



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

MEMORANDUM

TO: Ed Bowles, ODFW
Tony Nigro, ODFW
Rick Kruger, ODFW
Fish Passage Advisory Committee

FROM: Michele DeHart

DATE: June 21, 2011

RE: John Day Acoustic Tagging Compliance Monitoring

On February 16, 2011, the Fish Passage Center staff completed a review of the John Day performance standard testing at John Day Dam in 2010. During the RIOG meeting scheduled to discuss John Day operations, the Corps of Engineers representative stated that the Fish Passage Center had made an error in their comments. Specifically, the “error” referenced by the Corps of Engineers, was to the following comment in the February 16, 2011, FPC memorandum:

“Results from analysis of 2008 paired release studies at John Day could not be replicated utilizing the data in the 2008 report.”

The body of the FPC memorandum contained further explanation of the comment. Subsequently, in response to these comments, PNNL provided a spread sheet which presumably explained the FPC error. This spreadsheet demonstrated that PNNL was able to recreate the results from both the 2008 report and the FPC analysis. The spreadsheet also showed the PNNL “post-hoc” analysis, which reassigned treatment groups. This information was necessary to recreate the analysis from the 2008 report. However, this spreadsheet information was not included in the original 2008 final report, and, therefore, was not available to the FPC when we tried to replicate the results utilizing the 2008 report.

After, reviewing the February 16, 2011 FPC memorandum and the PNNL spread sheet response we have the following conclusions:

- **The February 16, 2011 FPC memorandum and comment was not in error. Indeed the PNNL results and conclusions could not be replicated from the data that was included in the 2008 PNNL report of John Day acoustic tagging. The method and rationale for the reassignment of individual fish to treatment groups was not included or described in the 2008 report.**
- **The PNNL response explaining their post-hoc assignment of treatments indicates that there is a high degree of subjectivity in interpretation of acoustic tag results, which raises serious issues regarding the management application of the results of acoustic tag survival estimates.**
- **The post-hoc manipulation of the acoustic tag data, in the reassignment of individual fish to treatment groups and the rationale for the post-hoc adjustment of acoustic tag data should be clearly and specifically described in reporting results.**
- **The post-hoc adjustments can determine the results of the study, is highly subjective, and can impact fish passage management decisions.**

The COE provided a spreadsheet showing the way PNNL used “post-hoc” analysis to reassign treatment blocks to the 30% spill category after the fact. They chose a cut-off of 35% spill so that any percentage below that was a 30% block and any above that was a 40% block. But they went even further in redefining the blocks. Instead of just reassigning blocks it appears they reassigned fish to different treatment blocks based on time of passage. They COE stated what was done as follows in their spreadsheet response (FPC added bold).

*“A post-hoc treatment condition was assigned to **every fish** passing the dam based upon spill level **at the time each fish passed the dam.**”*

It appears then, that the PNNL analysis not only redefined what a treatment was, but also shifted the treatment from temporal blocks to individual fish based blocks, so that passage timing was used to determine the blocking. This redefinition seems arbitrary and blurs the idea of what the treatments were trying to test. Comparing the table in the spreadsheet to the appendix in the final report that FPC used to review the document, it is unclear how the survivals even relate to those FPC reviewed that were included in the report. The reported values in table 3.17 of the final report include several “blocks” where individual fish were reassigned post-hoc to different “treatments” based on conditions at the time of passage. This was done in order to salvage a study when only 3 pairs of blocks met the criteria set up prior to the season. The fact that PNNL was able to recreate the results from the FPC analysis indicates that the methods used in the FPC review were much more understandable and repeatable and that the methods used in the PNNL analysis for the final report were not sufficiently described in their discussion of methodology.