

## STATE OF ALASKA

## DEPARTMENT OF FISH AND GAME

Division of Commercial Fisheries  
Division of Sport Fish

SEAN PARNELL, GOVERNOR

1255 W. 8<sup>TH</sup> Street  
P.O. BOX 115526  
JUNEAU, AK 99811-5526

PHONE: (907) 465-4210 (CF)  
(907) 465-4180 (SF)  
FAX: (907) 465-2604 (CF)  
(907) 465-2772 (SF)

## MEMORANDUM

TO: Jeff Regnart, Director   
Division of Commercial Fisheries

DATE: September 16, 2011

Charles O. Swanton, Director   
Division of Sport Fish

THRU: Scott Kelley, Regional Supervisor  
Division of Commercial Fisheries, Region I

SUBJECT: SE Alaska Salmon  
Escapement Goal  
Memo

Brian Frenette, Regional Supervisor  
Division of Sport Fish, Region I

FROM: Steve Heintz, Regional Research Biologist  
Division of Commercial Fisheries, Region I

John Der Hovanisian, Regional Research Coordinator  
Division of Sport Fish, Region I

The purpose of this memorandum is to inform you of our progress reviewing and recommending escapement goals for Southeast Alaska. Southeast Region escapement goals were last reviewed by the department during the 2008–2009 Alaska Board of Fisheries (board) cycle (Eggers and Heintz 2008; Eggers et al. 2009a, 2009b; Eggers et al. 2010; Heintz et al. 2008; Hendrich et al. 2008; McPherson et al. 2010; Shaul et al. 2009). Escapement goals for Blossom and Keta rivers king salmon (Fleischman et al. 2011) were reviewed out of cycle in 2009–2010.

In February 2011, an interdivisional salmon escapement goal review committee consisting of regional staff from the divisions of Commercial Fisheries and Sport Fish, as well as statewide representatives, met to review existing escapement goals in Southeast Alaska. These reviews were based on the *Policy for the Management of Sustainable Salmon Fisheries* (5 AAC 39.222) and the *Policy for Statewide Salmon Escapement Goals* (5 AAC 39.223). Two important terms are:

5 AAC 39.222 (f)(3) “*Biological Escapement Goal (BEG)*: the escapement that provides the greatest potential for maximum sustained yield (MSY);” and

5 AAC 39.222 (f)(36) “*Sustainable Escapement Goal (SEG)*: a level of escapement, indicated by an index or an escapement estimate, that is known to provide for sustained yield over a 5 to 10 year period, used in situations where a BEG cannot be estimated or managed for.”

A total of 51 existing escapement goals were evaluated in the Southeast Region. The committee determined the appropriate goal type (BEG or SEG) for each salmon stock with an existing goal. The committee also considered other monitored, exploited stocks without an existing goal. Based on the quality and quantity of available data, the committee determined the most appropriate methods to evaluate the escapement goals. Due to the comprehensive previous analyses (cited above), the committee reanalyzed only those goals with recent (2008–2010) data that could potentially result in a substantially different escapement goal from the last review, and assessed others that should be eliminated or established.

The committee recommends, to the directors of Commercial Fisheries and Sport Fish, changes to 6 existing goals:

- Change the Blossom River king salmon goal from a current BEG range of 250–500 large ( $\geq 660$  mm MEF) fish, as counted in aerial surveys, to a BEG range of 150–300;
- Change the Keta River king salmon goal from a current BEG range of 250–500 large fish, as counted in aerial surveys, to a BEG range of 175–400;
- Change the odd- and even-year Situk River pink salmon goals from current BEG ranges of 54,000–200,000 and 42,000–105,000 fish, to a lower bound SEG of 33,000 counted through the Situk River weir by 5 August, for both brood lines;
- Change the Southern Southeast summer-run chum salmon goal from a current lower bound SEG of 68,000 fish, as counted in aerial surveys, to a lower bound SEG of 54,000; and
- Change the Northern Southeast Inside summer-run chum salmon goal from a current lower bound SEG of 149,000 fish, as counted in aerial surveys, to a lower bound SEG of 119,000.

