

Title:

Characterization of Geomorphology and Hyporheic Conditions of Spring Chinook Salmon Spawning Habitat within the Yakima River Basin

Authors:

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Summary of Presentation:

A better understanding of the critical features of salmon spawning habitat is needed in order to advance salmon restoration efforts in the Pacific Northwest. Our objective is to characterize the fluvial geomorphology and hyporheic conditions of spring chinook spawning habitat in the Yakima River Basin in order to assist decision-makers in evaluating future management strategies. To identify important physical features of spawning habitat, comparisons were made between spawning reaches and non-spawning reaches on two Yakima River tributaries: the American River and Little Naches River. Permeability, vertical head gradient, and water chemistry were measured from 3 transects of piezometers installed along each reach. Substrate samples were collected from each transect and analyzed at CWU. Channel geometry, large woody debris, and pool and riffle data were obtained from existing sources.

Preliminary analyses of piezometer data indicate that substrate permeability is significantly higher in the Little Naches spawning reach than the non-spawning reach, while vertical head gradients show no systematic trends between spawning and non-spawning reaches. Electrical conductivity was significantly higher in hyporheic water of the American spawning reach, which may represent a stronger groundwater influence within this reach. Substrate porosity was generally higher in spawning reaches, and mean grain size was smaller. Spawning reaches were also characterized by greater width-to-depth ratios than non-spawning reaches.

Title:

Kelt Reconditioning: A research project to determine potential use of steelhead kelts for enhancing wild steelhead populations

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