



FISH PASSAGE CENTER

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September 25, 2008

Mr. Ralph Steiner
 Rapid River Hatchery
 HC 69, Box 85
 Riggins, ID 83549

Dear Ralph-

The Fish Passage Center has been marking fish from the Rapid River Hatchery facility over the last several years as part of the Smolt Monitoring Program (SMP) and the Comparative Survival Study (CSS). For purposes of these studies data are collected on either juvenile life stage, or both the juvenile and adult life stages. The SMP provides information for in-season management of the hydrosystem and post-season analyses to the federal, state, and tribal fishery agencies. The CSS is a multi-year program that estimates survival rates over different life stages for spring and summer Chinook produced in major hatcheries. We would like to share with you some of the information we developed under these studies for the fish used from the Rapid River Hatchery facility.

Under the Smolt Monitoring Program, information is collected on the timing and migration speed from the hatchery to Lower Granite Dam. In addition, as part of the CSS study, juvenile survival estimates are developed for the hydrosystem between Lower Granite and Bonneville Dams, as well as survival from juvenile to adulthood of different passage histories. Table 1 below provides estimates of minimum, median, and maximum travel times from each year's release to Lower Granite Dam. Also provided are estimates of the 95% confidence limits around the estimated median travel time.

Table 1. Rapid River Hatchery Spring Chinook Travel Times to Lower Granite Dam

Release Date	Migration Year	Travel Time (Days)			Confidence Limits 95%		Lower Granite	
		Min	Med	Max	Lower	Upper	Flow (kcfs)	Temp (F)
4/1	1997	1.5	34.9	115.8	34.4	35.4	143	52
4/13	1998	n/a	19.5	60	19.5	19.6	75.2	52.6
4/2, 4/20	1999	1.4	37.1	134.8	36.9	37.2	95.7	49.8
3/17	2000	19.7	49	75.9	48.9	49	79.2	49.7
3/15	2001	16.2	46.3	110.3	46.2	46.3	34.7	46.7
3/18	2002	14.9	47.4	66.8	47.4	47.5	27.5	
3/17	2003	15.1	47.4	84.1	47.2	47.7	28.6	
3/15	2004	14.4	46.7	72.6	46.6	46.9	23.9	
3/15	2005	20.9	50.9	78.2	50.8	50.9		
3/17	2006	15.1	48.9	71.1	48.7	49.1	44	
3/15	2007	11.3	50.3	82.9	50.2	50.4	52.1	
3/17, 3/19	2008	14.1	52.6	86.0	52.6	52.7	52.7	49.7

Table 2 below contains estimates calculated in the CSS study of juvenile survival in the hydrosystem between Lower Granite and Bonneville Dams and the survival to adulthood of juvenile salmonids in several categories. Those categories are SAR(T), SAR(C₀), and Weighted SAR_{LGR-10-LGR}, where SAR(T) represents smolts transported from Lower Granite, Little Goose, or Lower Monumental Dam, SAR(C₀) represents smolts migrating in river, and SAR_{LGR-10-LGR} is a weighted estimate that is obtained by taking the proportion of the total population of smolts (tagged and untagged) at Lower Granite Dam in each study category and multiplying by the respective study category's SAR_{LGR-10-LGR}. In effect, the weighted SAR_{LGR-10-LGR} is the estimated SAR for the overall hatchery release. The data presented in Table 2 were taken from the Draft 2008 CSS Annual Report, which can be downloaded from the FPC webpage (<http://www.fpc.org/documents/CSS.html>).

Table 2. Rapid River Hatchery Spring Chinook Survivals from CSS

Release Date	Migration Year	Juvenile Survival LGR-BON	Proportion Transported	T/C Ratio	SAR(T)	Adult Survival SAR(C ₀) %	Weighted SAR _{LGR-10-LGR}
4/1	1997	0.33	0.54	1.73	0.79	0.45	0.65
4/13	1998	0.59	0.86	1.66	2.00	1.20	1.88
4/2, 4/20	1999	0.57	0.80	1.28	3.04	2.37	2.91
3/17	2000	0.58	0.68	1.32	2.10	1.59	1.94
3/15	2001	0.33	0.97	21.7	1.08	0.05 ^B	1.06
3/18	2002	0.71	0.67	1.50	1.01	0.67	0.90
3/17	2003	0.66	0.55	1.07	0.25	0.23	0.24
3/15	2004	0.35	0.89	1.57	0.36	0.23	0.34
3/15	2005	0.54	0.87	2.36	0.27	0.12 ^C	0.25
3/17	2006 ^A	0.59	0.77	1.25	0.52	0.42	0.49

