



## FISH PASSAGE CENTER

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September 1, 2010

Mr. Ralph Steiner  
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 the 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 an update of some of the information we developed under these studies for the fish used from the Rapid River Hatchery facility in 2010.

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. The 2010 estimate of travel time to LGR follows the convention we introduced in last year's report, where travel time to LGR is estimated as the date of arrival at LGR minus the date of detection at the Rapid River Hatchery detection site (RPJ).

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

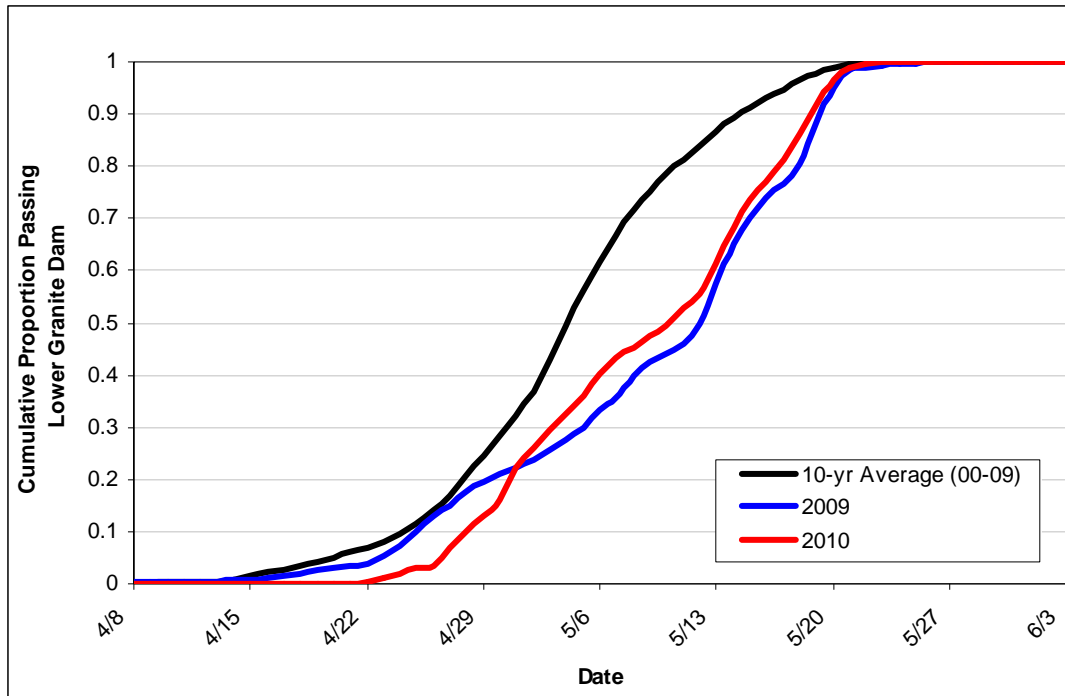
Release Date	Migration Year	Travel Time (Days) <sup>†</sup>			95% Confidence Limits	
		Min	Med	Max	Lower	Upper
4/1	1997	1.5	34.9	115.8	34.4	35.4
4/13	1998	n/a	19.5	60	19.5	19.6
4/2, 4/20	1999	1.4	37.1	134.8	36.9	37.2
17-Mar	2000	5.5	30.2	63.1	30.1	30.3
15-Mar	2001	7.6	30.1	79.9	30.1	30.2
18-Mar	2002	4.2	30.7	70.2	30.6	30.9
17-Mar	2003	5.7	32.3	66.0	32.2	32.4
15-Mar	2004	8.3	33.6	68.3	33.5	33.6
15-Mar	2005	8.7	33.6	59.4	33.4	33.8
17-Mar	2006	3.7	26.2	131.7	26.1	26.3
15-Mar	2007	4.5	20.3	66.9	20.2	20.5
3/17,3/19	2008	5.0	25.6	65.0	25.5	25.6
16-Mar	2009	4.0	35.0	72.4	34.6	35.2
15-Mar	2010	4.9	28.1	63.2	27.9	28.3

<sup>†</sup> Prior to MY 2000, travel times are based on the date of release and date of arrival at LGR. For MY 2000 and beyond, travel times are based on date of detection at the Rapid River Hatchery PIT-tag detection site (RPJ) and arrival at LGR.

As with last year, we are providing a table that presents the estimated 10%, 50%, and 90% passage dates of Rapid River yearling Chinook juveniles at Lower Granite Dam for each of the years of tagging (Table 2). Also, Figure 1 is provided as an illustration of how the arrival timing of the 2010 smolt release compares to last year's release, as well as the average of the most recent 10-years (2000-2009).

