



# FISH PASSAGE CENTER

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## MEMORANDUM

TO: FPAC

FROM: FPC Staff

DATE: June 1, 2009

RE: Spring Chinook adult passage in Snake River in May 2009

In response to your request FPC looked at PIT-tag data for 2009 to determine if there were signs within the PIT-tag data of adult spring Chinook delaying below Little Goose Dam in 2009. We compared PIT-tag daily average travel time between Ice Harbor and Lower Granite dams as well as conversion rates in 2009 to similar data for the years 2006 to 2008. The PIT tag data set analyzed for this memo was through May 26.

Our conclusions based on a preliminary analysis of PIT-tag data are as follows:

- Travel times for PIT-tagged adult Chinook between Ice Harbor Dam and Lower Granite Dam in 2009 are similar to those of adult Chinook in other recent years during early May. Travel times are faster than were observed when the delay below Little Goose was observed in 2007.
- However, we need to point out that travel time data for 2009 is not complete since slower fish may not have been observed during period of time of analysis.
- Conversion proportion (number of adults detected at LGR of the original number detected at Ice Harbor) for 2009 was 91% for groups passing Little Goose Dam through May 18<sup>th</sup>. However, this analysis is ongoing and it is possible that these rates will increase as additional tags are detected at Lower Granite.

Based on adult counts there is difference of more than 12,000 adult Chinook (including jacks) between Lower Monumental Dam and Little Goose dams (Table 1). Because of this difference

an analysis of PIT-tag data was requested by FPAC. Four PIT-tag analysis detection arrays exist in the adult ladders at Ice Harbor and Lower Granite dams (but are not present at Lower Monumental or Little Goose dams). FPC compared 2009 data on daily travel time and seasonal conversion proportions to the years 2006 to 2008. We compared data for the month of May in those years to see if the proportion of adults detected at Ice Harbor Dam that successfully passed through the Snake River dams and were subsequently detected at Lower Granite Dam differed from year to year. We compared average travel time by date as well as total number detected. Since this analysis only included detection information at Lower Granite Dam through May 26 in 2009, we restricted the analysis of conversion proportion to the period prior to May 19 for this year. Data subsequent to that shows a large drop off in conversion proportions since not all adults would have passed Lower Granite Dam in that short of a time period.

The analysis of conversion proportion shows that Chinook adult conversion proportion was lower in 2009 than three other recent years Table 2. The average 2009 conversion proportion was 91 percent between May 1 and May 18. The analysis was curtailed at May 18 since a portion of PIT-tag adults passing Ice Harbor after that date were likely still in transit when this analysis was completed (see Figure 2).

The results of travel time analysis was inconclusive (see Figure 1). Average daily travel times in 2009 were lower than in most other recent years'. However, travel time data may be misleading since the 2009 passage is not complete and while it is possible that fish remain below Little Goose Dam it could also mean fish are not holding below Little Goose. The data available to date suggest that at least for the first half of May the 2009 adult travel times were similar to other recent years. It is important to note that travel times in 2007 (when a delay of adults was observed) were much longer than other recent years indicative of issues that were present that year.

Table 1. Summary of Adult spring Chinook passage counts at Snake Rive dams through May 31, 2009.

Dam	Chinook Adult	Chinook Jack	Total Chinook
IHR	42,700	23,663	66,363
LMN	50,966	14,271	65,237
LGS	34,722	17,820	52,542
LGR	31,264	21,445	52,709

Table 2. Summary of Adult spring Chinook conversion proportions Between Ice Harbor and Lower Granite Dams in May (jacks not included).

Dam	Ice Harbor Count	Lower Granite Count	Conversion Proportion
2006	245	227	92.7%
2007	148	140	94.6%
2008	727	705	97.0%
2009 <sup>a</sup>	621	565	91.0%

<sup>a</sup> The 2009 conversion data was for the period May 1 to May 18.

