

## **Yakima River Fall Chinook Supplementation 2005-06**

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There are two existing stocks of Fall Chinook (FCK) in the Yakima River Basin, the Yakima River Mainstem and the Marion Drain stock. The goal for the YKFP Fall Chinook program is to supplement and enhance these populations. To guide our efforts, three major projects were conducted in 2005-06.

The focus of our program is to better understand smolt survival and migration timing. From 1999 through 2005, two rearing treatments were compared using in-basin FCK broodstock collected at the Yakama Nation Prosser Hatchery. One group was reared using an “accelerated” treatment, the use of warmer well water to accelerated growth and ultimately smoltification. The other group experienced “conventional” methods, ambient river temperature incubation and rearing profiles. A portion of fish was marked with PIT tags for detection at McNary Dam following release. A portion of Marion Drain FCK was also PIT tagged. The Marion Drain FCK experience accelerated growth, as water temperature in the drain is naturally warmer than the Yakima Rivermainstem. Since this study began, the Accelerated smolts and the Marion Drain smolts have out-performed the Conventionally reared fish the majority of the time.

Fall Chinook Redd surveys were conducted above Prosser Dam September-November 2005. A total of 350 redds were found in the Yakima River mainstem, 93% between RM 70 and RM 95. The Marion Drain yielded 56 redds, 61% were above Hwy 97. There were 25 adults captured at the Denil fish trap located at Prosser Dam RM 47.1. These fish were Radio Tagged and released back into the river. There were 2 fish located between RM 48 and 59, 15 fish between RM 70 and 85, 3 fish in the Marion Drain and 5 fish could not be located.

In the spring 2006, an ongoing beach seine effort was conducted to capture and PIT tag wild FCK  $\geq 55$  mm at sites below and above Prosser Dam. Sampling sites are located around Richland, Benton City, Prosser, Granger and Union Gap. Only 612 smolts vs. 5,000+ (both 2004 and 2005) were handled between sites. High flows put efforts to an immediate halt. Survival below Benton City to McNary Dam from 2004-06 have been 53%, 22% and 35%, respectively. Although detections for those fish tagged within the Granger and Union Gap reach have been made at Prosser Dam since the study was implemented, none have been observed at McNary Dam.