**Table 2.** Estimated 10%, 50%, and 90% passage dates of Rapid River Hatchery yearling Chinook at Lower Granite.

Migration Year	Release Date(s)	10% Passage Date	50% Passage Date	90% Passage Date
1997	1-Apr	24-Apr	7-May	20-May
1998	13-Apr	24-Apr	3-May	10-May
1999	4/2,4/20	26-Apr	9-May	22-May
2000	17-Mar	26-May	4-May	12-May
2001	15-Mar	27-Apr	30-Apr	14-May
2002	18-Mar	18-Apr	4-May	13-May
2003	17-Mar	22-Apr	3-May	16-May
2004	15-Mar	18-Apr	30-Apr	5-May
2005	15-Mar	27-Apr	5-May	9-May
2006	17-Mar	27-Apr	6-May	15-May
2007	15-Mar	28-Apr	4-May	12-May
2008	3/17,3/19	4-May	10-May	18-May
2009	16-Mar	25-Apr	13-May	20-May
2010	15-Mar	28-Apr	11-May	19-May



**Figure 1.** Cumulative passage timing of Rapid River Hatchery yearling Chinook to Lower Granite Dam.

Table 3 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(C<sub>0</sub>), and Weighted SAR<sub>LGR-10-LGR</sub>, where SAR(T) represents smolts transported from Lower Granite, Little Goose, or Lower Monumental Dam, SAR(C<sub>0</sub>) represents smolts migrating in river (undetected at Snake River transportation collector projects), and SAR<sub>LGR-10-LGR</sub> 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<sub>LGR-10-LGR</sub>. In effect, the weighted SAR<sub>LGR-10-LGR</sub> is the estimated SAR for the overall hatchery release (without jacks). The data presented in Table 3 were taken from the Draft 2010 CSS Annual Report, which can be downloaded from the FPC webpage (<http://www.fpc.org/documents/CSS.html>). Figure 2 is a time series of the Weighted SAR<sub>LGR-10-LGR</sub> estimates over the twelve years of available data.

**Table 3.** Rapid River Hatchery Spring Chinook Survivals from CSS

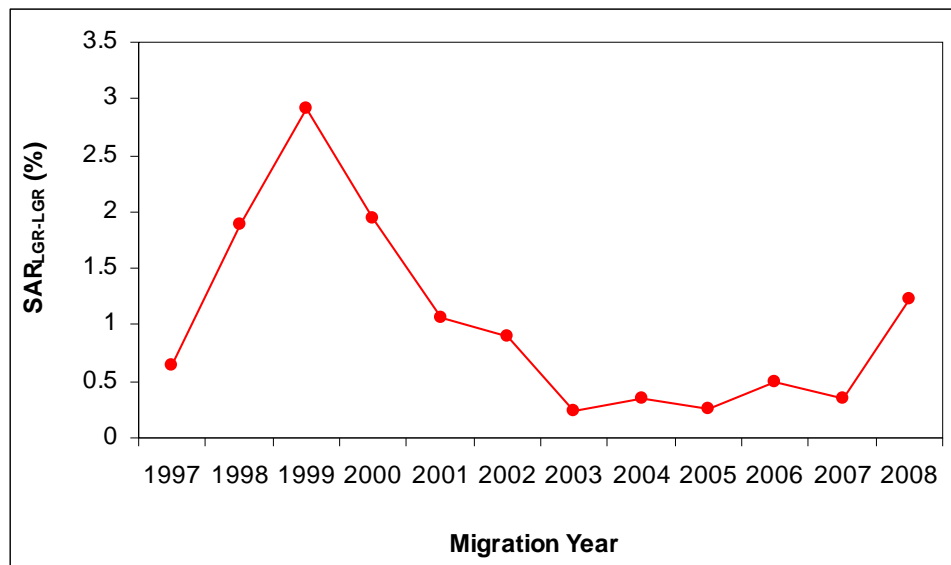
Release Date	Migration Year	Juvenile			Adult Survival		
		Survival (LGR-BON)	Proportion Transported	T/C Ratio	SAR(T) %	SAR(C <sub>0</sub> ) %	Weighted SAR <sub>LGR-to-LGR</sub>
4/1	1997	0.33	0.54	1.73	0.79	0.45	0.65
4/13	1998	0.59	0.86	1.66	2.00	1.20	1.88
4/2, 4/20	1999	0.57	0.80	1.28	3.04	2.37	2.91
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 <sup>B</sup>	1.06
3/18	2002	0.71	0.67	1.51	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 <sup>C</sup>	0.25
3/17	2006 <sup>D</sup>	0.55	0.71	1.35	0.57	0.42	0.50
3/15	2007 <sup>D</sup>	0.63	0.35	1.81	0.45	0.25	0.34
3/17, 3/19	2008 <sup>A,D</sup>	0.56	0.59	1.54	1.39	0.90	1.23

<sup>A</sup> Migration year 2008 is incomplete with Age 2-salt adult returns through 7/26/2010

<sup>B</sup> Assumed SAR(C<sub>0</sub>) same as SAR(C<sub>1</sub>) for 2001

<sup>C</sup> In-river SAR is combination of groups C<sub>1</sub> and C<sub>0</sub>

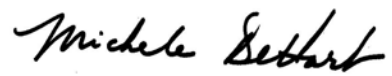
<sup>D</sup> Estimates for migration years 2006 through 2008 reflect use of new methodology developed for random pre-assignment of “monitor mode” and “return-to-river mode” operations. See 2010 CSS Annual Report for details.



**Figure 2.** Weighted SAR<sub>LGR-to-LGR</sub> for Rapid River Hatchery spring Chinook releases over the past 12 years (1997-2008). Migration year 2008 is incomplete with Age 2-salt adult returns through 7/26/2010.

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  
Bill Tweit, WDFW  
Jay Hesse, Nez Perce  
Tony Nigro, ODFW  
Ron Boyce, ODFW  
FPAC