

**Title:**

Spawner and Redd Characteristics of Wild- and Hatchery-Origin Upper Yakima River Spring Chinook

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**Summary of Presentation:**

In 2002, we compared the reproductive behavior and redd characteristics of naturally spawning upper Yakima River hatchery and wild females. We compared utilization of spawning habitat, water depth, velocity and substrate characteristics; spatial and temporal spawning distribution; time to construct and guard redds; and redd size parameters. Redds were sampled by snorkeling 3 to 4 days per week. Sampling covered the peak of spawning between September 9 and October 2 and individual redds were identified with a female of known origin (presence or absence of an adipose fin). During each observation female size was estimated visually and the status of each redd and behavioral stage of females were noted. After spawning was completed, a suite of size, depth, velocity and substrate parameters were collected from each known origin redd.

A total of 76 hatchery- and 43 wild-origin females and associated redds were identified. Naturally spawning hatchery females were significantly smaller ( $p=0.01$ ) than wild females by 1.7 cm on average, demonstrating a similar body size difference to that observed in Roza Adult Monitoring Facility and carcass recovery samples. In our preliminary analyses of redd parameter data there were no significant differences ( $p>0.45$ ) in either redd size dimensions, depths or water velocities between hatchery- and wild-origin females. We have not yet completed analyses comparing behavioral data, temporal distribution of spawning, and gravel characteristics.