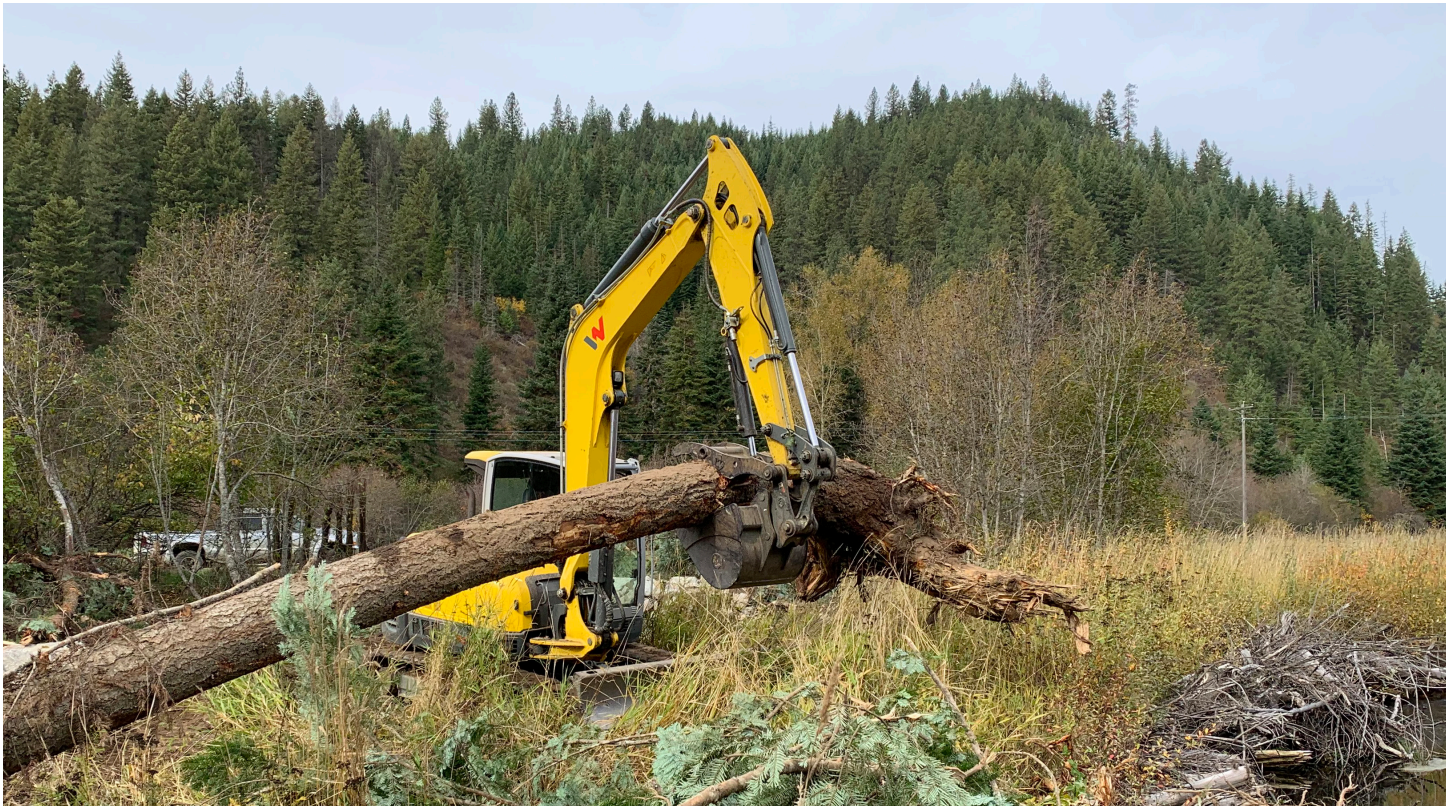
Conservation the Idaho Way

IDAHO SOIL & WATER CONSERVATION COMMISSION

ISSUE 128 APRIL 2024



Contractors place a root wad on Wolf Lodge Creek to anchor the streambank on Steve and Janet Funk's Edgecreek Tree Farm near Lake Coeur d'Alene (photo courtesy Kootenai-Shoshone SWCD).

N. IDAHO LANDOWNERS MAKE STREAMBANK IMPROVEMENTS TO MICA, WOLF LODGE CREEKS TO REDUCE SEDIMENT FLOW INTO CDA LAKE

By Steve Stuebner

Larry and Sherry Mundt, owners of the Rocking R8 Ranch on Mica Creek, have a long history of making improvements on the stream to improve water quality and reduce sediment flowing into Mica Bay and Coeur d'Alene Lake.

The same is true of Steve and Janet Funk, owners of the 374-acre Edgecreek Tree Farm on Wolf Lodge Creek. The Funks have completed a number of projects to improve water quality on Wolf Lodge Creek, a tributary of Coeur d'Alene Lake.

Both property owners participated in conservation projects in 2023 – one funded by the Conservation Commission's Water Quality for Agriculture program (WQPA) and one funded by a Section 319 grant from the Idaho Department of Environmental Quality - to make additional improvements on the streams, resulting in sediment reductions and water quality improvements.

