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**Summary of Pacific Salmon Escapement Goals in
Alaska with a Review of Escapements from 2002 to
2010**

by

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and

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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	e.g.	logarithm (natural)	ln
pound	lb	(for example)		logarithm (base 10)	log
quart	qt	Federal Information Code	FIC	logarithm (specify base)	log ₂ , etc.
yard	yd	id est (that is)	i.e.	minute (angular)	'
		latitude or longitude	lat. or long.	not significant	NS
Time and temperature		monetary symbols		null hypothesis	H_0
day	d	(U.S.)	\$, ¢	percent	%
degrees Celsius	°C	months (tables and figures): first three letters	Jan,...,Dec	probability	P
degrees Fahrenheit	°F	registered trademark	®	probability of a type I error (rejection of the null hypothesis when true)	α
degrees kelvin	K	trademark	™	probability of a type II error (acceptance of the null hypothesis when false)	β
hour	h	United States (adjective)	U.S.	second (angular)	"
minute	min	United States of America (noun)	USA	standard deviation	SD
second	s	U.S.C.	United States Code	standard error	SE
		U.S. state	use two-letter abbreviations (e.g., AK, WA)	variance	
Physics and chemistry				population sample	Var var
all atomic symbols					
alternating current	AC				
ampere	A				
calorie	cal				
direct current	DC				
hertz	Hz				
horsepower	hp				
hydrogen ion activity (negative log of)	pH				
parts per million	ppm				
parts per thousand	ppt, ‰				
volts	V				
watts	W				

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**SUMMARY OF PACIFIC SALMON ESCAPEMENT GOALS IN ALASKA
WITH A REVIEW OF ESCAPEMENTS FROM 2002 TO 2010**

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ABSTRACT

This report summarizes statewide Pacific salmon escapement goals in effect in 2010 and documents escapements for all species and stocks with goals from 2002 through 2010. Annual escapements are compared against escapement goals in place at the time to assess outcomes, with summaries by the Division of Commercial Fisheries regions. We list methods used to enumerate escapements and to develop current escapement goals (with brief descriptions) for each monitored stock.

Key words: escapement, escapement goals, Chinook salmon, sockeye salmon, coho salmon, pink salmon, chum salmon, Alaska Board of Fisheries, statewide, Alaska

INTRODUCTION

Scientifically defensible Pacific salmon escapement goals are a central tenet of fisheries management in Alaska. Escapement goals are founded in the sustained yield principle highlighted in the State Constitution (Article VIII, section 4) and in state statute (AS 16.05.020). Several policies in Alaska Administrative Code also provide guidance for establishing escapement goals including the *policy for the management of sustainable salmon fisheries* (5AAC 39.222), the *policy for statewide salmon escapement goals* (5 AAC 39.223) and the *policy for the management of mixed stock fisheries* (5 AAC 39.220). These policies provide detailed definitions of specific escapement goal types, outline the responsibilities of the Alaska Department of Fish and Game (department) and the Alaska Board of Fisheries (board) in establishing goals, and provide general direction for development and application of escapement goals in Alaska. Currently, there are 289 active salmon stock escapement goals throughout the state of Alaska (Figure 1).

It is the responsibility of the department to document, establish and review escapement goals, prepare scientific analyses in support of goals, notify the public when goals are established or modified, and notify the board of allocative implications associated with escapement goals. The foundation for this effort is regional or area escapement goal review teams assembled every three years to review goals, recommend changes, establish new goals or eliminate goals. The teams encompass broad expertise in biological characteristics of salmon stocks and technical approaches for establishing goals. Scientific staff from headquarters may assist regional teams and address issues of general importance for escapement goal development and application in Alaska. A detailed regional report of escapement goal recommendations is presented to the board and the public at tri-annual board meetings for that region or area. Following the board meeting, recommended goals are presented to the directors of the divisions of Commercial Fisheries and Sport Fish for approval.

While development of regional escapement goals are exhaustively detailed in regional reports and supporting documents, this statewide summary report allows readers to examine the goals and escapements for salmon stocks in a single document. It provides an overview of salmon stocks for which goals exist, a numerical description of the goal, type of goal, year the current goal was first implemented and recent years' escapement data for each stock. In addition, summary statistics documenting performance in achieving goals is presented, including a statewide summary of stocks with yield or management concerns, as recommended by the department and established by the board. Data presented in this document is the most recently available at the time of publication and supersedes data in previous annual statewide escapement reports. This report will be a useful resource for department staff, stakeholders, and the public.

METHODS

We reviewed department escapement goal reports and supporting documents to catalog current escapement goals in each region for all five species of Pacific salmon, including information on stock name, type of goal, numerical description of the goal and the year it was implemented (i.e. the first season that the goal was used to manage escapements). Regional and area staff from the divisions of Commercial Fisheries and Sport Fish provided the most current escapement estimates from 2002 through 2010 for each stock with an established escapement goal. The escapement goals listed are those in effect during the 2010 spawning season including escapement goals that were established, or updated during the 2009/2010 board meeting cycle (Appendices A–C).

Escapements from 2002 through 2010 were compared against escapement goals in place at the time of enumeration to assess outcomes in achieving goals. Escapements for a particular stock were classed as “Under” if escapement for a given year was less than the lower bound of the escapement goal. If escapement fell within the escapement goal range or was greater than a lower-bound goal, we considered the goal “Met”. Where escapement exceeded the upper bound of an escapement goal range, it was classed as “Over”. Where escapement goals or enumeration methods changed between 2002 and 2010 for a stock, we assessed outcomes by comparing escapement estimates with the goal and methods in place at the time of the fishery. Information on previous escapement goals and methods came from a detailed review of regional escapement goal reports, supporting documents, and conversations with regional and area biologists.

METHODS OF ESCAPEMENT GOAL DEVELOPMENT

A variety of methods are used to develop escapement goals in Alaska and brief descriptions of each are summarized below. The most commonly used methods are listed first, followed by the less common methods.

Percentile Method: A method for establishing sustainable escapement goals (SEG) developed by Bue and Hasbrouck (Unpublished)¹. Contrast of the observed annual escapements (largest escapement divided by smallest escapement) and exploitation rate of the stock are used to select percentiles of observed escapements for estimating lower and upper-bounds of the escapement goal.

Spawner-Recruit Analysis (SRA): Analysis of the relationship between escapement (number of spawners) and subsequent production of recruits (i.e. adults) in the next generation. There are several SRA models, but the Ricker production model (Ricker 1954) is almost exclusively used for salmon populations in Alaska.

Risk Analysis: Risks of management error, unneeded management action or mistaken inaction, in future years are estimated based on a precautionary reference point established using past observations of escapement (Bernard et al. 2009). This method is primarily used to guide establishment of a lower-bound SEG for nontargeted stocks of salmon.

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

Yield Analysis: Graphical or tabular examination of yields produced from observed escapement indices from which the escapement range with the greatest yields is identified (Hilborn and Walters 1992).

Theoretical Spawner-Recruit Analysis (Theoretical SRA): Used in situations where there are few or no stock specific harvest estimates and/or age data. Information from nearby stocks, or generalizations about the species, are used in a spawner-recruit production model to estimate the number of spawners needed to achieve maximum sustained yield (MSY) (e.g., Clark 2005).

Empirical Observation: Goal development methods classified as “Empirical Observation” generally are *ad hoc* methods for stocks with limited or sparse data. Goals are based on observed escapements over time and may be calculated as the average escapement or the value of a low escapement for which there is evidence that the stock is able to recover (e.g., Norton Sound pink salmon escapement goals, ADF&G 2004).

Zooplankton Model: This model estimates the number of sockeye salmon *Oncorhynchus nerka* smolts of a threshold or optimal size that a lake can support based upon measures of zooplankton biomass and surface area of the lake (Koenings and Kyle 1997). Adult production is then estimated from predicted smolt production by applying marine survival rates for a range of smolt sizes.

Spawning Habitat Model: Estimates of spawning capacity or number of spawners that produce MSY are based on relationship with watershed area, available spawning habitat in a drainage, or stream length. Spawning habitat models have been developed for sockeye salmon (Burgner et al. 1969), coho salmon *O. kisutch* (Bradford et al. 1999; Bradford et al. 1997) and Chinook salmon *O. tshawytscha* (Parken et al. 2004).

Euphotic Volume (EV) Model: Measurement of the volume of a lake where enough light penetrates to support primary production (i.e. euphotic volume) is used to estimate sockeye salmon smolt biomass (Koenings and Burkett 1987) from which adult escapement is then estimated using marine survival rates.

Lake Surface Area: Similar to spawning habitat models, the relationship between the lake surface area and escapement are used to estimate adult sockeye salmon production (Honnold et al. 1996; Nelson et al. 2006).

Conditional Sustained Yield Analysis: Observed escapement indices and harvest are used to estimate if, on average, surplus production (yield) results from a particular goal range (Nelson et al. 2005). Estimated expected yields are conditioned on extreme values of measurement error in the escapement indices.

Brood Interaction Simulation Model: This model simulates production using a spawner–recruit relationship that modifies the simulated production for the year of return using an age-structured sub-model, and estimates resulting catches and escapements under user-specified harvest strategies (Carlson et al. 1999). This is a hybrid of a theoretical SRA and yield analysis that has only been used to develop the escapement goal for Kenai River sockeye salmon.

RESULTS AND DISCUSSION

Summaries of estimated escapements and escapement goals for each monitored salmon stock from 2002 to 2010 are presented by region and species in Tables 1–4. While most information was available through regional escapement goal reports, 2010 data were often obtained directly from area and regional biologists. Data for 2010 are often preliminary estimates because complete data regarding subsistence and sport harvests are often not available immediately following the season.

A summary of escapement goal types for all species by region indicate that the majority of goals in Central, Westward, and AYK regions are SEGs, including lower-bound SEGs, with biological escapement goals (BEG) making up a smaller proportion of goals (Figure 1a). The reverse is true for Southeast region, where most goals are BEGs. Escapement goals for sockeye, Chinook and chum salmon comprise 75% of all escapement goals statewide, with the majority of goals for each species being SEGs (Figure 1b). Optimal escapement goals (OEG) imposed by the board, management targets, and goals based upon international agreements collectively represent a small proportion of escapement goals in Alaska.

Use of different escapement goal types for each salmon species is summarized by Division of Commercial Fisheries regions (Figures 2–5). Among the four regions, there are some distinct differences in the distribution of goal types by salmon species. In Southeast Region, all Chinook and pink salmon *O. gorbuscha* goals, as well as a majority of goals for coho (>60%) and sockeye salmon (>40%) are BEGs (Figure 2). This is sharply contrasted with Central Region, where the majority of all goals are SEGs, with two Chinook and two sockeye stocks representing the only BEGs (Figure 3). AYK Region has the only BEGs for chum salmon in the state, with additional BEGs for three Chinook and one sockeye salmon stock (Figure 4). Like Southeast, all Chinook salmon stocks in Westward Region are BEGs, but a much smaller proportion of coho and sockeye salmon goals are BEGs (Figure 5). These are broad generalizations immediately apparent from our summary. There are many reasons why goal types would be different between regions including fishery structure, stock assessment capacity and technical approaches.

Summary comparisons of actual estimated escapements with escapement goals in place at the time are shown in Tables 5–8, highlighting whether the goal was exceeded, met, or not met. Numerous footnotes contain important information about changes in stock assessment methods or goal ranges during that time, and are essential for a thorough understanding of the escapement estimates and evaluations of outcomes against goals. Summaries of outcomes in achieving goals are presented by species (Tables 9–12) and region (Tables 13–16; Figures 6–9). Between 2002 and 2006, it was typical to observe greater than 80% success in achieving minimum escapement goals for all species in all regions except AYK (Figures 6–9; Tables 9–12). In recent years, the proportion of escapements falling below the lower bound of goals has increased in Southeast, Central and Westward regions (Figures 6–9; Tables 9–12). Statewide, the percentage of escapement goals within the goal range (or above the lower bound if a lower-bound SEG) has been between 35% and 58% since 2002 (Figure 10a). In recent years there has been a decrease in the percentage of goals exceeded, and an increase in the percentage of goals not achieved, when compared to previous years (Figures 10b and 10c). Because meeting escapement goals is fundamental to department efforts to manage for sustainable salmon stock productivity, it is important to document outcomes for meeting these goals. Where escapements chronically (4–5 years) fail to meet expectations for harvestable yield or spawning escapements, the department

may recommend, and the board may adopt a stock of concern designation for those underperforming salmon stocks. The policy for the management of sustainable salmon fisheries (5 AAC 39.222) provides specific definitions for stocks of concern. Yield concerns arise from a chronic inability to maintain expected yields or harvestable surpluses above escapement needs. Management concerns are precipitated by a chronic failure to maintain escapements within the bounds, or above the lower bound of the established goal. A conservation concern may arise from a failure to maintain escapements above a sustained escapement threshold. Methods to develop stock-specific sustained escapement thresholds, as defined in the sustainable salmon fisheries policy, are not well developed for Pacific salmon, and no sustained escapement thresholds or stocks of conservation concern exist in Alaska. In 2010 there were five stocks of yield concern and one stock of management concern in the state (Table 17). During the 2010/2011 board meeting cycle, seven new stocks of concern were declared including: Karluk River Chinook salmon in Westward Region, and in Central Region, Chuitna, Theodore and Lewis rivers Chinook salmon, and Alexander, Willow and Goose creeks Chinook salmon. All of these stocks were designated as stocks of management concern, except for Willow and Goose creeks Chinook salmon that were designated as stocks of yield concern.

The array of methods used to enumerate salmon for each of the stocks with escapement goals, as well as methods used to assist department staff in developing the escapement goal for a given stock are summarized by region in Tables 18–21.

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TABLES AND FIGURES

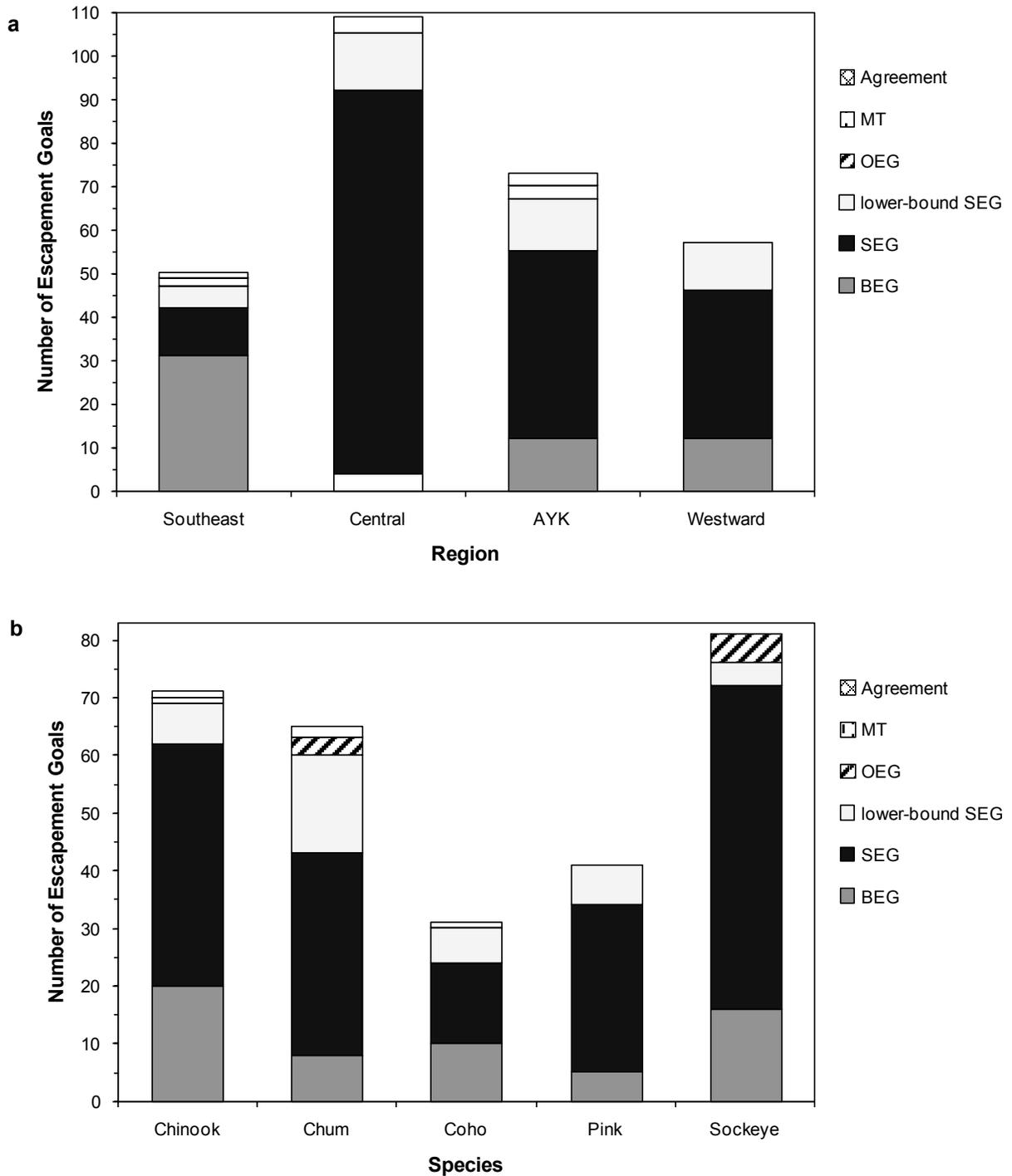


Figure 1.— Statewide summary of the 289 escapement goals in effect during the 2010 spawning season for (a) the four Division of Commercial Fisheries regions and (b) by species. BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), MT is management target and agreement goals are established through international treaties.

Table 1.–Southeast Region Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2002 to 2010.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
CHINOOK SALMON^a													
Blossom River	250	500	BEG	1997	224	203	333	445	339	135	257	123	180
Keta River	250	500	BEG	1997	411	322	376	497	747	311	363	172	475
Unuk River	1,800	3,800	BEG	2009	6,988	5,546	3,963	4,742	5,645	5,668	3,104	3,157	4,290 ^b
Chickamin River	450	900	BEG	1997	1,013	964	798	924	1,330	893	1,086	611	1,023
Andrew Creek	650	1,500	BEG	1998	1,708	1,160	2,991	1,979	2,124	1,736	981	628	1,205
Stikine River	14,000	28,000	BEG	2000	50,875	46,824	48,900	40,501	24,405	14,560	18,352	11,086	15,180 ^b
King Salmon River	120	240	BEG	1997	155	119	135	143	150	181	120	109	158
Taku River	19,000	36,000	BEG	2009	55,044	36,435	75,032	38,725	42,296	14,854	27,383	20,762	29,307 ^b
Chilkat River	1,750	3,500	BEG	2003	4,051	5,657	3,422	3,366	3,039	1,445	2,905	4,429	1,852 ^b
Klukshu (Alek) River	1,100	2,300	BEG	1998	2,109	1,645	2,451	1,034	568	676	466	1,466	2,159 ^b
Situk River	450	1,050	BEG	2003	1,000	2,163	696	595	695	677	413	900	167 ^c
CHUM SALMON													
Southern Southeast Summer	68,000		lower-bound SEG	2009	55,000	66,000	74,000	66,000	76,000	132,000	13,000	41,000	47,000
Northern Southeast Inside Summer	149,000		lower-bound SEG	2009	397,000	210,000	242,000	185,000	282,000	149,000	99,000	107,000	77,000
Northern Southeast Outside Summer	19,000		lower-bound SEG	2009	19,000	30,000	86,000	77,000	57,000	34,000	46,000	15,000	24,000
Cholmondeley Sound Fall	30,000	48,000	SEG	2009	39,000	75,000	60,000	15,000	54,000	18,000	49,500	39,000	76,000
Port Camden Fall	2,000	7,000	SEG	2009	450	676	3,300	2,110	2,420	505	1,400	1,711	5,400
Security Bay Fall	5,000	15,000	SEG	2009	6,000	8,700	13,100	2,750	15,000	5,400	11,700	5,100	6,500
Excursion River Fall	4,000	18,000	SEG	2009	4,680	6,300	5,200	1,100	2,203	6,000	8,000	1,400	6,100
Chilkat River Fall	75,000	170,000	SEG	2009	206,000	166,000	310,000	202,000	704,000	331,000	451,000	337,000	91,000
COHO SALMON													
Hugh Smith Lake	500	1,600	BEG	2009	3,291	1,510	840	1,732	891	1,244	1,741	2,281	2,878
Taku River ^d	35,000		MT	1995	219,360	183,038	129,327	135,558	121,778	74,326	95,360 ^b	104,321 ^b	103,992 ^b
Auke Creek	200	500	BEG	1994	1,176	585	416	450	581	352	600	360	417
Montana Creek	400	1,200	SEG	2006	2,448	808	364	351	1,110	324	405	698	630
Peterson Creek	100	250	SEG	2006	195	203	284	139	439	226	660	123	467
Ketchikan Survey Index	4,250	8,500	BEG	2006	12,223	11,859	9,904	14,840	6,912	4,488	16,680	8,226	4,657
Sitka Survey Index	400	800	BEG	2006	1,868	1,101	1,124	1,668	2,647	1,066	1,117	1,156	1,273
Ford Arm Lake	1,300	2,900	BEG	1994	7,109	6,789	3,539	4,257	4,737	2,567	5,173	2,181	1,610
Berners River	4,000	9,200	BEG	1994	27,700	10,110	14,450	5,220	5,470	3,915	6,870	4,230	7,520
Chilkat River	30,000	70,000	BEG	2006	205,429	134,340	67,465	38,589	80,683	25,493	57,376	47,548	87,381
Lost River	2,200		lower-bound SEG	2009	8,093	6,394	5,047	1,241	3,500	2,542	NA	3,581	2,393
Situk River	3,300	9,800	BEG	1994	40,000	6,009	10,284	2,514	8,533	5,763	NA	5,814	11,195
Tsiu/Tsivat Rivers	10,000	29,000	BEG	1994	31,000	35,850	NA	16,600	14,500	14,000	25,200	28,000	11,000

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Table 1.–Page 2 of 2.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
PINK SALMON													
Southern Southeast	3,000,000	8,000,000	BEG	2009	8,850,000	9,780,000	8,260,000	9,400,000	4,330,000	10,590,000	6,290,000	7,200,000	5,900,000
Northern Southeast Inside	2,500,000	6,000,000	BEG	2009	5,470,000	6,680,000	5,210,000	6,680,000	3,960,000	4,740,000	1,470,000	3,650,000	3,200,000
Northern Southeast Outside	750,000	2,500,000	BEG	2009	2,300,000	3,510,000	2,190,000	3,840,000	1,960,000	2,310,000	1,730,000	1,820,000	2,000,000
Situk River (even-year)	42,000	105,000	BEG	1995	98,790		144,938		114,779		1,232 ^e		89,301 ^e
Situk River (odd-year)	54,000	200,000	BEG	1995		374,533		281,135		229,033		62,787	
SOCKEYE SALMON													
Hugh Smith Lake	8,000	18,000	OEG ^f	2003	5,880	19,568	19,734	23,872	42,112	33,743	3,588	9,483	15,646
	8,000	18,000	BEG	2003									
McDonald Lake	55,000	120,000	SEG	2009	42,102	110,633	28,759	61,043	31,357	29,086	20,700	51,000	72,500
Mainstem Stikine River	20,000	40,000	SEG	1987	26,001	57,972	36,748	34,788	27,603	20,865	16,802	24,575	25,164
Tahltan Lake	18,000	30,000	BEG	1993	17,340	53,533	62,952	43,046	53,455	20,874	10,416	30,323	22,702 ^g
Speel Lake	4,000	13,000	BEG	2003	5,016	7,014	7,813	7,549	4,165	3,099	1,763	3,689	5,640
Taku River	71,000	80,000	SEG	1986	103,507	160,366	106,688	120,053	146,151	87,764 ^b	70,442 ^b	71,200 ^b	87,899 ^b
Redoubt Lake	7,000	25,000	OEG	2003	23,943	69,893	77,263	65,653	103,953	66,938	10,146	12,851	17,119
	10,000	25,000	BEG	2003									
Chilkat Lake	70,000	150,000	BEG	2009	128,000	113,000	119,000	84,000	73,000	68,000	71,735	153,033	61,906
Chilkoot Lake	38,000	86,000	SEG	2009	58,361	74,459	75,596	51,178	96,203	72,561	32,957	33,545	71,657
East Alsek-Doame River	13,000	26,000	BEG	2003	14,200	36,400	33,300	50,000	29,000	40,100	8,000	12,000	19,500
Klukshu River	7,500	15,000	BEG	2000	23,587	32,120	13,721	3,167	12,890	8,479	2,741	5,509	18,546
Lost River	1,000		lower-bound SEG	2009	1,818	3,057	1,123	1,476	1,018	180	200	NA	1,525
Situk River	30,000	70,000	BEG	2003	68,773	89,720	43,278	66,476	90,351	61,799	22,520	83,959	47,865 ^c

Note: NA = data not available.

^a Goals are for large (≥ 660 mm MEF, or fish age 1.3 and older) Chinook salmon, except the Alsek River goal, which is germane to fish age 1.2 and older and can include fish < 660 mm MEF.

^b Preliminary data.

^c Incomplete weir count due to inseason problems with weir (e.g., breach of weir).

^d For the Taku River coho salmon, the management intent of the U.S. is to ensure a minimum above border run (i.e. inriver run) of 38,000 fish as detailed in the Pacific Salmon Treaty. The management threshold for escapement is the inriver run minus the allowed Canadian inriver harvest of 3,000 at runs of less than 50,000.

^e Situk River weir was pulled well before peak of pink salmon run so adequate assessment was not possible.

