



FISH PASSAGE CENTER

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MEMORANDUM

TO: FPAC

FROM: Michele DeHart

DATE: August 8, 2005

RE: Update of Adult Passage in the Snake River

At your request the Fish Passage Center provided a July 7, 2005 and a July 28, 2005 memo to you describing the adult passage conditions this year. This is an update of those memos.

Coincident with the initiation of spill on June 20, it was observed that the adult counts declined at Little Goose Dam. The situation was immediately addressed by changing spill patterns and by reducing daytime spill percentages. Spill patterns were changed on the weekend following the initiation of spill on June 20th. When the adult passage did not improve, efforts were undertaken to reduce the spill volume relative to the amount of water passing through the powerhouse in order to draw more adults to the fishway entrances. Spill was reduced to 50% of total river flow during daytime hours on June 28, and then when adult passage numbers did not increase, spill was further reduced to 30% of river flow during daytime hours on June 30. Adult fish counts at Little Goose Dam responded and exceeded 1500 fish for the day. Adult passage appears to have proceeded without problems, except for July 5 when the adult count decreased to 57 fish. This appeared to be due to a delayed operational change from the nighttime to the daytime spill pattern at the project. The FPC concluded in the original memo that “, the delay in passage at Little Goose Dam due to the high volume of spill at that project relative to river flow appears to have been addressed by the reduction of daytime spill at that project to 30% of total flow. In addition, given the variability in traditional counts among years and the PIT tagged fish conversion percentages observed, there does not at this time appear to be an issue with delay or with survival of adult fish this year when the data are compared to past years.”

In the original memo the FPC used two sources of information to review adult passage in the Snake River, 1) the traditional adult counts for which there is a long time

series of data, and 2) the more recent adult PIT tag detections that are available since the installation of the adult PIT tag detector at Ice Harbor Dam in 2003.

Traditional Adult Counts

Traditional adult counts are made visually at all the Snake River Projects. Counts are provided via the US Army Corps of Engineer’s web page. Table 1 presents the conversion percentages (percentage of fish from the downstream dam passing the upstream dam) between the Snake River projects for 2005 to-date and compares those percentages to past years. As can be observed from the table there is a considerable variation in conversion percentages among years for any of the projects using traditional counts. From these data it appears that the conversion percentage observed thus far in 2005 is not different from what has been observed from the past five years when summer spill did not occur at the projects.

Table 1. 2000 to 2004 Adult Chinook Passage at Snake River Dams using Traditional Summer Chinook Count Dates. Traditional counting dates for summer chinook begin on 6/12 at Ice Harbor, 6/14 at Lower Monumental, 6/16 at Little Goose and 6/18 at Lower Granite. The 2005 Count data is from traditional start date to August 7, 2005. (%) = Number of fish counted at downstream dam and passing next upstream dam.

| Dams | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 |
|-------------------------|------------------|-------------------|--------------------|--------------------|--------------------|-------------------|
| Ice Harbor | 8,771 | 13,173 | 20,742 | 26,607 | 15,270 | 4,241 |
| Lower Monumental | 8,274 (94.3%) | 10,593 (80.4%) | 18,718 (90.2%) | 23,744 (89.2%) | 19,287 (126.3%) | 4,680 (110.4%) |
| Little Goose | 6,885 (83.2%) | 9,304 (87.8%) | 14,340 (76.6%) | 20,854 (87.8%) | 15,929 (82.6%) | 4,160 (88.9%) |
| Lower Granite | 6,666 (96.8%) | 8,767 (94.2%) | 16,422 (114.5%) | 22,159 (106.3%) | 13,735 (86.2%) | 3,939 (94.7%) |

PIT Tagged Fish Data

There is a two-year record for the conversion percentage for PIT tagged fish between Ice Harbor and Lower Granite Dam. The data set used was fish that were detected at Ice Harbor Dam and subsequently detected at Lower Granite Dam. Fish that were detected at Ice Harbor, but were bound for the Yakima River were removed from the data set as well as those bound for the Tucannon River. In addition, fish that were tagged at Ice Harbor Dam were removed so as not to include handling and tagging effects. In 2003 the conversion percentage was 94.05% and in 2004 the conversion percentage was 93.14%.

