

## **John Day River Basin Irrigation Efficiency**

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The Upper John Day River Basin supports two ESA listed fish species, Middle Columbia River steelhead and bull trout, as well as culturally significant species such as spring Chinook and lamprey. Restoration efforts in the region have focused on improving the habitat for these species, with water quantity being a principal concern. Net water availability in the Basin ranges from 556 cfs in early spring to 0 cfs in late summer, with irrigation accounting for around 88% of the consumptive use. This study was initiated in response to tribal efforts to increase instream flow, particularly in late summer, through irrigation efficiency projects. This studies intent is to quantify the amount of water lost from the point of diversion to the first point of use in regional earthen irrigation canals. Preliminary results show daily water lost ranged from 0.8 to 0.1 cfs or 516,000 to 193,000 gallons/day. Future work will incorporate seepage data collected for each canal soil type, which will help focus piping efforts. Improvements in the efficiency of water transport should create opportunities for irrigators to lease, sell, or transfer portions of their private water rights to instream flow. This reduced volume of water diverted will positively impact the water quality, habitat, and fish passage issues in the John Day River Basin.