024	68,743	40	98,190	22
2003	5/8–8/8	2,615	89,720	1	375,333	12
2004	5/8–8/9	798	42,544	184	145,914	111
2005	5/8–7/31	613	66,476	137	279,648	0
2006	5/11–8/13	749	90,383	320	115,079	283
2007	5/11–8/15	677	61,799	39	224,024	18
2008	5/11–7/23	414	22,540	0	1,275	6
2009	5/12–8/5	904	83,959	10	62,287	2
1988 to 2008 Average		2,432	60,015	130	143,026	39

Note: In 1992 and from 1994 to the present, the weir has been operated by the Division of Sport Fish in May and early June to count emigrant steelhead.

^a Chinook salmon weir counts are for large, three ocean or older, fish.

The Chinook salmon escapement goal range of 450–1,050 fish is for large fish.

^b Sockeye salmon escapement goal range is 30,000 to 70,000 fish.

^c The Situk weir is not operated through the end of the coho salmon return and is not a useful measure of escapement for this species.

^d This odd-year pink salmon escapement goal range is 59,000 to 200,000 fish.

Table 19.–Harvest of salmon in the Yakutat Bay set gillnet fishery by fishing period, 2009.

Week	Ending	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
	Date								
25	6/20	48	150	4,187	24	0	64	4,425	2.5
26	6/27	30	65	2,479	157	3	83	2,787	2.5
27	7/04	33	65	3,405	332	27	56	3,885	2.5
28	7/11	12	14	155	44	4	9	226	2.5
29	7/18	20	39	888	223	254	11	1,415	4.5
30	7/25	27	19	2,798	240	2,011	15	5,083	4.5
31	8/01	19	12	913	129	920	15	1,989	4.5
32	8/08	8	0	77	8	210	3	298	4.0
33	8/15	9	5	289	162	2,879	21	3,356	3.0
34	8/22	4	0	19	129	241	1	390	3.0
35	8/29	7	1	118	705	1,739	42	2,605	3.0
36	9/05	5	0	19	185	670	8	882	3.0
37	9/12	6	6	16	468	263	12	765	3.0
38	9/19	5	0	4	259	37	4	304	3.0
39	9/26	4	4	0	156	0	3	163	3.0
40	10/03	3	0	0	25	0	1	26	4.0
41-42	10/17	0	0	0	0	0	0	0	4.0
Totals		56	380	15,367	3,246	9,258	348	28,599	60.5

Table 20.–Harvest of salmon in the Yakutat Bay set gillnet fishery, 2009, and 5-year-catch comparison.

Year	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
2004	47	690	22,920	3,721	3,339	130	30,800	92.0
2005	41	270	17,844	4,846	11,920	190	35,070	77.75
2006	46	317	35,893	3,254	16,681	725	56,870	60.0
2007	56	788	59,602	6,384	25,808	1,100	93,682	50.5
2008	56	518	14,976	2,072	21,869	362	39,737	47.5
2009	56	380	15,367	3,246	9,258	348	28,599	60.5
2004–2008 Average	50	494	27,767	3,921	14,813	476	51,232	64.7
2009 Deviation ^a		-23%	-45%	-17%	-38%	-27%	-41%	-0.1

^a Percent deviation from 5-year average.

Table 21.–Harvest of salmon in the Manby Shore Ocean set gillnet fishery, 2009, and 5-year-catch comparison.

Year	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
2004	8	7	2,494	13	26	0	2,488	65.0
2005	14	82	8,732	169	205	1	9,189	57.5
2006	9	34	5,823	6	14	1	5,878	59.5
2007	8	6	1,014	1	42	1	1,063	51.5
2008	6	14	885	21	2	6	928	37.0
2009	12	100	2,830	60	378	33	3,909	54.1
2004–2008 Average	9	29	3,790	42	58	2	3,909	48.0
2009 Deviation ^a		+245%	-25%	+43%	+552%	+1,500%	-13%	-0.1

^a Percent deviation from 5-year average.

Table 22.—Harvest of salmon in the Tsiu River, 2004–2009.

