





US Army Corps  
of Engineers  
Engineer Research and  
Development Center

# Regional Sediment Management Program Portland District (NWP):



## Optimizing Fall Creek Reservoir Flush TMDL's, Oregon

Additionally, NWP is considering run-of-river drawdowns at Detroit and Cougar Reservoirs in this system to build fish passage and temperature control infrastructure. Developing and calibrating models for the smaller active effort at Fall Creek will inform analysis for Lookout Point, provide a scale analog for operating to optimize through-reservoir smolt survival and downstream turbidity and build stake holder confidence in our ability to predict downstream effects..

### Successes Lessons Learned

The first drawdown in 2012 resulted in the mobilization of roughly 50,000 tons of sediment. With monitoring showing that about 1/3 of this material deposited in areas downstream, resulting in the creation of salmonid spawning habitat. Run-of-the river management of the reservoirs replicates more natural conditions, enhancing conditions for salmonid survival.



### Expected Products

- Monitor Flushing Event
- A Calibrated HEC-RAS Sediment Model of Fall Creek Reservoir
- Alternative release recommendations
- Technical report

### Stakeholders/Users

NWP, USGS, ODFW, NOAA, DLCD, ODEQ, others

### Projected Benefits

This work will help develop precedent and build momentum for sustainable sediment management in Corps operated hydropower facilities. If successful the management tools could be used as a model for hydropower operations. It will demonstrate USACE capability to model and predict downstream effects of drawdown reservoir management alternatives, both for environmental and other regional sediment management objectives. The report will document Corps capacity to predict and mitigate sediment concentrations downstream of flushed reservoirs as the USACE evaluates sustainable reservoir sediment management options. This will inform similar activities considered at other dams in this system (e.g. Lookout), across the Corps (e.g. Tuttle in NWK, Prado in SPL, and Gavins in NWO), and for international Corps missions (e.g. NWO consultations on new dams in South East Asia).

### Leveraging Opportunities

This effort will leverage >\$350k USACE investment, converting USGS collected data between 2012 and 2015 into an operational tool with value to the USACE.

### Points of Contact

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### Participating Partners

USGS, others