^f Hugh Smith Lake sockeye salmon OEG includes wild and hatchery fish.

^g Escapement count includes fish collected for broodstock.

Table 2.—Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2002 to 2010.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
CHINOOK SALMON													
<i>Bristol Bay</i>													
Nushagak River	40,000	80,000	SEG	2007	80,751	72,420	107,591	163,506	117,364	50,960	91,653	73,379	56,134
Togiak River	9,300		lower-bound SEG	2007	9,515	NS	NS	NS	NS	NS	NS	NS	NS ^a
Naknek River	5,000		lower-bound SEG	2007	7,503	6,081	12,878	NS	NS	5,498	6,559	3,305 ^b	NS ^a
Alagnak River	2,700		lower-bound SEG	2007	3,675	8,209	6,755	5,084	4,278	3,455	1,825	1,957	NS ^a
Egegik River	450		lower-bound SEG	2007	646	790	579	335	196	458	162	350 ^c	NS ^a
<i>Upper Cook Inlet</i>													
Alexander Creek	2,100	6,000	SEG	2002	1,936	2,012	2,215	2,140	885	480	150	275	177
Campbell Creek	50	700	SEG	2008	744	745	964	1,097	1,052	588	439	554	290
Chuitna River	1,200	2,900	SEG	2002	1,394	2,339	2,938	1,307	1,911	1,180	586	1,040	735
Chulitna River	1,800	5,100	SEG	2002	9,002	NS	2,162	2,838	2,862	5,166	2,514	2,093	1,052
Clear (Chunilna) Creek	950	3,400	SEG	2002	3,496	NS	3,417	1,924	1,520	3,310	1,795	1,205	903
Crooked Creek	650	1,700	SEG	2002	958	2,554	2,196	1,903	1,516	964	881	617	1,088
Deshka River	13,000	28,000	BEG	2002	28,535	39,257	57,934	37,725	31,150	18,714	7,533	11,960	18,594
Goose Creek	250	650	SEG	2002	565	175	417	468	306	105	117	65	76
Kenai River - Early Run	5,300	9,000	OEG	2005	6,185	10,097	11,855	16,387	18,428	12,504	11,732	9,771	NA
	4,000	9,000	BEG	2005									
Kenai River - Late Run	17,800	35,700	BEG	1999	30,464	23,736	40,198	26,046	24,423	32,618	24,144	17,158	NA
Lake Creek	2,500	7,100	SEG	2002	4,852	8,153	7,598	6,345	5,300	4,081	2,004	1,394	1,617
Lewis River	250	800	SEG	2002	439	878	1,000	441	341	0 ^e	120	111	56
Little Susitna River	900	1,800	SEG	2002	1,660	1,114	1,694	2,095	1,855	1,731	1,297	1,028	589
Little Willow Creek	450	1,800	SEG	2002	1,680	879	2,227	1,784	816	1,103	NC	776	468
Montana Creek	1,100	3,100	SEG	2002	2,357	2,576	2,117	2,600	1,850	1,936	1,357	1,460	755
Peters Creek	1,000	2,600	SEG	2002	2,959	3,998	3,757	1,508	1,114	1,225	NC	1,283	NC
Prairie Creek	3,100	9,200	SEG	2002	7,914	4,095	5,570	3,862	3,570	5,036	3,039	3,500	3,022
Sheep Creek	600	1,200	SEG	2002	854	NS	285	760	580	400	NC	500	NC
Talachulitna River	2,200	5,000	SEG	2002	7,824	9,573	8,352	4,406	6,152	3,871	2,964	2,608	1,499
Theodore River	500	1,700	SEG	2002	934	1,059	491	478	958	486	345	352	202
Willow Creek	1,600	2,800	SEG	2002	2,533	3,855	2,840	2,411	2,193	1,373	1,255	1,133	1,173
<i>Lower Cook Inlet</i>													
Anchor River	5,000		lower-bound SEG	2008	NA	9,238	12,016	11,156	8,945	9,622	5,806	3,455	4,437 ^d
Deep Creek	350	800	SEG	2002	696	1,008	1,075	1,076	507	553	205	483	387
Ninilchik River	550	1,300	SEG	2008	897	517	679	1,259	1,013	543	586	528	606 ^d
<i>Prince William Sound</i>													
Copper River	24,000		lower-bound SEG	2003	21,502	34,034	30,628	21,528	58,454	34,565	32,487	27,787	17,207 ^f
CHUM SALMON													
<i>Bristol Bay</i>													
Nushagak River	190,000		lower-bound SEG	2007	419,964	295,413	283,811	456,025	661,002	161,483	326,300	438,481	273,914
<i>Upper Cook Inlet</i>													
Clearwater Creek	3,800	8,400	SEG	2002	8,864	800	3,900	530	500	5,590	12,960	8,300	13,700

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Table 2.–Page 2 of 4.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
Lower Cook Inlet													
Port Graham River	1,450	4,800	SEG	2002	5,253	2,925	1,177	743	2,231	1,882	1,802	1,029	1,395
Dogfish Lagoon	3,350	9,150	SEG	2002	10,062	13,287	3,617	2,746	5,394	4,919	6,200	4,380	12,703
Rocky River	1,200	5,400	SEG	2002	5,655	5,549	17,159	6,060	11,200	1,600	3,763	2,500	1,271
Port Dick Creek	1,900	4,450	SEG	2002	12,321	5,595	8,620	4,848	2,786	2,753	11,774	5,592	2,439
Island Creek	6,400	15,600	SEG	2002	15,251	16,274	15,135	20,666	5,615	3,092	12,935	9,295	3,408
Big Kamishak River	9,350	24,000	SEG	2002	17,350	16,357	57,897	25,717	58,173	14,787	4,495	15,026	NS
Little Kamishak River	6,550	23,800	SEG	2002	16,400	22,194	45,342	12,066	42,929	15,569	21,265	4,213	18,414
McNeil River	24,000	48,000	SEG	2008	17,520	29,306	14,613	22,496	17,403	21,629	10,617	18,766	10,520
Bruin River	6,000	10,250	SEG	2002	9,852	13,080	15,886	21,208	7,000	3,055	17,535	10,071	6,200
Ursus Cove	6,050	9,850	SEG	2002	17,144	30,410	15,988	12,176	15,663	20,897	6,502	12,946	11,765
Cottonwood Creek	5,750	12,000	SEG	2002	42,194	72,764	16,277	17,914	13,243	12,522	11,561	19,405	15,848
Iniskin Bay	7,850	13,700	SEG	2002	28,486	18,709	22,044	16,461	15,640	5,340	20,042	30,821	19,252
Prince William Sound^e													
Eastern District	50,000		lower-bound SEG	2006	94,046	198,921	108,833	113,135	109,403	123,814	74,740	55,219	91,514
Northern District	20,000		lower-bound SEG	2006	30,531	44,272	42,456	30,657	52,039	49,669	38,791	37,358	38,207
Coghill District	8,000		lower-bound SEG	2006	7,430	19,729	9,685	11,979	15,900	14,052	39,660	36,724	51,589
Northwestern District	5,000		lower-bound SEG	2006	16,194	12,736	10,371	12,696	25,860	10,778	28,051	34,290	30,074
Southeastern District	8,000		lower-bound SEG	2006	104,906	116,131	42,344	25,547	26,739	60,464	21,614	16,453	85,138
COHO SALMON													
Bristol Bay													
There are no coho salmon stocks with escapement goals in Bristol Bay													
Upper Cook Inlet													
Jim Creek	450	700	SEG	2002	2,473	1,421	4,652	1,464	2,389	725	1,890	1,331	242
Little Susitna River	10,100	17,700	SEG	2002	47,938	10,877	40,199	16,839	NA	17,573	18,485	9,523	9,214
Lower Cook Inlet													
There are no coho salmon stocks with escapement goals in Lower Cook Inlet													
Prince William Sound													
Copper River Delta	32,000	67,000	SEG	2003	89,815	72,180	99,980	101,082	89,270	53,820	76,892	41,294	41,077
Bering River	13,000	33,000	SEG	2003	34,200	32,475	30,185	44,542	33,192	33,062	28,932	22,141	21,311
PINK SALMON													
Bristol Bay													
There are no pink salmon stocks with escapement goals in Bristol Bay													
Upper Cook Inlet													
There are no pink salmon stocks with escapement goals in Upper Cook Inlet													
Lower Cook Inlet													
Humpy Creek	21,650	85,550	SEG	2002	37,051	90,853	28,945	93,756	48,368	53,989	90,870	5,207	70,686
China Poot Creek	2,900	8,200	SEG	2002	6,543	6,694	3,335	9,223	7,242	6,235	5,086	1,120	2,220
Tutka Creek	6,500	17,000	SEG	2002	15,884	30,866	17,846	133,600	25,824	5,664	14,144	3,770	2,141
Barabara Creek	1,900	8,950	SEG	2002	3,241	5,062	5,395	14,440	3,554	25,168	16,557	2,583	13,935
Seldovia Creek	19,050	38,950	SEG	2002	26,938	35,135	56,763	98,602	70,045	69,405	53,484	14,619	25,886
Port Graham River	7,700	19,850	SEG	2002	58,527	14,916	44,010	69,095	31,173	25,595	24,720	13,996	16,586

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Table 2.–Page 3 of 4.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
Port Chatham	7,800	21,000	SEG	2002	18,078	34,979	26,375	44,389	24,210	14,451	16,354	25,291	2,992
Windy Creek Right	3,350	10,950	SEG	2002	14,401	23,341	11,974	22,174	17,146	32,297	12,491	15,012	6,408
Windy Creek Left	3,650	29,950	SEG	2002	28,946	82,814	23,286	72,031	65,155	18,339	64,068	57,263	24,241
Rocky River	9,350	54,250	SEG	2002	112,527	287,443	53,760	198,671	67,840	189,992	90,876	173,583	27,045
Port Dick Creek	18,550	58,300	SEG	2002	108,072	107,575	13,323	122,236	51,500	44,170	34,228	41,681	41,090
Island Creek	7,200	28,300	SEG	2002	44,105	118,637	33,573	26,404	107,683	87,235	49,719	44,527	69,525
S. Nuka Island Creek	2,700	14,250	SEG	2002	14,811	41,366	6,432	11,199	5,100	6,645	12,300	19,934	NS
Desire Lake Creek	1,900	20,200	SEG	2002	78,410	34,766	24,258	45,980	74,774	11,820	9,546	73,926	2,978
Bear and Salmon Creeks	5,000	23,500	SEG	2005	2,689	4,435	1,236	34,452	9,033	NS	NS	NS	NS
Thumb Cove	2,350	8,850	SEG	2002	3,694	5,050	4,250	8,668	5,205	NS	NS	NS	NS
Humpy Cove	900	3,200	SEG	2002	1,832	2,563	990	14,586	1,905	NS	NS	NS	NS
Tonsina Creek	500	5,850	SEG	2002	6,949	5,180	3,450	9,922	6,453	NS	NS	NS	NS
Bruin River	18,650	155,750	SEG	2002	1,598,454	138,674	66,494	98,346	515,114	350,420	150,717	1,067,351	40,256
Sunday Creek	4,850	28,850	SEG	2002	81,949	346,657	31,497	116,170	70,037	394,797	20,434	106,296	6,607
Brown's Peak Creek	2,450	18,800	SEG	2002	27,480	285,049	18,100	60,983	35,703	249,383	17,400	63,605	3,092
Prince William Sound													
All Districts Combined (even yr) ^h	1,250,000	2,750,000	SEG	2003	943,177		1,996,223		1,187,595		862,419		1,916,910
All Districts Combined (odd yr) ^h	1,250,000	2,750,000	SEG	2003		2,857,289		4,669,168		1,509,133		1,828,801	
SOCKEYE SALMON													
Bristol Bay													
Kvichak River ⁱ	2,000,000	10,000,000	SEG	2009	704,000	1,687,000	5,500,000	2,320,000	3,068,000	2,810,000	2,758,000	2,266,000	4,207,000
Alagnak River	320,000		lower-bound SEG	2007	767,000	3,676,000	5,397,000	4,219,000	1,774,000	2,466,000	2,181,000	971,000	1,188,000
Naknek River	800,000	1,400,000	SEG ^j	1984	1,264,000	1,831,000	1,939,000	2,745,000	1,953,000	2,945,000	2,473,000	1,169,000	1,464,000
Egegik River	800,000	1,400,000	SEG	1995	1,036,000	1,152,000	1,290,000	1,622,000	1,465,000	1,433,000	1,260,000	1,146,000	927,000
Ugashik River	500,000	1,200,000	SEG	1995	892,000	790,000	815,000	800,000	1,003,000	2,599,000	596,000	1,364,000	831,000
Wood River	700,000	1,500,000	SEG	2000	1,284,000	1,460,000	1,543,000	1,497,000	4,008,000	1,528,000	1,725,000	1,319,000	1,804,000
Igushik River	150,000	300,000	SEG	2000	123,000	194,000	110,000	366,000	305,000	415,000	1,055,000	514,000	518,000
Nushagak River	235,000	760,000	OEG	1997	316,000	581,000	492,000	1,049,000	548,000	518,000	493,000	484,000	469,000
	340,000	760,000	SEG	1997									
Togiak River	120,000	270,000	SEG	2009	162,000	232,000	136,000	156,000	312,000	270,000	206,000	314,000	188,000
Upper Cook Inlet													
Crescent River	30,000	70,000	BEG	2005	62,833	122,159	103,201	125,623	92,533	79,406	62,029	NS	86,333
Fish Creek (Knik)	20,000	70,000	SEG	2002	90,483	91,952	22,157	14,215	32,562	27,948	19,339	83,480	126,836
Kasilof River	150,000	300,000	OEG	2002	216,134	347,434	575,721	346,516	366,216	335,943	299,601	295,434	265,513
	150,000	250,000	BEG	2002									
Kenai River ^k	500,000	1,000,000	OEG	1999	700,707	921,064	1,120,076	1,114,618	1,311,144	595,355	402,264	498,592	732,790
	500,000	800,000	SEG	2005									
Packers Creek	15,000	30,000	SEG	2008	NS	NS	NS	22,000	NS	46,637	25,247	16,473	NS
Russian River - Early Run	14,000	37,000	SEG	2002	85,943	23,650	56,582	52,903	80,524	27,298	30,989	52,178	27,074
Russian River - Late Run	30,000	110,000	SEG	2005	62,115	157,469	110,244	59,473	89,160	53,068	46,638	80,088	38,848
Yentna River ^l	90,000	160,000	SEG	2002	78,591	180,813	71,281	36,921	92,045	79,901	90,180		

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Table 2.–Page 4 of 4.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
Chelatna Lake	20,000	65,000	SEG	2009					18,433	41,290	73,469	17,721	37,784
Judd Lake	25,000	55,000	SEG	2009					40,633	58,134	54,304	44,616	18,361
Larson Lake	15,000	50,000	SEG	2009				9,751	57,411	47,736	35,040	40,933	20,324
Lower Cook Inlet													
English Bay	6,000	13,500	SEG	2002	15,277	19,422	15,310	8,188	15,454	16,487	11,996	18,176	12,253
Delight Lake	5,950	12,550	SEG	2002	19,555	7,538	7,262	15,200	10,929	43,963	23,933	12,700	23,775
Desire Lake	8,800	15,200	SEG	2002	16,000	8,400	10,700	4,820	18,600	10,000	10,700	16,000	6,320
Bear Lake	700	8,300	SEG	2002	8,441	9,498	8,061	10,285	8,338	8,421	9,000	9,977	7,964
Aialik Lake	3,700	8,000	SEG	2002	6,100	5,370	10,100	5,250	4,760	5,370	4,200	3,100	5,315
Mikfik Lake	6,300	12,150	SEG	2002	16,650	12,830	14,020	5,970	17,700	11,190	5,560	15,130	11,330
Chenik Lake	1,880	9,300	SEG	2002	4,650	13,825	17,006	14,507	13,868	18,288	11,284	15,200	17,312
Amakdedori Creek	1,250	2,600	SEG	2002	3,200	11,800	7,200	1,710	300	3,830	3,200	2,160	1,210
Prince William Sound													
Upper Copper River	300,000	500,000	SEG	2003	572,610	461,050	438,482	541,247	605,874	638,029	496,451	477,905	504,549 ^m
Copper River Delta	55,000	130,000	SEG	2003	75,735	73,150	69,385	58,406	98,896	88,285	67,950	69,292	82,835
Bering River	20,000	35,000	SEG	2003	24,715	32,840	25,135	30,890	14,671	21,471	18,396	17,022	4,367
Coghill Lake	20,000	40,000	SEG	2006	28,323	75,427	30,569	30,313	24,157	70,001	29,298	19,293	24,312 ⁿ
Eshamy Lake	13,000	28,000	BEG	2009	40,478	39,845	13,443	23,523	41,823	16,646	18,495	24,025	16,291

Note: NA = data not available; NC = no count; NS = no survey.

^a Aerial surveys for Chinook salmon were not flown in 2010 due to poor weather conditions and high water levels.

^b In 2009, aerial surveys were only flown on Big Creek (2,834 Chinook salmon) and King Salmon River (471 Chinook salmon). Mainstem Naknek River and Paul's Creek were not surveyed in 2009.

^c Aerial surveys were conducted in the Egegik and King Salmon River systems on August 5, 2009 to provide escapement indices for Chinook and chum salmon. Resulting counts were 350 Chinook, and 277 chum salmon. Water conditions were poor; high and turbid conditions prevented observation on most of the surveyed systems. Chinook escapement indices were well below average in streams surveyed, but should be considered minimum counts due to the poor water conditions. Based on carcass distribution and observed presence, the survey was likely conducted after peak spawning.

^d Preliminary escapement estimates.

^e Lewis River diverged into swamp 1/2 mi. below bridge. No water in channel.

^f The 2010 Copper River Chinook salmon spawning escapement estimate is preliminary. The estimate is generated from a mark-recapture project run by the Native Village of Eyak and LGL Consulting. The spawning escapement estimate is generated by subtracting the upper Copper River state and federal subsistence, state personal use, and sport fishery harvest estimates from the mark-recapture estimate of the inriver abundance. The estimates for the federal and state subsistence and the state personal use fishery harvests are generally not available for ~6 months after the fishery is closed. Additionally, the sport fishery harvest estimate is based on the mail-out survey and is generally available ~12 months after the fishery ends.

^g No estimates for chum salmon escapements are included for the Unakwik, Eshamy, Southwestern, or Montague districts because there are no escapement goals for those districts.

^h The estimates for pink salmon (odd year) do not include Unakwik District escapements, due to absence of an escapement goal and an average escapement estimate of a few thousand fish.

ⁱ Prior to 2010 Kvichak River had a pre-peak/peak-cycle escapement goal of 6-10 million sockeye and an off-peak escapement goal of 2-10 million fish. Between 2001 and 2009 only one year (2004) was classified as either a pre-peak or peak year.

^j Naknek River has an OEG of 800,000-2,000,000 when the Naknek River Special Harvest Area (NRHSA) is open to fishing.

^k Uses the best estimate of sport harvest upstream of sonar.

^l Yentna River sockeye salmon escapement goal was replaced by SEGs on Chelatna, Judd and Larson lakes in early 2009.

^m The 2010 upper Copper River sockeye salmon spawning escapement estimate is preliminary pending the estimates of sport fishery harvests and final mark-recapture estimate of upper Copper River Chinook salmon.

ⁿ The Coghill River weir was removed on 26 July 2010, so this provides a minimum estimate.

Table 3.—Arctic-Yukon-Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2002 to 2010.

System	2010 Goal Range		Type	Year Implemented	Escapement									
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010	
CHINOOK SALMON														
<i>Kuskokwim Area</i>														
North (Main) Fork Goodnews River	640	3,300	SEG	2005	1,195	3,935	7,462	NS	4,159	NS	NS	NS	NS	
Middle Fork Goodnews River	1,500	2,900	BEG	2007	3,085	2,389	4,348	4,529	4,559	3,852	2,161	1,630	2,244	
Kanektok River	3,500	8,000	SEG	2005	NS	6,206	28,375	13,926	8,433	NS	NS	NS	1,228	
Kogrukluk River	5,300	14,000	SEG	2005	10,104	11,771	19,651	21,993	19,414	13,029	9,730	9,517	5,690	
Kwethluk River	6,000	11,000	SEG	2007	8,502	14,474	28,605	NA	17,618	12,927	5,275	5,744	1,669	
Tuluksak River	1,000	2,100	SEG	2007	1,346	1,064	1,475	2,653	1,044	374	701	362	201	
George River	3,100	7,900	SEG	2007	2,444	4,693	5,207	3,845	4,357	4,883	2,698	3,663	1,500	
Kisaralik River	400	1,200	SEG	2005	2,285	688	6,913	4,112	4,734	1,373	1,200	NS	235	
Aniak River	1,200	2,300	SEG	2005	1,856	3,514	5,569	NS	5,639	3,984	3,222	NS	NS	
Salmon River (Aniak R)	330	1,200	SEG	2005	1,236	1,292	2,177	4,097	NS	1,458	1,061	NS	NS	
Holitna River	970	2,100	SEG	2005	1,741	NS	4,842	2,795	3,924	NS	832	NS	587	
Cheeneetnu River (Stony R)	340	1,300	SEG	2005	730	810	918	1,155	1,015	NS	290	323	NS	
Gagaryah River (Stony R)	300	830	SEG	2005	452	1,093	670	788	531	1,035	177	303	62	
Salmon River (Pitka Fork)	470	1,600	SEG	2005	1,276	1,371	1,138	1,809	928	1,014	1,305	632	150	
<i>Yukon River</i>														
East Fork Andreafsky River	2,100	4,900	SEG	2010	4,123	4,336	8,045	2,239	6,463	4,504	4,242	3,004	2,413	
West Fork Andreafsky River	640	1,600	SEG	2005	917	1,578	1,317	1,492	824	976	262	1,678	858	
Anvik River	1,100	1,700	SEG	2005	1,713	1,100	3,679	2,421	1,876	1,529	992	832	974	
Nulato River (forks combined)	940	1,900	SEG	2005	1,584	NS	1,321	553	1,292	2,583	922	2,260	711	
Gisasa River	eliminated			2010	506	NS	731	958	843	593	487	515		
Chena River	2,800	5,700	BEG	2001	6,967	8,739	9,645	NS	2,936	3,576	3,212	5,253	2,301	
Salcha River	3,300	6,500	BEG	2001	4,644	15,500	15,761	5,988	10,679	5,639	2,731	12,774	5,907	
Canada Mainstem	42,500	55,000	Agreement	Annual ^a	42,359	80,594	48,469	68,551	62,933	34,903	34,008	63,876	34,465	
<i>Norton Sound</i>														
Fish River/Boston Creek	100		lower-bound SEG	2005	NS	240	112	46	NS	NS	NS	67 ^b	29	
Kwiniuk River	300	550	SEG	2005	778	744	663	342	195	194	237	444	138	
North River (Unalakleet R)	1,200	2,600	SEG	2005	1,484	1,452	1,104	1,015	906	1,948	903	2,352	1,256	
Shaktoolik River	400	800	SEG	2005	82 ^c	15 ^c	91 ^c	74 ^d	150 ^c	412	NS	129 ^b	29	
Unalakleet/Old Woman River	550	1,100	SEG	2005	61 ^c	168 ^c	398 ^c	510 ^d	NS	821	NS	1,368	1,021 ^e	
CHUM SALMON														
<i>Kuskokwim Area</i>														
Middle Fork Goodnews River	12,000		lower-bound SEG	2005	30,300	21,637	31,616	26,690	54,699	49,285	44,699	19,713	26,687	
Kanektok River	5,200		lower-bound SEG	2005	NS	NS	NS	NS	NS	NS	NS	NS	62,567	
Kogrukluk River	15,000	49,000	SEG	2005	51,570	23,413	24,201	197,707	180,597	49,505	44,978	83,711	63,583	
Aniak River	220,000	480,000	SEG	2007	472,346	477,544	672,931	1,151,505	1,108,626	696,801	427,911	479,531	429,643	

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Table 3.–Page 2 of 4.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
Yukon River Summer Chum													
East Fork Andreafsky River	40,000		lower-bound SEG	2010	45,019	22,603	62,730	20,127	102,260	69,642	57,259	8,770	72,893
Anvik River	350,000	700,000	BEG	2005	462,101	251,358	365,691	525,391	992,378	459,038	374,929	182,988	396,173
Mainstem Yukon River	600,000	1,000,000	OEG	2001	1,088,463	1,168,518	1,357,826	2,439,616	3,767,044	1,726,885	1,665,667	1,283,206	1,327,581
	300,000	600,000	BEG	2001									
Yukon River Fall Chum													
Yukon River Drainage	300,000	600,000	SEG	2010	398,000	695,000	538,000	1,997,000	874,000	917,000	560,000	462,000	414,000
Tanana River	61,000	136,000	BEG	2001	138,000	230,000	124,000	419,000	223,000	359,000	ND	140,000	100,000
Delta River	6,000	13,000	BEG	2001	12,000	23,000	25,000	28,000	14,055	19,000	23,000	13,000	18,000
Toklat River	eliminated			2010	29,000	21,000	35,000	NA	NA	NA	NA	NA	
Upper Yukon R Tributaries	152,000	312,000	BEG	2001	135,000	271,000	195,000	1,056,000	436,000	327,000	248,000	NA	196,000
Chandalar River	74,000	152,000	BEG	2001	90,000	214,000	137,000	497,000	245,000	228,000	178,000	150,000	158,000
Sheenjek River	50,000	104,000	BEG	2001	32,000	44,000	38,000	438,000	160,000	65,000	50,000	54,000	22,000
Fishing Branch River (Canada)	22,000	49,000	Agreement	2008 ^f	14,000	30,000	20,000	121,000	30,000	34,000	20,000	26,000	16,000
Yukon R. Mainstem (Canada)	70,000	104,000	Agreement	2010 ^g	99,000	143,000	154,000	438,000	211,000	227,000	174,000	93,000	118,000
Norton Sound													
Subdistrict 1 Aggregate	23,000	35,000	BEG	2001	33,225	17,081	23,787	38,808	87,223	76,937	25,215	21,368	97,798
Sinuk River	eliminated			2010	6,333	3,482	3,197	4,710	4,834	16,481	1,000 ^h	2,232	
Nome River	2,900	4,300	SEG	2005	1,720	1,957	3,903	5,584	5,678	7,034	2,607	1,565	5,906
Bonanza River	eliminated			2010	3,199	1,664	2,166	5,534	708	8,491	1,000 ^h	6,744	
Snake River	1,600	2,500	SEG	2005	2,776	2,201	2,145	2,948	4,128	8,144	1,244	891	6,973
Solomon River	eliminated			2010	2,150	806	1,436	1,914	2,062	3,469	1,000 ^h	918	
Flambeau River	eliminated			2010	6,804	3,380	7,667	7,692	27,828	12,006	11,618	4,075	
Eldorado River	6,000	9,200	SEG	2005	10,243	3,591	3,273	10,426	41,985	21,312	6,746	4,943	42,612
Niukluk River	23,000		lower-bound SEG	2010	35,307	20,018	10,770	25,598	29,199	50,994	12,078	15,879	48,561
Kwiniuk River	11,500	23,000	OEG	2001	37,995	12,123	10,362	12,083	39,519	27,756	9,462	8,733	71,403
	10,000	20,000	BEG	2001									
Tubutuluk River	9,200	18,400	OEG	2001	NS	1,799	NS	4,842	NS	7,045	NS	3,161	16,097
	8,000	16,000	BEG	2001									
Unalakleet/Old Woman River	2,400	4,800	SEG	2005	NS	NS	NS	1,530	NS	1,902	NS	7,143	70,811 ^e

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Table 3.–Page 3 of 4.