Year	Boats	Chinook	Sockeye	Coho	Pink	Chum	Total	Days
2004	^a	^a	^a	^a	^a	^a	^a	55.0
2005	8	0	0	25,429	0	0	25,429	25.0
2006	12	0	0	26,438	0	0	26,438	25.0
2007	12	0	5	22,318	0	0	22,823	28.0
2008	10	0	2	49,292	1	0	49,293	23.0
2009	10	0	74	43,723	121	2	43,920	23.15
2005-2008 Average	11	0	2	30,869	0	0	30,996	25.25
2009 Deviation^b	-9	0	3,600	42			42	-8.00

^a Fewer than three permits, all catch figures are confidential.

^b Percent deviation from 4-year average.

Table 23.—Tags recovered by location from fall chum salmon in the Tanana and Kantishna rivers, 2007.

Recapture location	Method	Number of tags	Tag deployment dates	
			median	range
Delta River	Foot survey	32	9/16	9/1–9/23
Toklat Springs	Foot survey	6	-	8/19–9/13
Tanana River recovery wheel ^a	Fish wheel/digital video	197	9/25	9/12–9/26
Toklat River recovery ^b	Fish wheels	190	9/15	8/23–9/24
Kantishna River recovery ^c	Fish wheels	99	9/16	8/31–9/24
Other tag recoveries ^d	Anglers/public	18	-	-
Total		542		

Note: Cells marked “-” denote insufficient data to compute a median date or range.

^a Tag deployment dates range is from tags (15) recovered during commercial periods.

^b Includes only single (first time) recaptures and 1 tag loss.

^c Includes tags captured after 9/29 not used in the abundance estimate. Does not include 1 tag loss.

^d Includes tags recovered from various locations.

