

# Hatchery Reform Project Annual Report

## June 15, 2001

### White River Acclimation Pond Evaluation

**South Sound Spring Chinook Technical Committee (SSSCTC)**  
**(Submitted by Chuck Baranski, WDFW, Committee Chair)**

**IAC Grant No. 01-036**

### Abstract

One strategy employed to increase natural spring chinook spawning in the upper White River is releasing smolts from upriver acclimation sites. Survival from smolt to spawner, adult characteristics related to reproductive success and the geographic distribution of pond-origin spawners have not been adequately evaluated. This study is intended to evaluate those factors by identifying pond-origin fry and monitoring their survival back to the upper White River, monitoring their distribution throughout the Puyallup River basin and measuring their adult morphological characteristics and comparing them to those of natural origin adults. If survivals are low, adults less reproductively fit or if returning adults are widely distributed in the Puyallup basin (particularly into fall chinook production areas), alternative recovery strategies will need to be developed.

### Executive Summary

- Standard coded-wire-tagging (CWT) is not a suitable acclimation pond production evaluation tool in this basin because all nose-tagged fish are removed from the upper White River chinook spawning population. Sub-dermal body-tagging with blank CWT was eliminated as a viable identification option for chinook fry of 100-200 fish per pound during trials on Minter Creek fall chinook in March, 2000.
- 200,286 White River spring chinook fingerlings, averaging 175 fish per pound, were left ventral (LV) marked at Hupp Springs Hatchery on March 29-April 6, 2000. 182,384 spring chinook, averaging 141 fish per pound, were LV marked at White River Hatchery on April 3-6, 2000.
- On April 17, 199,698 fry (588 post-marking mortalities), averaging 166 fish per pound, were transferred from Hupp Springs Hatchery to the acclimation pond on the Clearwater River. On April 13 and 14, 182,200 fry (184 post-marking mortalities), averaging 128 fish per pound, were transferred from White River Hatchery to the acclimation pond on Huckleberry Creek.
- Marking costs for both sites totaled \$11,460. All work was accomplished under

WDFW supervision, with WDFW identifying and hiring the Hupp Springs marking crew and Muckleshoot Indian Tribe identifying and hiring the White River crew.

- The screens were opened on both ponds on June 9 and all of the fish had voluntarily evacuated by June 13. Mortalities were enumerated throughout the rearing period to estimate the number of fish released from each pond. Most mortality occurred at or immediately following transfer to the ponds. 182,100 fingerlings averaging 65.7 fish per pound were released from the Huckleberry Creek pond and 198,800 fingerlings were released from the Clearwater River pond. The fish were in excellent condition upon release. A sample of the outmigrating fingerlings indicated a 95% complete, clean mark rate for both ponds. The Huckleberry Creek pond fish had 5% partial clips and the Clearwater River pond sample included 3% unclipped and 2% partial clips. It is unclear whether the partial clips will be identifiable upon adult return.
- Monitoring of the adult returns from these releases will take place during the chinook migration and spawning periods (May through October) of 2001 through 2004. During those time periods, migrating and spawning spring and fall chinook populations in the Puyallup/White River basin will be sampled for marked acclimation pond origin fish.