System	2010 Goal Range		Type	Year Implemented	Escapement									
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010	
Kotzebue Sound														
Kotzebue Sound Aggregate	196,000	421,000	BEG	2007										
Noatak and Eli Rivers	42,000	91,000	SEG	2007	NS	NS	53,058	NS	39,785	NS	270,747	69,872	NS	
Upper Kobuk w/ Selby River	9,700	21,000	SEG	2007	NS	11,175	26,018	NS	48,750	NS	42,622	45,155	NS	
Salmon River	3,300	7,200	SEG	2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	
Tutuksuk River	1,400	3,000	SEG	2007	NS	NS	NS	1,736	NS	NS	NS	NS	NS	
Squirrel River	4,900	10,500	SEG	2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	
COHO SALMON														
Kuskokwim Area														
Middle Fork Goodnews River	12,000		lower-bound SEG	2005	27,364	52,810	47,916	15,683	15,969	20,975	36,630	19,933	23,839	
Kogruluk River	13,000	28,000	SEG	2005	14,516	74,604	27,041	24,113	17,011	27,033	29,661	23,009	13,971	
Kwethluk River	19,000		lower-bound SEG	2010	23,298	107,789	64,216	NS	25,664	19,473	49,973	21,911	NA	
Yukon River														
Delta Clearwater River	5,200	17,000	SEG	2005	39,000	106,000	38,000	34,000	17,000	15,000	7,500	17,000	5,867 ⁱ	
Norton Sound														
Kwiniuk River	650	1,300	SEG	2005	NS	760	1,237	NS	NS	5,174	2,676	NS	8,058	
Niukluk River ^j	2,400	7,200	SEG	2010	7,391	1,282	2,064	2,727	11,169	3,498	13,779	6,861	9,042	
North River (Unalakleet R.)	550	1,100	SEG	2005	800	NS	1,386	1,963	NS	2,349	2,744	2,830	7,608	
PINK SALMON														
Kuskokwim Area														
There are no escapement goals for pink salmon in the Kuskokwim Management Area														
Yukon River														
There are no escapement goals for pink salmon in the Yukon River drainage														
Norton Sound														
Nome River (odd year)	3,200		lower-bound SEG	2005		11,402		285,759		24,395		16,490		
Nome River (even year)	13,000		lower-bound SEG	2005	35,057		1,051,146		578,555		1,186,554		165,931	
Kwiniuk River	8,400		lower-bound SEG	2005	1,114,410	22,329	3,054,684	341,048	1,347,087	54,255	1,442,249	42,957	634,169	
Niukluk River	10,500		lower-bound SEG	2005	636,404	75,855	1,022,236	270,424	1,371,919	43,617	669,234	24,204	434,205	
North River	25,000		lower-bound SEG	2005	321,756	280,212	1,149,294	1,670,934	2,169,890	583,320	240,286	189,939	150,635	
SOCKEYE														
Kuskokwim Area														
North (Main) Fork Goodnews River	5,500	19,500	SEG	2005	2,626	50,140	31,695	NS	78,100	NS	NS	NS	NS	

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Table 3.–Page 4 of 4.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
Middle Fork Goodnews River	18,000	40,000	BEG	2007	22,101	44,387	55,926	113,809	126,772	72,282	50,459	25,460	35,726
Kanektok River	14,000	34,000	SEG	2005	NS	21,335	78,380	110,730	382,800	NS	NS	NS	16,950
Kogrukluk River	4,440	17,000	SEG	2010	4,050	9,164	6,775	37,939	60,807	16,526	19,675	23,843	13,995

Yukon River

There are no escapement goals for Sockeye in the Yukon River drainage

Norton Sound

Salmon Lake/Grand Central River	4,000	8,000	SEG	2005	3,592	20,290	25,860	42,240	41,780	20,112	11,672	272	762
Glacial Lake	800	1,600	SEG	2005	320	865	970	3,730	5,810	1,505	540	169	1,047

Note: NA = data not available; NS = no survey; ND = not determined yet.

Note: 2010 escapements are preliminary because harvest estimates are not completed until around the beginning of the following season.

^a Canadian Yukon River Mainstem Chinook salmon IMEG (Interim Management Escapement Goal) of 42,500-55,000 was implemented for 2010 and 2011 seasons by the United States and Canada Yukon River Joint Technical Committee (JTC).

^b 2009 aerial surveys of the Shaktoolik River and Boston Creek are rated as incomplete as they were conducted on August 9 and 12, respectively, well after peak Chinook salmon spawning. Several carcasses and moribund Chinook salmon were observed during survey.

^c 2002-2004 and 2006 Shaktoolik River surveys and combined Unalakleet and Old Woman rivers surveys (2002-2004) are not considered complete as they were conducted well before peak spawn. Surveys during these years were rated as acceptable, but the observer noted difficulty enumerating Chinook salmon due to large numbers of pink salmon.

^d 2005 Shaktoolik and Unalakleet River drainage surveys were conducted during peak spawning periods but Chinook salmon counts are thought to be underestimated due to large numbers of pink salmon.

^e 2010 escapement estimate for Unalakleet/Old Woman River is a weir count.

^f Fishing Branch River fall chum salmon IMEG of 22,000-49,000 was implemented in 2008 by JTC and will be in place through 2010.

^g Yukon River Mainstem fall chum salmon IMEG of 70,000-104,000 was implemented for 2010 and 2011 seasons by JTC.

^h In 2008, unable to see chum salmon in the Bonanza, Sinuk and Solomon Rivers because of large number of pink salmon. Arbitrarily assigned 1,000 chum salmon to each river.

ⁱ Delta Clearwater River coho salmon 2010 escapement index is not a peak count.

^j Niukluk River coho salmon numbers (all years) are actual tower counts, and do not take into consideration upstream harvest.

Table 4.–Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon escapement goals and escapements, 2002 to 2010.

System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
CHINOOK SALMON													
<i>AK Peninsula</i>													
Nelson River	2,400	4,400	BEG	2004	6,750	5,154	6,959	4,993	2,516	2,492	5,012	2,048	2,769
<i>Chignik</i>													
Chignik River	1,300	2,700	BEG	2002	2,821	6,205	7,633	6,037	3,175	1,675	1,620	1,590	3,373 ^a
<i>Kodiak</i>													
Karluk River	3,600	7,300	BEG	2003	6,944	6,986	7,228	4,684	3,673	1,697	752	1,306	2,917
Ayakulik River	4,800	9,600	BEG	2003	12,190	17,106	24,425	8,175	2,937	6,232	3,071	2,615	5,291
CHUM SALMON													
<i>AK Peninsula</i>													
Northern District	119,600	239,200	SEG	2007	262,800	214,660	139,350	103,675	382,583	243,334	228,537	154,131	145,310
Northwestern District	100,000	215,000	SEG	2007	417,100	236,000	295,600	192,965	193,460	335,450	241,750	84,460	144,100
Southeastern District b	106,400	212,800	SEG	1992	204,150	218,810	367,200	412,500	405,300	201,451	277,450	106,500	62,612
South Central District	89,800	179,600	SEG	1992	129,400	79,000	184,800	235,700	119,600	126,000	140,450	18,600	5,300
Southwestern District	133,400	266,800	SEG	1992	268,000	193,030	180,000	317,910	231,935	398,010	171,250	385,730	142,650
Unimak District	800		lower-bound SEG	2007	1,200	200	400	4,200	7,915	1,200	2,800	1,400	1,050
<i>Chignik</i>													
Entire Chignik Area	57,400		lower-bound SEG	2008	235,634	300,325	349,518	308,700	93,489	238,216	197,259	214,959	177,220
<i>Kodiak</i>													
Mainland District	104,000		lower-bound SEG	2008	197,175	114,750	364,395	37,500	346,140	87,350	122,425	83,106	144,715
Kodiak Archipelago Aggregate	151,000		lower-bound SEG	2008	333,416	265,773	168,696	206,755	441,409	206,983	101,482	202,039	155,637
COHO SALMON													
<i>AK Peninsula</i>													
Nelson River	18,000		lower-bound SEG	2004	38,000	28,000	52,500	24,000	19,000	19,000	24,000	22,000	15,000
Thin Point Lake	3,000		lower-bound SEG	2004	18,000	25,000	9,600	17,500	9,750	9,000	3,200	900	NA ^c
Ilnik River	9,000		lower-bound SEG	2010	45,000	37,000	40,000	NA	27,000	19,000	22,000	NA	19,600
<i>Chignik</i>													
There are no coho salmon stocks with escapement goals in Chignik Area													
<i>Kodiak</i>													
Pasagshak River	1,200	3,300	SEG	2005	5,825	8,886	3,402	3,773	937	1,896	3,875	2,385	1,971
Buskin River	3,200	7,200	BEG	2005	10,022	12,325	8,384	15,844	11,706	7,697	7,963	9,351	6,808 ^d
Olds River	1,000	2,200	SEG	2005	790	1,534	1,860	2,495	1,912	868	656	697	127

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System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
American River	400	900	SEG	2005	1,034	511	753	339	2,033	307	700	639	58
PINK SALMON													
AK Peninsula													
Bechevin Bay Section (odd yr)	1,600		lower-bound SEG	2004		800		8,720		16,800		72,000	
Bechevin Bay Section (even yr)	31,000		lower-bound SEG	2004	10,700		84,300		116,075		11,900		13,600
South Peninsula Total (odd yr)	1,637,800	3,275,700	SEG	2007		5,511,220		6,165,634		2,680,213		3,067,000	
South Peninsula Total (even yr)	1,864,600	3,729,300	SEG	2007	3,762,800		8,311,410		2,862,250		3,338,370		742,912
Chignik													
Entire Chignik Area (odd yr)	500,000	800,000	SEG	2008		1,390,600		1,591,850		1,217,064		869,063	
Entire Chignik Area (even yr)	200,000	600,000	SEG	2008	782,820		1,114,860		374,826		863,031		330,570
Kodiak													
Mainland District	250,000	750,000	SEG	2005	901,925	1,008,550	711,555	268,050	778,200	315,300	236,500	430,100	265,650
Kodiak Archipelago	2,000,000	5,000,000	SEG	2005	7,494,477	4,088,412	8,074,963	3,688,158	5,086,372	2,208,678	2,924,708	4,707,894	3,378,483
SOCKEYE SALMON													
AK Peninsula													
Cinder River	12,000	48,000	SEG	2007	11,500	88,700	55,050	96,000	52,100	123,000	96,800	102,600	90,900
Ilnik River	40,000	60,000	SEG	1991	43,000	69,000	82,000	154,000	88,000	93,000	44,300	66,000	59,000
Meshik River	25,000	100,000	SEG	2010	47,250	94,000	82,200	96,100	114,010	45,500	61,250	63,500	46,200
Sandy River	34,000	74,000	SEG	2007	49,000	66,000	32,000	101,000	48,000	44,700	32,200	36,000	37,000
Bear River Early Run	176,000	293,000	SEG	2004	178,480	226,201	354,565	332,248	262,995	206,233	125,526	216,237	226,534
Bear River Late Run	117,000	195,000	SEG	2004	96,520	139,799	80,435	221,752	182,005	224,767	195,474	133,263	142,966
Nelson River	97,000	219,000	BEG	2004	315,689	343,511	480,097	303,000	215,000	180,000	141,600	157,000	108,000
Christianson Lagoon	25,000	50,000	SEG	1980s	42,700	52,200	75,400	54,500	41,505	48,100	114,000	48,100	27,900
Swanson Lagoon	6,000	16,000	SEG	2007	10,000	16,100	24,300	2,400	376	9,200	5,500	1,000	1,700
North Creek	4,400	8,800	SEG	late 1980s	10,100	10,200	15,000	45,000	7,530	16,800	38,000	8,000	18,500
Orzinski Lake	15,000	20,000	SEG	1992	42,849	70,690	75,450	44,797	18,000	10,643	36,839	21,457	18,039
Mortensen Lagoon	3,200	6,400	SEG	late 1980s	5,205	16,804	7,215	21,703	14,688	6,200	5,600	25,000	6,600
Thin Point Lake	14,000	28,000	SEG	late 1980s	51,000	40,000	34,500	21,000	11,510	21,550	18,900	33,500	12,400
McLees Lake e	10,000	60,000	SEG	2010	97,780	101,793	40,283	12,097	12,936	21,428	8,661	10,120	32,842
Chignik													
Chignik River Early Run	350,000	400,000	SEG	2005	380,701	350,004	363,800	355,091	366,497	361,091	377,579	391,476	432,535
Chignik River Late Run f	200,000	400,000	SEG	2008	343,616	334,119	214,459	225,366	368,996	293,883	328,479	328,586	311,291

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System	2010 Goal Range		Type	Year Implemented	Escapement								
	Lower	Upper			2002	2003	2004	2005	2006	2007	2008	2009	2010
Kodiak													
Malina Creek	1,000	10,000	SEG	2005	32,214 ^g	12,000	9,636 ^g	3,180 ^g	6,400	1,900	3,690	1,400	4,000
Afognak (Litnik) River	20,000	50,000	BEG	2005	19,520	27,766	15,181	21,577	22,933	21,070	26,874	31,358	52,255
Little River	3,000		lower-bound SEG	2008	36,000	50,500	16,000	3,000	3,500	8,500	2,300	1,500	3,200
Uganik Lake	24,000		lower-bound SEG	2008	25,400	51,000	83,600	7,500	26,700	35,000	64,700	53,700	30,700
Karluk River Early Run	110,000	250,000	BEG	2008	456,842	451,856	393,468	283,860	202,366	294,740	82,191	52,466	70,544
Karluk River Late Run	170,000	380,000	BEG	2005	408,734	626,854	326,466	498,102	288,007	267,185	164,419	277,611	277,558
Ayakulik River	200,000	500,000	SEG	2005	229,292	197,892	275,238	251,906	87,780	283,042	162,888	315,184	262,327
Upper Station River Early Run	30,000	65,000	SEG	2005	36,802	76,175	78,487	60,349	24,997	31,895	38,800	34,585	42,060
Upper Station River Late Run	120,000	265,000	BEG	2005	150,349	200,894	177,108	156,401	153,153	149,709	184,856	161,736	141,139
Frazer Lake	75,000	170,000	BEG	2008	85,317	201,679	120,664	136,948	89,516	120,186	105,363	101,845	94,680
Saltery Lake	15,000	30,000	BEG	2001	36,336	57,993	54,800	28,500	28,000	17,200	49,266	46,591	26,809
Pasagshak River	3,000	12,000	SEG	2005	4,750	8,000	46,400	22,000	6,300	14,300	14,900	1,400	4,800
Buskin Lake	8,000	13,000	SEG	1996	17,174	23,870	22,023	15,468	17,734	16,502	5,900	7,757	9,800

Note: NA = data not available.

^a 2010 Chignik River Chinook salmon escapement is the weir count minus 300 fish for subsistence harvest.

^b Southeastern District chum salmon escapement goal includes Shumagin Islands Section and Southeastern District Mainland.

^c Poor survey conditions contributed to the zero aerial survey escapement index for Thin Point Lake coho salmon.

^d Buskin River coho salmon 2010 escapement is weir count only as SWHS data are not available yet.

^e McLees Lake sockeye salmon SEG will be in effect if a weir is in place; there will be no goal if a weir is not operated.

^f The Chignik late-run sockeye escapement objective (July 5 to September 15) includes the late-run sockeye salmon sustainable escapement goal (SEG; 200,000 – 400,000) plus an additional 50,000 sockeye salmon inriver run goal (25,000 in August and 25,000 in September) to meet late season subsistence needs.

^g 2002, 2004, and 2005 Malina Creek sockeye salmon escapements are weir counts. All other escapements are peak aerial survey indices.

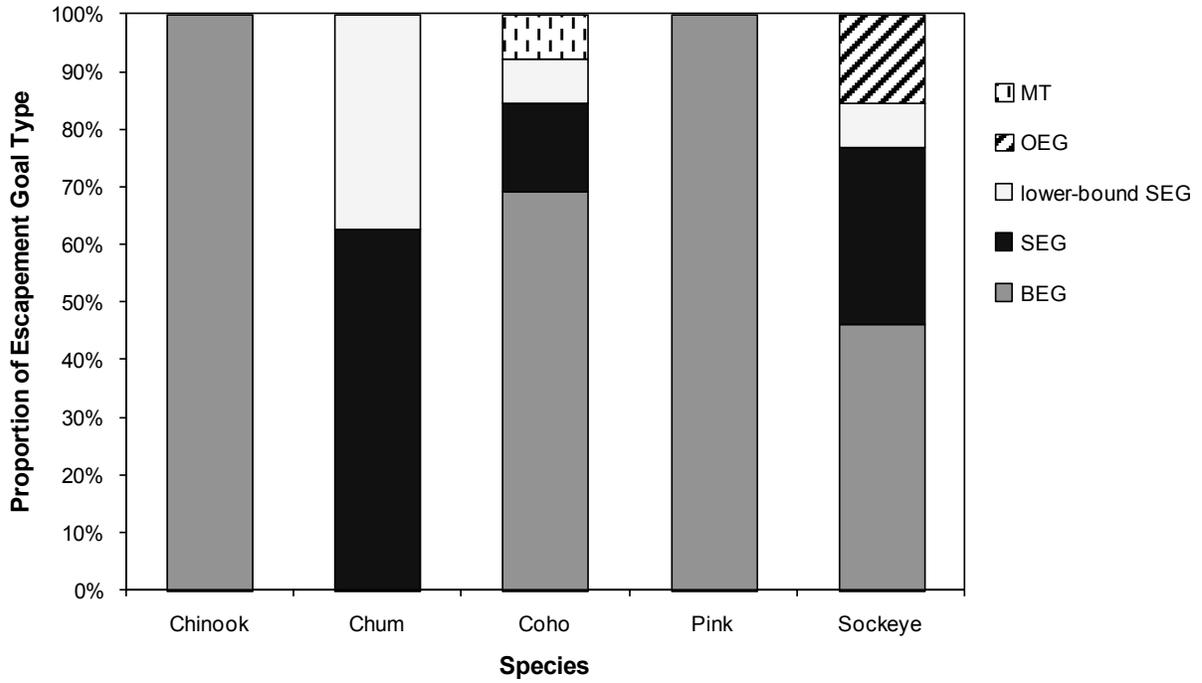


Figure 2.—Proportion of escapement goal types by species for the 50 escapement goals in Southeast Region. BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), and MT is management target.

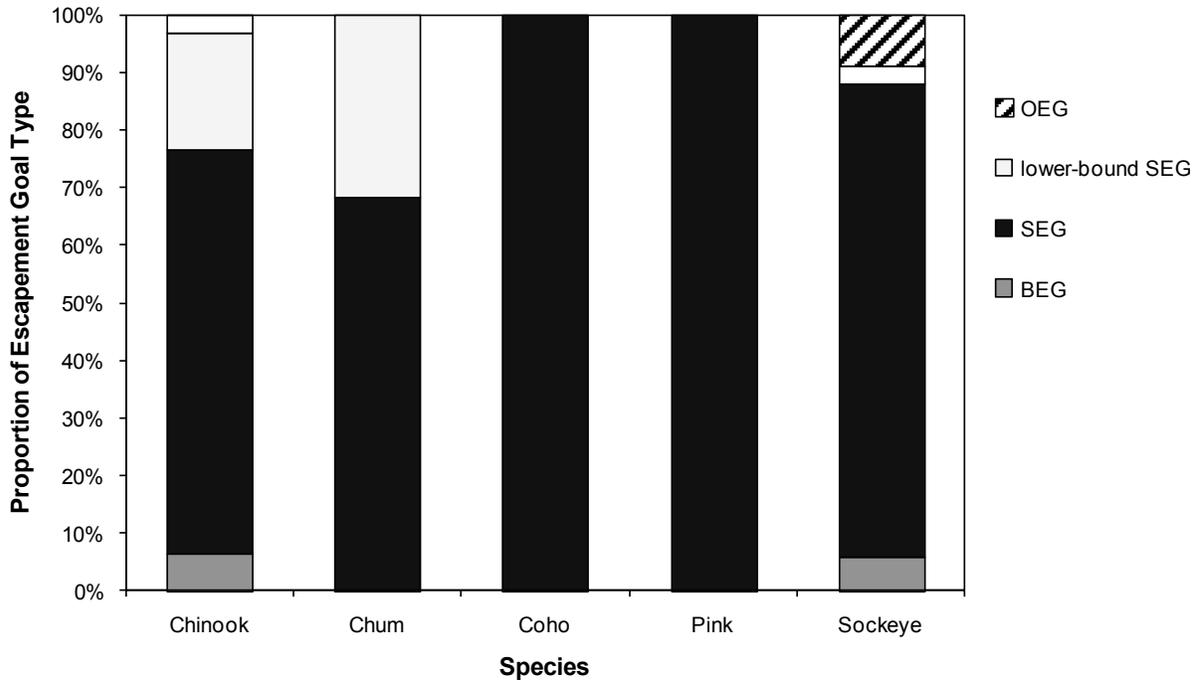


Figure 3.—Proportion of escapement goal types by species for the 109 escapement goals in Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River). BEG is biological escapement goal, SEG is sustainable escapement goal, and OEG is optimal escapement goal (set by the Alaska Board of Fisheries).

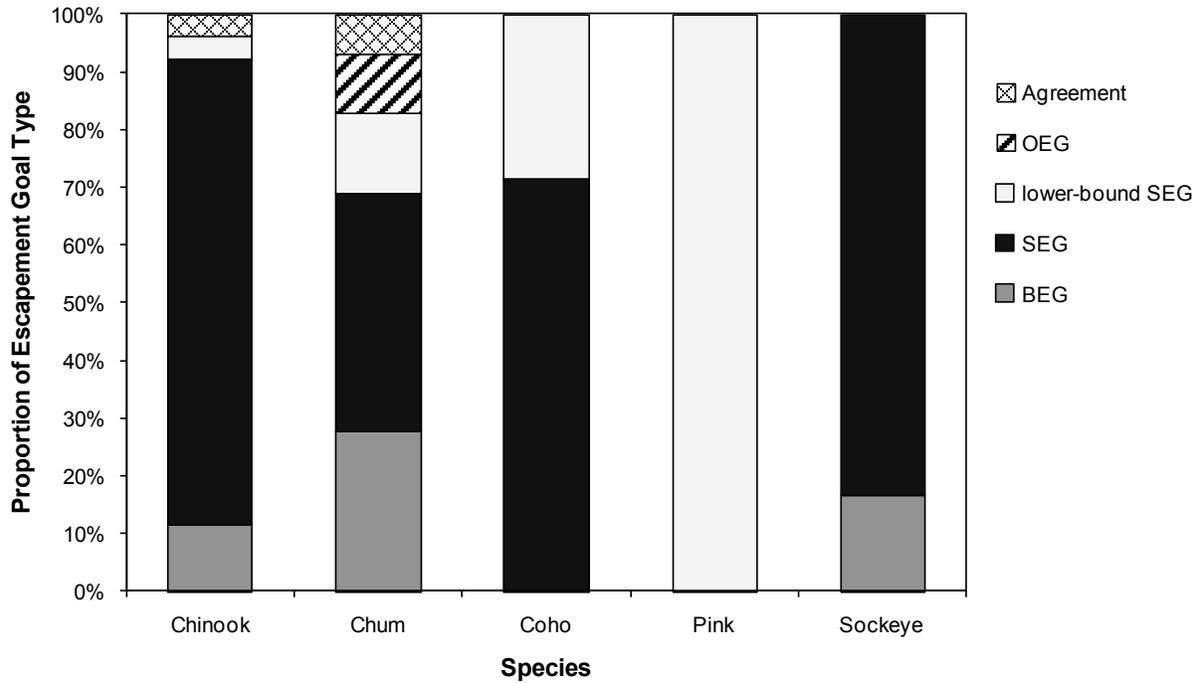


Figure 4.—Proportion of escapement goal types by species for the 73 escapement goals in Arctic-Yukon-Kuskokwim Region. BEG is biological escapement goal, SEG is sustainable escapement goal, OEG is optimal escapement goal (set by the Alaska Board of Fisheries), and agreement goals are established through international treaties.

