



# COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

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February 20, 2020

Ron Twiner  
Operations Manager  
U.S. Army Corps of Engineers - John Day Dam  
P. O. Box 823  
Rufus, OR 97050

Dear Mr. Twiner:

The Columbia River Inter-Tribal Fish Commission (CRITFC) requests permission to access the John Day Dam (JDA) to collect non-lethal tissue samples for genetic analysis from approximately 1,000 larval/juvenile Pacific lamprey [Smolt Monitoring Facility] (See attached proposal).

The work schedule is being coordinated with the U.S. Army Corps of Engineers and Pacific States Marine Fisheries Commission staff at the JDA Smolt Monitoring Facility and will occur during routine Pacific lamprey condition monitoring from April through September 2020. We will not collect or handle any additional fish from what is collected by the Smolt Monitoring Program personnel as part of routine sampling.

A non-lethal fin clip (1mm diameter) will be collected from already anesthetized lamprey after the condition monitoring is complete (additional 10 seconds of fish handling). Once sampled, the fish will be immediately returned to the recovery tank. The tissue will be stored dry on Whatman paper and does not require any solutions or chemicals.

Laurie Porter, Lamprey Project Lead and Greg Silver, Lamprey Biologist will be involved in this sampling program assisted occasionally by Jon Hess, Fisheries Geneticist.

If you have any questions please contact Greg Silver, Lamprey Biologist at (503) 238-0667.

Sincerely,

Jaime A. Pinkham  
Executive Director

Enclosure

Cc: Eric Grosvenor, Smolt Monitoring Facility Fish Biologist, U.S. Army Corps of Engineers  
Erin Kovalchuk, Columbia River Coordinator, U.S. Army Corps of Engineers



## **Collection of tissue samples from Pacific lamprey larvae/juveniles for genetic analysis at John Day Dam Smolt Monitoring Program**

CRITFC staff request non-lethal tissue samples for genetic analysis of out-migrating Pacific lamprey larvae and juveniles at John Day Dam (JDA) as part of routine sampling already being conducted for the Smolt Monitoring Program (SMP).

Tissue sampling at JDA and subsequent genetic analysis at the Hagerman Genetics Lab would provide the ability to estimate the relative contribution of each individual tribal translocation program to the total production of out-migrating juvenile and larval Pacific Lamprey from the interior Columbia River basin. All offspring of adults that have been out planted into streams distributed throughout the interior Columbia River basin will encounter JDA on their outmigration to saltwater.

Results from these analyses can provide data that would address critical uncertainties such as length at age, age at metamorphosis and outmigration, differential growth among natal rearing sites, and tributary of origin. These genetic tools are critical for an effective research, monitoring and evaluation program for translocation and artificial propagation strategies that the tribes have been utilizing to boost abundance of this species. This information is therefore key to determining the efficacy of conservation management of this species and may also be used to adaptively manage various conservation actions.

Since 2013, nearly all of the tribes' translocation adults have been genetically sampled (n=18,541). This genetic baseline of candidate parents effectively has genetically tagged >95% of the progeny produced by the translocated adults. We estimate this number of adults represents approximately 13% of all adult fish that migrated past JDA to the interior Columbia Basin (approximately 67,000 fish migrated above JDA during 2013-2016). We expect offspring to begin out-migrating past JDA after rearing for 5 or more years. The first sampling year (2017) was considered a 'control' year, where we expected to observe predominately the production from volitional returns). However, starting in 2018, we expected increasing numbers of outmigrants from the tribal translocation programs that could be assigned to our baseline of candidate parents (SY2013+). This year we estimate a sample size of 1000 total genetic samples would be sufficient to allow estimation of juvenile production from all three tribal programs. Ideally, the samples would be collected over the course of the entire season and at a rate that is proportional to the total fish that are out-migrating.

Non-lethal genetic samples (via a fin clip) will be collected from larval Pacific lamprey under the existing SMP at JDA sampling program schedule and sampling rates for 2020. We do not propose to collect more lamprey than are currently sampled within the SMP procedures under the Biological Opinion Letter of Determination issued to the Fish Passage Center (FPC) and therefore no additional listed salmon will be impacted. The genetic sample will be collected during the existing condition monitoring at the same time as other biological data is collected. The sample requires collecting a non-lethal 1 mm hole punch or scissor snip of fin clip taken from either the dorsal fin or the caudal fin (whichever has more available tissue). This should



take no more than 10 seconds per individual. There is no expected injury or mortality to Pacific lamprey from the tissue collection activities. Smaller fish (below 60mm) may be more difficult to collect a sample from. If the lamprey is below 60 mm or if insufficient tissue exists to sample the fish then the fish would not be sampled, and a notation would be made.

The genetic sample will be immediately placed on Whatman filter paper and allowed to dry. The sample should be kept out of direct sunlight. Once dry, the sheet should be placed in a folder or manila envelope to avoid dislodging the samples prior to shipping to CRITFC. CRITFC will provide the required sampling supplies, including scissors, preprinted Whatman filter paper, and envelopes.