



FISH PASSAGE CENTER

1827 NE 44th Ave., Suite 240, Portland, OR 97213

Phone: (503) 230-4099 Fax: (503) 230-7559

<http://www.fpc.org>

e-mail us at fpcstaff@fpc.org

September 2, 2009

Mr. Gene McPherson
McCall Hatchery
Idaho Department of Fish and Game
P.O. Box 1021
McCall, ID 83638

Dear Gene-

The Fish Passage Center has been marking fish from the McCall 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 some of the information we developed under these studies for the fish used from the McCall 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 to adulthood of different passage histories.

Table 1 below provides estimates of minimum, median, and maximum travel time from each year's release to Lower Granite Dam. Also provided are estimates of the 95% confidence limits around the estimated median travel time.

In past years, we have provided you with figures to illustrate passage timing of McCall yearling summer Chinook to Lower Granite Dam since tagging began in 1997. However, given that McCall Hatchery has been releasing tagged fish for so many years now, these figures have become cumbersome. This year, we have decided to provide a table that presents the estimated 10%, 50%, and 90% passage dates of McCall yearling summer 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 2009 smolt release relates to last year's release, as well as the average of the most recent 10-years (1999-2008).

Table 1. McCall Hatchery Summer 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)
20-Mar	1997	9.9	49.4	100.2	49.1	49.7	150.9	52.3
30-Mar	1998	14.4	36.5	109.7	36.4	36.5	71.4	51.4
6-Apr	1999	13.8	39.9	129	39.7	40.5	95.5	50.4
5-Apr	2000	11.3	34.1	114	34	34.2	94.2	51.6
26-Mar	2001	24.2	48.5	114.8	48.2	48.6	41.4	47.3
25-Mar	2002	20.2	51.3	82.5	51	51.5	27.6	
31-Mar	2003	12.4	42	101.3	41.9	42.1	28.8	
22-Mar	2004	16.4	43.5	96.1	43.4	43.6	23.9	
18-Mar	2005	24.4	49.4	93.1	49.4	49.5		
21-Mar	2006	17.5	46.1	76	45.9	46.3	44.2	
19-Mar	2007	20.0	47.0	71.8	46.8	47.2	52.9	
17-Mar	2008	32.9	54.7	100.5	54.5	54.9		
24-Mar	2009	17.1	50.1	92.8	49.9	50.4	80.6	

Table 2. Estimated 10%, 50%, and 90% passage dates of McCall Hatchery yearling summer Chinook at Lower Granite Dam.

Migration Year	Release Date	10% Passage Date	50% Passage Date	90% Passage Date
1997	20-Mar	27-Apr	10-May	16-May
1998	30-Mar	28-Apr	6-May	14-May
1999	6-Apr	2-May	16-May	26-May
2000	5-Apr	1-May	9-May	22-May
2001	26-Mar	30-Apr	13-May	17-May
2002	25-Mar	3-May	15-May	21-May
2003	31-Mar	27-Apr	12-May	20-May
2004	22-Mar	27-Apr	4-May	10-May
2005	18-Mar	29-Apr	7-May	12-May
2006	21-Mar	26-Apr	6-May	16-May
2007	19-Mar	25-Apr	5-May	15-May
2008	17-Mar	5-May	11-May	20-May
2009	24-Mar	26-Apr	13-May	21-May