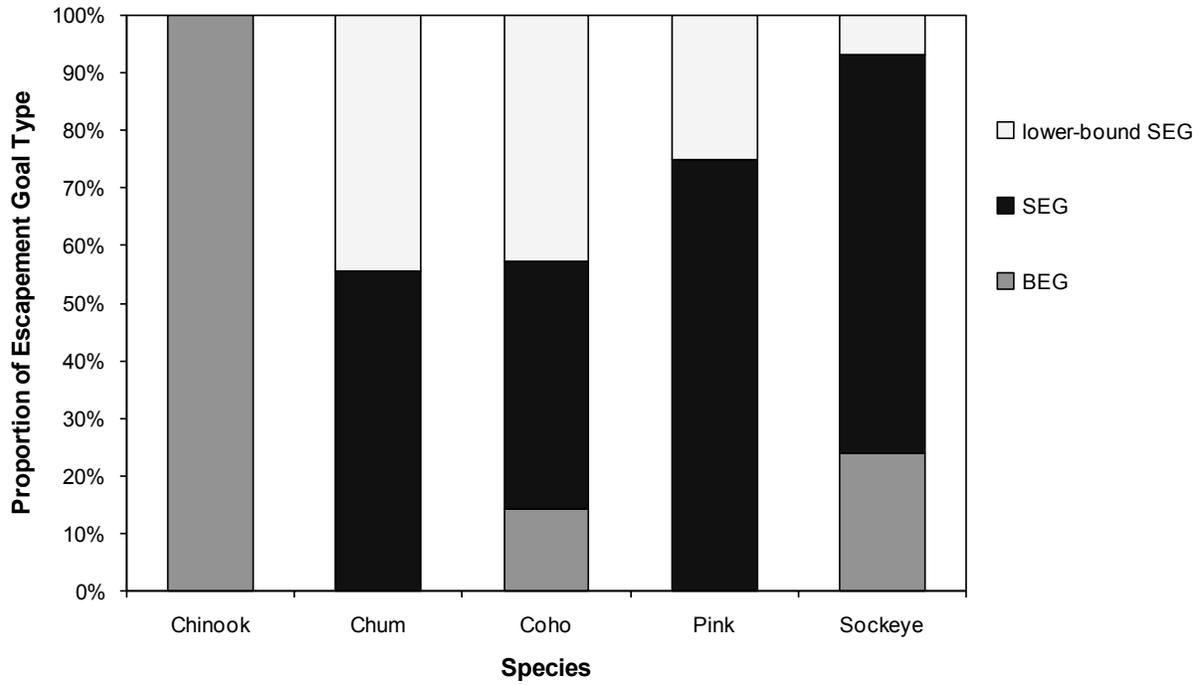


Figure 5.—Proportion of escapement goal types by species for the 57 escapement goals in Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas). BEG is biological escapement goal and SEG is sustainable escapement goal.

Table 5.—Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Southeast Region.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
Chinook salmon	Blossom River	Under	Under	Met	Met	Met	Under	Met	Under	Under
	Keta River	Met	Met	Met	Met	Over	Met	Met	Under	Met
	Unuk River	Met	Met	Met	Met	Met	Met	Met	Met ^a	Over
	Chickamin River	Over	Over	Met	Over	Over	Met	Over	Met	Over
	Andrew Creek	Over	Met	Over	Over	Over	Over	Met	Under	Met
	Stikine River	Over	Over	Over	Over	Met	Met	Met	Under	Met
	King Salmon River	Met	Under	Met	Met	Met	Met	Met	Under	Met
	Taku River	Over	Met	Over	Met	Met	Under	Under	Met ^b	Met
	Chilkat River	Over	Over ^c	Met	Met	Met	Under	Met	Over	Met
	Klukshu (Alsek) River	Met	Met	Over	Under	Under	Under	Under	Met	Met
Situk River	Met	Over ^b	Met	Met	Met	Met	Met	Under	Met	Under
Chum salmon	Southern Southeast Summer								Under	Under
	Northern Southeast Inside Summer								Under	Under
	Northern Southeast Outside Summer								Under	Met
	Cholmondeley Sound Fall								Met	Over
	Port Camden Fall								Under	Met
	Security Bay Fall								Met	Met
	Excursion River Fall								Under	Met
	Chilkat River Fall								Over	Met
Coho salmon	Hugh Smith Lake	Over	Over	Met	Over	Met	Over	Over	Over ^b	Over
	Taku River	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Auke Creek	Over	Over	Met	Met	Over	Met	Over	Met	Met
	Montana Creek	Over	Over	Met	Met	Met ^b	Under	Met	Met	Met
	Peterson Creek	Met	Met	Met	Met	Over ^b	Met	Over	Met	Over
	Ketchikan Survey Index					Met	Met	Over	Met	Met
	Sitka Survey Index					Over	Over	Over	Over	Over
	Ford Arm Lake	Over	Over	Over	Over	Over	Met	Over	Met	Met
	Berners River	Over	Over	Over	Met	Met	Under	Met	Met	Met
	Chilkat River					Over	Under	Met	Met	Over
	Lost River	Over	Met	Met	Under	Met	Met	NA	Met ^d	Met
	Situk River	Over	Met	Over	Under	Met	Met	NA	Met	Over
	Tsiu/Tsivat Rivers	Over	Over	NA	Met	Met	Met	Met	Met	Met

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Table 5.–Page 2 of 2.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
Pink salmon	Southern Southeast	Over	Over ^b	Met	Over	Met	Over	Met	Met ^e	Met
	Northern Southeast Inside		Met ^f	Under	Met	Met	Met	Under	Met ^e	Met
	Northern Southeast Outside		Over ^f	Over	Over	Over	Over	Met	Met ^e	Met
	Situk River (even-year)	Met		Over		Over		NA ^g		NA ^g
	Situk River (odd-year)		Over		Over		Over		Met	
Sockeye salmon	Hugh Smith Lake	Under	Over ^b	Over	Over	Over	Over	Under	Met	Met
	McDonald Lake	Under	Over	Under	Under	Under ^b	Under	Under	Under ^b	Met
	Mainstem Stikine River	Met	Over	Met	Met	Met	Met	Under	Met	Met
	Tahltan Lake	Under	Over	Over	Over	Over	Met	Under	Over	Met
	Speel Lake	Met	Met ^c	Met	Met	Met	Under	Under	Under	Met
	Taku River	Over	Over	Over	Over	Over	Over	Under	Met	Over
	Redoubt Lake		Over	Over	Over	Over	Over	Met	Met	Met
	Chilkat Lake	Over	Over	Over	Met	Under ^h	Under	Under	Over ^b	Under
	Chilkoot Lake	Met	Met	Met	Met	Over ^b	Met	Under	Under ^b	Met
	East Alsek-Doame River	Under	Over ^b	Over	Over	Over	Over	Under	Under	Met
	Klukshu River	Over	Over	Met	Under	Met	Met	Under	Under	Over
	Lost River	Met	Over	Met	Met	Met	Under	Under	NA ^d	Met
Situk River	Met ⁱ	Over	Met	Met	Over	Met	Under	Over	Met	

Note: NA = data not available. Blank cells indicate that there was no official escapement goal for the stock in that particular year.

^a Prior to 2009 goal was based on index count of escapements.

^b Escapement goal reevaluated, goal range changed.

^c Escapement goal reevaluated, point goal changed to a range.

^d Escapement goal reevaluated, upper bound eliminated, lower bound remained the same.

^e Expansion factor was removed from escapement estimates and escapement goal was reevaluated.

^f Northern Southeast was split into Northern Southeast Inside and Northern Southeast Outside in 2003.

^g Weir on Situk River was pulled well before peak of pink salmon run, therefore a valid assessment of whether the goal was met is not possible.

^h Prior to 2006 escapement goal was based on weir counts. From 2006 escapements and escapement goal were based on mark-recapture estimates (see DerHovansian and Geiger 2005).

ⁱ Escapement goal reevaluated, goal type changed but goal range remained the same.

Table 6.—Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River).

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Chinook salmon	<u>Bristol Bay</u>										
	Nushagak River	Over	Over	Over	Over	Over	Met ^a	Over	Met	Met	
	Togiak River	Under	NS	NS	NS	NS	NS ^b	NS	NS	NS	
	Naknek River	Over	Over	Over	NS	NS	Met ^b	Met	Under	NS	
	Alagnak River						Met	Under	Under	NS	
	Egegik River						Met	Under	Under	NS	
	<u>Upper Cook Inlet</u>										
	Alexander Creek	Under	Under	Met	Met	Under	Under	Under	Under	Under	
	Campbell Creek	Over	Over	Over	Eliminated			Met ^c	Met	Met	
	Chuitna River	Met	Met	Over	Met	Met	Under	Under	Under	Under	
	Chulitna River	Over	NS	Met	Met	Met	Over	Met	Met	Under	
	Clear (Chunilna) Creek	Over	NS	Over	Met	Met	Met	Met	Met	Under	
	Crooked Creek	Met	Over	Over	Over	Met	Met	Met	Met	Under	Met
	Deshka River	Over	Over	Over	Over	Over	Over	Met	Under	Under	Met
	Goose Creek	Met	Under	Met	Met	Met	Under	Under	Under	Under	Under
	Kenai River - Early Run	Under	Met	Met	Over ^d	Over	Over	Over	Over	Over	NA
	Kenai River - Late Run	Met	Met	Over	Met	Met	Met	Met	Met	Under	NA
	Lake Creek	Met	Over	Over	Met	Met	Met	Met	Under	Under	Under
	Lewis River	Met	Over	Over	Met	Met	Under	Under	Under	Under	Under
	Little Susitna River	Met	Met	Met	Over	Over	Met	Met	Met	Met	Under
	Little Willow Creek	Met	Met	Over	Met	Met	Met	Met	NC	Met	Met
	Montana Creek	Met	Met	Met	Met	Met	Met	Met	Met	Met	Under
	Peters Creek	Over	Over	Over	Met	Met	Met	Met	NC	Met	NC
	Prairie Creek	Met	Met	Met	Met	Met	Met	Met	Under	Met	Under
	Sheep Creek	Met	NS	Under	Met	Under	Under	Under	NC	Under	NC
	Talachulitna River	Over	Over	Over	Met	Over	Met	Met	Met	Met	Under
	Theodore River	Met	Met	Under	Under	Met	Under	Under	Under	Under	Under
	Willow Creek	Met	Over	Over	Met	Met	Under	Under	Under	Under	Under
	<u>Lower Cook Inlet</u>										
	Anchor River	Under	Under	Over	Eliminated				Met ^e	Under	Under
	Deep Creek	Met	Over	Over	Over	Met	Met	Met	Under	Met	Met
	Ninilchik River	Met	Under	Met	Met	Met	Met	Met	Met ^f	Under	Met

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Table 6.–Page 2 of 4.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
	<u>Prince William Sound</u>									
	Copper River	Under	Met ^g	Met	Under	Met	Met	Met	Met	Under
Chum salmon	<u>Bristol Bay</u>									
	Nushagak River						Under	Met	Met	Met
	<u>Upper Cook Inlet</u>									
	Clearwater Creek	Over	Under	Met	Under	Under	Met	Over	Met	Over
	<u>Lower Cook Inlet</u>									
	Port Graham River	Over	Met	Under	Under	Met	Met	Met	Under	Under
	Dogfish Lagoon	Over	Over	Met	Under	Met	Met	Met	Met	Over
	Rocky River	Over	Over	Over	Over	Over	Met	Met	Met	Met
	Port Dick Creek	Over	Over	Over	Over	Met	Met	Over	Over	Met
	Island Creek	Met	Over	Met	Over	Under	Under	Met	Met	Under
	Big Kamishak River	Met	Met	Over	Over	Over	Met	Under	Met	NS
	Little Kamishak River	Met	Met	Over	Met	Over	Met	Met	Under	Met
	McNeil River	Met	Over	Met	Met	Met	Met	Under ^h	Under	Under
	Bruin River	Met	Over	Over	Over	Met	Under	Over	Met	Met
	Ursus Cove	Over	Over	Over	Over	Over	Over	Met	Over	Over
	Cottonwood Creek	Over	Over	Over	Over	Over	Over	Met	Over	Over
	Iniskin Bay	Over	Over	Over	Over	Over	Under	Over	Over	Over
	<u>Prince William Sound</u>									
	Eastern District	Met	Over ^d	Met	Met	Met ⁱ	Met	Met	Met	Met
	Northern District	Met	Met ^d	Met	Met	Met ⁱ	Met	Met	Met	Met
	Coghill District	Under	Met ^d	Met	Met	Met ⁱ	Met	Met	Met	Met
	Northwestern District	Under	Met ^d	Met	Met	Met ⁱ	Met	Met	Met	Met
	Southeastern District	Over	Over ^d	Over	Over	Met ⁱ	Met	Met	Met	Met
Coho salmon	<u>Upper Cook Inlet</u>									
	Jim Creek	Over	Over	Over	Over	Over	Over	Over	Over	Under
	Little Susitna River	Over	Met	Over	Met	NA	Met	Over	Under	Under
	<u>Prince William Sound</u>									
	Copper River Delta	Over	Over ^j	Over	Over	Over	Met	Over	Met	Met
	Bering River	Over	Met ^j	Met	Over	Over	Over	Met	Met	Met

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Table 6.–Page 3 of 4.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Pink salmon	<u>Lower Cook Inlet</u>										
	Humpy Creek	Met	Over	Met	Over	Met	Met	Over	Under	Met	
	China Poot Creek	Met	Met	Met	Over	Met	Met	Met	Under	Under	
	Tutka Creek	Met	Over	Over	Over	Over	Under	Met	Under	Under	
	Barabara Creek	Met	Met	Met	Over	Met	Over	Over	Met	Over	
	Seldovia Creek	Met	Met	Over	Over	Over	Over	Over	Under	Met	
	Port Graham River	Over	Met	Over	Over	Over	Over	Over	Met	Met	
	Port Chatham	Met	Over	Over	Over	Over	Met	Met	Over	Under	
	Windy Creek Right	Over	Over	Over	Over	Over	Over	Over	Over	Met	
	Windy Creek Left	Met	Over	Met	Over	Over	Met	Over	Over	Met	
	Rocky River	Over	Over	Met	Over	Over	Over	Over	Over	Met	
	Port Dick Creek	Over	Over	Under	Over	Met	Met	Met	Met	Met	
	Island Creek	Over	Over	Over	Met	Over	Over	Over	Over	Over	
	S. Nuka Island Creek	Over	Over	Met	Met	Met	Met	Met	Met	Over	NS
	Desire Lake Creek	Over	Over	Over	Over	Over	Met	Met	Met	Over	Met
	Bear and Salmon Creeks				Over	Met	NS	NS	NS	NS	NS
	Thumb Cove	Met	Met	Met	Met	Met	NS	NS	NS	NS	NS
	Humpy Cove	Met	Met	Met	Over	Met	NS	NS	NS	NS	NS
	Tonsina Creek	Over	Met	Met	Over	Over	NS	NS	NS	NS	NS
	Bruin River	Over	Met	Met	Met	Over	Over	Met	Met	Over	Met
	Sunday Creek	Over	Over	Over	Over	Over	Over	Met	Met	Over	Met
	Brown's Peak Creek	Over	Over	Met	Over	Over	Over	Met	Met	Over	Met
		<u>Prince William Sound</u>									
	All Districts Combined (even year)		^k	Met		Under		Under		Met	
	All Districts Combined (odd year)		Over ^k		Over		Met		Met		
Sockeye salmon	<u>Bristol Bay</u>										
	Kvichak River	Under	Under	Under ¹	Met	Met	Met	Met	Met	Met	
	Alagnak River	Over	Over	Over	Over	Over	Met ^g	Met	Met	Met	
	Naknek River	Met	Over	Over	Over	Over	Over	Over	Met	Over	
	Egegik River	Met	Met	Met	Over	Over	Over	Met	Met	Met	
	Ugashik River	Met	Met	Met	Met	Met	Over	Met	Over	Met	
	Wood River	Met	Met	Over	Met	Over	Over	Over	Met	Over	
	Igushik River	Under	Met	Under	Over	Over	Over	Over	Over	Over	
	Nushagak River	Met	Met	Met	Over	Met	Met	Met	Met	Met	
	Togjak River	Met	Over	Met	Met	Over	Met ^d	Met	Over	Met ^j	

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Table 6.–Page 4 of 4.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
	<u>Upper Cook Inlet</u>									
	Crescent River	Over ^j	Over	Over	Over ^d	Over	Over	Met	NS	Over
	Fish Creek (Knik)	Over	Over	Met	Under	Met	Met	Under	Over	Over
	Kasilof River	Met	Over	Over	Over	Over	Over	Met	Met	Met
	Kenai River	Met	Met	Over	Over	Over	Met	Under	Under	Met
	Packers Creek	NS	NS	NS	Eliminated			Met ^c	Met	NS
	Russian River - Early Run	Over	Met	Over	Over ^j	Over	Met	Met	Over	Met
	Russian River - Late Run	Met	Over	Met	Met ^d	Met	Met	Met	Met	Met
	Yentna River	Under	Over	Under	Under	Met	Under	Met		
	Chelatna Lake								Under	Met
	Judd Lake								Met	Under
	Larson Lake								Met	Met
	<u>Lower Cook Inlet</u>									
	English Bay	Over	Over	Over	Met	Over	Over	Met	Over	Met
	Delight Lake	Over	Met	Met	Over	Met	Over	Over	Over	Over
	Desire Lake	Over	Under	Met	Under	Over	Met	Met	Over	Under
	Bear Lake	Over	Over	Met	Over	Over	Over	Over	Over	Met
	Aialik Lake	Met	Met	Over	Met	Met	Met	Met	Under	Met
	Mikfik Lake	Over	Over	Over	Under	Over	Met	Under	Over	Met
	Chenik Lake	Met	Over	Over	Over	Over	Over	Over	Over	Over
	Amakdedori Creek	Over	Over	Over	Met	Under	Over	Over	Met	Under
	<u>Prince William Sound</u>									
	Upper Copper River	Over	Met ^d	Met	Over	Over	Over	Met	Met	Over
	Copper River Delta	Met	Met ^d	Met	Met	Met	Met	Met	Met	Met
	Bering River	Under	Met ^d	Met	Met	Under	Met	Under	Under	Under
	Coghill Lake	Met	Over ^d	Met	Met	Met ^j	Over	Met	Under	Met
	Eshamy Lake	Over	Met ^d	Under	Met	Over	Under	Under	Met ^d	Met

Note: NA = data not available; NC = no count; NS = no survey. There are no escapement goals for coho salmon in Bristol Bay or Lower Cook Inlet and there are no pink salmon escapement goals in Bristol Bay or Upper Cook Inlet.

^a Escapement goal reevaluated, point goal changed to a range.

^b Escapement goal reevaluated, point goal changed to a lower-bound goal.

^c Previous escapement goal reinstated.

^d Escapement goal reevaluated, goal range changed.

^e Escapement goal from 2001-2004 based on aerial surveys, escapement numbers in Table 2 are not comparable.

^f Escapement goal reevaluated, current goal based on escapement count over longer period during spawning season, escapement numbers in Table 2 are based on longer counting time.

^g Escapement goal reevaluated, goal range changed to a lower bound goal.

^h Escapement goal reevaluated, escapement goal in place prior to 2002 was reinstated. Escapement goal in place from 2002 to 2007 was based on escapement estimates using a different aerial survey index expansion method (see Otis and Szarzi 2007).

ⁱ Escapement goal reevaluated, upper bound eliminated, lower bound remanded the same.

^j Escapement goal reevaluated, goal type changed but goal range remained the same.

^k Aggregate goal established to replace individual district level goals.

^l 2004 and 2009 were identified as pre-peak/peak escapement years for Kvichak River sockeye salmon and evaluated against the 6-10 million escapement goal.

Table 7.—Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Arctic-Yukon-Kuskokwim Region.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
Chinook salmon	<u>Kuskokwim Area</u>									
	North (Main) Fork Goodnews River	Under	Met	Met	NS ^a	Over	NS	NS	NS	NS
	Middle Fork Goodnews River	Under	Under	Met	Over ^a	Over	Over ^b	Met	Met	Met
	Kanektok River	NS	Met	Met	Over ^a	Over	NS	NS	NS	Under
	Kogruklu River	Met	Met	Met	Over ^a	Over	Met	Met	Met	Met
	Kwethluk River	Met	Over	Over	Over	NA	Over ^c	Under	Under	Under
	Tuluksak River						Under	Under	Under	Under
	George River						Met	Under	Met	Under
	Kisaralik River	Met	Under	Met	Over ^a	Over	Over	Met	NS	Under
	Aniak River	Met	Met	Met	NS ^a	Over	Over	Over	NS	NS
	Salmon River (Aniak R)	Met	Met	Met	Over ^a	NS	Over	Met	NS	NS
	Holitna River	Under	NS	Met	Over ^a	Over	NS	Under	NS	Under
	Cheeneetnu River (Stony R)				Met	Met	NS	Under	Under	NS
	Gagaryah River (Stony R)				Met	Met	Over	Under	Met	Under
	Salmon River (Pitka Fork)	Under	Met	Under	Over ^a	Met	Met	Met	Met	Under
	<u>Yukon River</u>									
	East Fork Andreafsky River	Under	Under	Met	Over ^a	Under	Over	Under	Under	Met ^c
	West Fork Andreafsky River	Under	Met	Under	Met ^a	Met	Met	Under	Over	Met
	Anvik River	Met	Under	Met	Over ^a	Over	Met	Under	Under	Under
	Nulato River (forks combined)	Met	NS	Met	Under ^a	Met	Over	Under	Over	Under
	Gisasa River	Under	NS	Met	Met ^a	Met	Met	Met	Met	Eliminated
	Chena River	Over	Over	Over	NS	Met	Met	Met	Met	Under
	Salcha River	Met	Over	Over	Met	Over	Met	Under	Over	Met
	Canada Mainstem	Met ^d	Met	Met	Met	Met	Met ^d	Under ^d	Met	Under ^d
	<u>Norton Sound</u>									
	Fish River/Boston Creek	NS	Met	Met	Under ^e	NS	NS	NS	Under	Under
	Kwiniuk River	Over	Over	Over	Met ^f	Under	Under	Under	Met	Under
	North River (Unalakleet R)	Met	Met	Under	Under ^b	Under	Met	Under	Met	Met
	Shaktoolik River	Under	Under	Under	Under ^f	Under	Met	NS	Under	Under
Unalakleet/Old Woman River	Under	Under	Under	Under ^f	NS	Met	NS	Over	Met	

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Table 7.–Page–2 of 4.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010	
Chum salmon	<u>Kuskokwim Area</u>										
	Middle Fork Goodnews River	Met	Met	Met	Met ^b	Met	Met	Met	Met	Met	
	Kanektok River	NS	NS	NS	NS ^b	NS	NS	NS	NS	Met	
	Kogrukluk River	Met	Under	Under	Over ^a	Over	Over	Met	Over	Over	
	Aniak River	Met	Met	Met	Over ^a	Over	Over ^g	Met	Met	Met	
	<u>Yukon River Summer Chum</u>										
	East Fork Andreafsky River	Under	Under	Under	Under	Met	Met	Under	Under	Met ^e	
	Anvik River	Met	Under	Under	Met ^b	Over	Met	Met	Under	Met	
	Mainstem Yukon River	Over	Over	Over	Over	Over	Over	Over	Over	Over	
	<u>Yukon River Fall Chum</u>										
	Yukon River Drainage	Met	Over	Met	Over	Over	Over	Met	Met	Met ^f	
	Tanana River	Over	Over	Met	Over	Over	Over	ND	Over	Met	
	Delta River	Met	Over	Over	Over	Over	Over	Over	Met	Over	
	Toklat River	Met	Met	Over	NA	NA	NA	NA	NA	Eliminated	
	Upper Yukon River Tributaries	Under	Met	Met	Over	Over	Over	Met	NA	Met	
	Chandalar River	Met	Over	Met	Over	Over	Over	Over	Met	Over	
	Sheenjek River	Under	Under	Under	Over	Over	Met	Met	Met	Under	
	Fishing Branch River (Canada)	Under	Under	Under	Over	Under	Under	Under ^d	Met	Under	
	Yukon R. Mainstem (Canada)	Met	Met	Met	Met	Met	Met	Met	Met	Over ^d	
	<u>Norton Sound</u>										
	Subdistrict 1 Aggregate	Met	Under	Met	Over	Over	Over	Met	Under	Over	
	Sinuk River	Over	Under	Under	Met ^f	Met	Over	Under	Under	Eliminated	
	Nome River	Under	Under	Met	Over ^f	Over	Over	Under	Under	Over	
Bonanza River	Met	Under	Under	Over ^f	Under	Over	Under	Over	Eliminated		
Snake River	Over	Met	Met	Over ^f	Over	Over	Under	Under	Over		
Solomon River	Over	Under	Met	Over ^f	Over	Over	Under	Under	Eliminated		
Flambeau River	Over	Under	Over	Over ^f	Over	Over	Over	Under	Eliminated		
Eldorado River	Over	Under	Under	Over ^f	Over	Over	Met	Under	Over		
Niukluk River				Under	Under	Met	Under	Under	Met ^b		
Kwiniuk River	Over	Met	Under	Met	Over	Over	Under	Under	Over		
Tubutuluk River	NS	Under	NS	Under	NS	Under	NS	Under	Met		
Unalakleet/Old Woman River	NS	NS	NS	Under ^f	NS	Under	NS	Over	Over		

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Table 7.–Page 3 of 4.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
	<u>Kotzebue Sound</u>									
	Kotzebue Sound Aggregate									
	Noatak and Eli Rivers	NS	NS	Under	NS ^f	Under	NS ^b	Over	Met	NS
	Upper Kobuk w/ Selby River	NS	Met	Over	NS ^f	Over	NS ^b	Over	Over	NS
	Salmon River	NS	NS	NS	NS ^f	NS	NS ^b	NS	NS	NS
	Tutuksuk River	NS	NS	NS	Met ^f	NS	NS ^b	NS	NS	NS
	Squirrel River	NS	NS	NS	NS ^f	NS	NS ^b	NS	NS	NS
Coho salmon	<u>Kuskokwim Area</u>									
	Middle Fork Goodnews River				Met	Met	Met	Met	Met	Met
	Kogruklu River	Under	Met	Met	Met ^a	Met	Met	Over	Met	Met
	Kwethluk River									NA
	<u>Yukon River</u>									
	Delta Clearwater River	Met	Met	Met	Over ^a	Met	Met	Met	Met	Met
	<u>Norton Sound</u>									
	Kwiniuk River	NS	Met	Met	NS ^f	NS	Over	Over	NS	Over
	Niukluk River	Met	NS	Met	NS	NS	Met ^h	Over	Over	Over ^b
	North River (Unalakleet R.)	Met	NS	Over	Over ^f	NS	Over	Over	Over	Over
Pink salmon	<u>Norton Sound</u>									
	Nome River (odd year)				Met		Met		Met	
	Nome River (even year)	Over		Over	ⁱ	Met		Met		Met
	Kwiniuk River	Over	Over	Over	Met ⁱ	Met	Met	Met	Met	Met
	Niukluk River	Over	Over	Over	Met ⁱ	Met	Met	Met	Met	Met
	North River	Over	Over	Over	Met ⁱ	Met	Met	Met	Met	Met
Sockeye salmon	<u>Kuskokwim Area</u>									
	North (Main) Fork Goodnews River	Under	Met	Met	NS ^a	Over	NS	NS	NS	NS
	Middle Fork Goodnews River	Under	Met	Met	Over ^a	Over	Over ^b	Over	Met	Met

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Table 7.–Page 4 of 4.