^A Migration year 2006 is incomplete with Age 2-salt adult returns through 8/13/2008

^B Assumed SAR(C₀) same as SAR(C₁) for 2001

^C In-river SAR is combination of groups C₁ and C₀

Figure 1 below is a time series of the the Weighted SAR_{LGR-10-LGR} estimates over the ten years of available data.

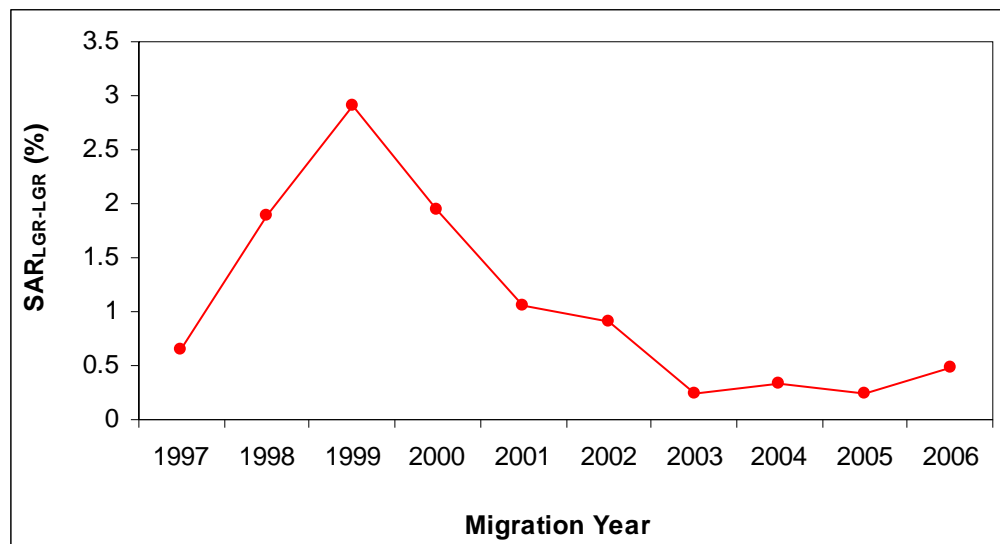
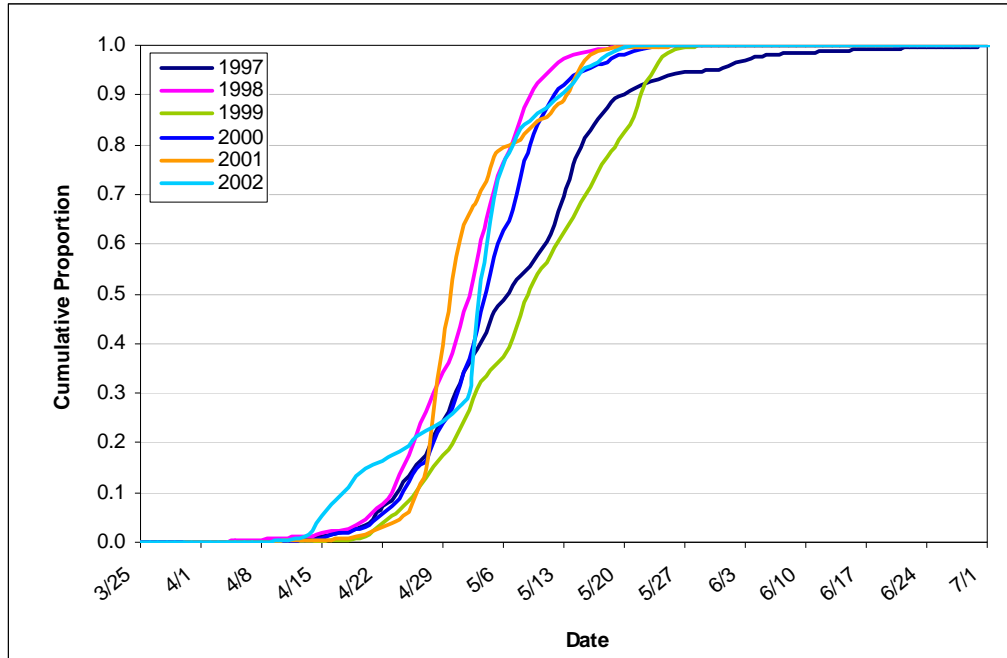