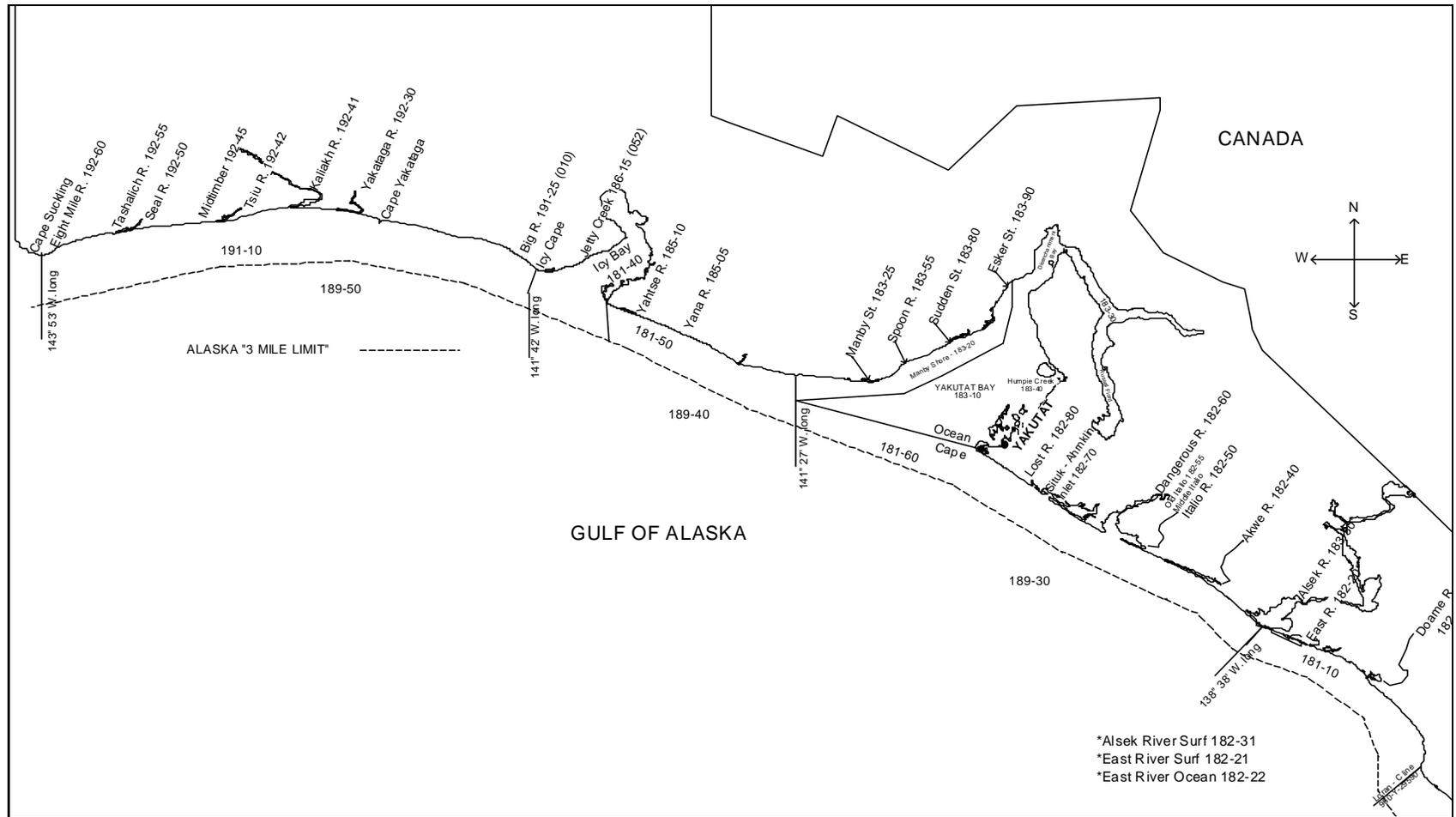


Figure 1.—Yakutat Area map, showing statistical reporting areas.

APPENDIX: DATA FILES

Appendix A.–Computer files used to estimate the spawning abundance of Chinook salmon in the Stikine River in 2005.

File Name	Description
CAPTPROB05.xls	EXCEL spreadsheet with chi-square capture probability tests
STIK05.BAS	QBASIC bootstrap program for estimating abundance (Petersen model) of large and medium Chinook salmon, variance, bias, and confidence intervals
STIK05BOOTSRTAPS.xls	Excel spreadsheet with QBASIC input and output files for large and medium Chinook salmon, including QBASIC bootstrap instructions
POSTSEASON05.xls	EXCEL spreadsheet with Petersen abundance estimates including bootstrap output for variance, confidence interval and bias estimation
PRE-INSEASON05.xls	EXCEL spreadsheet with and preseason sibling forecast and inseason CPUE models.
SIZESELPOST05.xls	EXCEL spreadsheet with Kolmogorov-Smirnov size-selectivity tests including charts.
SMSTIK05.BAS	QBASIC bootstrap program for estimating abundance (Petersen model) of medium Chinook salmon, variance, bias, and confidence intervals
STIKMR-CPUE05.xls	EXCEL spreadsheet with Kakwan Point and Rock Island catch-effort, hydrology, and temperature data including charts.
STIKMR-TAG&ASL05.xls	EXCEL spreadsheet with Kakwan Point, Rock Island, and inriver fishery/spawning ground tag, recovery, and age-sex-size data.
41_STIK_HARV_BY98.xls	Excel spreadsheet containing harvest and smolt abundance estimates for brood year 1998 Chinook salmon
STIK_CHIN_SR_2005.xls	Excel spreadsheet containing Chinook spawner-recruit data through 2005 and brood year 1998 return, exploitation, and marine survival estimates
STIKCWT_AWL00.xls	Excel spreadsheet containing 2000 Chinook/coho smolt length-weight data
STIKCWT_PHY00.xls	Excel spreadsheet containing 2000 Water temperature, stream level, and precipitation data
STIKCWT_TAG00.xls	Excel spreadsheet containing 2000 Chinook/coho smolt catch, effort, and tagging data
STIK_THETA_05.xls	Excel spreadsheet containing estimates of the inriver CWT marked fraction through brood year 2002
THETA8BY98FULL.csv	Input file for THETA11BY98.r that contains the number of fully aged fish by year, sampling location and length

Note: All files archived at ADF&G Division of Sport Fish, Research and Technical Services, 333 Raspberry Rd, Anchorage AK 99518.