



# Fish Creek Fish Screen North Umpqua Hydroelectric Project

*Roseburg, Oregon*



R2 was retained by PacifiCorp to provide all engineering and environmental services associated with the screen design. Key tasks include development of conceptual design alternatives and a recommendation of a preferred site solution, agency consultation as required by the FERC license, final design and permitting, cost estimating, construction services, and biological and hydraulic monitoring and evaluation of the completed screen.

Fish Creek is a high mountain stream, located in the North Umpqua National Forest east of Roseburg, Oregon, with flows ranging from a low of about 100 cfs to over 6,000 cfs. PacifiCorp owns and operates a hydropower diversion on the creek, which is part of their 185-MW North Umpqua Hydroelectric Development. Upon receipt of their new Federal Energy Regulatory Commission (FERC) license to operate the hydro-development, PacifiCorp has agreed to provide a modern fish screen to the intake to prevent entrainment of resident species (rainbow trout), and potential future runs of steelhead trout.



The remote site provided many challenges to the design, including highly varied stream flows, maintenance of new instream flow requirements through the project bypass-



reach, heavy sediment loads, debris cleaning, lack of power at the site, desire to operate in

icing conditions including frazzle ice, and year-round unstaffed operation.

## Project Elements:

- Fish Passage and Protection
- Hydrologic Analyses
- Hydraulic Engineering
- Sediment Handling and Risk Analysis
- Agency Consultation and Permitting
- Conceptual and Final Design
- Cost Estimating
- Construction Engineering Services
- Hydraulic and Biological Monitoring and Evaluation

A variety of screen concepts and cleaning mechanisms were evaluated. The recommended design utilizes a bank of T-Screens fitted with a zoned air-burst cleaning system. Construction was completed in 2008.