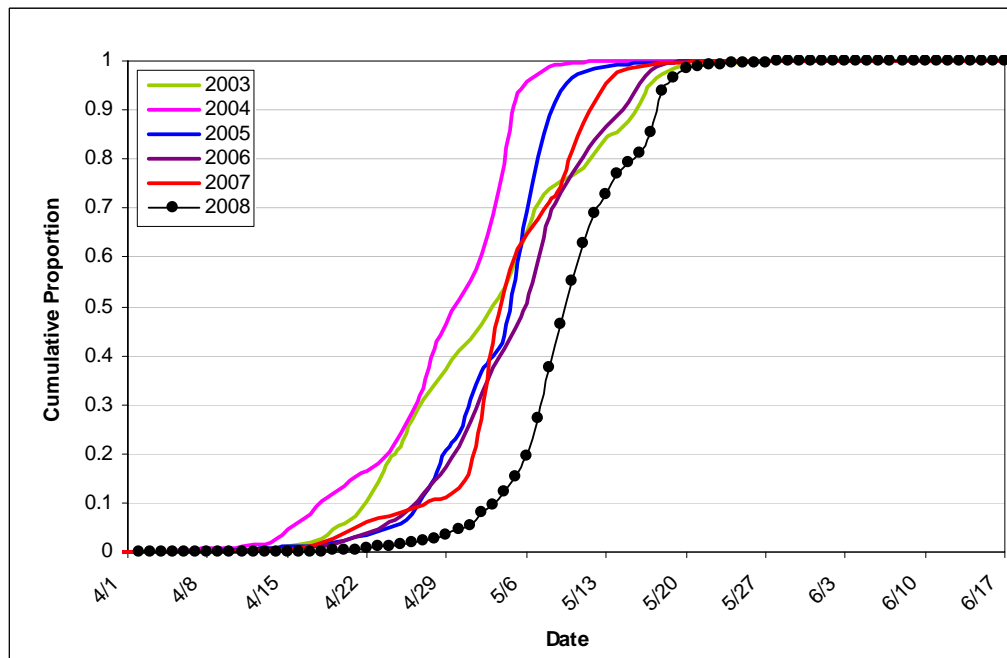
Figure 1. Weighted SAR_{LGR-10-LGR} for Rapid River Hatchery spring Chinook releases over the past 10 years (1997-2006).

Finally, we are providing figures to illustrate passage timing of Rapid River Hatchery spring Chinook to Lower Granite Dam over the past several years. To better facilitate comparison, we have broken the years into two separate graphs. Please note the different scales on the x-axis.

Rapid River Hatchery – Spring Chinook (1997-2002)
Passage Timing to Lower Granite Dam

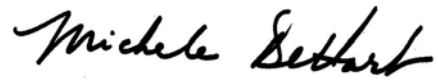


Rapid River Hatchery – Spring Chinook (2003-2008)
Passage Timing to Lower Granite Dam



We hope that the information we have provided regarding the use and application of information from the marked groups over the last several years is of some use to you. If you would like any additional information regarding these releases please feel free to contact us.

Sincerely,

A handwritten signature in black ink that reads "Michele DeHart". The signature is written in a cursive, flowing style.

Michele DeHart
Fish Passage Center Manager

Cc: Pete Hassemer, IDF&G
Doug DeHart, USFWS
Brian Lipscomb, CBFWA
Tony Nigro, ODFW
Ron Boyce, ODFW
FPAC