



U.S. ARMY

# Dynamic Processes in Stream Ecosystem Restoration - Sweetwater Creek, Idaho

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EWN Lightning Talks  
15 April 2019



Steelhead trout, NOAA Fisheries

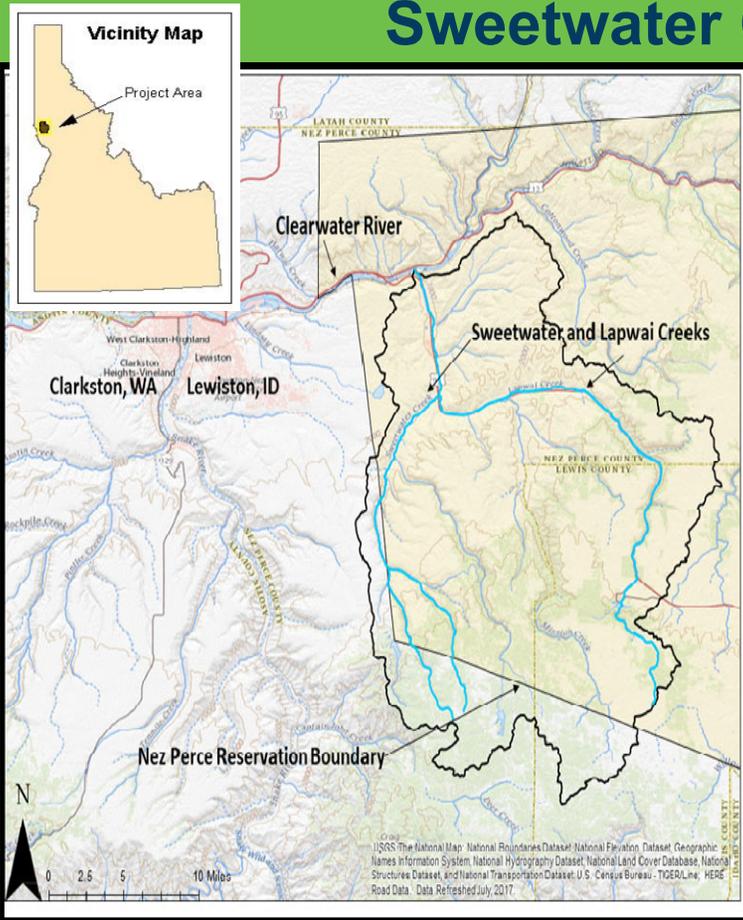


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DISCOVER | DEVELOP | DELIVER

## Sweetwater Creek Ecosystem Restoration Project



- Working with Nez Perce Tribe under Section 203 (WRDA) Tribal Partnership Program (TPP)
- Allows USACE to work collaboratively with American Indian Tribes on water resources feasibility studies
- Design and construction are authorized to be carried out without going back to congress for further authorization (projects where fed share is <\$10M)
- Lewiston Orchards Irrigation Diversion reduced summer baseflow from 15+cfs to ~1cfs
- 2010 NOAA Fisheries BiOp found Sweetwater Creek a significant source population, prior to LOID
- TPP allows multiple authorized purposes: Ecosystem Restoration for Hé-yey, Nez Perce for Snake River Basin Steelhead Trout (*Oncorhynchus mykiss*), threatened under ESA
- Enhance cultural resources, e.g. Coho salmon and native plants, plus watershed assessment and FRM

# Engineering With Nature<sup>®</sup> Project Potential

To enhance and protect aquatic habitat for salmonid spawning and rearing:

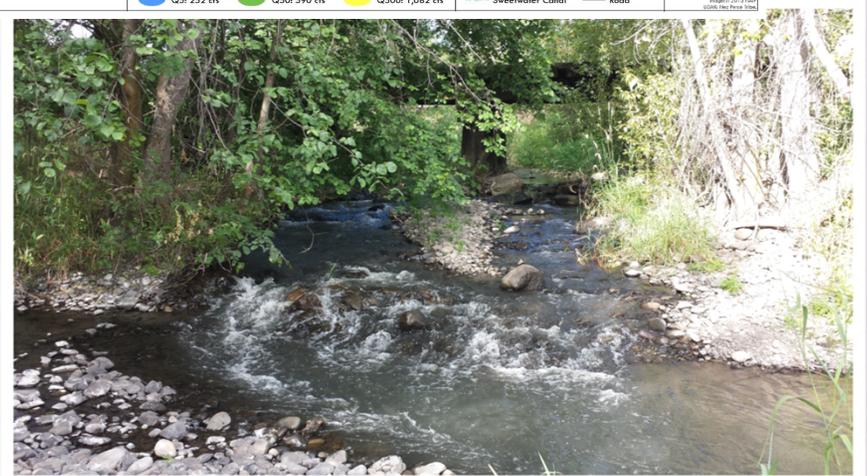
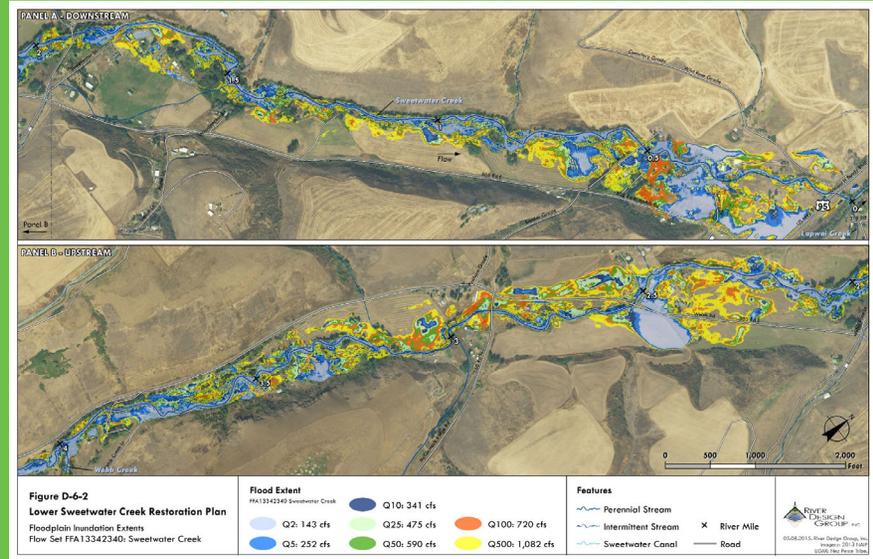
- Hydrology, Hydraulics, Geomorphology to achieve objectives and minimize risk
- Natural large wood recruitment to increase habitat complexity, and
- Sediment transport dynamics to retain spawning gravels
- Collaboration and stakeholder engagement
- Socioeconomic and ecosystem benefits



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Example of a Protection Reach