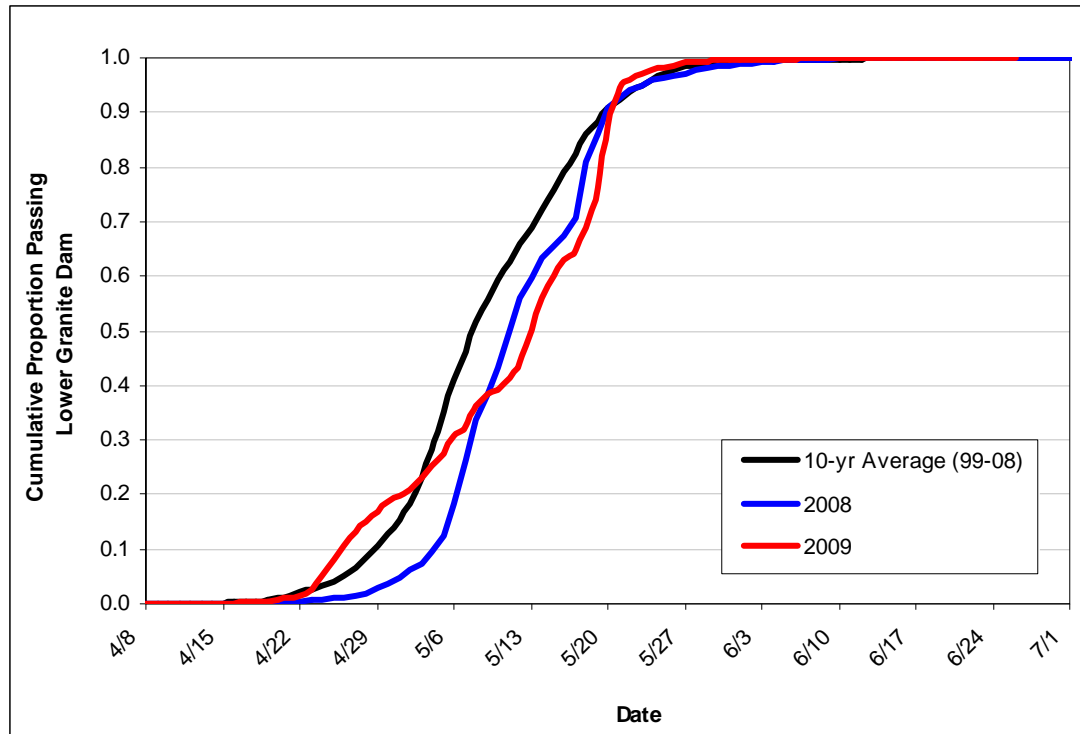


Figure 1. Cumulative passage timing of McCall Hatchery yearling summer Chinook to Lower Granite Dam.

Table 3 below contains estimates calculated in the CSS study of juvenile survival in the hydrosystem between Lower Granite and Bonneville Dams and 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 3 were taken from the Draft 2009 CSS Annual Report, which can be downloaded from the FPC webpage (<http://www.fpc.org/documents/CSS.html>). Finally, Figure 2 below is a time series of the Weighted SAR_{LGR-10-LGR} over the eleven years of available data.

Table 3. McCall Hatchery Summer Chinook Survivals from CSS

Release Date	Migration Year	Juvenile Survival (LGR-BON)	Proportion Transported	T/C Ratio	Adult Survival		
					SAR(T) %	SAR(C ₀) %	Weighted SAR _{LGR-to-LGR}
20-Mar	1997	0.43	0.51	1.38	1.51	1.09	1.31
30-Mar	1998	0.56	0.86	1.96	2.69	1.38	2.50
6-Apr	1999	0.52	0.73	1.49	3.59	2.4	3.26
5-Apr	2000	0.61	0.58	1.89	3.88	2.06	3.12
26-Mar	2001	0.27	0.97	31.9	1.23	0.04 ^B	1.20
25-Mar	2002	0.58	0.68	1.44	1.49	1.03	1.34
31-Mar	2003	0.70	0.54	1.47	0.79	0.54	0.68
19-Mar	2004	0.44	0.93	1.59	0.40	0.25	0.39
18-Mar	2005	0.53	0.86	3.02	0.62	0.20 ^C	0.57
21-Mar	2006 ^D	0.60	0.66	1.12	1.16	1.03	1.1
24-Mar	2007 ^{A D}	0.82	0.31	2.09	1.46	0.70	0.92

^A Migration year 2007 is incomplete with Age 2-salt adult returns through 8/3/2009

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

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

^D Smolt migration year 2006 and 2007 use combined TWS and BWS data

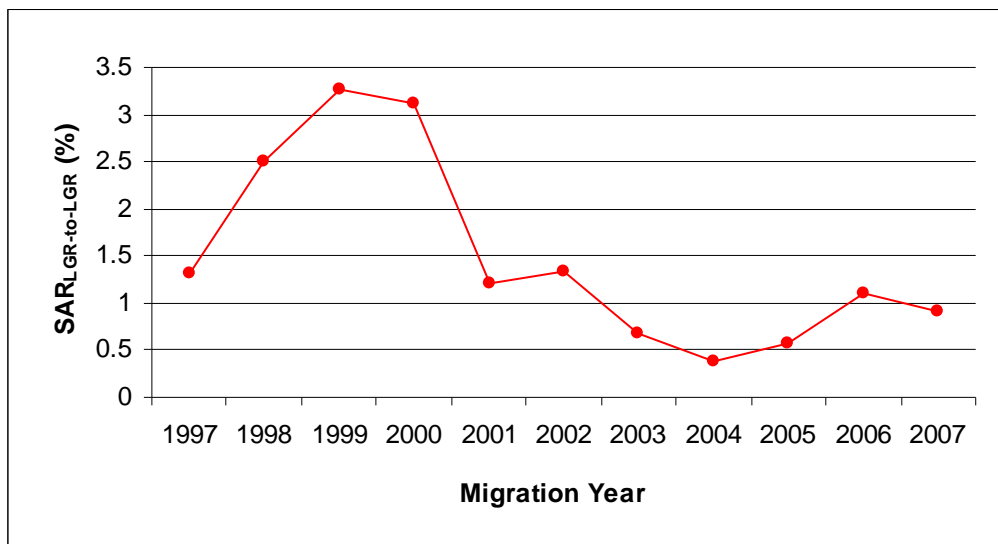
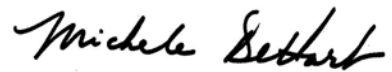


Figure 2. Weighted SAR_{LGR-to-LGR} for McCall Hatchery summer Chinook over the last 11 years (1997-2007). Migration year 2007 is incomplete with Age 2-salt adult returns through 8/3/2009.

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