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
	Kanektok River	NS	Met	Met	Over ^a	Over	NS	NS	NS	Met
	Kogrukluk River									Met
	<u>Norton Sound</u>									
	Salmon Lake/Grand Central River	Under	Over	Over	Over ^f	Over	Over	Over	Under	Under
	Glacial Lake	Under	Met	Met	Over ^f	Over	Met	Under	Under	Met

Note: NA = data not available; NS =no survey; ND = not determined yet. There are no escapement goals for pink salmon in Kuskokwim Area and Yukon River and there are no escapement goals for sockeye salmon in Yukon River.

^a Escapement goal reevaluated, lower-bound goal changed to a range.

^b Escapement goal reevaluated, goal value changed.

^c Previous escapement goal was based on aerial surveys, replaced with escapement goal based on weir counts. Escapements in Table 3 are weir counts.

^d Escapement goal revised by The United States and Canada Yukon River Joint Technical Committee (JTC).

^e Escapement goal reevaluated, goal range changed to a lower-bound goal.

^f Escapement goal reevaluated, goal type changed but goal value remained the same.

^g Previous escapement goal was based on Bendix and Biosonics sonar counts, replaced with escapement goal based on DIDSON sonar counts. Escapements in Table 3 are in DIDSON units (see Molyneaux and Brannian 2006).

^h Prior to 2007 escapement goal was based on escapements enumerated by aerial surveys of Niukluk and Ophir rivers. Escapements in Table 3 are weir counts.

ⁱ Escapement goal reevaluated, point goal changed to a lower-bound goal.

Table 8.—Assessment of whether escapements met (Met), exceeded (Over), or did not meet (Under) the escapement goal in place at the time of enumeration for salmon stocks in Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas).

Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
Chinook salmon	<u>AK Peninsula</u>									
	Nelson River	Over	Met	Over ^a	Over	Met	Met	Over	Under	Met
	<u>Chignik</u>									
	Chignik River	Over	Over	Over	Over	Over	Met	Met	Met	Over
	<u>Kodiak</u>									
	Karluk River	Met	Met ^a	Met	Met	Met	Under	Under	Under	Under
	Ayakulik River	Over	Over ^a	Over	Met	Under	Met	Under	Under	Met
Chum salmon	<u>AK Peninsula</u>									
	Northern District	Over	Met	Met	Under	Over	Over ^b	Met	Met	Met
	Northwestern District	Met ^a	Met	Over	Met	Met	Over ^b	Over	Under	Met
	Southeastern District	Met	Over	Over	Over	Over	Met	Over	Met	Under
	South Central District	Met	Under	Over	Over	Met	Met	Met	Under	Under
	Southwestern District	Over	Met	Met	Over	Met	Over	Met	Over	Met
	Unimak District	Met	Under	Under ^b	Met	Met	Met ^c	Met	Met	Met
	<u>Chignik</u>									
	Entire Chignik Area							Met ^d	Met	Met
	<u>Kodiak</u>									
	Mainland District	Met	Under	Met	Under ^e	Met	Under	Met ^f	Under	Met
Kodiak Archipelago Aggregate							Under ^d	Met	Met	
Coho salmon	<u>AK Peninsula</u>									
	Nelson River	Over	Over	Met ^c	Met	Met	Met	Met	Met	Under
	Thin Point Lake	Over	Over	Met ^c	Met	Met	Met	Met	Under	NA
	Ilnik River	Over	Over	Eliminated						Met ^g
	<u>Kodiak</u>									
	Pasagshak River	Over	Over	Over	Over ^a	Under	Met	Over	Met	Met
	Buskin River	Over	Over	Met	Over ^a	Over	Over	Over	Over	Met
	Olds River	Over	Over	Over	Over ^a	Met	Under	Under	Under	Under
American River	Over	Over	Over	Under ^a	Over	Under	Met	Met	Under	

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Species	System	2002	2003	2004	2005	2006	2007	2008	2009	2010
Pink salmon	<u>AK Peninsula</u>									
	Bechevin Bay Section (odd year)		Under	^e	Met		Met		Met	
	Bechevin Bay Section (even year)	Under		Met ^e		Met		Under		Under
	South Peninsula Total (odd year)			^d	Over		Met ^b		Met	
	South Peninsula Total (even year)			Over ^d		Met	^b	Met		Under
	<u>Chignik</u>									
	Entire Chignik Area (odd year)				Over ^d		Over		Over ^a	
	Entire Chignik Area (even year)				^d	Met		Over	^a	Met
	<u>Kodiak</u>									
	Mainland District	Over	Over	Met	Met ^h	Over	Met	Under	Met	Met
Kodiak Archipelago				Met ^d	Over	Met	Met	Met	Met	
Sockeye salmon	<u>AK Peninsula</u>									
	Cinder River	Met	Over	Over	Over	Over	Over ^a	Over	Over	Over
	Ilnik River	Met	Over	Over	Over	Over	Over	Met	Over	Met
	Meshik River	Over	Over	Over	Over	Over	Met ^a	Over	Over	Met ^a
	Sandy River	Met	Over	Under	Over	Met	Met ^a	Under	Met	Met
	Bear River Early Run	Over	Over	Over ^a	Over	Met	Met	Under	Met	Met
	Bear River Late Run	Over	Over	Under ^a	Over	Met	Over	Over	Met	Met
	Nelson River	Over	Over	Over ^a	Over	Met	Met	Met	Met	Met
	Christianson Lagoon	Met	Over	Over	Over	Met	Met	Over	Met	Met
	Swanson Lagoon	Met	Over	Over	Under	Under	Met ^a	Under	Under	Under
	North Creek	Over	Over	Over	Over	Met	Over	Over	Met	Over
	Orzinski Lake	Over	Over	Over	Over	Met	Under	Over	Over	Met
	Mortensen Lagoon	Met	Over	Over	Over	Over	Met	Met	Over	Over
	Thin Point Lake	Over	Over	Over	Met	Under	Met	Met	Over	Under
	McLees Lake	Over	Over	Eliminated ⁱ						Met ^g
	<u>Chignik</u>									
	Chignik River Early Run	Met	Met	Met	Met ^b	Met	Met	Met	Met	Over
	Chignik River Late Run	Over	Over	Met	Met	Over	Over	Met ^a	Met	Met
	<u>Kodiak</u>									
	Malina Creek	Over	Met	Met	Met ^a	Met	Met	Met	Met	Met
Afognak (Litnik) River	Under	Under	Under	Met ^a	Met	Met	Met	Met	Over	

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Table 8.–Page 3 of 3.

Species	System	2002	2003	2004	2005			2006	2007	2008
	Little River	Over	Over	Met	Eliminated			Under ^j	Under	Met
	Uganik Lake	Under	Met	Over	Eliminated			Met ^j	Met	Met
	Karluk River Early Run	Over	Over	Over	Over ^a	Met	Over	Under ^a	Under	Under
	Karluk River Late Run	Met	Over	Under	Over ^a	Met	Met	Under	Met	Met
	Ayakulik River	Met	Under	Met	Met ^a	Under	Met	Under	Met	Met
	Upper Station River Early Run	Under	Over	Over	Met ^a	Under	Met	Met	Met	Met
	Upper Station River Late Run	Met	Over	Met	Met ^a	Met	Met	Met	Met	Met
	Frazer Lake	Under	Over	Under	Met ^a	Met	Met	Met ^a	Met	Met
	Saltery Lake	Over	Over	Over	Met	Met	Met	Over	Over	Met
	Pasagshak River	Met	Over	Over	Over ^a	Met	Over	Over	Under	Met
	Buskin Lake	Over	Over	Over	Over	Over	Over	Under	Under	Met

Note: There are no coho salmon escapement goals in Chignik Area.

^a Escapement goal reevaluated, goal range changed.

^b Escapement goal reevaluated, goal type changed but goal range remained the same.

^c Escapement goal reevaluated, upper bound eliminated, lower bound remained the same.

^d Aggregate goal established to replace individual district level goals.

^e Escapement goal reevaluated, goal range changed to a lower bound goal.

^f Escapement goal reevaluated, lower bound goal changed.

^g Goal reestablished. New analysis.

^h Separate odd and even year goals were discontinued and a single goal established.

ⁱ Escapement goal prior to elimination in 2004 was based on escapement indices enumerated by peak aerial surveys, escapements on Table 4 are weir counts.

^j Previous escapement goal reestablished.

Table 9.—Southeast Region Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2002 to 2010.

	2002	2003	2004	2005	2006	2007	2008	2009	2010
CHINOOK SALMON									
Number Below	1	2	0	1	1	4	3	5	2
Number Met	5	5	7	7	7	6	7	5	7
Number Above	5	4	4	3	3	1	1	1	2
% Below	9	18	0	9	9	36	27	45	18
% Met	45	45	64	64	64	55	64	45	64
% Above	45	36	36	27	27	9	9	9	18
CHUM SALMON									
Number Below								5	2
Number Met								2	5
Number Above								1	1
% Below								63	25
% Met								25	63
% Above								13	13
COHO SALMON									
Number Below	0	0	0	2	0	3	0	0	0
Number Met	2	4	6	6	8	8	5	11	8
Number Above	8	6	3	2	5	2	6	2	5
% Below	0	0	0	20	0	23	0	0	0
% Met	20	40	67	60	62	62	45	85	62
% Above	80	60	33	20	38	15	55	15	38
PINK SALMON									
Number Below	0	0	1	0	0	0	1	0	0
Number Met	1	1	1	1	2	1	2	4	3
Number Above	1	3	2	3	2	3	0	0	0
% Below	0	0	25	0	0	0	33	0	0
% Met	50	25	25	25	50	25	67	100	100
% Above	50	75	50	75	50	75	0	0	0
SOCKEYE SALMON									
Number Below	4	0	1	2	2	4	12	5	1
Number Met	5	2	6	6	4	5	1	4	10
Number Above	3	11	6	5	7	4	0	3	2
% Below	33	0	8	15	15	31	92	42	8
% Met	42	15	46	46	31	38	8	33	77
% Above	25	85	46	38	54	31	0	25	15

Note: Blank cells indicate that there were no official escapement goals for that species in those particular years.

Table 10.—Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2002 to 2010.

	2002	2003	2004	2005	2006	2007	2008	2009	2010
CHINOOK SALMON									
Number Below	5	4	2	2	2	7	12	16	15
Number Met	15	9	9	16	17	18	12	12	7
Number Above	8	11	16	6	5	2	2	1	0
% Below	18	17	7	8	8	26	46	55	68
% Met	54	38	33	67	71	67	46	41	32
% Above	29	46	59	25	21	7	8	3	0
CHUM SALMON									
Number Below	2	1	1	3	2	4	2	3	3
Number Met	7	6	8	6	10	13	13	12	10
Number Above	9	11	9	9	6	2	4	4	5
% Below	11	6	6	17	11	21	11	16	17
% Met	39	33	44	33	56	68	68	63	56
% Above	50	61	50	50	33	11	21	21	28
COHO SALMON									
Number Below	0	0	0	0	0	0	0	1	2
Number Met	0	2	1	1	0	2	1	2	2
Number Above	4	2	3	3	3	2	3	1	0
% Below	0	0	0	0	0	0	0	25	50
% Met	0	50	25	25	0	50	25	50	50
% Above	100	50	75	75	100	50	75	25	0
PINK SALMON									
Number Below	0	0	1	0	1	1	1	4	3
Number Met	9	8	12	4	8	8	9	4	12
Number Above	11	13	8	18	13	9	8	10	2
% Below	0	0	5	0	5	6	6	22	18
% Met	45	38	57	18	36	44	50	22	71
% Above	55	62	38	82	59	50	44	56	12
SOCKEYE SALMON									
Number Below	4	2	4	4	2	2	5	5	4
Number Met	13	13	13	12	10	13	18	15	19
Number Above	12	14	12	13	17	14	7	11	8
% Below	14	7	14	14	7	7	17	16	13
% Met	45	45	45	41	34	45	60	48	61
% Above	41	48	41	45	59	48	23	35	26

Table 11.—Arctic-Yukon-Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2002 to 2010.

	2002	2003	2004	2005	2006	2007	2008	2009	2010
CHINOOK SALMON									
Number Below	9	6	5	5	4	2	14	7	15
Number Met	10	10	14	7	8	12	7	10	7
Number Above	2	4	4	10	9	8	1	4	0
% Below	43	30	22	23	19	9	64	33	68
% Met	48	50	61	32	38	55	32	48	32
% Above	10	20	17	45	43	36	5	19	0
SUMMER CHUM SALMON									
Number Below	1	9	6	3	3	2	7	10	0
Number Met	5	5	6	4	2	2	5	3	5
Number Above	6	0	2	9	10	11	3	4	7
% Below	8	64	43	19	20	13	47	59	0
% Met	42	36	43	25	13	13	33	18	42
% Above	50	0	14	56	67	73	20	24	58
YUKON RIVER SUMMER CHUM SALMON									
Number Below	1	2	2	1	0	0	1	2	0
Number Met	1	0	0	1	1	2	1	0	2
Number Above	1	1	1	1	2	1	1	1	1
% Below	33	67	67	33	0	0	33	67	0
% Met	33	0	0	33	33	67	33	0	67
% Above	33	33	33	33	67	33	33	33	33
YUKON RIVER FALL CHUM SALMON									
Number Below	3	2	2	0	1	1	1	0	2
Number Met	5	3	5	1	1	2	4	6	3
Number Above	1	4	2	7	6	5	2	1	3
% Below	33	22	22	0	13	13	14	0	25
% Met	56	33	56	13	13	25	57	86	38
% Above	11	44	22	88	75	63	29	14	38
COHO SALMON									
Number Below	1	0	0	0	0	0	0	0	0
Number Met	3	3	4	2	3	4	2	3	3
Number Above	0	0	1	2	0	2	4	2	3
% Below	25	0	0	0	0	0	0	0	0
% Met	75	100	80	50	100	67	33	60	50
% Above	0	0	20	50	0	33	67	40	50

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	2002	2003	2004	2005	2006	2007	2008	2009	2010
PINK SALMON									
Number Below	0	0	0	0	0	0	0	0	0
Number Met	0	0	0	4	4	4	4	4	4
Number Above	4	3	4	0	0	0	0	0	0
% Below	0	0	0	0	0	0	0	0	0
% Met	0	0	0	100	100	100	100	100	100
% Above	100	100	100	0	0	0	0	0	0
SOCKEYE SALMON									
Number Below	4	0	0	0	0	0	1	2	1
Number Met	0	4	4	0	0	1	0	1	4
Number Above	0	1	1	4	5	2	2	0	0
% Below	100	0	0	0	0	0	33	67	20
% Met	0	80	80	0	0	33	0	33	80
% Above	0	20	20	100	100	67	67	0	0

Table 12.—Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2002 to 2010.

	2002	2003	2004	2005	2006	2007	2008	2009	2010
CHINOOK SALMON									
Number Below	0	0	0	0	1	1	2	3	1
Number Met	1	2	1	2	2	3	1	1	2
Number Above	3	2	3	2	1	0	1	0	1
% Below	0	0	0	0	25	25	50	75	25
% Met	25	50	25	50	50	75	25	25	50
% Above	75	50	75	50	25	0	25	0	25
CHUM SALMON									
Number Below	0	3	1	2	0	1	1	3	2
Number Met	5	3	3	2	5	3	6	5	7
Number Above	2	1	3	3	2	3	2	1	0
% Below	0	43	14	29	0	14	11	33	22
% Met	71	43	43	29	71	43	67	56	78
% Above	29	14	43	43	29	43	22	11	0
COHO SALMON									
Number Below	0	0	0	1	1	2	1	2	3
Number Met	0	0	3	2	3	3	3	3	3
Number Above	7	7	3	3	2	1	2	1	0
% Below	0	0	0	17	17	33	17	33	50
% Met	0	0	50	33	50	50	50	50	50
% Above	100	100	50	50	33	17	33	17	0
PINK SALMON									
Number Below	1	1	0	0	0	0	2	0	2
Number Met	0	0	2	3	3	4	2	4	3
Number Above	1	1	1	2	2	1	1	1	0
% Below	50	50	0	0	0	0	40	0	40
% Met	0	0	67	60	60	80	40	80	60
% Above	50	50	33	40	40	20	20	20	0
SOCKEYE SALMON									
Number Below	4	2	5	1	4	1	8	5	3
Number Met	11	3	6	10	16	17	12	16	21
Number Above	14	24	17	15	6	8	8	7	5
% Below	14	7	18	4	15	4	29	18	10
% Met	38	10	21	38	62	65	43	57	72
% Above	48	83	61	58	23	31	29	25	17

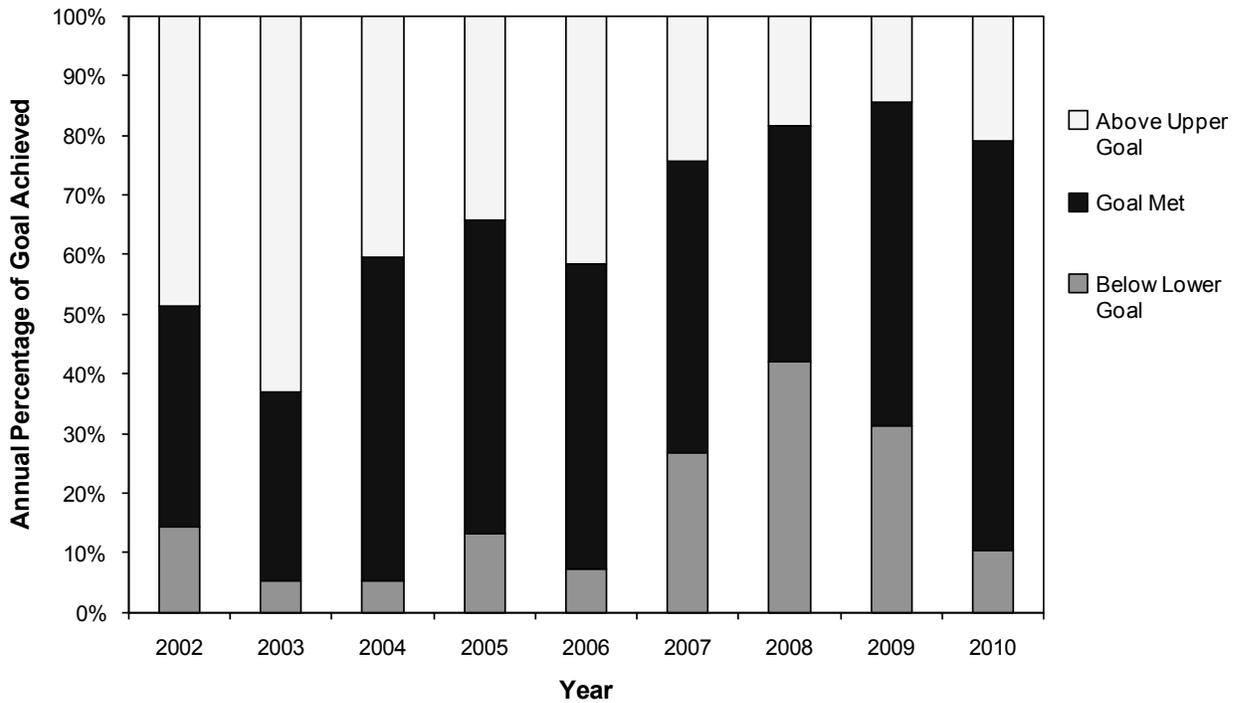


Figure 6.—Southeast Region salmon escapements compared against escapement goals for the years 2002 to 2010.

Table 13.—Summary of Southeast Region salmon escapements compared against escapement goals for the years 2002 to 2010.

Southeast Region	2002	2003	2004	2005	2006	2007	2008	2009	2010
Stocks with Escapement Data	35	38	37	38	41	41	38	48	48
Below Lower Goal									
Number	5	2	2	5	3	11	16	15	5
Percent	14%	5%	5%	13%	7%	27%	42%	31%	10%
Goal Met									
Number	13	12	20	20	21	20	15	26	33
Percent	37%	32%	54%	53%	51%	49%	39%	54%	69%
Above Upper Goal									
Number	17	24	15	13	17	10	7	7	10
Percent	49%	63%	41%	34%	41%	24%	18%	15%	21%

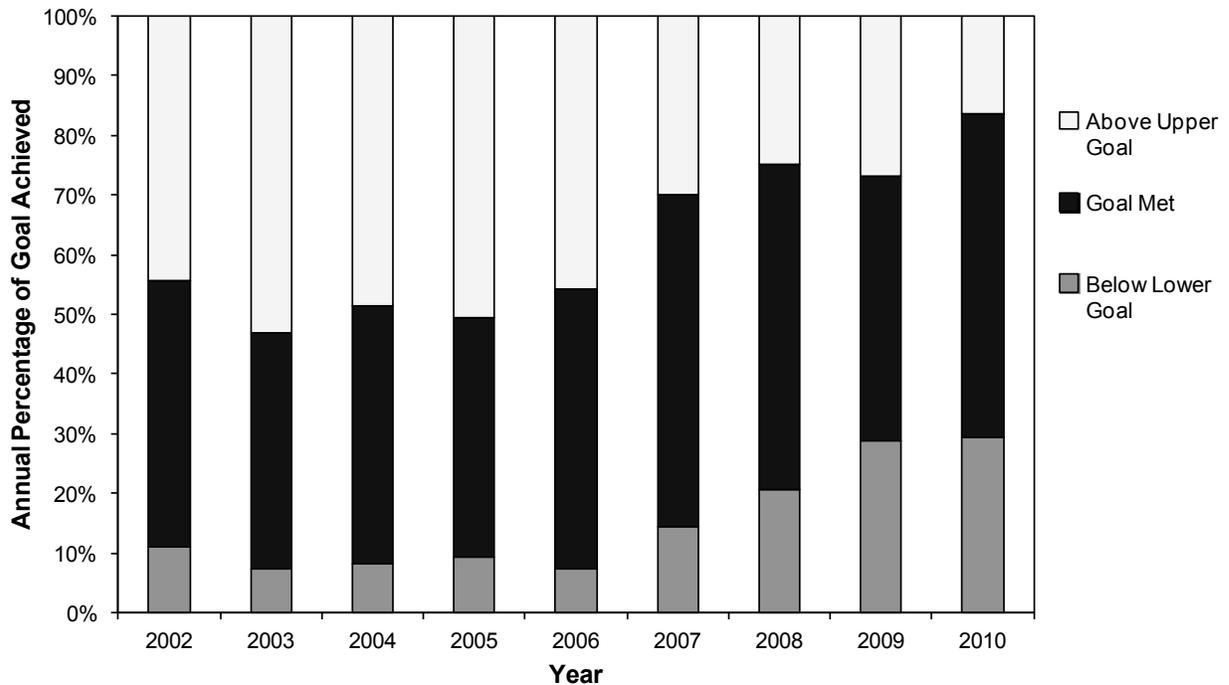


Figure 7.—Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) salmon escapements compared against escapement goals for the years 2002 to 2010.

Table 14.—Summary of Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) salmon escapements compared against escapement goals for the years 2002 to 2010.

