

Title:

The Effects of Seasonal Stream De-watering on Bull Trout (*Salvelinus confluentus*) at Kachess River in Relation to Historical Land Use.

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Summary of Presentation:

De-watering occurs during summer in many headwater streams of the Yakima River Basin in central Washington, where chronically low populations of the threatened bull trout, *Salvelinus confluentus*, occur. The influence of historical land management practices on de-watering, and the resulting effect of de-watering on the survival, densities and movement of bull trout, was investigated in the summer and fall of 2000. Kachess River is a headwater stream, which persistently de-waters near where it flows into Kachess Reservoir. Historical evidence suggests this stream has switched to an alternate stable state over the past 50-100 years due to mining, logging and road building. Reservoir drawdown appeared to have no direct effect on de-watering the stream. Juvenile bull trout may have shifted their out-migration from summer to fall, because of the summer de-watering. Adult migration at Kachess River seems to have become locally adapted to de-watering into late fall, and as a result this population is the latest known spawning population in the Yakima Basin. Bull trout populations in these seasonally de-watered and degraded systems seem to be at carrying capacity and recovery to greater numbers likely depends upon some form of watershed restoration.