



*Multi-layered woody material mixed with soil and rock anchor the streambanks on Wolf Lodge Creek.  
(photo courtesy Kootenai-Shoshone SWCD)*

## KOOTENAI-SHOSHONE DISTRICT COMPLETES HIGH-TECH RESTORATION ON WOLF LODGE CREEK

By Steve Stuebner

Sometimes, trying to mimic nature can be an effective way to restore streams.

That's what design professionals recommended for a 2,000-foot reach of Wolf Lodge Creek on private lands owned by Steve and Janet Funk, east of Coeur d'Alene. Over time, the creek course had been straightened and lost connection to its flood plain, leading to increased water velocity and erosion during spring high-water events.

The Wolf Lodge Creek Watershed Assessment and Restoration Prioritization Plan, finalized in 2017 by River Design Group for the Idaho Department of Environmental Quality (DEQ), listed Wolf Lodge Creek Reach

3 as the highest sediment-producing stream reach in the Wolf Lodge Creek watershed. The report indicated that the creek contributed 75 tons of sediment to Lake Coeur d'Alene each year with high bank-erosion rates.

In a 2020 stream-restoration project on Wolf Lodge Creek, contractors re-connected the stream to its historical flood plain, slowed down the water with more stream-meanders and broad curves, and installed numerous high-tech multi-layered streambank stabilization features intended to mimic heavily brushed banks and debris jams – excellent habitat for fish and bank protection.

The stream-restoration project was designed by River Design Group for the Kootenai-Shoshone District,

and supported by Conservation Commission engineer Bill Lillibridge.

"We're trying to slow down water velocity and let the water spread out on the flood plain during flood events," Lillibridge says.

"It's similar to skiing," he says in a video about the project. "When you point your skis straight down the hill, you're going to pick up speed quickly. So we learn to turn as we go down the hill to slow down and stay in control. It's similar to building a highway. We develop switchbacks in steep sections to slow down and control our speed."

The Wolf Lodge Creek stream-restoration project will have a similar effect in slowing the water down, reducing erosion and improving fish habitat, experts say. The project



incorporates a large amount of woody debris, rock, soil and root wads to stabilize the banks and create fish habitat. Wood for the project was sourced from the Funk's property.

"The project re-established proper channel dimensions and streambank conditions that will reduce rates of lateral channel migration, property loss, and sedimentation," according to the Kootenai-Shoshone District's final report on the 319 grant project to Idaho DEQ. "It re-established important habitat for West Slope cutthroat trout and aquatic organisms."

The Wolf Lodge Creek project was just completed in October-November 2020, one of the Kootenai-Shoshone District's most recent conservation success stories. The District also operates four Invasive Species Check stations in the two-county area, holds a popular spring tree sale with other Idaho Panhandle conservation districts and works on education outreach.

The Kootenai-Shoshone District's mission is to be a "leading partner with other government agencies, private landowners and users, and the public in promoting voluntary, non-regulatory, locally-led conservation and wise-use stewardship of the natural resources in the region."

In that spirit, the Wolf Lodge Creek conservation project involved multiple partner agencies and almost 10 years of planning and stakeholder input.

"The District is quite proud of that project on Wolf Lodge Creek," said Bob Flagor, a Supervisor on the Kootenai-Shoshone District Board.

The project began with a major collaborative planning effort, looking at the Coeur d'Alene River tributaries Watershed Advisory Group in 2012. Many stakeholders participated, including the Kootenai County Office of Emergency Management, U.S. Forest Service, NRCS, Idaho



*Streambanks on Wolf Lodge Creek, pre-project.*

Department of Lands, Idaho DEQ, University of Idaho Extension, and the Coeur d'Alene Tribe.

In addition, the Kootenai-Shoshone District applied for and received an IDL grant to complete a watershed analysis on 65,000 acres of mountain land in three sub-watersheds, Wolf Lodge Creek, Blue Creek and Fernan Creek. The idea was to develop a watershed action plan on the areas that needed the treatment most on 20,000 acres of private land. Pilot projects were developed for eight landowners, including the Funk family.

Landowner Steve Funk said it was a big deal to get all of the agencies and stakeholders at the table to develop a single plan for the watershed. "That was a huge, huge step to have all the agencies talking to each other and to come up with one plan," he said. "And it worked!"

Funk is happy with the way the project turned out so far, but aesthetically, it still looks a bit raw and rough, he says.

"The water is slowing down and spreading out just as it's supposed to," he said. "It was quite a project! A lot

of work involved. I don't like the way it looks yet, but I know it'll look better after things grow back in a few years."

