

## MEMORANDUM FOR RECORD

SUBJECT: Corps of Engineers (Corps) Decision Not to Fund Feasibility Investigation for Sluiceway PIT Tag Detection at Bonneville Powerhouse I and The Dalles in FY2016

1. During development of the FY2016 System Configuration Team (SCT) list of actions proposed to be funded with Columbia River Fish Mitigation (CRFM) construction appropriations, Regional Fish Managers requested that two line items to investigate the feasibility of sluiceway PIT tag detection systems at Bonneville Powerhouse I and The Dalles be added for ranking. While these items were ranked high by Regional Fish Agencies, the Corps will not be funding these actions in FY2016. This memorandum serves to document the Corps decision.
2. The stated goal and interest in sluiceway PIT tag detection systems at these two Lower Columbia River projects is to increase precision on estimates of downstream in-river juvenile survival that utilize PIT tag detections within the Federal Columbia River Power System (FCRPS). Historical precision on these estimates is highly variable and much of this variability is associated with the estimates in the lower river from McNary Dam to Bonneville Dam. One possible way to increase precision is to increase PIT tag detections at these lower river projects through passage routes that currently do not have PIT tag detection capability. This line item was requested to determine if installation of a system using current technology is feasible within the sluiceway environment.
3. The Corps considered the following to come to this decision:
  - a. Line items within CRFM budget submissions are reviewed by Corps Headquarters, the Assistant Secretary of the Army for Civil Works, and the Office of Management and Budget. Specifically, proposed line items must be defended and justified based on the requirements within the FCRPS Biological Opinion (BiOp) for which the CRFM Program has responsibility. Sluiceway PIT tag detection systems at the Corps FCRPS dams are not required by the Reasonable and Prudent Action (RPA) to address the impact of Corps dams on juvenile and adult migrants. Therefore they have never been proposed with justification, defended or approved in any CRFM budget submission.
  - b. While the rationale for these systems is to improve precision of juvenile survival estimates, it is unclear how more precise estimates will inform future Corps decisions on implementing additional operational or configuration actions at its projects to comply with the BiOp. Absent this link, using CRFM Program funding to develop and implement these actions is not appropriate.
  - c. The Corps is currently investigating the feasibility of a spillway PIT tag detection system at Lower Granite Dam to address RPA 55. Significant technological improvements for components of these systems have been made over the last 2 years which may lead to simplified design, construction, operations and maintenance, and to increased detection probabilities in the spillway environment. Installation and operation of this prototype system will serve to inform development of other large PIT tag detection systems at other passage routes, provide information on the probability of detection of fish passing through this route, and will support future feasibility investigations of these systems.
  - d. Sluiceway PIT tag detection systems are not a fish survival or productivity improvement configuration action. Like spillway PIT tag detection systems, these systems if determined to be feasible and deployed, could enhance the tools currently being used for long term monitoring. As such any deployment of these systems beyond a prototype, would become the responsibility of the Corps Operations and Maintenance (O&M) Program and/or the

Bonneville Power Administration's Fish and Wildlife Program. It is premature for the CRFM Program to consider the feasibility of these systems without discussions with appropriate managers of these other program's to determine if there is a long term commitment to funding their capital cost of installation and long term maintenance. To that end, the prototype installation at the Lower Granite spillway will provide order of magnitude costs for installation and short term maintenance which could be used as input for future funding decisions.

- e. Regional Fish Managers have inferred that future BiOp's may be more reliant on system juvenile survival standards for which survival estimates and their precision are dependent on the number of PIT tag detections within the FCRPS. If this is the vision for the future, details should be collaboratively developed during consultation for the next FCRPS BiOp. Specifically, the precision standard needs to be identified, and a power analysis performed to determine what detection capabilities above the current system will be needed (or desired). Using this analysis, a detailed feasibility study of the types, numbers of additional detection sites, and required detection probabilities of each with respect to the proportion of fish species utilizing the route can be evaluated. A trade-off analysis on increased precision versus both initial capital and long term O&M costs of systems could then be performed. This analysis presumably will show if the desired level of precision can be attained at a reasonable cost, and would prioritize sites and types of systems to provide the greatest incremental precision benefit at the least life-cycle cost. While the current assumption is that sluiceway detection will increase the precision of estimates, without a clearly identified precision goal and corresponding power analysis, it is not obvious that these systems alone will provide the level of increased precision desired, or that they are the best alternative to achieve the desired result.

4. For the above reasons the Corps will not fund these actions in FY16.

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