In addition, the committee determined that the escapement goals for Stikine River and Chilkat River king salmon should be reviewed after the 2012 season.

A summary of the region’s salmon escapement goals and recommended changes are presented in Tables 1–5. Note that due to the timing of this memo relative to the timing of escapements for some systems and species, some information needed to determine if goals were met is unavailable for 2011. Oral and written reports concerning Southeast Alaska escapement goals and specific recommendations will be presented to the board in February 2012. These reports will list all current and recommended goals for Southeast Alaska and provide details on the methods used to reach these recommendations.

## References Cited

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Table 1.—Estimated king salmon escapements for systems with formal escapement goals in Southeast Alaska, 2006–2011.

System	Escapement data	Goal type	Escapement goal	Year established	Escapement <sup>a</sup>						2011 EG Team recommendation
					2006	2007	2008	2009	2010	2011	
Blossom River	AS, IE	BEG	250–500 <sup>b</sup>	1997	339	135	257	123	180	NA	Change to BEG of 150–300 index count
Keta River	AS, IE	BEG	250–500 <sup>b</sup>	1997	747	311	363	172	475	MET	Change to BEG of 175–400 index count
Unuk River	M-R, AS	BEG	1,800–3,800 <sup>c</sup>	2008	5,645	5,668	3,104	3,157 <sup>d</sup>	4,290 <sup>d</sup>	NA	NC
Chickamin River	AS, IE	BEG	450–900 <sup>b</sup>	1997	1,330	893	1,111	611	1,156	MET	NC
Andrew Creek	AS,	BEG	650–1,500 <sup>c</sup>	1998	2,124	1,736	981	628	1,205	936	NC
Stikine River	M-R, weir	BEG	14,000–28,000 <sup>c</sup>	2000	24,405	14,560	18,352	11,086 <sup>d</sup>	15,180 <sup>d</sup>	MET	NC
King Salmon River	AS	BEG	120–240 <sup>c</sup>	1997	150	181	120	109	158	192	NC
Taku River	MR, AS	BEG	19,000–36,000 <sup>c</sup>	2009	42,296	14,854	27,383 <sup>d</sup>	20,762 <sup>d</sup>	29,307 <sup>d</sup>	NA	NC
Chilkat River	MR	BEG	1,750–3,500 <sup>c</sup>	2003	3,039 <sup>e</sup>	1,445 <sup>c</sup>	2,905 <sup>d, c</sup>	4,429 <sup>d, e</sup>	1,852 <sup>d, e</sup>	MET	NC
Klukshu River (Aisek River)	Weir	BEG	1,100–2,300 <sup>f, g</sup>	1998	568	676	466	1,466	2,159	1,667 <sup>d</sup>	NC
Situk River	Weir	BEG	450–1,050 <sup>c</sup>	2003	695	677	413	900	167 <sup>h</sup>	240 <sup>d</sup>	NC

<sup>a</sup> Escapements are germane to king salmon  $\geq 660$  mm MEF, with the exception of the Klukshu River (Aisek River).

<sup>b</sup> The goal is germane to king salmon  $\geq 660$  mm MEF as counted in peak survey counts. Reported escapements are survey counts.

<sup>c</sup> The goal is germane to total escapement.

<sup>d</sup> Preliminary pending biometric and/or peer review.

<sup>e</sup> Inriver run. Spawning escapement is equal to the inriver run minus the inriver subsistence harvest, which averages <100 fish.

<sup>f</sup> The goal is germane to age-1.2+ fish.

<sup>g</sup> Klukshu River escapement = (Klukshu weir count + sport harvest below the weir in the Klukshu River) – Canadian harvest, where Canadian harvest = sport harvest (Dalton Post + Blanchard + Takhanne) + Aboriginal harvest (above and below the weir in the Klukshu River).

<sup>h</sup> Weir compromised, partial count.

