

# 2020 Lower Snake River Sediment Management Forum

## Abstracts and Speaker Info

### SESSION 1



#### **Ryan Fosness - Sediment Transport in the Lower Snake and Clearwater River Basins, Idaho and Washington, 2008–11**

**Abstract:** From 2008-2011, The USGS, in cooperation with the U.S. Army Corps of Engineers, completed three studies to quantify sediment load and source areas for sediment entering Lower Granite Reservoir from the Snake and Clearwater Rivers and identify depositional patterns of the sediment within Lower Granite Reservoir.

**Bio:** Ryan is a hydraulic engineer with 17 years of experience with the USGS. His primary focus is surface water studies including suspended and bedload sediment transport; high-resolution bathymetric surveys; sediment coring; sediment facies mapping; bridge scour surveys; two-dimensional hydraulic modeling; river restoration monitoring, and streamflow statistics. Contact: (208) 387-1319 [rfofness@usgs.gov](mailto:rfofness@usgs.gov)



#### **Caleb Zurstadt - South Fork Salmon River: An Update on a Half Century of Sediment Monitoring**

**Abstract:** Results will be presented from decades of core sampling in Chinook salmon spawning beds, tributary cobble embeddedness, and photo point monitoring. After 40 years of rehabilitation efforts many of the monitoring sites are near reference conditions and the river continues to show resilience to large scale disturbance from fire and floods.

**Bio:** Caleb is a Fisheries Biologist for the East Zone of the Payette National Forest. He provides fisheries effects analysis for travel planning, mining, vegetation management, recreation, and other Forest Service land management activities. Other activities include monitoring the effects of land management on habitat for Chinook salmon, steelhead, and bull trout and implementation of watershed rehabilitation partnership projects with the Nez Perce Tribe. Graduated in 1995 with a Bachelors in Fisheries Science from Oregon State University and a Masters in Fisheries Science from Oregon State University in 2000. Contact: (208) 634-0618 [caleb.zurstadt@usda.gov](mailto:caleb.zurstadt@usda.gov)



#### **David M. Evetts - Yankee Fork Salmon River: Restoration Project Sediment Monitoring**

**Abstract:** U.S. Bureau of Reclamation has conducted dredge tailings restoration and channel restoration projects on the Yankee Fork of the Salmon River to mitigate a highly altered and unnatural fluvial system. In support of these projects, the USGS created pseudo hydrographs at three locations along the Yankee Fork using stream gage 13296000, Yankee Fork Salmon River near Clayton, ID as an index and conducted sediment-transport monitoring and analysis on the Yankee Fork to help monitor the project progress and success.

**Bio:** David Evetts is the Assistant Director of Hydrologic Data for the USGS- Idaho Water Science Center, managing three field offices, USGS Idaho hydrologic data collection, and the operation and maintenance of the USGS gaging network providing near real-time hydrologic data for surface water, groundwater, and water quality application. Graduated from the University of Alaska, Fairbanks with a Bachelors in Geological Engineering. Managed the USGS-Elko Field Office in Elko, Nevada. Performed and managed multiple projects and networks involving water quality, sediment, groundwater and surface water data collection and analysis in Nevada. Contact: (208) 387-1316 [devetts@usgs.gov](mailto:devetts@usgs.gov)

## SESSION 2



### **Jason Williams - South Fork Clearwater River: Sediment Patterns and Progress Toward Achieving Sediment Goals**

**Abstract:** The main stem South Fork Clearwater River and several of its tributaries are listed as impaired by sediment under the Clean Water Act. The Idaho Department of Environmental Quality, Nez Perce Tribe, and US Environmental Protection Agency cooperatively developed sediment Total Maximum Daily Loads (TMDLs) that define sediment goals for protection of aquatic life. Over the 20 years since the TMDLs were developed, multiple government agencies have collected water quality data and taken actions to reduce sediment inputs from nonpoint sources. At least \$25 million dollars have been spent across at least 60 water quality and stream habitat improvement projects in the watershed. This presentation will summarize available monitoring data, and evaluate sediment patterns, progress towards meeting TMDL sediment goals, and potential for future collaboration. Sediment goals have not yet been achieved, and sediment loading responses to restoration efforts are not fully clear because relevant monitoring data are limited.

**Bio:** I have worked for DEQ since 2016 and have been a Water Quality Analyst at the DEQ Lewiston Regional Office since 2017. I earned PhD from Washington State University in 2016, where I studied the sensitivity of Pacific Northwest mountain lakes to eutrophication effects of atmospheric nitrogen deposition. I'm happy to be doing water quality work in a beautiful area of Idaho! Contact: (208) 799-4370 [Jason.Williams@deq.idaho.gov](mailto:Jason.Williams@deq.idaho.gov)



### **Shawn Nield - Soil Erosion and Soil Health: Effects of Conservation Activities and their Role in Erosion Prevention**

**Abstract:** Present information on erosion estimates by wind and water in Idaho, some of the common conservation practices that are used to address these, and the role that soil health plays in maximizing erosion prevention.