Central Region	2002	2003	2004	2005	2006	2007	2008	2009	2010
Stocks with Escapement Data	99	96	99	97	96	97	97	101	92
Below Lower Goal									
Number	11	7	8	9	7	14	20	29	27
Percent	11%	7%	8%	9%	7%	14%	21%	29%	29%
Goal Met									
Number	44	38	43	39	45	54	53	45	50
Percent	44%	40%	43%	40%	47%	56%	55%	45%	54%
Above Upper Goal									
Number	44	51	48	49	44	29	24	27	15
Percent	44%	53%	48%	51%	46%	30%	25%	27%	16%

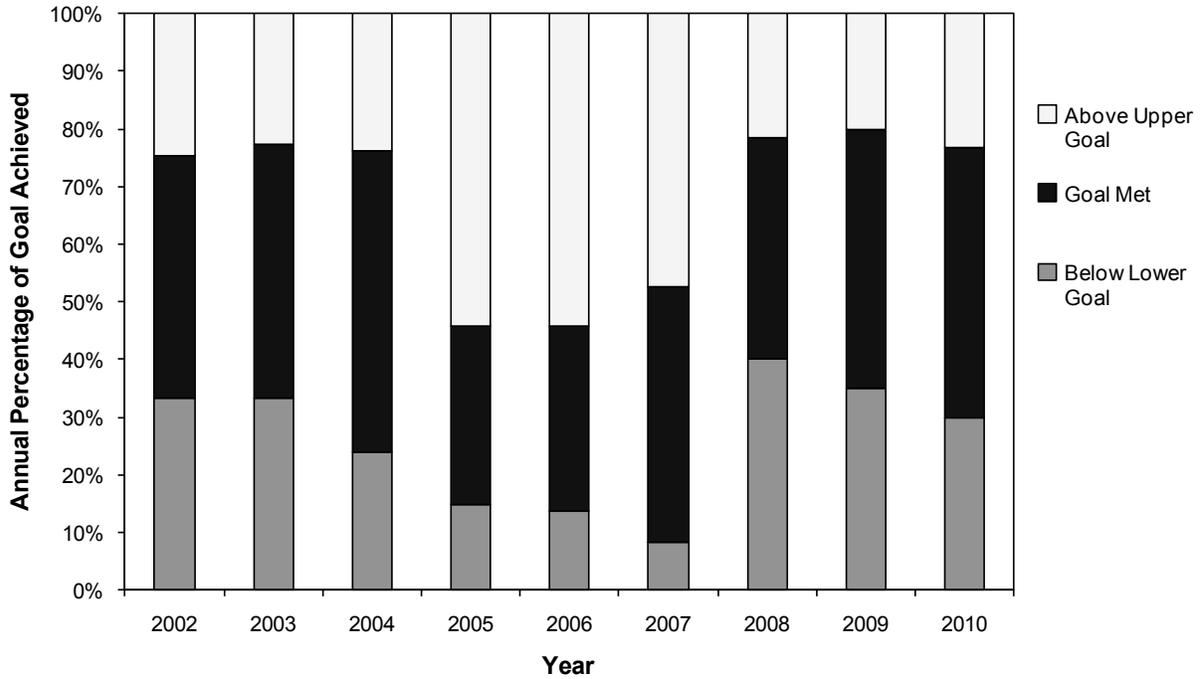


Figure 8.—Arctic-Yukon-Kuskokwim Region salmon escapements compared against escapement goals for the years 2002 to 2010.

Table 15.—Summary of Arctic-Yukon-Kuskokwim Region salmon escapements compared against escapement goals for the years 2002 to 2010.

AYK Region	2002	2003	2004	2005	2006	2007	2008	2009	2010
Stocks with Escapement Data	57	57	63	61	59	61	60	60	60
Below Lower Goal									
Number	19	19	15	9	8	5	24	21	18
Percent	33%	33%	24%	15%	14%	8%	40%	35%	30%
Goal Met									
Number	24	25	33	19	19	27	23	27	28
Percent	42%	44%	52%	31%	32%	44%	38%	45%	47%
Above Upper Goal									
Number	14	13	15	33	32	29	13	12	14
Percent	25%	23%	24%	54%	54%	48%	22%	20%	23%

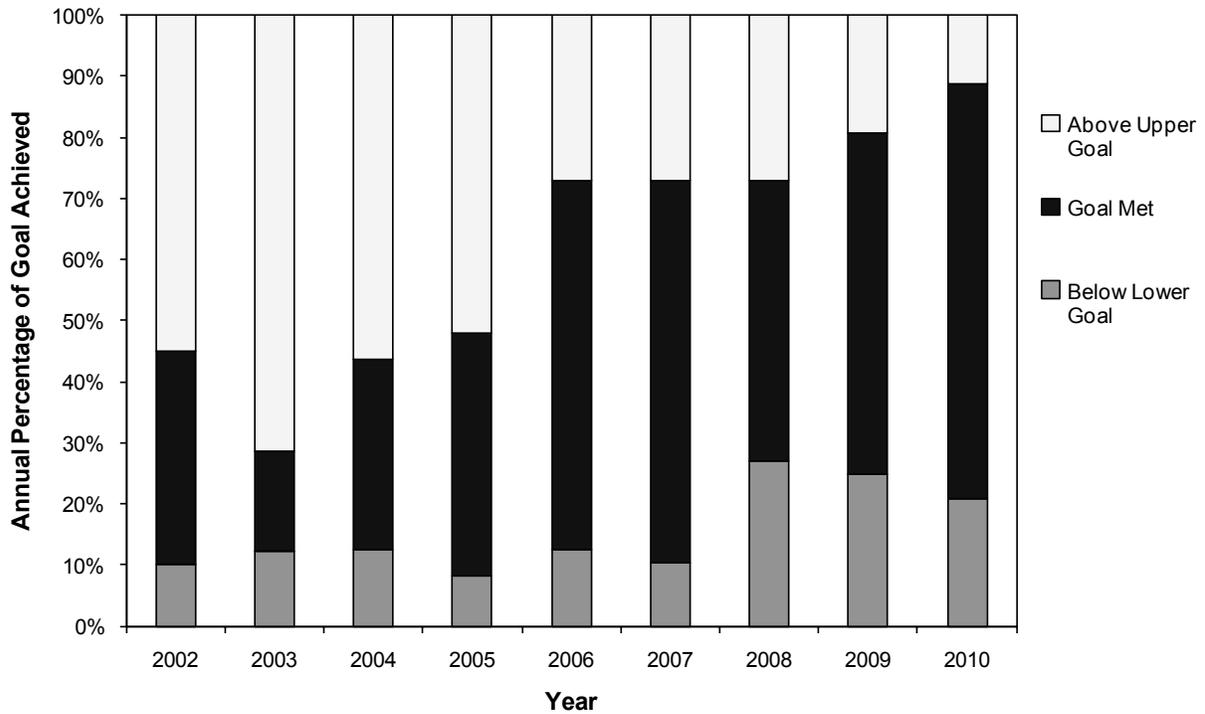


Figure 9.—Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) salmon escapements compared against escapement goals for the years 2002 to 2010.

Table 16.—Summary of Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) salmon escapements compared against escapement goals for the years 2002 to 2010.

Westward Region	2002	2003	2004	2005	2006	2007	2008	2009	2010
Stocks with Escapement Data	49	49	48	48	48	48	52	52	53
Below Lower Goal									
Number	5	6	6	4	6	5	14	13	11
Percent	10%	12%	13%	8%	13%	10%	27%	25%	21%
Goal Met									
Number	17	8	15	19	29	30	24	29	36
Percent	35%	16%	31%	40%	60%	63%	46%	56%	68%
Above Upper Goal									
Number	27	35	27	25	13	13	14	10	6
Percent	55%	71%	56%	52%	27%	27%	27%	19%	11%

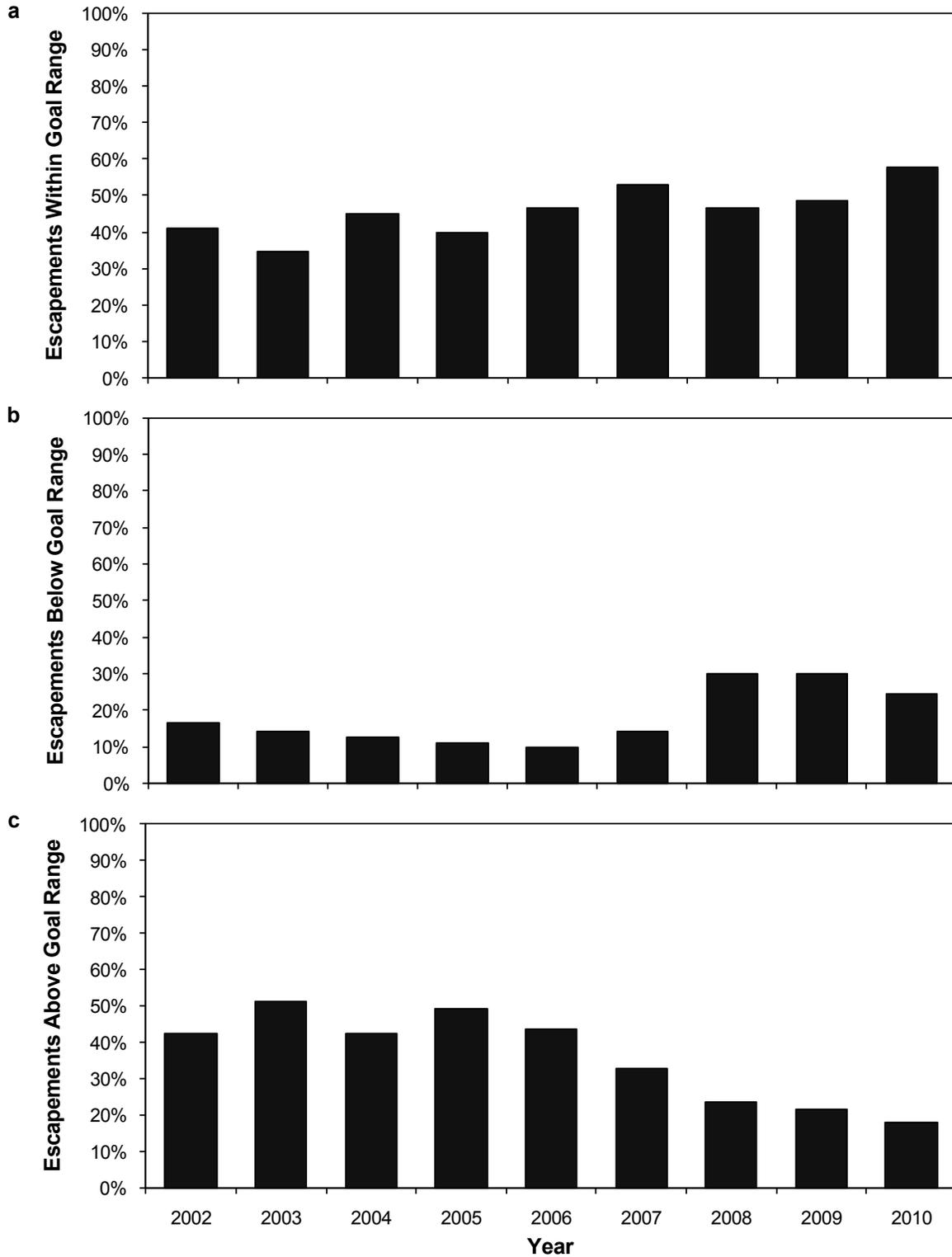


Figure 10.—Statewide summary by year of percentage of escapements that a) met the escapement goal (i.e., within goal range or above lower bound), b) were below lower bound of goal, or c) exceeded upper bound of goal range for the years 2002 to 2010.

Table 17.–Statewide summary of salmon stocks of concern in Alaska.

Region	System	Species	Level of Concern
Southeast	McDonald Lake	Sockeye	Management
Central	Kvichak River	Sockeye	Yield
	Susitna (Yentna) River	Sockeye	Yield
	Chuitna River ^a	Chinook	Management
	Theodore River ^a	Chinook	Management
	Lewis River ^a	Chinook	Management
	Alexander Creek ^a	Chinook	Management
	Willow Creek ^a	Chinook	Yield
	Goose Creek ^a	Chinook	Yield
Westward	Karluk River ^a	Chinook	Management
Arctic-Yukon-Kuskokwim	Yukon River	Chinook	Yield
	Norton Sound Sub-district 5 and 6	Chinook	Yield
	Norton Sound Sub-district 1, 2, and 3	Chum	Yield

^a Designated as stock of concern during the 2010/2011 Board of Fisheries meeting cycle.

Table 18.—Methods used to enumerate and develop escapement goals for Southeast Region Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method
CHINOOK SALMON		
Blossom River	Peak Aerial Survey ^a	SRA ^b
Keta River	Peak Aerial Survey	SRA
Unuk River	Mark-Recapture	SRA
Chickamin River	Peak Aerial Survey	SRA
Andrew Creek	Peak Aerial Survey (Expanded)	SRA
Stikine River	Mark-Recapture	SRA
King Salmon River	Peak Aerial Survey (Expanded)	SRA
Taku River	Mark-Recapture	SRA
Chilkat River	Mark-Recapture	Theoretical SRA
Klukshu (Alsek) River	Weir Count	SRA
Situk River	Weir Count	SRA
CHUM SALMON		
Southern Southeast Summer	Peak Aerial Survey	Percentile
Northern Southeast Inside Summer	Peak Aerial Survey	Percentile
Northern Southeast Outside Summer	Peak Aerial Survey	Percentile
Cholmondeley Sound Fall	Peak Aerial Survey	Percentile
Port Camden Fall	Peak Aerial Survey	Risk Analysis
Security Bay Fall	Peak Aerial Survey	Percentile
Excursion River Fall	Peak Aerial Survey	Percentile
Chilkat River Fall	Mark-Recapture, Fish Wheel	SRA
COHO SALMON		
Hugh Smith Lake	Weir Count	SRA
Taku River	Mark-Recapture	Agreement, SRA
Auke Creek	Weir Count	SRA
Montana Creek	Foot Survey	Theoretical SRA
Peterson Creek	Foot Survey	Theoretical SRA
Ketchikan Survey Index	Peak Aerial Survey	Theoretical SRA
Sitka Survey Index	Foot Survey	Theoretical SRA
Ford Arm Lake	Weir Count	SRA
Berners River	Mark-Recapture	SRA
Chilkat River	Mark-Recapture, Foot Survey	SRA
Lost River	Foot Survey	SRA
Situk River	Peak Aerial Survey	SRA
Tsiu/Tsivat Rivers	Peak Aerial Survey	SRA
PINK SALMON		
Southern Southeast	Peak Aerial Survey	Yield Analysis
Northern Southeast Inside	Peak Aerial Survey	Yield Analysis
Northern Southeast Outside	Peak Aerial Survey	Yield Analysis
Situk River (even-year)	Weir Count	SRA
Situk River (odd-year)	Weir Count	SRA

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System	Enumeration Method	Goal Development Method
SOCKEYE SALMON		
Hugh Smith Lake	Weir Count	Risk Analysis, Theoretical SRA
McDonald Lake	Expanded Foot Survey	SRA
Mainstem Stikine River	Mark-Recapture	Professional Judgement (Transboundary Technical Committee, Pacific Salmon Commission)
Tahltan Lake	Weir Count	SRA
Speel Lake	Weir Count	SRA
Taku River	Mark-Recapture	Professional Judgement (Transboundary Technical Committee, Pacific Salmon Commission)
Redoubt Lake	Weir Count	SRA
Chilkat Lake	Sonar, Mark-Recapture	SRA
Chilkoot Lake	Weir Count	SRA
East Alsek-Doame River	Peak Aerial Survey	SRA
Klukshu River	Weir Count	SRA
Lost River	Foot/Boat Survey	Percentile
Situk River	Weir Count	SRA

^a One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.

^b SRA = Spawner-recruit analysis.

Table 19.–Methods used to enumerate and develop escapement goals for Central Region (Bristol Bay, Cook Inlet, and Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method
CHINOOK SALMON		
<i><u>Bristol Bay</u></i>		
Nushagak River	Sonar	SRA ^a , Yield Analysis
Togiak River	Single Aerial Survey ^b	Risk Analysis
Naknek River	Single Aerial Survey	Risk Analysis
Alagnak River	Single Aerial Survey	Risk Analysis
Egegik River	Single Aerial Survey	Risk Analysis
<i><u>Upper Cook Inlet</u></i>		
Alexander Creek	Single Aerial Survey	Percentile
Campbell Creek	Single Foot Survey	Percentile
Chuitna River	Single Aerial Survey	Percentile
Chulitna River	Single Aerial Survey	Percentile
Clear (Chunilna) Creek	Single Aerial Survey	Percentile
Crooked Creek	Weir Count	Percentile
Deshka River	Weir Count	SRA
Goose Creek	Single Aerial Survey	Percentile
Kenai River - Early Run	Sonar	SRA
Kenai River - Late Run	Sonar	SRA
Lake Creek	Single Aerial Survey	Percentile
Lewis River	Single Aerial Survey	Percentile
Little Susitna River	Single Aerial Survey	Percentile
Little Willow Creek	Single Aerial Survey	Percentile
Montana Creek	Single Aerial Survey	Percentile
Peters Creek	Single Aerial Survey	Percentile
Prairie Creek	Single Aerial Survey	Percentile
Sheep Creek	Single Aerial Survey	Percentile
Talachulitna River	Single Aerial Survey	Percentile
Theodore River	Single Aerial Survey	Percentile
Willow Creek	Single Aerial Survey	Percentile
<i><u>Lower Cook Inlet</u></i>		
Anchor River	Sonar, Weir Count	SRA
Deep Creek	Single Aerial Survey	Percentile
Ninilchik River	Weir Count	Percentile
<i><u>Prince William Sound</u></i>		
Copper River	Mark-Recapture	Empirical Observation
CHUM SALMON		
<i><u>Bristol Bay</u></i>		
Nushagak River	Sonar	Risk Analysis
<i><u>Upper Cook Inlet</u></i>		
Clearwater Creek	Peak Aerial Survey ^c	Percentile
<i><u>Lower Cook Inlet</u></i>		
Port Graham River	Multiple Foot Surveys ^d	Percentile
Dogfish Lagoon	Multiple Foot Surveys	Percentile

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Table 19.–Page 2 of 4.

System	Enumeration Method	Goal Development Method
Rocky River	Multiple Foot Surveys	Percentile
Port Dick Creek	Multiple Aerial or Foot Surveys	Percentile
Island Creek	Multiple Aerial or Foot Surveys	Percentile
Big Kamishak River	Multiple Aerial Surveys	Percentile
Little Kamishak River	Multiple Aerial Surveys	Percentile
McNeil River	Multiple Aerial Surveys	Percentile
Bruin River	Multiple Aerial Surveys	Percentile
Ursus Cove	Multiple Aerial Surveys	Percentile
Cottonwood Creek	Multiple Aerial Surveys	Percentile
Iniskin Bay	Multiple Aerial Surveys	Percentile
<u>Prince William Sound</u>		
Eastern District	Multiple Aerial Surveys	Risk Analysis
Northern District	Multiple Aerial Surveys	Risk Analysis
Coghill District	Multiple Aerial Surveys	Risk Analysis
Northwestern District	Multiple Aerial Surveys	Risk Analysis
Southeastern District	Multiple Aerial Surveys	Risk Analysis
COHO SALMON		
<u>Bristol Bay</u>		
There are no coho salmon stocks with escapement goals in Bristol Bay		
<u>Upper Cook Inlet</u>		
Jim Creek	Single Foot Survey	Percentile
Little Susitna River	Weir Count	Percentile
<u>Lower Cook Inlet</u>		
There are no coho salmon stocks with escapement goals in Lower Cook Inlet		
<u>Prince William Sound</u>		
Copper River Delta	Peak Aerial Survey	Percentile
Bering River	Peak Aerial Survey	Percentile
PINK SALMON		
<u>Bristol Bay</u>		
There are no pink salmon stocks with escapement goals in Bristol Bay		
<u>Upper Cook Inlet</u>		
There are no pink salmon stocks with escapement goals in Upper Cook Inlet		
<u>Lower Cook Inlet</u>		
Humpy Creek	Multiple Foot Surveys	Percentile
China Poot Creek	Multiple Foot Surveys	Percentile
Tutka Creek	Multiple Foot Surveys	Percentile
Barabara Creek	Multiple Foot Surveys	Percentile
Seldovia Creek	Multiple Foot Surveys	Percentile
Port Graham River	Multiple Foot Surveys	Percentile
Port Chatham	Multiple Foot Surveys	Percentile
Windy Creek Right	Multiple Foot Surveys	Percentile
Windy Creek Left	Multiple Foot Surveys	Percentile
Rocky River	Multiple Foot Surveys	Percentile
Port Dick Creek	Multiple Aerial or Foot Surveys	Percentile

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System	Enumeration Method	Goal Development Method
Island Creek	Multiple Aerial or Foot Surveys	Percentile
S. Nuka Island Creek	Multiple Aerial or Foot Surveys	Percentile
Desire Lake Creek	Multiple Aerial Surveys	Percentile
Bear and Salmon Creeks	Multiple Foot Surveys	Percentile
Thumb Cove	Multiple Foot Surveys	Percentile
Humpy Cove	Multiple Foot Surveys	Percentile
Tonsina Creek	Multiple Foot Surveys	Percentile
Bruin River	Multiple Aerial Surveys	Percentile
Sunday Creek	Multiple Aerial Surveys	Percentile
Brown's Peak Creek	Multiple Aerial Surveys	Percentile
<u>Prince William Sound</u>		
All Districts Combined (even year)	Multiple Aerial Surveys	Yield Analysis
All Districts Combined (odd year)	Multiple Aerial Surveys	Yield Analysis
SOCKEYE SALMON		
<u>Bristol Bay</u>		
Kvichak River	Tower Count	SRA, Yield Analysis
Alagnak River	Tower Count	Risk Analysis
Naknek River	Tower Count	SRA, Yield Analysis
Egegik River	Tower Count	SRA, Yield Analysis
Ugashik River	Tower Count	SRA, Yield Analysis
Wood River	Tower Count	SRA, Yield Analysis
Igushik River	Tower Count	SRA, Yield Analysis
Nushagak River	Sonar	SRA, Yield Analysis
Togiak River	Tower Count	SRA, Yield Analysis
<u>Upper Cook Inlet</u>		
Crescent River	Sonar	SRA
Fish Creek (Knik)	Weir Count	Percentile
Kasilof River	Sonar	SRA
Kenai River	Sonar	Brood Interaction Simulation Model
Packers Creek	Weir Count	Percentile
Russian River - Early Run	Weir Count	Percentile
Russian River - Late Run	Weir Count	Percentile
Yentna River	Sonar	Percentile
Chelatna Lake	Weir Count	Percentile
Judd Lake	Weir Count	Percentile
Larson Lake	Weir Count	Percentile
<u>Lower Cook Inlet</u>		
English Bay	Peak Aerial Survey, Weir Count	Percentile
Delight Lake	Peak Aerial Survey, Weir Count	Percentile
Desire Lake	Peak Aerial Survey, Weir Count	Percentile
Bear Lake	Weir Count	Percentile
Aialik Lake	Peak Aerial Survey	Percentile
Mikfik Lake	Peak Aerial Survey	Percentile
Chenik Lake	Peak Aerial Survey, Weir Count	Percentile
Amakdedori Creek	Peak Aerial Survey	Percentile

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Table 19.–Page 4 of 4.

System	Enumeration Method	Goal Development Method
<i>Prince William Sound</i>		
Upper Copper River	Sonar	SRA
Copper River Delta	Peak Aerial Survey	SRA
Bering River	Peak Aerial Survey	Percentile
Coghill Lake	Weir Count	Percentile
Eshamy Lake	Weir Count	SRA

^a SRA = Spawner-recruit analysis.

^b Single survey done around time of presumed peak of the run with no expansion of counts.

^c Multiple aerial surveys are attempted throughout the run. Peak count is used to index the escapement.

^d Multiple surveys throughout run (at least 1 per week). Area under the curve method (AUC) used to estimate annual escapement.

Table 20.—Methods used to enumerate and develop escapement goals for Arctic-Yukon-Kuskokwim Region Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method
CHINOOK SALMON		
<u>Kuskokwim Area</u>		
North (Main) Fork Goodnews R.	Single Aerial Survey ^a	Percentile
Middle Fork Goodnews River	Weir Count	SRA ^b
Kanektok River	Single Aerial Survey	Percentile
Kogruklu River	Weir Count	Percentile
Kwethluk River	Weir Count	Percentile
Tuluksak River	Weir Count	Percentile
George River	Weir Count	Percentile
Kisaralik River	Single Aerial Survey	Percentile
Aniak River	Single Aerial Survey	Percentile
Salmon River (Aniak R)	Single Aerial Survey	Percentile
Holitna River	Single Aerial Survey	Percentile
Cheeneetnuk River (Stony R)	Single Aerial Survey	Percentile
Gagaryah River (Stony R)	Single Aerial Survey	Percentile
Salmon River (Pitka Fork)	Single Aerial Survey	Percentile
<u>Yukon River</u>		
East Fork Andreafsky River	Weir Count	Percentile
West Fork Andreafsky River	Peak Aerial Survey ^c	Percentile
Anvik River	Peak Aerial Survey	Percentile
Nulato River (forks combined)	Peak Aerial Survey	Percentile
Chena River	Tower, Mark-Recapture	SRA
Salcha River	Tower, Mark-Recapture	SRA
Canada Mainstem	Sonar	Agreement (U.S./Canada Joint Technical Committee)
<u>Norton Sound</u>		
Fish River/Boston Creek	Peak Aerial Survey	Percentile
Kwiniuk River	Tower Count	SRA
North River (Unalakleet R)	Tower Count	Percentile
Shaktoolik River	Peak Aerial Survey	Theoretical SRA
Unalakleet/Old Woman River	Peak Aerial Survey	Theoretical SRA
CHUM SALMON		
<u>Kuskokwim Area</u>		
Middle Fork Goodnews River	Weir Count	Percentile
Kanektok River	Single Aerial Survey	Percentile
Kogruklu River	Weir Count	Percentile
Aniak River	Sonar	Percentile
<u>Yukon River Summer Chum</u>		
East Fork Andreafsky River	Weir Count	SRA
Anvik River	Sonar	SRA
Mainstem Yukon River	NA	NA
<u>Yukon River Fall Chum</u>		
Yukon River Drainage	Calculated - Multiple Surveys	SRA
Tanana River	Mark-Recapture	SRA

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Table 20.–Page 2 of 3.