AS = peak aerial survey, IE = index escapement, M-R = mark-recapture, NC = no change, NA = not available

Table 2.—Estimated sockeye salmon escapements for systems with formal escapement goals in Southeast Alaska, 2006–2011.

System	Escapement data	Goal type	Escapement goal	Year established	Escapement						2011 EG Team recommendation
					2006	2007	2008	2009	2010	2011	
Hugh Smith Lake	Weir, MR	OEG	8,000–18,000	2003	42,112	33,743	3,588	9,483	15,646	MET	NC
McDonald Lake <sup>a</sup>	FS,MR	SEG	55,000–120,000	2009	31,357	29,086	20,700	51,000	72,500	MET	NC
Mainstem Stikine River	MR	SEG	20,000–40,000	1987	27,603	20,865	16,802	24,575	25,164	MET	NC
Tahltan Lake	Weir	BEG	18,000–30,000	1993	53,455	20,874	10,416	30,323	22,702	MET	NC
Speel Lake	Weir	BEG	4,000–13,000	2003	4,165	3,099	1,763	3,689	5,640	MET	NC
Taku River	MR	SEG	71,000–80,000	1986	146,151	87,764	70,442	71,200	87,899	MET	NC
Redoubt Lake	Weir	OEG	7,000–25,000	2003	103,953	66,938	10,146	12,851	17,119	MET	NC
Chilkat Lake <sup>b</sup>	Sonar, MR	BEG	70,000–150,000	2009	73,000	68,000	71,735	150,033	61,906	NA	NC
Chilkoot Lake	Weir, MR	SEG	38,000–86,000	2009	96,203	72,561	32,957	33,545	71,657	MET	NC
East Alsek-Doame River	AS, IE	BEG	13,000–26,000	2003	29,000	40,100	8,000	12,000	19,500	MET	NC
Klukshu River (Alsek River)	Weir	BEG	7,500–15,000	2000	12,890	8,479	2,741	5,509	18,546	MET	NC
Lost River	BS, IE	Lower bound SEG	1,000	2009	1,018	180	200	NA	1,525	MET	NC
Situk River	Weir	BEG	30,000–70,000	2003	90,351	61,799	22,520	83,959	47,865 <sup>c</sup>	MET	NC

<sup>a</sup> McDonald Lake total escapement based on mark-recapture estimates (2006–2007) or calibrated peak foot survey count (2008–2011).

<sup>b</sup> Chilkat Lake total escapement based on mark-recapture estimates (2006–2007) or DIDSON sonar (2008–2011).

<sup>c</sup> Situk River weir compromised in 2010; partial count.

AS = peak aerial survey, FS = foot survey, BS = boat survey, IE = index escapement, MR = mark-recapture, NC = no change, NA = not available

Table 3.—Estimated coho salmon escapements for systems with formal escapement goals in Southeast Alaska, 2006–2011.

System	Escapement data	Goal type	Escapement goal	Year established	Escapement						2011 EG Team recommendation	
					2006	2007	2008	2009	2010	2011		
Hugh Smith Lake	Weir	BEG	500–1,600	2009	891	1,244	1,741	2,281	2,878	MET	NC	
Taku River <sup>a</sup>	MR	manage. threshold	>35,000	1995	121,778	74,326	95,360 <sup>b</sup>	104,321 <sup>b</sup>	103,992 <sup>b</sup>	NA	NC	
Auke Creek	Weir	BEG	200–500	1994	581	352	600	360	417	NA	NC	
Juneau Roadside Index	Montana Creek	FS, IE	SEG	400–1,200	2006	1,110	324	405	698	630	NA	NC
	Peterson Creek	FS, IE	SEG	100–250	2006	439	226	660	123	467	NA	NC
Ketchikan Survey Index	AS, IE	BEG	4,250–8,500	2006	6,912	4,488	16,680	8,226	4,657	NA	NC	
Sitka Survey Index	FS, IE	BEG	400–800	2006	2,647	1,066	1,117	1,156	1,273	NA	NC	
Ford Arm Lake	Weir	BEG	1,300–2,900	1994	4,737	2,567	5,173	2,181	1,610	NA	NC	
Berners River	MR	BEG	4,000–9,200	1994	5,470	3,915	6,870	4,230	7,520	NA	NC	
Chilkat River	AS/FS-IE, MR	BEG	30,000–70,000	2006	80,683	25,493	57,376	47,548	87,381 <sup>b</sup>	NA	NC	
Lost River	FS, IE	SEG	2,200	2009	3,500	2,542	NA	3,581	2,393	NA	NC	
Situk River	BS, IE	BEG	3,300–9,800	1994	8,533	5,763	NA	5,814	11,195	NA	NC	
Tsiu/Tsivat Rivers	AS, IE	BEG	10,000–29,000	1994	14,500	14,000	25,200	28,000	11,000	NA	NC	

