Project Lead: Rich Brown

Agency: PNNL

Project Title: Evaluation of externally JSATS-tagged Subyearling Chinook salmon

Funding Agency: USACE

Study Objectives: The objective of this study is to conduct a field performance test of a neutrally-buoyant externally attached JSATS (juvenile salmonids acoustic telemetry system) tag. Typically, surgically implanted JSATS tags are used to monitor fish in turbine passage studies. However, previous research suggests that the presence of an implanted telemetry tag increases the likelihood that the fish will be injured or die when exposed to rapid decompression characteristic of turbine passage. Comparisons of tag performance will be made between internally and externally JSATS tagged released at Ice Harbor Dam following exposure to a simulated turbine passage system in a Mobile Aquatic Barotrauma Laboratory (MABL) prior to release. A third group of fish will be PIT tagged and affixed with an external dummy tag identical to actual neutrally-buoyant external tags and released. These fish will be retrieved at McNary (MCN) dam following dam passage and examined for injury and external tag retention.

Study History: When fish are internally implanted with a tag and pass through a turbine, it is required that fish increase the volume of their swim bladder to compensate for the added mass. This can result in injuries such as swim bladder rupture, exophthalmia, and emboli and hemorrhaging in the fins and tissues. Therefore a neutrally buoyant externally attached tag may prove an effective tool for estimating turbine passage survival as it will not add mass to the fish or take up space in the coelom. Extensive laboratory testing was conducted on two different external tag designs to determine tag retention and potential effects on growth, survival, tissue damage following a 14-day holding period and injury following simulated turbine passage. Results revealed that an external tag sutured to the dorsal musculature of the fish may be a viable tag design for juvenile Chinook salmon passing through hydropower facilities. .

I certify that I have completed all required coordination for this SbyC project

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Only juvenile fish will be tagged

Juvenile Fish Tagging Description:

Life Stage: Subyearling

Stock: Lyon's Ferry

ESA Status: Listed

Number of Fish: 500

Tagging location: Lower Monumental Dam

Release Location: Lower Monumental Dam

Estimates dates of tagging/release: Beginning no later than 06/08/12 and ending no later than 06/31/12

Does it measure SAR? No

Does it measure collection efficiency? No

SbyC Actions:

Action: Collect All

Target group: Dummy external tags

Number of fish: 500

Site: McNary JMF

Start Date: 05/31/12 (exact date unknown, could be later)

End Date: TBD

Additional Info: Fish will be tagged with dummy external transmitters and PIT tags. All fish need to be recovered to be examined for injury as a result of external tagging.

See attached spreadsheets for PIT tag codes