

Instream Flow Studies

The Basin Study generated information on flow-habitat and flow-temperature relationships in various reaches to help understand potential benefits of different flow levels.

Upper Deschutes Habitat Modeling

- The Upper Deschutes River, 60 miles between Wickiup Reservoir and the City of Bend, is managed to store and deliver irrigation water.
- Water storage and release results in large fluctuations between low winter flows and high summer flows, causing loss of vegetation and available habitat.

Study Objectives

- How do Oregon spotted frog and Deschutes redband trout habitats change with changes in flow?
- How does flow affect wetland and riparian habitat?
- The study assessed two sites along the Deschutes River (Bull Bend and Dead Slough-approximately 1 mile each).

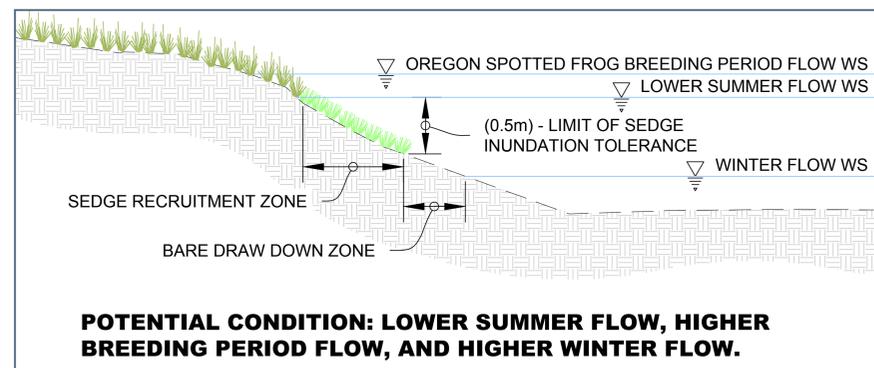
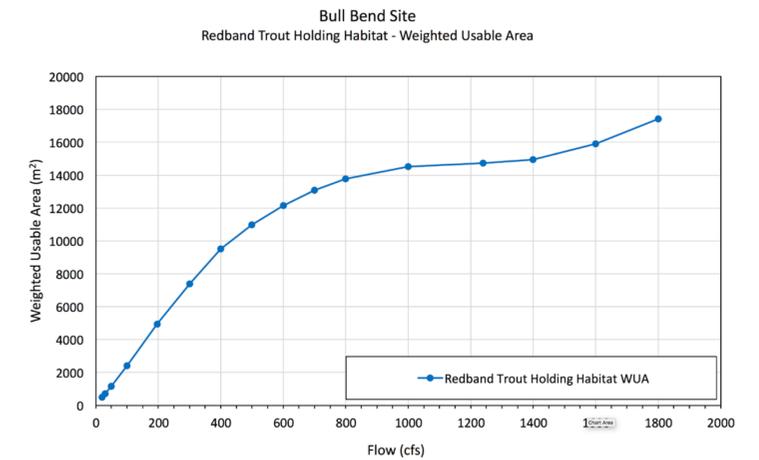
Study Takeaways

- Redband trout habitat at the studied sites increases with increased winter flows. Rate of habitat increase varies with flows.
- Lower summer flows and higher winter flows tend to benefit recruitment of riparian vegetation and Oregon spotted frog habitat.

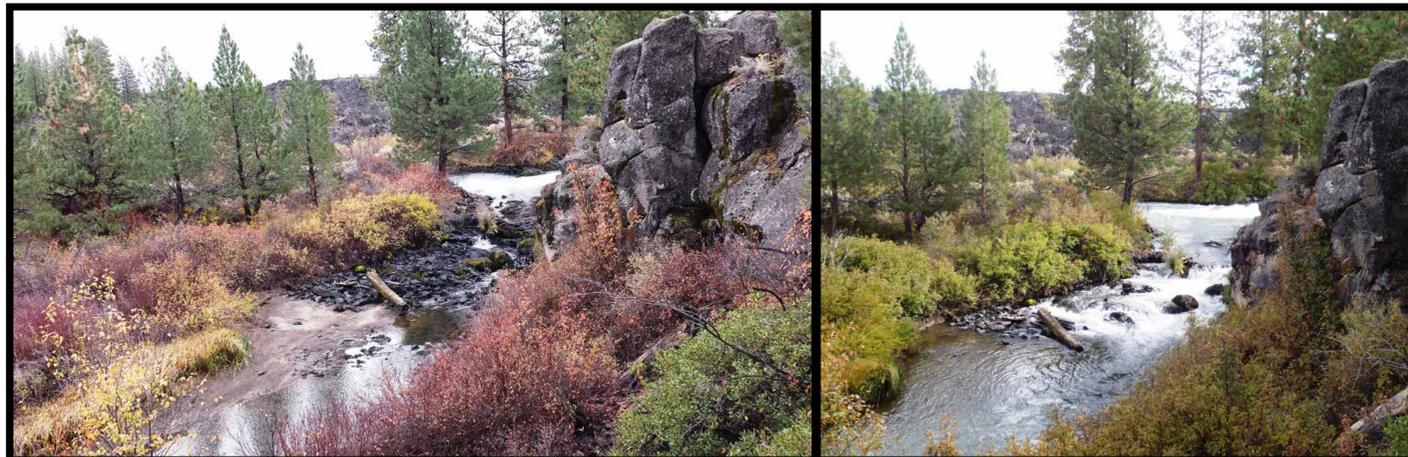
Important Notes: The study assessed two sites; results cannot necessarily be extrapolated for the whole river reach. The study was based on limited habitat information for Oregon spotted frog.



THE UPPER DESCHUTES
BASIN STUDY
Water for agriculture, rivers & cities



Upper Deschutes River: low and high flows



Flow Temperature Assessments: Middle Deschutes, Tumalo Creek, Whychus Creek and lower Crooked River

- High summer temperatures are a limiting factor in some reaches in the Deschutes Basin.
- A variety of models were developed to capture relationships between streamflow, water temperature, air temperature and, in the case of the Crooked River, reservoir levels.
- These models can be used to explore the impacts of water management strategies on water temperatures.
- Generally, higher streamflows help toward temperature standards associated with fish needs.