<sup>a</sup> For the Taku River stock of 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 specified 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 less than 50,000.

<sup>b</sup> Preliminary pending biometric and/or peer review.

AS = peak aerial survey, FS = foot survey, BS = boat survey, FS = foot survey, IE = index escapement, MR = mark-recapture, NC = no change, NA = not available

Table 4.—Estimated pink salmon escapements for systems with formal escapement goals in Southeast Alaska, 2006–2011.

System	Escapement data	Goal type	Escapement goal	Year established	Escapement						2011 EG Team recommendation
					2006	2007	2008	2009	2010	2011	
Southern Southeast	AS, IE	BEG	3.0–8.0 million	2009	4.3 million	10.6 million	6.3 million	7.2 million	5.9 million	MET	NC
Northern Southeast Inside	AS, IE	BEG	2.5–6.0 million	2009	4.0 million	4.7 million	1.5 million	3.7 million	3.2 million	MET	NC
Northern Southeast Outside	AS, IE	BEG	0.75–2.5 million	2009	2.0 million	2.3 million	1.7 million	1.8 million	2.0 million	MET	NC
Situk River (odd-year)	Weir	BEG	54,000–200,000	1995		229,033		62,787		MET	Change to lower bound SEG 33,000
Situk River (even-year)	Weir	BEG	42,000–105,000	1995	114,779		1,232		89,301		Change to lower bound SEG 33,000

\* Recommended Lower Bound SEG for Situk River even- and odd-year runs combined based on weir count through 5 August.

AS = peak aerial survey, IE = index escapement, NC = no change.

Table 5.—Estimated chum salmon escapements for systems with formal escapement goals in Southeast Alaska, 2006–2011.

System	Escapement data	Goal type	Escapement goal	Year established	Escapement						2011 EG Team recommendation
					2006	2007	2008	2009	2010	2011	
Southern Southeast Summer-Run	AS, IE	Lower bound SEG	68,000	2009	76,000	132,000	13,000	41,000	47,000	MET	Change to lower bound SEG of 54,000
Northern Southeast Inside Summer-Run	AS, IE	Lower bound SEG	149,000	2009	282,000	149,000	99,000	107,000	77,000	NA	Change to lower bound SEG of 119,000
Northern Southeast Outside Summer-Run	AS, IE	Lower bound SEG	19,000	2009	57,000	34,000	46,000	15,000	24,000	MET	NC
Cholmondeley Sound Fall-Run	AS, IE	SEG	30,000–48,000	2009	54,000	18,000	49,500	39,000	76,000	NA	NC
Port Camden Fall-Run	AS, IE	SEG	2,000–7,000	2009	2,420	505	1,400	1,711	5,400	NA	NC
Security Bay Fall-Run	AS, IE	SEG	5,000–15,000	2009	15,000	5,400	11,700	5,100	6,500	NA	NC
Excursion River Fall-Run	AS, IE	SEG	4,000–18,000	2009	2,203	6,000	8,000	1,400	6,100	NA	NC
Chilkat River Fall-Run	MR, FW	SEG	75,000–170,000	2009	704,000	331,000	451,000	337,000	91,000	NA	NC

AS = peak aerial survey, IE = index escapement, MR = mark-recapture, FW = fish wheel, NC = no change; NA = not available