System	Enumeration Method	Goal Development Method
Delta River	Multiple Foot Surveys	Proportion of Tanana River Goal
Upper Yukon River Tributaries	Sonar and Weir Count	SRA
Chandalar River	Sonar	Proportion of Upper Yukon River Tributaries Goal
Sheenjok River	Sonar	Proportion of Upper Yukon River Tributaries Goal
Fishing Branch River (Canada)	Weir Count	Agreement (U.S./Canada Joint Technical Committee) IMEG Percentile
Yukon R. Mainstem (Canada)	Mark-Recapture	Agreement (U.S./Canada Joint Technical Committee) IMEG SRA
<u>Norton Sound</u>		
Subdistrict 1 Aggregate	Calculated - Multiple Surveys	SRA
Nome River	Weir Count	Proportion of Aggregate Goal
Snake River	Tower/Weir Count	Proportion of Aggregate Goal
Eldorado River	Peak Aerial Survey (Expanded)	Proportion of Aggregate Goal
Niukluk River	Tower Count	Risk Analysis
Kwiniuk River	Tower Count	SRA
Tubutuluk River	Peak Aerial Survey (Expanded)	SRA
Unalakleet/Old Woman River	Peak Aerial Survey	Empirical Observation
<u>Kotzebue Sound</u>		
Kotzebue Sound Aggregate	Peak Aerial Survey (Expanded)	SRA
Noatak and Eli Rivers	Peak Aerial Survey	Proportion of Aggregate Goal
Upper Kobuk w/ Selby River	Peak Aerial Survey	Proportion of Aggregate Goal
Salmon River	Peak Aerial Survey	Proportion of Aggregate Goal
Tutuksuk River	Peak Aerial Survey	Proportion of Aggregate Goal
Squirrel River	Peak Aerial Survey	Proportion of Aggregate Goal
COHO SALMON		
<u>Kuskokwim Area</u>		
Middle Fork Goodnews River	Weir Count	Percentile
Kogruklu River	Weir Count	Percentile
Kwethluk River	Weir Count	Empirical Observation
<u>Yukon River</u>		
Delta Clearwater River	Boat Survey	Percentile
<u>Norton Sound</u>		
Kwiniuk River	Peak Aerial Survey	Theoretical SRA
Niukluk River	Tower Count	Percentile
North River (Unalakleet R.)	Peak Aerial Survey	Theoretical SRA
PINK SALMON		
<u>Kuskokwim Area</u>		
There are no escapement goals for pink salmon in the Kuskokwim Management Area		
<u>Yukon River</u>		
There are no escapement goals for pink salmon in the Yukon River drainage		
<u>Norton Sound</u>		
Nome River (odd year)	Weir Count	Empirical Observation
Nome River (even year)	Weir Count	Empirical Observation

-continued-

Table 20.–Page 3 of 3.

System	Enumeration Method	Goal Development Method
Kwiniuk River	Tower Count	Empirical Observation
Niukluk River	Tower Count	Empirical Observation
North River	Tower Count	Empirical Observation
SOCKEYE SALMON		
<u>Kuskokwim Area</u>		
North (Main) Fork Goodnews River	Single Aerial Survey	Percentile
Middle Fork Goodnews River	Weir Count	SRA
Kanektok River	Single Aerial Survey	Percentile
Kogrukluk River	Weir Count	Percentile
<u>Yukon River</u>		
There are no escapement goals for Sockeye in the Yukon River drainage		
<u>Norton Sound</u>		
Salmon Lake/Grand Central River	Peak Aerial Survey	Empirical Observation
Glacial Lake	Peak Aerial Survey	Empirical Observation

Note: NA = data not available.

^a Typically single survey done around time of presumed peak of the run with no expansion of counts.

^b SRA = Spawner-recruit analysis.

^c One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.

Table 21.–Methods used to enumerate and develop escapement goals for Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik areas) Chinook, chum, coho, pink, and sockeye salmon stocks.

System	Enumeration Method	Goal Development Method
CHINOOK SALMON		
<u>AK Peninsula</u>		
Nelson River	Weir, Peak Aerial Survey ^a	Spawning Habitat Model, SRA ^b
<u>Chignik</u>		
Chignik River	Weir Count	SRA
<u>Kodiak</u>		
Karluk River	Weir Count	SRA
Ayakulik River	Weir Count	SRA
CHUM SALMON		
<u>AK Peninsula</u>		
Northern District	Peak Aerial Survey	SRA
Northwestern District	Peak Aerial Survey	SRA
Southeastern District	Peak Aerial Survey	Percentile
South Central District	Peak Aerial Survey	Percentile
Southwestern District	Peak Aerial Survey	Percentile
Unimak District	Peak Aerial Survey	Risk Analysis
<u>Chignik</u>		
Entire Chignik Area	Peak Aerial Survey	Risk Analysis
<u>Kodiak</u>		
Mainland District	Peak Aerial Survey	Percentile, Risk Analysis
Kodiak Archipelago Aggregate	Peak Aerial Survey	Percentile
COHO SALMON		
<u>AK Peninsula</u>		
Nelson River	Peak Aerial Survey	Risk Analysis
Thin Point Lake	Peak Aerial Survey	Empirical Observation
Ilnik River	Peak Aerial Survey	Risk Analysis
<u>Chignik</u>		
There are no coho salmon stocks with escapement goals in Chignik Area		
<u>Kodiak</u>		
Pasagshak River	Foot Survey	Theoretical SRA
Buskin River	Weir Count	SRA
Olds River	Foot Survey	Theoretical SRA
American River	Foot Survey	Theoretical SRA
PINK SALMON		
<u>AK Peninsula</u>		
Bechevin Bay Section (odd year)	Peak Aerial Survey	Risk Analysis
Bechevin Bay Section (even year)	Peak Aerial Survey	Risk Analysis
South Peninsula Total (odd year)	Peak Aerial Survey	SRA
South Peninsula Total (even year)	Peak Aerial Survey	SRA
<u>Chignik</u>		
Entire Chignik Area (odd year)	Peak Aerial Survey	Yield Analysis
Entire Chignik Area (even year)	Peak Aerial Survey	Yield Analysis

-continued-

Table 21.–Page 2 of 2.

System	Enumeration Method	Goal Development Method
<u>Kodiak</u>		
Mainland District	Peak Aerial Survey	Conditional Sustained Yield Analysis
Kodiak Archipelago	Peak Aerial Survey	Conditional Sustained Yield Analysis
SOCKEYE SALMON		
<u>AK Peninsula</u>		
Cinder River	Peak Aerial Survey	Percentile Percentile, Euphotic Volume Model, Zooplankton Model
Ilnik River	Weir Count	Model
Meshik River	Peak Aerial Survey	Percentile
Sandy River	Weir Count	Percentile
Bear River Early Run	Weir Count	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area
Bear River Late Run	Weir Count	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area
Nelson River	Weir Count	SRA
Christianson Lagoon	Peak Aerial Survey	Spawning Habitat Model
Swanson Lagoon	Peak Aerial Survey	Percentile
North Creek	Peak Aerial Survey	Percentile
Orzinski Lake	Weir Count	Percentile
Mortensen Lagoon	Peak Aerial Survey	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area
Thin Point Lake	Peak Aerial Survey	Spawning Habitat Model, Percentile, Euphotic Volume Model, Zooplankton Model, Lake Surface Area
McLees Lake	Weir Count	Percentile
<u>Chignik</u>		
Chignik River Early Run	Weir Count	Yield Analysis, Euphotic Volume Model, Zooplankton Model
Chignik River Late Run	Weir Count	SRA, Euphotic Volume Model, Zooplankton Model
<u>Kodiak</u>		
Malina Creek	Peak Aerial Survey	Percentile, Zooplankton Model
Afognak (Litnik) River	Weir Count	SRA
Little River	Peak Aerial Survey	Risk Analysis
Uganik Lake	Peak Aerial Survey	Percentile
Karluk River Early Run	Weir Count	SRA
Karluk River Late Run	Weir Count	SRA
Ayakulik River	Weir Count	SRA, Yield Analysis
Upper Station River Early Run	Weir Count	Percentile
Upper Station River Late Run	Weir Count	SRA
Frazer Lake	Weir Count	SRA
Saltery Lake	Weir Count	SRA
Pasagshak River	Peak Aerial Survey	Percentile, Risk Analysis
Buskin Lake	Weir Count	Empirical Observation

^a One or more aerial surveys are attempted during the peak of the run. Peak count is used to index the escapement.

^b SRA = Spawner-recruit analysis.

APPENDIX A

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

Division of Commercial Fisheries
Division of Sport Fish

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MEMORANDUM

TO:  John Hilsinger, Director
Division of Commercial Fisheries

DATE: October 13, 2010

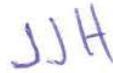
And

Charles O. Swanton, Director 
Division of Sport Fish

FROM: Steve Honnold, Regional Supervisor 
Division of Commercial Fisheries
Region IV – Kodiak

SUBJECT: Alaska Peninsula and
Aleutian Islands
Escapement Goal Memo

And


James J. Hasbrouck, Regional Supervisor
Division of Sport Fish
Region II – Anchorage

This memorandum summarizes the escapement goal recommendations for the Alaska Peninsula and Aleutian Islands Management Area (Area M), after extensive review of existing goals as part of the 2009/2010 Board of Fisheries (board) cycle for Area M. This review was based on the *Policy for Statewide Salmon Escapement Goals* (EGP; 5 AAC 39.223) and the *Policy for the Management of Sustainable Salmon Fisheries* (SSFP; 5 AAC 39.222), which were enacted to ensure that the state's salmon stocks be conserved, managed, and developed using the sustained yield principle. The most previous review of Area M escapement goals was in 2006, when Honnold et al. (2007) reviewed all 27 goals then in existence, leaving 17 unchanged, changing 5, reclassifying 4 from Biological Escapement Goals (BEGs) to Sustainable Escapement Goals (SEGs), and eliminating 1. This resulted in 26 escapement goals for Area M: 1 BEG for Chinook salmon, 1 BEG and 12 SEGs for sockeye salmon, 2 SEGs for coho salmon, 4 aggregate SEGs for pink salmon, and 6 aggregate SEGs for chum salmon.

In February 2009, an interdivisional team, including staff from the Divisions of Commercial Fisheries and Sport Fish, was formed to review the 26 existing salmon escapement goals in Area M. The team's objectives were to review each existing goal, to recommend maintaining or

changing goals, to develop goals for systems without goals, if appropriate, and to document this review and subsequent recommendations in a report (published as Witteveen et al. 2009).

The review team determined the appropriate goal type for each Area M salmon stock with an existing goal, based on the quality and quantity of available data, and the appropriate methods to evaluate the escapement goals (Witteveen et al. 2009). If a sufficient time series of escapement and total return estimates were available and the data contained sufficient information to provide a scientifically defensible, accurate estimate of the escapement with the greatest potential to produce maximum sustained yield (S_{msy}), then the data were considered sufficient to attempt to develop a BEG (as defined in the SSFP). If data were not sufficient to estimate a BEG, they were used to establish an SEG (also as defined in the SSFP).

For the current review, we examined stock assessment data for 10 North Peninsula sockeye salmon stocks (including early and late runs for Bear Lake sockeye salmon), 1 North Peninsula Chinook salmon stock, 3 South Peninsula sockeye salmon stocks, 1 Aleutian Islands sockeye salmon stock, 1 South Peninsula coho salmon stock, 2 North Peninsula coho salmon stocks, 2 South Peninsula pink salmon aggregate stocks, 2 North Peninsula pink salmon aggregate stocks, 4 South Peninsula chum salmon aggregate stocks, and 2 North Peninsula chum salmon aggregate stocks (Table 1; Figure 1). We conducted our review similarly to the 2006 review, updating previous analyses to include new stock assessment data from 2006 through 2008 (Table 1).

We did not review or analyze data for most stocks in which goals were eliminated after reviews in 2003 (Nelson et al. 2006) and 2006 (Honnold et al. 2007). We reviewed sockeye salmon data from McLees Lake, in the Aleutian Islands, even though the goal was eliminated in 2003 because the U.S. Fish and Wildlife Service has operated a weir at this system since 2001, and there was thus the potential for data sufficient to develop an escapement goal.

After analyzing available data for each stock, the team estimated escapement goals, compared these estimates with the current goals, and then made recommendations to establish new goals or maintain (no change), change, or eliminate the current goals. The approach, methods, data, and final recommendations were described in detail in a department Fishery Manuscript report (Witteveen et al. 2009) presented at the board meeting in February 2010. These recommendations are presented below, for your final approval.

Chinook salmon

The team recommends that the current Nelson River Chinook salmon BEG of 2,400 to 4,400, as established in 2003, should remain unchanged. Recent escapements were similar to historical counts and the team concluded that further analysis was not necessary.

Sockeye salmon

Of the 13 Area M sockeye salmon escapement goals, the team recommends that 12 should remain unchanged and 1 should be changed. The current Meshik River sockeye salmon escapement goal of 20,000 to 60,000 fish does not consider escapement to Red Bluff and Yellow Bluff creeks, which contribute a substantial number of fish to this system and cannot be managed separately from Meshik River sockeye salmon escapement. Therefore, the Meshik River sockeye salmon escapement goal was reanalyzed with the inclusion of the escapement data for Red Bluff and Yellow Bluff creeks. The team recommends that the SEG be changed to

25,000 to 100,000 fish, based on an analysis using the percentile method (Bue and Hasbrouck, *unpublished*).

After examining the McLees Lake sockeye salmon weir data and historical aerial survey data, the team decided that there were sufficient data to develop a goal based on weir counts. The team agreed that if a counting weir was in place a SEG of 10,000 to 60,000 fish would be implemented, as determined using the percentile method (Bue and Hasbrouck, *unpublished*). Because escapement estimates from aerial surveys were found to be inconsistent with weir counts for McLees Lake sockeye salmon, the team agreed that there should be no goal if a weir was not in place. There is currently no funding to operate the weir after 2011.

Coho salmon

The team recommends no change to the current Thin Point Lake coho salmon lower bound SEG of 3,000 and the current Nelson River coho salmon lower bound SEG of 18,000 because there is no recent information to warrant changes. The team recommends a lower bound SEG of 9,000 coho salmon for the Ilnik River, using the risk analysis method (Bernard et al. 2009).

Pink salmon

Four Area M pink salmon escapement goals (even- and odd-year goals for two aggregate stocks) were evaluated during this review. The team recommends no change to the current South Peninsula pink salmon SEG ranges of 1,864,600 to 3,729,300 for even years and 1,637,800 to 3,275,700 for odd years. The team also recommends no change to the Bechevin Bay pink salmon lower bound SEG for even years of 31,000 fish and the lower bound SEG for odd years of 1,600 fish. Recent escapements were similar to historical counts and the team concluded that further analysis was not necessary.

Chum salmon

The team recommends no changes to the current South Peninsula chum salmon SEG ranges of 106,400 to 212,800 for the Southeastern District, 89,800 to 179,600 for the South Central District, 133,400 to 266,800 for the Southwestern District, and the lower bound SEG of 800 fish for the Unimak District. The team also recommends that the North Peninsula chum salmon SEG ranges of 100,000 to 215,000 fish for the Northwestern District and 119,600 to 239,200 fish for the Northern District remain unchanged. Recent escapements were similar to historical counts and the team concluded that further analysis was not necessary.

In summary, the Area M Escapement Goal Review Team comprehensively reviewed 26 existing salmon escapement goals in Area M, and reached consensus to leave 25 goals unchanged, change 1 goal, and establish 2 new goals. This would result in 28 escapement goals for Area M, as follows: 1 BEG for Chinook salmon, 1 BEG and 13 SEGs for sockeye salmon, 3 SEGs for coho salmon, 4 aggregate SEGs for pink salmon, and 6 aggregate SEGs for chum salmon. These are the recommendations described in Witteveen et al. (2009) and presented to the board in February 2010, pending your final approval.

References Cited

Bernard, D. R., J. J. Hasbrouck, B. G. Bue and R. A. Clark. 2009. Estimating risk of management error from precautionary reference points (PRPs) for non-targeted salmon stocks. Alaska Department of Fish and Game, Special Publication No. 09-09, Anchorage.

Appendix A.—Escapement goal memo for the Alaska Peninsula and Aleutian Islands Management Area (Area M) meeting of the 2009/2010 Board of Fisheries meeting cycle.

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

Honnold, S.G., M.J. Witteveen, I. Vining, H. Finkle, M.B. Foster, and J.J. Hasbrouck. 2007. Review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management, 2006. Alaska Department of Fish and Game, Fishery Manuscript No. 07-02, Anchorage.

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Witteveen, M. J., H. Finkle, M. Loewen, M. B. Foster, and J. W. Erickson. 2009. Review of salmon escapement goals in the Alaska Peninsula and Aleutian Islands Management Areas; A Report to the Alaska Board of Fisheries, 2010. Alaska Department of Fish and Game, Fishery Manuscript No.09-09, Anchorage.

John Hilsinger, Director, Division of Commercial Fisheries

A handwritten signature in blue ink, appearing to read "John Hilsinger", written over a horizontal line.

Charles O. Swanton, Director, Division of Sport Fish

A handwritten signature in blue ink, appearing to read "Charles O. Swanton", written over a horizontal line.

Appendix A.—Escapement goal memo for the Alaska Peninsula and Aleutian Islands Management Area (Area M) meeting of the 2009/2010 Board of Fisheries meeting cycle.

Table 1. Current escapement goals, escapements observed from 2006 through 2008, Chinook, sockeye, coho, pink, and chum salmon stocks of the Alaska Peninsula Management and Aleutian Islands Areas.

System	Escapement Data ^a	Current Escapement Goal			Escapements			2009 Recommendation	
		Type (BEG, SEG)	Range		2006	2007	2008		
Chinook Salmon									
Nelson River	WC/PAS	BEG	2,400	to	4,400	2,516	2,492	5,012	No change
Sockeye Salmon									
Orzinski Lake	WC	SEG	15,000	to	20,000	18,000	10,643	36,839	No change
Thin Point Lake	PAS	SEG	14,000	to	28,000	11,510	21,550	18,900	No change
Mortensens Lagoon	PAS	SEG	3,200	to	6,400	14,688	6,200	5,600	No change
Christianson Lagoon	PAS	SEG	25,000	to	50,000	41,505	48,075	114,000	No change
Swanson Lagoon	PAS	SEG	6,000	to	16,000	376	9,200	5,500	No change
North Creek	PAS	SEG	4,400	to	8,800	7,530	16,800	38,000	No change
Nelson River	WC	BEG	97,000	to	219,000	215,000	180,000	141,600	No change
Bear Lake									
Early	WC	SEG	176,000	to	293,000	262,995	206,233	125,526	No change
Late	WC	SEG	117,000	to	195,000	182,005	224,767	195,474	No change
Sandy River	WC	SEG	34,000	to	74,000	48,000	44,700	32,200	No change
Ilnik River	WC	SEG	40,000	to	60,000	75,000	79,000	44,300	No change
Meshik River	PAS	SEG	20,000	to	60,000	114,010	45,400	61,250	Change: SEG 25,000–100,000
Cinder River	PAS	SEG	12,000	to	48,000	52,100	123,000	96,800	No change
McLees Lake	WC/PAS	None				12,936	21,428	8,661	Create: SEG 10,000–60,000 ^b
Coho Salmon									
Thin Point Lake	PAS	SEG	3,000			9,750	9,000	3,200	No change
Nelson River	PAS	SEG	18,000			19,000	19,000	24,000	No change
Ilnik River	PAS	None				27,000	19,000	22,000	Create: lower bound SEG 9,000

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Table 1. (Page 2 of 2)

System	Escapement Data ^a	Escapement Goal			Escapements			2009 Recommendation	
		Type (BEG, SEG)	Range		2006	2007	2008		
Pink Salmon									
South Peninsula Total -even years	PAS	SEG	1,864,600	to	3,729,300	2,862,250		3,338,370	No change
South Peninsula Total -odd years	PAS	SEG	1,637,800	to	3,275,700		2,680,213		No change
Bechevin Bay Section-even years	PAS	SEG	31,000			116,075		11,900	No change
Bechevin Bay Section-odd years	PAS	SEG	1,600				16,800		No change
Chum Salmon									
Southeastern District	PAS	SEG	106,400	to	212,800	405,300	201,451	277,450	No change
South Central District	PAS	SEG	89,800	to	179,600	119,600	126,000	140,450	No change
Southwestern District	PAS	SEG	133,400	to	266,800	231,935	398,010	171,250	No change
Unimak District	PAS	SEG	800			7,915	1,200	2,800	No change
Northwestern District	PAS	SEG	100,000	to	215,000	193,460	335,450	241,750	No change
Northern District	PAS	SEG	119,600	to	239,200	382,583	243,334	228,537	No change

^a PAS = Peak Aerial Survey. WC = Weir Count

^b McLees Lake sockeye salmon SEG will be in effect if a weir is in place: there will be no goal if a weir is not operated.

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Figure 1. Map of the Alaska Peninsula Management Area with the major sockeye, coho, and Chinook salmon systems depicted.

APPENDIX B

STATE OF ALASKA

DEPARTMENT OF FISH AND GAME

*Division of Commercial Fisheries
Division of Sport Fish*

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MEMORANDUM

TO:  John Hilsinger, Director
Division of Commercial Fisheries

DATE: February 1, 2010

and

Charles O. Swanton, Director 
Division of Sport Fish

FROM: Jeff Regnart, Regional Supervisor 
Division of Commercial Fisheries
Region II - Anchorage

SUBJECT: Bristol Bay
Escapement Goal
Recommendations

and

James Hasbrouck, Regional Supervisor 
Division of Sport Fish
Region II - Anchorage

The purpose of this memo is to inform you of our progress in reviewing and recommending escapement goals for Bristol Bay. Many escapement goals in Bristol Bay have been set and evaluated at regular intervals since statehood. During the previous Alaska Board of Fisheries (board) cycle, 2006-2007, Bristol Bay escapement goals were reviewed and recommended changes were made by the department (Baker et al. 2006).

Recent genetic techniques have greatly improved the ability to accurately determine sockeye salmon stock compositions of the harvest. In Bristol Bay, this data is currently available for the past 3 years. However, there is a study in progress that uses previously collected scale samples from harvests dating back to 1964 to isolate DNA and determine partial historical harvest stock compositions. Over the next few years, the data gathered from these studies will be used to reconstruct brood tables for each sockeye salmon stock, and hence, greatly improve our understanding of stock productivity. Because of this imminent change to the brood tables upon which escapement goals are built, the escapement goal committee does not believe that major changes to existing goals should occur at this time. Nonetheless, it was the intention of this

review to re-evaluate existing data sets using modern statistical and modeling techniques to estimate escapement levels at maximum sustained yield for comparison to current goals. Non-sockeye salmon escapement goals were evaluated, as necessary, in this review.

In February 2009, an interdivisional salmon escapement goal review committee, including staff from the Divisions of Commercial Fisheries and Sport Fish, was formed to review existing salmon escapement goals in the Bristol Bay Management Area. This review was based on the *Policy for the Management of Sustainable Salmon Fisheries* and the *Policy for Statewide Salmon Escapement Goals*. Since the 2003 review, the basis for deciding goal type [biological escapement goal (BEG) or sustainable escapement goal (SEG)] has evolved, and as a result, some changes in the goal types were recommended in the 2006 review, and in this review. In particular, the large uncertainty associated with catch allocations from mixed-stock sockeye salmon fisheries in Bristol Bay suggests that accurate estimates of escapement levels producing maximum sustained yield (MSY) may be uncertain. Nonetheless, stock-recruit models formerly used to estimate BEG ranges were appropriate for estimating SEG ranges.

The committee determined the appropriate goal type (BEG or SEG) for each salmon stock with an existing goal and other relevant stocks without an existing goal, based on the quality and quantity of available data, and then determined the most appropriate methods to evaluate the escapement goal ranges. An escapement goal for a stock was defined as a BEG if a sufficiently long time series of escapement, catch, and age estimates were available; the estimates were sufficiently accurate and precise; and the data were considered sufficient to estimate MSY (as per rules and methods in Hilborn and Walters 1992, Chinook Technical Committee 1999, Quinn and Deriso 1999). An escapement goal for a stock was defined as an SEG if a sufficiently long time series of escapement estimates were available, but there was concern about the spawner-return data (lack of age composition estimates and/or concern with stock-specific catch allocation) or there was a lack of information on stock productivity.

In a standard full review, escapement goals are evaluated for Bristol Bay stocks using the following: (1) spawner-recruit models; (2) yield analysis; (3) smolt information; and (4) risk analysis. Following these analyses, escapement goals are estimated for each stock, compared to the current goal, and recommendations to keep the current goal, change the goal, or eliminate the goal are discussed.