Funk is a bit concerned about how all of the streambank improvements will hold in place after high-water comes from the mountains. Lillibridge agrees. "I think it looks great, but we're at kind of scary stage right now to see how things hold up after the snow runs off. We've only had one year of runoff so far, and last year's runoff wasn't that big."

Kristin Lowell, a senior water quality

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analyst for DEQ in Coeur d'Alene, said she's excited about the project. "I thought it turned out excellent," she said. "It's a great success story with lots of up-front planning involved."

Wolf Lodge Creek was the first cohesive project that involved more than spot treatment of acute issues along the stream, Lillibridge said. The stream-restoration work is expected to reduce sediment flows from the project area by 80 percent or 60 tons per year, the District 319 report said. That amount is more than one-third of the total sediment load in the sub-basin watershed.

The total cost of the 319 grant project was \$391,608, including matching funds. Project partners that provided matching funds through cash or in-kind contributions included the Funk family, landowner Mike Murphy, Restoration Partnership, Coeur d'Alene Lake Management Program, NRCS EQIP, Idaho DEQ, Avista Corp., North Idaho Fly Casters, Eastside Highway District, Trans Canada, Conservation Commission (technical assistance from Lillibridge), and the Kootenai-Shoshone District.

The amount of woody debris used for the high-tech streambank-restoration work was extensive, officials noted. River Design Group prescribed bioengineering techniques, vegetative wood and brush fascines, and large wood habitat structures. Harvesting all of the wood for the project and staging it by the creek was one of the major initiatives and challenges associated with the project, officials said.

There were 25,000 willow cuttings incorporated into the woody streambank structures, 80 trees, 12-18 inches in diameter with root wads, more than 1,800 logs 6-12 inches in diameter, 20 feet long, and 3,341 smaller-diameter trees, 3-6 inches in



*A mix of trees, root wads, and willows anchor the stream bank and provide more habitat complexity for native trout (courtesy KSSWCD).*

diameter, 10-12 feet long.

Logging operations on the Funk property had to work around issues with a buried gas pipeline and powerlines. The logging contractor had to place rock donated by the Eastside Highway District over the buried gas pipeline crossings, and gas company officials had to visit the site to approve the crossings.

"The logging turned out really good," Funk said. "They cleaned everything up as clean as a whistle."

Funk had wanted to do more tree-thinning on their private forest land but because of the powerlines and gas lines, there were tight restrictions on land disturbance. "We got a variance from IDL for logging the trees within the no-cut zone," he said. "Besides the wood we used for the stream project, we were able to send some of the larger-diameter stuff to the mill. That helped to cover our costs."

The logging contractor had detailed instructions on where the various sized trees and root wads had to be

placed along the stream. Lillibridge and River Design Group officials supervised the work on-site to ensure that all of those requirements were met successfully.

"The day-to-day oversight that Bill provided was really helpful," Lowell said. "It was critical in getting things done correctly."

In the project-planning phase, Lillibridge assisted the landowners in obtaining all required stream-alteration permits from the Idaho Department of Water Resources and the Army Corps of Engineers. He worked with the Phillips 66 and Williams pipeline companies to satisfy all their needs in protecting the two pipelines that were close to the creek.

Once completed, some immediate benefits to the creek occurred, the district report said. Large cutthroat trout were seen in deep pools in Wolf Lodge Creek. Aquatic life and water quality benefits will increase with time as willow green up and mature, officials said. The willows survived the

first growing season despite record heat reaching 108 degrees in summer 2021.

“That’s going to be some wonderful fish habitat in there that’s for sure,” Funk says. His daughter and some other family members will be casting a line to catch some of those trout. “We’re anxious to see how they do,” he says. “We’re finally getting a few cutthroat trout coming back, and there’s quite a few brookies in there.”

### Invasive Species Check Stations

The Kootenai-Shoshone District operates four invasive species check stations in coordination with the Idaho State Department of Agriculture in their service area. The stations are known as Cedars on I-90, Highway 53, Huetter on I-90, and Rose Lake.

Kootenai-Shoshone District employees inspected 43,161 watercraft in 2021, down a bit from 47,621 inspections in 2020. More than 440 of the boats inspected came from waters infested with invasive mussels in 2021, and 390 of them had invasive weeds on board or on the hull, District officials said.

Karla Freeman, Kootenai-Shoshone District Administrator, said it’s a challenge to retain check station employees right now as it is for all employers of all kinds. “It’s hard to find people who want to work,” she said.

