

**Proposal to collect tissue samples from Chinook salmon and steelhead broodstock annually at facilities under the oversight of the HCP Hatchery Committee and PRCC Hatchery Sub Committee**

Submitted to:  
HCP Hatchery Committee and PRCC Hatchery Sub Committee

Requesting agency:  
Columbia River Inter-Tribal Fish Commission  
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## Objective

In order to expand parentage based tagging (PBT) throughout the Columbia River basin for Chinook salmon and steelhead, we are requesting that tissue samples be collected from all broodstock as fish are spawned in hatcheries above Bonneville Dam starting in 2012 and continuing for the foreseeable future. We are specifically requesting that Chinook salmon and steelhead hatchery programs collect tissue samples from 100% of broodstock, and tissues be sent to the appropriate operating agency's genetics lab for storage until the anticipated funding is in place to genotype samples.

CRITFC can provide sampling supplies in the form of Whatman sheets for spawn year 2013. At a minimum, we ask that a tissue sample be collected upon spawning from every individual fish used as broodstock, and the corresponding spawn date and gender be recorded for each individual. Optional information would include spawn cross records (i.e., which fish were mated together), length, or any other associated data recorded by hatchery staff.

PBT data is intended to be shared within a centralized database. IDFG recently received funding through Pacific Coast Salmon Recovery Fund to coordinate the development of a broad database to house genetic data for multi-agency use.

## Background

Several committees and science review groups have recommended that large-scale evaluations of PBT technology be performed (PFMC 2008; PSC 2008; ISAB/ISRP 2009). Thus far, PBT has been effectively applied to Chinook salmon and steelhead populations in California (Anderson & Garza 2006; Anderson 2010) and throughout the Snake River basin (Steele et al. 2012; Steele et al. *in press*) for accomplishing a variety of objectives including identification of hatchery parents of harvested fish, strays, returning adults, and outmigrating juveniles.

PBT technology greatly reduces the problem of small sample sizes encountered with CWTs, and thus would provide the statistical power needed to improve escapement estimates and identification of stock contributions to fisheries. By genotyping 100% of parental broodstock, 100% of all offspring are genetically tagged. Implementation of PBT involves annual sampling of hatchery broodstock to create a parental genotype baseline. Offspring produced by these parents must then be sampled (e.g. non-lethal fin clips) either as adults or juveniles, and then genotyped to be assigned back to their parents – thus identifying their age and hatchery of origin. This new PBT approach will provide many opportunities to address additional questions related to fisheries management and strongly complements the existing CWT program in the Columbia Basin.

## Literature cited

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