There were 17 escapement goals evaluated for 16 stocks in Bristol Bay (Table 1). The committee recommends that the escapement goal for Togiak River sockeye salmon be defined as an SEG instead of a BEG; however, the current escapement goal range would remain unchanged from the 2000 review (Fair 2000). The rationale for the change is a higher than expected proportion of non-Togiak sockeye salmon stock in the Togiak harvest (Dann et al. *In prep*). The committee also recommends a change to the Kvichak River sockeye salmon escapement goal. Currently, there are 2 goals, one for pre-peak and peak years, and one for off-cycle years. In recent years, the ability to define a pre-peak or peak run was made increasingly difficult as the runs declined. A pre-peak/peak goal, largely composed of 5-year-old 2-ocean fish, was originally established because it was believed that production differed from that of off-cycle years, and therefore, it was advantageous to separate them. However, a new look at the production of pre-peak/peak versus off-cycle years shows similarity such that we cannot conclude they are different (Baker et al *In prep*). The committee, therefore, recommends that the pre-peak/peak goal of 6 to 10 million be dropped and that the off-cycle goal of 2 to 10 million be expanded to include all years.

Also considered in this review was the effect that transitioning from Bendix sonar to DIDSON in the Nushagak River will have on current goals (sockeye, Chinook, and chum). The final step in the transition occurred in 2009 and has not been fully processed or analyzed at this time. It is unlikely that it will be complete in time to be included in the escapement goal report (Baker et al. *In prep*), but preliminary information *may* be available at the December 2009 board meeting.

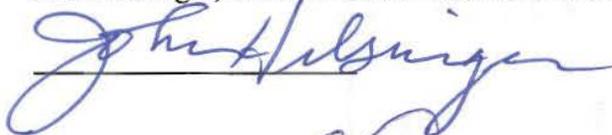
In summary, this comprehensive review of the 17 existing salmon escapement goals in Bristol Bay resulted in 2 recommended changes. For one goal, Togiak River sockeye salmon, the only change was in goal type from BEG to SEG. The other change was to combine separate goals for Kvichak River sockeye salmon into a single goal.

An oral and written report (Baker et al. *In prep*) concerning escapement goals and specific recommendations for numerous stocks in Bristol Bay will be presented to the board in December 2009. These reports will list all current and recommended escapement goals for Bristol Bay, as well as a detailed description of the methods used to reach these recommendations. Following the December board meeting, a memo will be prepared to include these recommendations to division directors for approval.

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John Hilsinger, Division of Commercial Fisheries Director



Charles O. Swanton, Division of Sport Fish Director



Table 1. Summary of current escapement goals and recommended escapement goals for salmon stocks in Bristol Bay.

System	Current Escapement Goal			Escapement Data	Action	Recommended Escapement Goal	
	Goal	Type	Year Adopted			Goal	Type
Sockeye Salmon							
Ugashik	500,000-1,200,000	SEG	1995; Changed to SEG in 2006	Tower	No Change	500,000-1,200,000	SEG
Egegik	800,000-1,400,000	SEG	1995; Changed to SEG in 2006	Tower	No Change	800,000-1,400,000	SEG
Naknek	800,000-1,400,000	SEG	1984; Changed to SEG in 2006	Tower	No Change	800,000-1,400,000	SEG
Kvichak (off-cycle)	2,000,000-10,000,000	SEG	1997; Changed to SEG in 2006	Tower	Change to single Kvichak goal	2,000,000-10,000,000	SEG
Kvichak (pre, peak)	6,000,000-10,000,000	SEG	1997; Changed to SEG in 2006	Tower	Change to single Kvichak goal	2,000,000-10,000,000	SEG
Alagnak	320,000 minimum	SEG	2006	Tower	No Change	320,000 minimum	SEG
Wood	700,000-1,500,000	SEG	2000; Changed to SEG in 2006	Tower	No Change	700,000-1,500,000	SEG
Nushagak	340,000-760,000	SEG	1997; Changed to SEG in 2006	Sonar	No Change		SEG
Igushik	150,000-300,000	SEG	2000; Changed to SEG in 2006	Tower	No Change	150,000-300,000	SEG
Togiak	120,000-270,000	BEG	1997	Tower	Change to SEG	120,000-270,000	SEG
Kulukak Bay	8,000 minimum	SEG	2006	Aerial	No Change	8,000 minimum	SEG
Chinook Salmon							
Nushagak	40,000-80,000	SEG	2006	Sonar	No Change		SEG
Togiak	9,300 minimum	SEG	2006	Aerial	No Change	9,300 minimum	SEG
Naknek	5,000 minimum	SEG	2006	Aerial	No Change	5,000 minimum	SEG
Alagnak	2,700 minimum	SEG	2006	Aerial	No Change	2,700 minimum	SEG
Egegik	450 minimum	SEG	2006	Aerial	No Change	450 minimum	SEG
Chum Salmon							
Nushagak	190,000 minimum	SEG	2006	Sonar	No Change		SEG

APPENDIX C

STATE OF ALASKA

SEAN PARNELL, GOVERNOR

DEPARTMENT OF FISH AND GAME

Divisions of Commercial Fisheries and Sport Fish

MEMORANDUM

TO: John Hilsinger, Director
Division of Commercial Fisheries
Anchorage

AND
Charles Swanton, Director
Division of Sport Fish
Juneau

FROM: John Linderman, Regional Supervisor
Division of Commercial Fisheries
Region III - Anchorage

AND
Don Roach, Regional Supervisor
Division of Sport Fish
Region III - Fairbanks

DATE: May 25, 2010

PHONE: 267-2115 (Linderman)
459-7229 (Roach)

FAX: 267-2442 (Linderman)
456-2259 (Roach)

FILE: Hilsinger-Swanton Final AYK EG
Recommendations-2010 (2)

SUBJECT: Final Escapement
Goal Recommendations
For Selected AYK
Salmon Stocks

The purpose of this memo is to formally recommend to you additions, deletions, and changes to AYK salmon escapement goals for the Arctic-Yukon-Kuskokwim (AYK) Region and to solicit your final approval to include these recommendations as ADF&G salmon escapement goals for the AYK Region. The *Policy for the Management of Sustainable Salmon Fisheries* (SSFP; 5 AAC 39.222) directs the department to provide the Alaska Board of Fisheries (board) with a review of salmon escapement goals every three years in concert with the regulatory cycle for each management area. Escapement goals were evaluated and recommended based on the SSFP and the *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223).

An interdivisional escapement goal review team (review team) was convened to review available escapement and other data and make escapement goal recommendations where appropriate. Escapement goals recommended in this memorandum are the products of several collaborative meetings of the review team, other department staff, and stakeholders from federal agencies, and various non-governmental organizations. A timeline was agreed upon (Appendix A) for goal development, documentation, public review, presentation to the board, and final submission to the division directors. The review team helped direct the work of other staff and reviewed that work in the process of making escapement goal recommendations.

A written report (Volk et al. 2009) and corresponding oral report concerning escapement goals and specific recommendations for numerous stocks in all areas of the AYK Region were presented to the board in January 2010. These reports listed all current and recommended escapement goals for all management areas of the AYK Region. These recommendations are briefly described for each management area below. These recommendations have been reviewed and accepted by the respective Regional Supervisors. This memo submits these recommendations to you, the division directors, for your consideration and approval.

Kuskokwim Management Area

In the Kuskokwim Management Area, which includes the Kuskokwim River and Kuskokwim Bay drainages, there are currently 25 established escapement goals for 14 Chinook salmon, 4 chum salmon, 3 coho salmon, and 4 sockeye salmon stocks (Table 1). A comprehensive review of escapement data for most Kuskokwim Management Area stocks was conducted for the 2007 board cycle (Molyneaux and Brannian 2006), and this team only reviewed stocks for which there was sufficient evidence to justify further reviews for escapement goals.

The review team is recommending one new coho salmon goal based on weir and tower counts at the Kwethluk River. Nine years of escapement estimates are available from recent years and all were realized under a light to moderate harvest regime. The recommended goal is a lower bound sustainable escapement goal (SEG) of >19,000 coho salmon, which corresponds to the minimum observed escapement. It was the consensus of the review team that escapements exceeding this lower bound would be sustainable and would provide for moderate yields.

The review team is also recommending one new sockeye salmon escapement goal based on weir counts at the Kogrukluk River (a tributary of the Holitna River). There are active subsistence and commercial sockeye salmon fisheries in the Kuskokwim River with an amount necessary for subsistence finding of 27,500-39,500 fish and a guideline harvest level of 50,000 fish, yet there are no escapement goals for sockeye salmon anywhere in the Kuskokwim River drainage. Recent radiotelemetry studies have shown that up to 70% of Kuskokwim River drainage sockeye salmon spawn in the Holitna drainage and 12-13% of these fish spawn in the Kogrukluk River. The recommended SEG is 4,400-17,000 sockeye salmon and was derived using the percentile approach (Bue and Hasbrouck *Unpublished*).

All other existing goals are recommended to continue without revision. Twenty-eight additional stocks in the Kuskokwim Management Area were reviewed, but no goals were recommended. Reasons for not recommending a goal were generally because there was a lack of sufficient data or because a particular enumeration method was changed.

Yukon Management Area

In the Yukon River Management Area, which includes the entire Yukon River drainage, there are currently 17 established escapement goals for 7 Chinook salmon, 2 summer chum salmon, 7 fall chum salmon, and 1 coho salmon stocks (Table 2). Eleven of these goals are biological escapement goals (BEG) developed from spawner-recruit analyses. Six are SEGs developed

using the percentile approach. In addition, there are three goals for Canadian stocks, not listed here, that were established as part of the *Yukon River Salmon Agreement*. Annual escapement targets for these Canadian stocks (mainstem Yukon River Chinook salmon, mainstem Yukon River fall chum salmon, and Fishing Branch River fall chum salmon) are set annually by the Yukon River Panel through agreement based on rebuilding plans.

The review team is recommending revision of the Chinook salmon SEG for East Fork Andreafsky River from an aerial survey-based goal to a weir-based goal. The previous aerial goal was 960-1,700 Chinook salmon. The recommended new SEG is 2,100-4,900 Chinook salmon past the weir and was derived using the percentile approach. The team is also recommending elimination of the Gisasa River aerial survey goal for Chinook salmon because aerial surveys do not appear to track true abundance based on recent weir counts.

For East Fork Andreafsky River summer chum salmon, the team is recommending that the weir-based BEG of 65,000-130,000 chum salmon be changed to an lower bound SEG of >40,000. This recommendation is based on a stock-recruit analysis using a Bayesian approach that accommodates data uncertainty associated with measurement error and missing data. Even though this stock has experienced light exploitation in recent years, the existing escapement goal has rarely been met. The stock-recruit analysis indicates that meeting or exceeding this lower bound should provide a >90% probability of providing at least 70% of maximum sustained yield (MSY).

The review team is also recommending that the drainage-wide BEG for fall chum salmon be changed to an SEG because the current goal range does not provide for a high probability of achieving MSY. No change is recommended for the specific numerical goal range. Additionally, the review team is recommending that the Toklat River fall chum salmon BEG be eliminated. Environmental changes have altered the relationship between surveys and peak spawning dates and channel breaches have altered the flow of the mainstem river through some of the more productive habitat, obscuring fish and making counts impossible. These changes have rendered the Toklat River survey unreliable and foot surveys have been discontinued. With no assessment to evaluate performance of the goal, it should be eliminated.

All other existing goals are recommended to continue without revision. Eighteen additional stocks in the Yukon Management Area were reviewed, but no goals were recommended. Reasons for not recommending a goal were generally because there was a lack of sufficient data or because a particular enumeration method was changed.

Norton Sound-Port Clarence and Kotzebue Management Areas

A total of 32 escapement goals exist in the Norton Sound-Port Clarence and Kotzebue Management Areas for 5 Chinook salmon, 17 chum salmon, 3 coho salmon, 5 pink salmon, and 2 sockeye salmon stocks (Table 3). Biological escapement goals exist for 4 stocks, including Norton Sound Subdistrict 1 (Nome) chum salmon, Kwiniuk and Tubutulik Rivers chum salmon, and Kotzebue (all areas) chum salmon, and the remaining 28 goals are SEGs.

The review team is recommending elimination of aerial survey SEGs for chum salmon on the Flambeau, Sinuk, Solomon, and Bonanza Rivers. Due to weather, uncertainty of the relationship of the survey to peak spawning time, and availability of aircraft, these counts are unreliable for evaluating goals on these specific systems. However, the aerial surveys will continue when possible and be used as part of the overall evaluation of the Subdistrict 1 chum salmon goal. The team recommends changing the Niukluk River chum salmon goal to a lower bound SEG of >23,000 based on a risk analysis (Bernard et al. 2009) which indicated escapements exceeding this lower bound would result in only a 6.6% estimated risk of a management concern (4 consecutive years of escapements below the goal), and only a 6.4% estimated risk of experiencing a 75% drop in mean escapement.

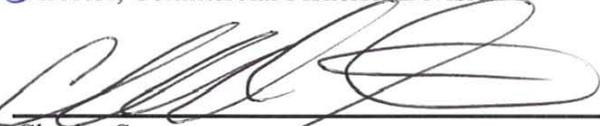
The review team is also recommending a modification to the range of the SEG for Niukluk coho salmon. The previous goal (2,400-5,800 coho salmon) did not account for subsistence and sport harvest occurring upstream from the counting tower. Subsistence permits and the sport fishing statewide harvest survey now specifically enumerate harvest above the tower. The revised SEG of 2,400-7,200 coho salmon was derived using the percentile approach and reflects true escapement above the tower.

All other existing goals are recommended to continue without revision. Twenty-three additional stocks in the Norton Sound-Port Clarence and Kotzebue Management Areas were evaluated during the current review, but no goals were recommended. Reasons for not recommending a goal were typically because there was a lack of sufficient data or because a particular enumeration method was changed.

SUMMARY

In summary the AYK Escapement Goal Review Team has progressed along its time line (Appendix A) to the final ADF&G director's approval process. All public review comments have been addressed and are reflected in the final version of escapement goal report (Volk et al. 2009). Oral and written reports were presented to the Board regarding these escapement goal recommendations. Therefore, we respectfully seek your signature for approval and acceptance of these recommendations as ADF&G established salmon escapement goals:

Approved:

 _____ John Hilsinger Director, Commercial Fisheries Division	5/26/10 _____ Date
 _____ Charles Swanton Director, Sport Fish Division	5/26/10 _____ Date

cc: Bergstrom, Borba, Brase, Burr, Chythlook, Clark, Estensen, Fleischman, Hamachan, Hayes, Howard, Menard, Molyneaux, Munro, Pfisterer, Scanlon, Taube, Volk.

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- Volk, E., M. J. Evenson, and R. H. Clark. 2009. Escapement goal recommendations for select Arctic-Yukon-Kuskokwim Region salmon stocks, 2010. Alaska Department of Fish and Game, Fishery Manuscript No. 09-07, Anchorage.

Table 1. Summary of escapement goal recommendations for Kuskokwim Management Area salmon stocks for 2010.

Stock Unit	Enumeration	Current Escapement Goal			Escapement Goal Recommendation		
	Method	Goal	Type	Year Established	Action	New or Revised Goal	Type
Chinook Salmon							
Aniak River	Aerial Survey	1,200-2,300	SEG	2005	No Revision		
Cheneetuk River	Aerial Survey	340-1,300	SEG	2005	No Revision		
Gagaraya River	Aerial Survey	300-830	SEG	2005	No Revision		
George River	Weir	3,100–7,900	SEG	2007	No Revision		
Goodnews River (Main Fork)	Aerial Survey	640-3,300	SEG	2005	No Revision		
Holitna River	Aerial Survey	970-2,100	SEG	2005	No Revision		
Kanektok River	Aerial Survey	3,500-8,000	SEG	2005	No Revision		
Kisaralik River	Aerial Survey	400-1,200	SEG	2005	No Revision		
Kogrukluk River	Weir	5,300-14,000	SEG	2005	No Revision		
Kwethluk River	Weir	6,000–11,000	SEG	2007	No Revision		
Middle Fork Goodnews River	Weir	1,500–2,900	BEG	2005	No Revision		
Pitka Fork Salmon River	Aerial Survey	470-1,600	SEG	2005	No Revision		
Salmon River (Aniak Drainage)	Aerial Survey	330-1,200	SEG	2005	No Revision		
Tuluksak River	Weir	1,100–2,100	SEG	2007	No Revision		

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Table 1. Page 2 of 2.

Stock Unit	Enumeration	Current Escapement Goal			Escapement Goal Recommendation		
	Method	Goal	Type	Year Established	Action	New or Revised Goal	Type
Chum Salmon							
Aniak River	Sonar	220,000-480,000	SEG	2007	No Revision		
Kanektok River	Aerial Survey	>5,200	SEG	2005	No Revision		
Kogrukluk River	Weir	15,000-49,000	SEG	2005	No Revision		
Middle Fork Goodnews River	Weir	>12,000	SEG	2005	No Revision		
Coho Salmon							
Kogrukluk River	Weir	13,000-28,000	SEG	2005	No Revision		
Middle Fork Goodnews River	Weir	>12,000	SEG	2005	No Revision		
Kwethluk River	Weir	None			Establish	>19,000	SEG
Sockeye Salmon							
Goodnews River (Main Fork)	Aerial Survey	5,500-19,500	SEG	2005	No Revision		
Kanektok River	Aerial Survey	14,000-34,000	SEG	2005	No Revision		
Middle Fk. Goodnews River	Weir	18,000-40,000	BEG	2007	No Revision		
Kogrukluk River	Weir	None			Establish	4,400-17,000	SEG

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Table 2.—Summary of escapement goal recommendations for Yukon River Management Area for 2010.

Stock Unit	Enumeration	Current Escapement Goal			Escapement Goal Recommendation		
	Method	Goal	Type	Year Established	Action	New or Revised Goal	Type
Chinook Salmon^a							
Andreafsky River (East Fork)	Aerial Survey	960-1,700	SEG	2005	Revise	2,100-4,900 (weir)	SEG
Andreafsky River (West Fork)	Aerial Survey	640-1,600	SEG	2005	No Revision		
Anvik River	Aerial Survey	1,100-1,700	SEG	2005	No Revision		
Chena River	Tower/Mark-Recapture	2,800-5,700	BEG	2001	No Revision		
Gisasa River	Aerial Survey	420-1,100	SEG	2005	Eliminate		
Nulato River (forks combined)	Aerial Survey	940-1,900	SEG	2005	No Revision		
Salcha River	Tower/Mark-Recapture	3,300-6,500	BEG	2001	No Revision		
Chum Salmon (Summer)							
East Fork Andreafsky River	Weir	65,000-130,000	BEG	2001	Revise	>40,000	SEG
Anvik River	Sonar	350,000-700,000	BEG	2005	No Revision		

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Table 2. Page 2 of 2.

Stock Unit	Enumeration	Current Escapement Goal			Escapement Goal Recommendation		
	Method	Goal	Type	Year Established	Action	New or Revised Goal	Type
Chum Salmon (Fall)^b							
Yukon River Drainage ^c	Multiple ^d Mark- Recapture	300,000-600,000	BEG	2001	Revise	300,000-600,000	SEG
Tanana River	Foot Survey	61,000-136,000	BEG	2001	No Revision		
Delta River	Foot Survey	6,000-13,000	BEG	2001	No Revision		
Toklat River	Foot Survey	15,000-33,000	BEG	2001	Eliminate		
Upper Yukon River Tributaries ^e	Multiple ^f	152,000-312,000	BEG	2001	No Revision		
Chandalar River	Sonar	74,000-152,000	BEG	2001	No Revision		
Sheenjek River	Sonar	50,000-104,000	BEG	2001	No Revision		
Coho Salmon							
Delta Clearwater River	Boat Survey	5,200-17,000	SEG	2005	No Revision		

^a The Canadian Chinook salmon border escapement goal, which is under the Yukon River Salmon Agreement and reviewed annually by the Yukon River Panel is not included as part of this summary.

^b The Canadian fall chum salmon border escapement goal or Fishing Branch River goal, which are under the Yukon River Salmon Agreement and reviewed annually by the Yukon River Panel are not included in this summary.

^c This goal includes all Alaskan and Canadian stocks.

^d Includes foot survey, weir, sonar, aerial survey counts, and mark-recapture.

^e Includes Chandalar, Sheenjek, and Fishing Branch Rivers. Per footnote above, Fishing Branch River is not listed as an individual goal.

^f Includes sonar, weir, and aerial survey counts.

Table 3. Summary of escapement goal recommendations for Norton Sound/Port Clarence and Kotzebue Management Areas for 2010.

Stock Unit	Enumeration	Current Escapement Goal			Escapement Goal Recommendation		
	Method	Goal	Type	Year Established	Action	New or Revised Goal	Type
<i>Norton Sound/Port Clarence Management Area</i>							
Chinook Salmon							
Fish R./Boston Cr.	Aerial Survey	>100	SEG	2005	No Revision		
Kwiniuk River	Tower	300-550	SEG	2005	No Revision		
North River (Unalakleet R.)	Tower	1,200-2,600	SEG	2005	No Revision		
Old Woman R. (Unalakleet R.)	Aerial Survey	550-1,100	SEG	2005	No Revision		
Shaktoolik River	Aerial Survey	400 - 800	SEG	2005	No Revision		
Chum Salmon							
Bonanza River	Expanded Aerial Survey	2,300-3,400	SEG	2001	Eliminate		
Eldorado River	Expanded Aerial Survey	6,000-9,200	SEG	2001	No Revision		
Flambeau River	Expanded Aerial Survey	4,100-6,300	SEG	2001	Eliminate		
Kwiniuk River	Tower	10,000-20,000	BEG	2001	No Revision		
Niukluk River (Fish R.)	Tower	>30,000	SEG	2005	Revise	>23,000	SEG
Nome River	Weir	2,900-4,300	SEG	2001	No Revision		
Old Woman R. (Unalakleet R.)	Aerial Survey	2,400-4,800	SEG	2005	No Revision		
Sinuk River	Expanded Aerial Survey	4,000-6,200	SEG	2001	Eliminate		
Snake River	Tower/weir	1,600-2,500	SEG	2001	No Revision		
Solomon River	Expanded Aerial Survey	1,100-1,600	SEG	2001	Eliminate		

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Table 3. Page 2 of 3.

Stock Unit	Enumeration	Current Escapement Goal			Escapement Goal Recommendation		
	Method	Goal	Type	Year Established	Action	New or Revised Goal	Type
Chum Salmon, continued							
Subdistrict One (Nome, all systems)	Multiple	23,000-35,000	BEG	2001	No Revision		
Tubutulik River	Expanded Aerial Survey	8,000-16,000	BEG	2001	No Revision		
Coho Salmon							
Kwiniuk River	Aerial Survey	650-1,300	SEG	2005	No Revision		
Niukluk River	Tower	2,400-6,100	SEG	2007	Revise	2,400-7,200	SEG
North River (Unalakleet R.)	Aerial Survey	550-1,100	SEG	2005	No Revision		
Pink Salmon							
Kwiniuk River (all years)	Tower	>8,400	SEG	2005	No Revision		
Niukluk River (all years)	Tower	>10,500	SEG	2005	No Revision		
Nome River (even year)	Weir	>13,000	SEG	2005	No Revision		
Nome River (odd year)	Weir	>3,200	SEG	2005	No Revision		
North River (Unalakleet. R. all years)	Tower	>25,000	SEG	2005	No Revision		

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Table 3. Page 3 of 3.

Stock Unit	Enumeration	Current Escapement Goal			Escapement Goal Recommendation		
	Method	Goal	Type	Year Established	Action	New or Revised Goal	Type
Sockeye Salmon							
Salmon Lake	Aerial Survey	4,000-8,000	SEG	2005	No Revision		
Glacial Lake	Aerial Survey	800-1,600	SEG	2005	No Revision		
<u>Kotzebue Management Area</u>							
Chum Salmon							
Kotzebue (all areas)	Expanded Aerial Survey	196,000–421,000	BEG	2007	No Revision		
Noatak/Eli Rivers	Aerial Survey	42,000–91,000	SEG	2007	No Revision		
Salmon River (Kobuk R. drainage)	Aerial Survey	3,300-7,200	SEG	2007	No Revision		
Squirrel River (Kobuk R. drainage)	Aerial Survey	4,900–10,500	SEG	2007	No Revision		
Tutuksuk River (Kobuk R. drainage)	Aerial Survey	1,400-3,000	SEG	2007	No Revision		
Upper Kobuk and Selby Rivers	Aerial Survey	9,700–21,000	SEG	2007	No Revision		

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Appendix A. Timeline for review and reporting escapement goal recommendations for 2010.

**2010 Escapement Goal Review Team
Timeline for Review and Reporting**

February 26, 2008	Initial Escapement Goal Review Team meeting to determine stocks to be reviewed.
April 17, 2008	Meeting with regional and area staff to review timelines and procedures and make assignments for escapement goal analyses.
April 30, 2008	Notification sent to NGO's and stakeholders about the escapement goal review process and the need for analysis presentations at October meeting.
October 14-15, 2008	Presentation and review of preliminary work on assignments.
December 10, 2008	Presentation and review of additional work assignments made at the October meeting.
March 16, 2009	Draft summary of escapement goal recommendations sent to agency staff and public.
April 10, 2009	Board of Fisheries proposal deadline.
March – Dec. 2009	Agency staff and public continue review of escapement goal reports and recommendations. Meet as necessary to refine or revise reports and recommendations prior to Board meeting.
October 13-14, 2009	Summary of escapement goal recommendations presented at Board of Fisheries Work session.
October 15, 2009	Draft Escapement Goal report sent for peer review.
December, 2009	Final recommendations sent to board as a staff report.
January 26-31, 2010	AYK Board of Fisheries meeting.
February 2010	Memo from Regional Research Supervisors through Regional Supervisors to division directors describing escapement goal recommendations for approval signatures.