The District has about 35 inspectors who work seasonally and return each summer, but they need 40-60 people to staff all the check stations. “We have some really good dedicated

people working double-shifts to cover the gaps,” she said. “We’re also offering a higher wage in the \$15/hour range.”

The strategy with any contaminated watercraft is to “Clean, Drain and Dry” the boats. Check station employees apply a hot wash to kill the mussels and empty the bilge of contaminated mussels before motorists can proceed to their destination.



*Kootenai-Shoshone District employees check a boat at one of the District’s four Invasive Species check stations last summer. More than 40,000 boats are inspected annually.*



*Zebra mussels and quagga mussels are very tiny and hard to detect in watercraft. Technicians who work at Idaho Invasive Species check stations know how to find them, however, and remove them from watercraft.*

### Panhandle Seedlings Program

The District’s popular tree sale is sold out this year, Freeman said. People who want to buy native forest tree seedlings next year should go to the District web site and place their order. Web site: <https://www.wixkootenai-shoshonesoilandwaterconservationdistrict.net/>

*Steve Stuebner writes for Conservation the Idaho Way on a*





# WATER QUALITY PROGRAM FOR AGRICULTURE (WQPA)

**The Idaho Soil and Water Conservation Commission (SWCC) is excited to announce WQPA cost-share funding available for soil and water conservation projects.**

- Applicable to agricultural and grazing land in an approved project area.
- Eligible projects include water quality, irrigation water delivery and drainage rehabilitation and improvement projects, and other agricultural BMPs to enhance and restore the soil and water resources of the state.
- Matching funds must total at least 25% of the total project costs.
- Projects must be installed prior to June 1, 2023.
- Applications accepted on a continuous sign-up while funds are available.

*For more information about WQPA or to get the process started, contact your local SWCC staff person or Delwyne Trefz at [delwyne.trefz@swc.idaho.gov](mailto:delwyne.trefz@swc.idaho.gov) or 208-332-1796 or Loretta Strickland at [loretta.strickland@swc.idaho.gov](mailto:loretta.strickland@swc.idaho.gov) or 208-810-0769.*





# Idaho Soil and Water Conservation Commission

## Water Quality Program for Agriculture

### Fact Sheet

The Idaho Soil & Water Conservation Commission (SWCC) has funds available through their Water Quality Program for Agriculture (WQPA) program to provide cost-share financing for soil and water conservation projects, water delivery and drainage rehabilitation and improvement projects, implementation of agricultural best management practices (BMPs), and other projects to enhance and restore the soil and water resources of the state. Funding is available for eligible projects which will be completed no later than June 1st, 2023.

Matching funds must total at least 25% of total project costs. Matching funds include all project time and expenses not reimbursed by WQPA, e.g., time, equipment and materials provided by landowner, \$319 grant funds, EQIP and any other state and federal funds. Total program cost-share from all sources may not exceed 100% of the actual project cost.

Conservation districts wishing to sponsor a project must apply to SWCC. Steps to developing an application include:

- Establish a project area for treatment based on a TMDL, Ground Water Quality Management Plan, or similar technical document. The project area may be as large as a watershed or as small as a single field.
- Describe the overall goal and expected outcome of the project.
- Identify BMPs the district plans to implement and estimate site-specific actual costs per unit of each.
- Identify other sources of funding available for the project.

WQPA provides 10% of the value of the cost-share contract to the conservation district for administrative costs.

After an application has been approved for funding, SWCC will enter into a contract with the conservation district. The contract obligates the SWCC to provide cost-share payments up to the estimated reasonable cost for BMP technical assistance, installation, and project administration. The contract obligates the district, as the the project sponsor, to:

- Develop conservation plans for landowner participants that address water quality and/or quantity.
- Determine cost-share rates for BMPs.
- Provide for technical assistance to landowners.
- Develop and administer contracts with landowner participants in the project.
- Ensure that the matching share of project costs is provided.
- Request WQPA funds from SWCC and distribute to landowners as cost-share for BMPs completed.

Note: SWCC staff are available to assist districts with development and implementation of WQPA projects.

The sponsor works with individual landowners or agencies within the project area to develop conservation plans and executes a contract with each landowner. A template for the contract is provided by SWCC.

For more information, contact your local SWCC staff person or Delwyne Trefz at [delwyne.trefz@swc.idaho.gov](mailto:delwyne.trefz@swc.idaho.gov) 208.332.1796

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