A few more adults have been detected since the last update in the later groups (see table). The 2005 conversion percentage to Lower Granite Dam thus far of all PIT tagged fish that were detected at Ice Harbor Dam between 6/15/2005 and 7/1/2005 remains at 92.53%.

In addition to the overall conversion percentage we also looked at the conversion percentages for the detections at Ice Harbor Dam grouped on a daily basis. Here the sample sizes are very small (1 to 19 fish) and consequently one missing fish can cause the percentage to be small, but it appears overall from the data that the daily conversions percentages are

similar to what was observed for the 2003 and 2004 data. Again, these data are preliminary and the percentages are expected to increase as more fish are expected to pass Lower Granite Dam from these groups.

In summary, the updated information suggests that the conclusions reached in the previous memos remain valid.

Table 3. Percent of fish detected at Lower Granite Dam of daily group originating at Ice Harbor Dam and the available historic data for the same time period.

| Date | Daily Detection at Ice Harbor | Number Detected at Lower Granite | % Conversion |
|--------------------|-------------------------------|----------------------------------|--------------|
| 6/15/2005 | 12 | 12 | 100.00% |
| 6/16/2005 | 19 | 17 | 89.47% |
| 6/17/2005 | 18 | 17 | 94.44% |
| 6/18/2005 | 18 | 18 | 100.00% |
| 6/19/2005 | 7 | 7 | 100.00% |
| 6/20/2005 | 7 | 7 | 100.00% |
| 6/21/2005 | 10 | 6 | 60.00% |
| 6/22/2005 | 8 | 8 | 100.00% |
| 6/23/2005 | 13 | 12 | 92.31% |
| 6/24/2005 | 12 | 12 | 100.00% |
| 6/25/2005 | 5 | 5 | 100.00% |
| 6/26/2005 | 6 | 6 | 100.00% |
| 6/27/2005 | 1 | 1 | 100.00% |
| 6/28/2005 | 18 | 17 | 94.44% |
| 6/29/2005 | 10 | 10 | 100.00% |
| 6/30/2005 | 6 | 3 | 50.00% |
| 7/1/2005 | 4 | 3 | 75.00% |
| 7/2/2005 | 5 | 5 | 100.00% |
| 7/3/2005 | 4 | 4 | 100.00% |
| 7/4/2005 | 4 | 3 | 75.00% |
| 7/5/2005 | 2 | 2 | 100.00% |
| 7/6/2005 | 9 | 8 | 88.89% |
| 7/7/2005 | 5 | 3 | 60.00% |
| 7/8/2005 | 4 | 4 | 100.00% |
| 7/9/2005 | 4 | 4 | 100.00% |
| 7/10/2005 | 1 | 1 | 100.00% |
| 7/11/2005 | 0 | 0 | 0.00% |
| 7/12/2005 | 3 | 2 | 66.67% |
| 7/13/2005 | 0 | 0 | 0.00% |
| 7/14/2005 | 0 | 0 | 0.00% |
| 7/15/2005 | 0 | 0 | 0.00% |
| Total through 7/1 | 174 | 161 | 92.53% |
| Total through 7/7 | 203 | 186 | 91.63% |
| Total through 7/15 | 215 | 197 | 91.63% |
| 6/15-7/15 2004 | 277 | 264 | 95.31% |
| 6/15 - 7/7 2004 | 241 | 232 | 96.27% |
| 6/15-7/1 2004 | 204 | 190 | 93.14% |
| 6/15 - 7/15 2003 | 208 | 197 | 94.71% |
| 6/15 - 7/7 2003 | 204 | 195 | 95.59% |
| 6/15-7/1 2003 | 185 | 174 | 94.05% |

* There is no data prior to 2003, because there were no Ice Harbor Adult Detectors until 2003