



# FISH PASSAGE CENTER

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## MEMORANDUM

TO: Members Advisory Group  
Brian Lipscomb, CBFWA

FROM: Comparative Survival Study (CSS) Oversight Committee

DATE: July 10, 2009

RE: ISAB/ISRP Tagging Report and associated NPCC staff recommendation to the NPCC.

In response to your request, the CSS Oversight Committee (the Committee) reviewed the Independent Scientific Review Panel and Independent Scientific Advisory Board document entitled, "Tagging Report, A comprehensive review of Columbia River Basin fish tagging technologies and programs" (Report). In addition the Committee reviewed the NPCC staff recommendation to the NPCC dated May 28, 2009. The ISAB/ISRP Report was developed to respond to six questions posed by the NPCC. Two of the questions relate to cost effectiveness of tagging programs. The Committee offers the following comments for your consideration.

Following are our conclusions:

- The ISAB/ISRP report provides a broad overview of tagging methods and makes recommendations regarding coordination, data access and storage, and statistical considerations. The ISAB/ISRP report does not recognize that many of these recommendations are already being implemented. In any case, we believe CBFWA should coordinate among projects and be the clearinghouse for project information, data sharing, and reports.
- Although the Committee recognizes that the ISAB/ISRP Report is a response to specific questions developed by the NPCC staff, the Report and the NPCC questions did not address the most important consideration in tagging studies: the development of a management decision framework that identifies specific management questions and, in

applying RME results to these questions, incorporates the recognized, often quite serious faults and limitations of the various tagging methodologies.

- Because neither the NPCC's questions nor the ISAB/ISRP Report addressed the connections between management decisions and the limitations and faults of tagging studies, serious issues were not addressed and recommendations are offered without context. For example, the ISAB/ISRP have emphasized a need to determine the causes of PIT tags underestimating run reconstruction SARs, apparently assuming, without justification, that the run reconstruction method of estimating SARs is without error or bias. Run reconstruction sources of error and bias include, among others, estimation of smolt numbers, assumptions about missed-clip rates in adults, adult size criteria for window counts, expansion for hours not counted, and corrections for fall back rates.
- The ISAB/ISRP Report and the subsequent NPCC recommendations propose establishing additional process and additional committees. However, numerous committees, processes, and coordination associated with tagging studies are already in place. It is unclear how additional committees and process will address the concerns raised by the NPCC questions. If there is a concern over duplicative or inappropriate tagging efforts, it might be more effective to simply require coordination with other tagging programs as well as identification of tagging effects and limitations as a contract requirement for each study and monitoring program. Prior to establishing additional committees and additional process, the currently established RME process structures should be utilized.
- Many of the specific issues discussed in the ISAB/ISRP Report should be the responsibility of individual researchers. It is incumbent on researchers conducting studies or monitoring to coordinate with other tagging efforts and to clearly identify the limitations of the tagging methodology including tagging and handling effects. In addition, it is incumbent on researchers to identify how tagging and handling effects may limit the application of their results to management decisions.
- The ISAB/ISRP Report has the very serious omission that documented biases and limitations of specific tagging methodologies and associated study design issues were not addressed, therefore providing no guidance toward the proper uses of the various methodologies and study designs. If these methodology and design considerations are not taken into account during the RME design stage to meet specific management questions within a decision framework, then results are very likely to be inappropriate or inapplicable for informing the specified management questions. Failing to take tagging biases, limitations and design issues into account can result in incorrect or misleading conclusions, therefore providing a poor basis for management decisions. As an example, the POST array acoustic tagging efforts on juvenile salmon have generated river, estuary, and continental shelf survival estimates that are extremely contentious as a result of known biases and limitations of that particular tag methodology on survival estimates, along with serious study design problems. As a consequence, the results from that study are inappropriate for many analyses and inapplicable for informing management questions. A second example of the biases and limitations associated with specific tagging methodologies is the apparent survival biases associated with the Juvenile Salmonid Acoustic Telemetry System (JSATS) tags (Wargo Rub et al. 2009 draft report). The biases, limitations and study design issues associated with tagging studies are of critical importance, but received little discussion in the ISAB/ISRP Report.

- Priorities for funding additional research on tag methodologies should be determined as a result of RME coordinated programs being established in on-going RME processes within CBFWA and the federal action agencies. Tagging needs, applied methodologies and their limitations should be considered within the RME management context presently underway. The present processes in addition to contract requirements for individual projects, are adequate to address the issues raised in the Report regarding tagging methodologies and coordination. Establishment of additional committees and processes is likely to be counter productive, requiring additional expenditure of funds and increasing demands on limited staff resources.

**Reference:**

Wargo Rub, M.A., R.S. Brown, B.P. Sandford, K.A. Deters, L.G. Gilbreath, M.S. Myers, M.E. Peterson, R.A. Harnish, E.W. Oldenburg, J.A. Carter, I.W. Welch, G.A. McMichael, J.W. Boyd, E.E. Hockersmith, and G.M. Matthews. 2009 draft report. Comparative Performance of Acoustic-Tagged and Passive Integrated Transponder-Tagged Juvenile Salmonids in the Columbia and Snake Rivers, 2007. Draft report of research for the Portland District, U.S. Army Corps of Engineers.