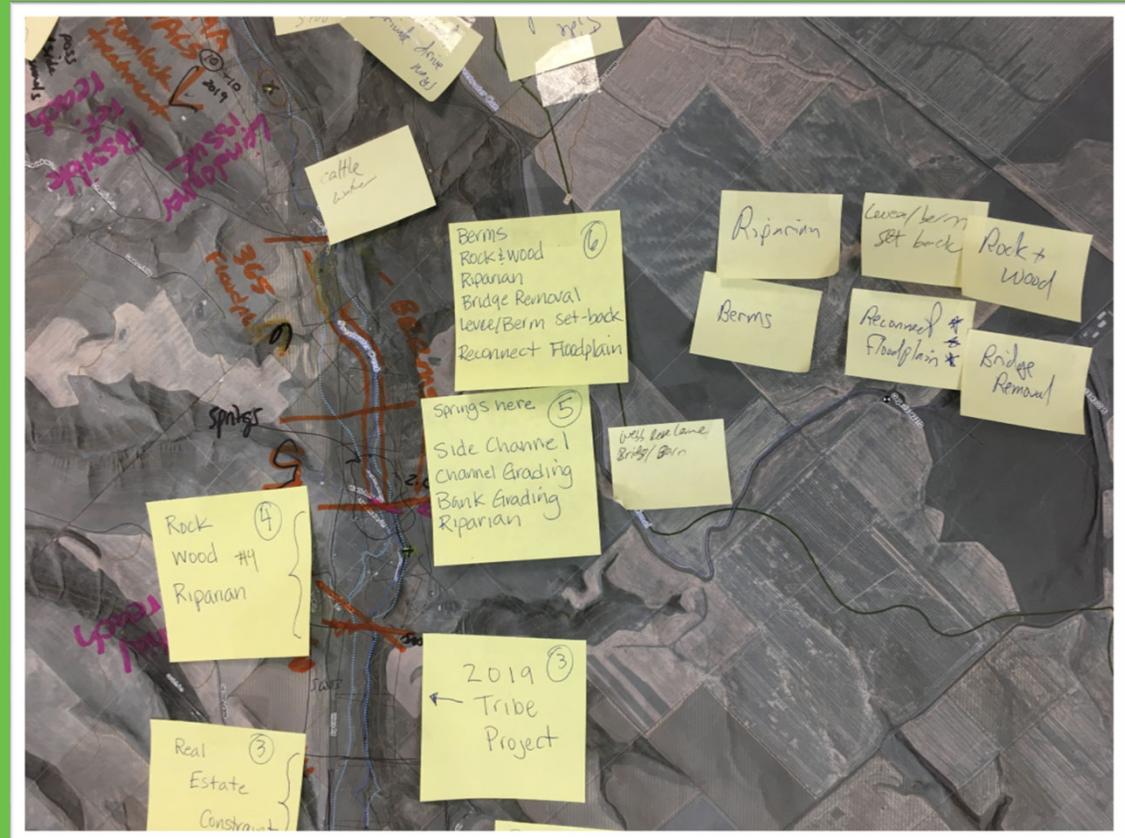


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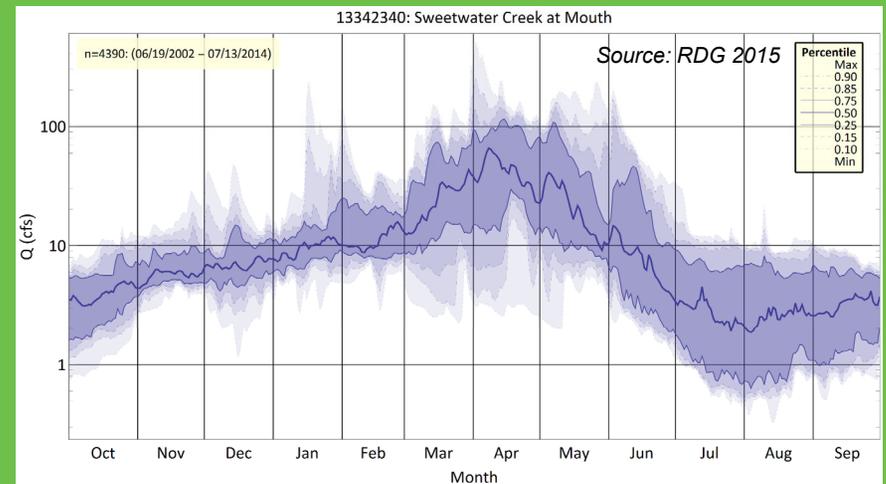
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# Engineering With Nature® Project Potential



# Engineering With Nature<sup>®</sup> Project Potential



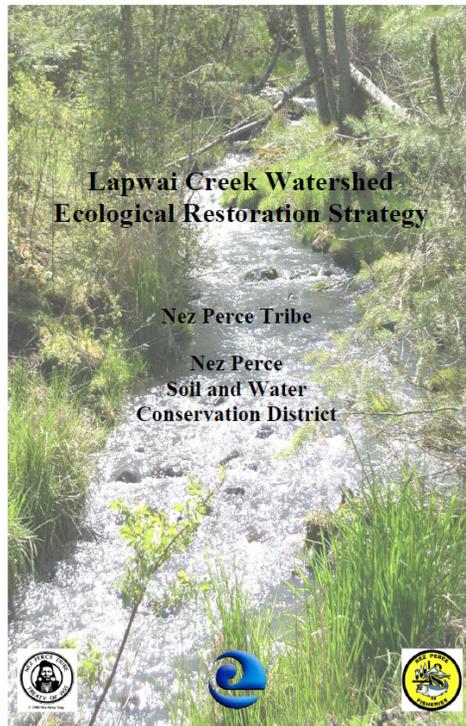
**Lapwai Creek  
Aquatic Assessment**

Prepared By

**The Center for Environmental Education,  
Washington State University**

For

**Nez Perce Tribe, Watershed Department**



Document ID #P119838  
 Report covers work performed under BPA contract #37309  
 Report was completed under BPA contract #48784



**Protect and Restore the  
Lapwai Creek Watershed**

**Annual Progress Report CY2009**

May 2009 – April 2010

Prepared by:

Bobby Hills

Nez Perce Tribe  
Department of Fisheries Resource Management  
Watershed Division  
Lapwai, ID

Funded by:

U.S. Department of Energy  
Bonneville Power Administration  
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Portland, OR 97208-3621

BPA Project Number: 1999-017-00  
Contract Number: 37309

January 28, 2011

**Restoration Plan for  
Lower Sweetwater Creek**

**FINAL REPORT**



*Lower Sweetwater Creek, and Confluence with Lapwai River*

Prepared For

Nez Perce Tribe  
DFRM – Watershed Division  
c/o Bobby Hills  
P.O. Box 365  
Lapwai, Idaho 83540



Prepared By

River Design Group, Inc.  
236 Wisconsin Avenue  
Whitefish, Montana 59937



July 2015

# Engineering With Nature® Project Potential

- Riffle-run-pool sequencing
- Complex wood structures
- Quality pool formation
- Seasonally inundated floodplain
- Side-channel connectivity
- Riparian vegetation type and structure for shade, wood, and allochthonous energy source



**Thank You!**

**Sarah J Miller  
Research Ecologist, Fluvial  
Geomorphologist**

**Environmental Laboratory,  
ERDC**



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**File Name**