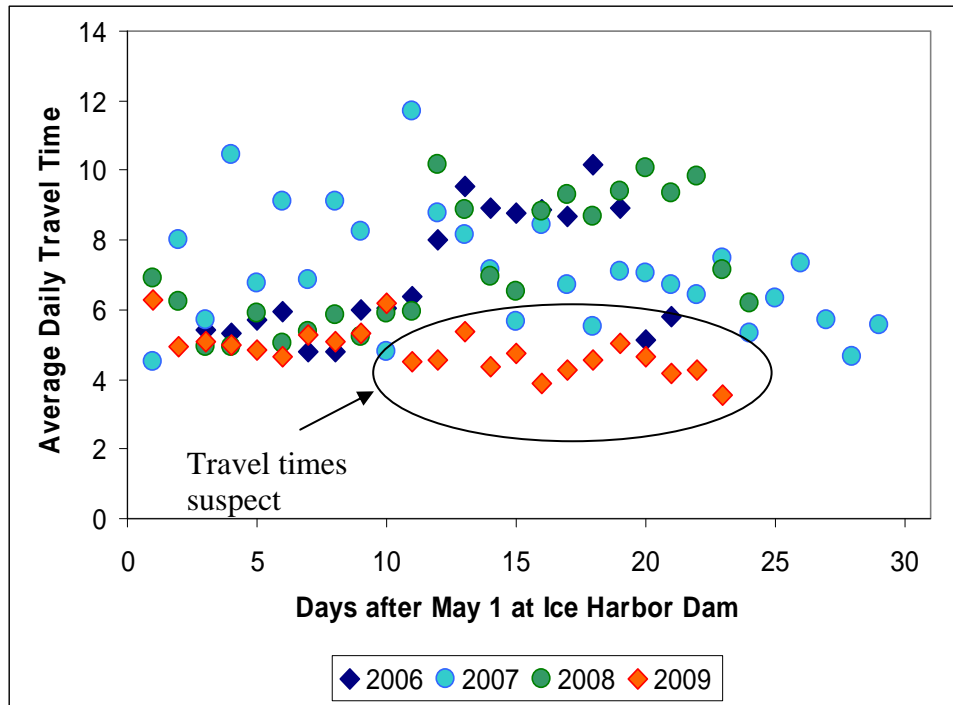


Figure 1. Average Daily Travel Time for PIT-tag adult Chinook (no jacks included) between Ice Harbor and Lower Granite dams between May 1 and May 31 in the years 2006 to 2009.

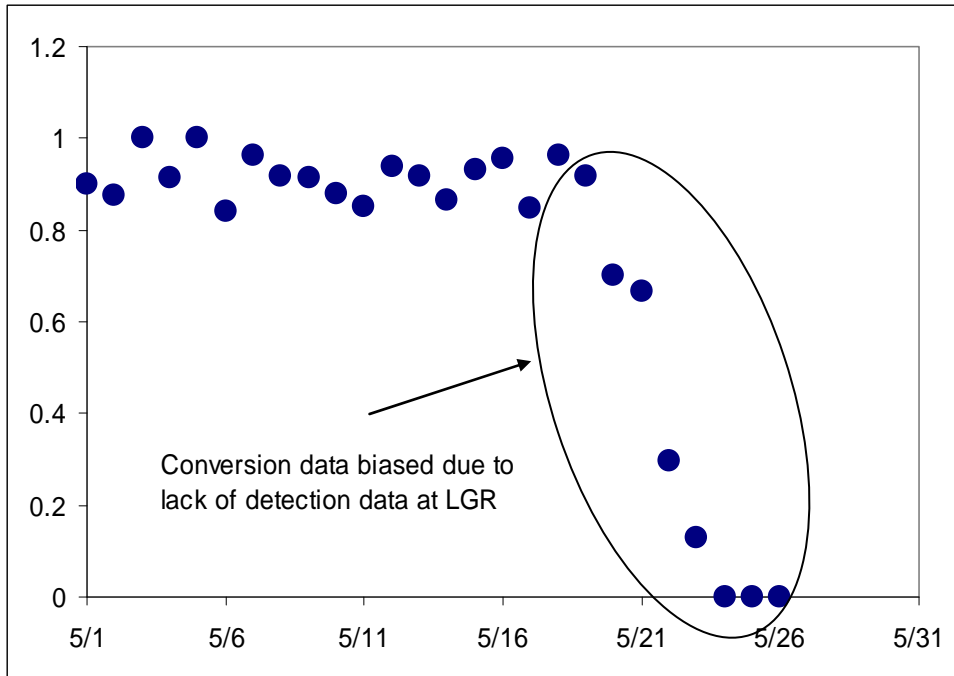


Figure 2. Daily Chinook Adult PIT-tag conversion rates in May of 2009. Drop off in rates after May 19 are due to lack of time for adults to reach LGR. Conversion proportion for 2009 were curtailed on May 18 for comparison to other recent years in Table 2.

I can't change the graph – but I would highly recommend circling the points that you would not use and annotating – or remove them