**Bio:** Shawn Nield is the State Soil Scientist and Snow Survey Program Manager for NRCS Idaho. He did his undergraduate work at the University of Idaho and later completed a master's of soil science at Utah State University. He worked for NRCS in Utah, Wyoming, and Alaska occupying positions of soil surveyor, GIS specialist, and senior regional soil scientist. He's responsible for the soil survey data in Idaho, soil health efforts and strategy, and is a proponent of soil health principles. Contact: 208-378-5728 [shawn.nield@usda.gov](mailto:shawn.nield@usda.gov)



### **Steve Becker - Eastern Washington and North Central Idaho: Erosion and Sedimentation Reduction in Agricultural Ecosystems**

**Abstract:** The presentation focuses on agricultural practices used in the dryland farming areas of Eastern Washington and the Palouse region of Idaho and the impacts of those practices on soil erosion and sediment delivery to the Clearwater and Snake Rivers. Discussion will include the techniques used by agricultural producers to reduce erosion, the efficiency of those techniques and some of the climate and soil conditions that produce the most erosion.

**Bio:** Steve Becker, Chairman of the Nez Perce Soil and Water Conservation District, has a proven record of effective fundraising and leadership that brings funding to implement conservation projects throughout Nez Perce County. Since 2009, Steve has been a leader for the Nez Perce Soil and Water Conservation District and has been an integral part of the conservation community for many years as well as playing a key role in promoting many community organizations. He is currently the Idaho Association of Soil and Water Conservation District's director from Division II (North Idaho) and the President of the Idaho Association of Soil Conservation Districts. Further, Steve owns and operates a 4,000 acre farm in the Palouse area of North Idaho and near Clarkston, Washington. His farm is diversified with several cropping systems developed to reduce erosion and sedimentation over a variety of soil types. Steve has been farming since the early 1980s. Steve spends his free time with his wife, Nancy, and their two children Stephanie and Edward and working on his farm in the Genesee, Idaho area. Contact: [sbecker@turbonet.com](mailto:sbecker@turbonet.com)

## **SESSION 3**



### **David M. Evetts - Spalding and Clear Creek: Surrogate Monitoring using Acoustic Doppler and Turbidity Sensors**

**Abstract:** Sediment surrogates give the opportunity to provide near real-time data of suspended-sediment concentration and load by defining relationships between sediment parameters and surrogate parameters such as acoustic backscatter and turbidity. Two such surrogates have been developed by the USGS and are or were in operation in the Clearwater River Drainage. Clearwater River at Spalding had an acoustic sediment surrogate in operation from 2010 through 2017. Clear Creek near Kooskia, ID has a turbidity surrogate currently under development expected to be implemented in 2021.

**Bio:** David Evetts is the Assistant Director of Hydrologic Data for the USGS- Idaho Water Science Center, managing three field offices, USGS Idaho hydrologic data collection, and the operation and maintenance of the USGS gaging network providing near real-time hydrologic data for surface water, groundwater, and water quality application. Graduated from the University of Alaska, Fairbanks with a Bachelors in Geological Engineering. Managed the USGS-Elko Field Office in Elko, Nevada. Performed and managed multiple projects and networks involving water quality, sediment, groundwater and surface water data collection and analysis in Nevada. Contact: (208) 387-1316 [devetts@usgs.gov](mailto:devetts@usgs.gov)



### **Mitchell Price - Snake and Clearwater Rivers Confluence: Sediment Management Measures**

**Abstract:** The confluence of the Snake and Clearwater Rivers is an area of concern for sedimentation impacts to the Snake River Federal Navigation Channel. Current sediment management practices include short-term navigation-objective reservoir operations and periodic dredging. Completed in 2014, the Lower Snake River Programmatic Sediment Management Plan recommended evaluation of additional sediment management measures to increase efficiency and reduce costs. This proposed project includes the development of a 2D AdH mobile-bed hydraulic model that extends from Silcott Island to the Southway Bridge on the Snake River, and up to the Memorial Bridge on the Clearwater River. Once calibrated to the existing depositional regime, the model will be used to evaluate morphodynamic performance of select sediment management measures including optimization of dredging frequency and extents, and installation of sediment training structures.

**Bio:** Mr. Price has over 25 years of experience supporting diverse water resource engineering projects throughout the Pacific Northwest region. He enjoys all aspects of the engineering process from initial scoping and assessment to final design and implementation. Contact: (509) 527-7606 [Mitchell.E.Price@usace.army.mil](mailto:Mitchell.E.Price@usace.army.mil)



### **Ken Tiffan - Lower Granite Reservoir: Biological Monitoring of Shallow-water Habitat Created using Dredged Material**

**Abstract:** Shallow-water habitat was created at Knoxway Bench in Lower Granite Reservoir with dredged material in 2015. The in-water placement site was selected and designed to provide suitable habitat for juvenile salmonids. Sampling of the biological community showed that the site is functioning as other shallow-water habitat in the reservoir and is being used by juvenile salmonids as intended.

**Bio:** Ken Tiffan has worked with the U.S. Geological Survey for the past 28 years as a research biologist. He has a BS and MS in fishery biology from Colorado State University. His work has focused primarily on the biology of Snake River fall Chinook salmon and evaluating measures implemented to aid the recovery of the population. Specific topics of investigation have included fish physiology, migration behavior, feeding ecology, habitat assessments, and adult redd surveys. Contact: [ktiffan@usgs.gov](mailto:ktiffan@usgs.gov)