"The conservation district is always thrilled to work with these landowners," said Karla Freeman, administrator of the Kootenai-Shoshone SWCD. "They are a perfect example of stewards of the land."

Both of these projects were done on a voluntary basis by the landowners to make conservation improvements for private and public benefit.

North Fork Mica Creek project

The Mundts raise horses and livestock, manage timberlands and raise about 500 tons of hay per year on their 680-acre Rocking R8 Ranch.

Since 2001, the Mundts have installed 15,784 feet of riparian fencing on their property and completed 4,339 feet of streambank

stabilization on the North and South forks of Mica Creek. Much of that work has been done through the Commission's Water Quality for Agriculture (WQPA) grant program and Section 319 grants from Idaho DEQ, along with landowner cost-share contributions and staff support.

In 2023, the Kootenai-Shoshone District applied for and received a WQPA grant to address four areas where existing vegetation had collapsed into the stream and pushed water flows into the opposing streambank, causing erosion and transporting sediment to Lake Coeur d'Alene in Mica Bay.

The proposed fix was to remove the collapsed vegetation and install rock and vegetative rip rap along the 220 feet of the streambank.

The total cost of the project was $35,520, with a $24,390 WQPA grant and $8,130 landowner cost-share.

Larry Mundt, who installed the willows and rip rap with heavy equipment along the creek, said he thought the project turned out well. "I thought it worked out great – we've been doing this kind of work for a long time," he noted.

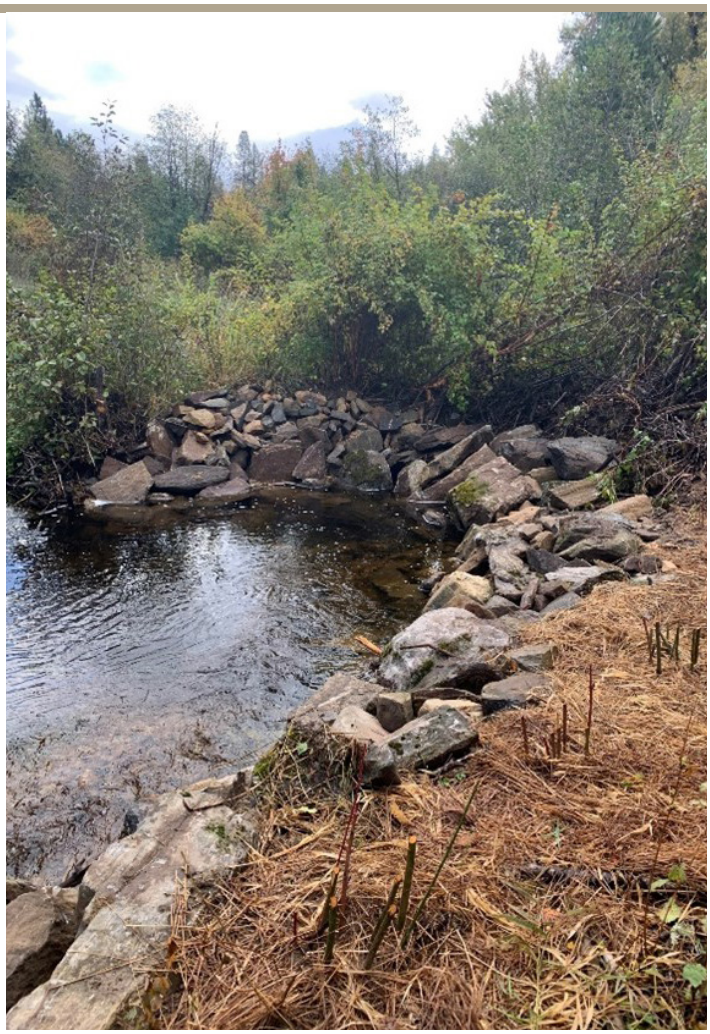
Mica Creek is a 303(d) listed stream for sediment and bacteria, which adversely affects Coeur d'Alene Lake and the kokanee salmon that spawn in the upper watershed, Kootenai-Shoshone District officials said.

With the improvements installed in 2023, the project will reduce sediment flows into Mica Creek and Mica Bay in Lake Coeur d'Alene by 37 tons per year or a 90 percent reduction, officials said.

Mundt said alder trees falling into the creek was forcing water into the opposing bank, causing erosion and cutting away at his private property. "It's important to keep our farmland where it is," he said.

While removing the fallen trees out of the creek, Mundt maintained the root mass of any vegetation salvageable along the edges of the stream. He also planted more than 220 willows in the streambanks, ensuring that there was at least one stem per foot of the treated streambank.

The root problem of the erosion is that the Mundt's farm sits on top of about 10-12 feet of glacial silt and sand deposited thousands of years ago in geologic time when the lake level was 10-12 feet higher than it is today, he said.



New rock anchoring vegetation streambank-enhancement work on the North Fork of Mica Creek on the Mundt's Rocking R8 Ranch. (courtesy KSSWCD).

When state and federal agencies initially looked at the erosion in Mica Creek in the year 2000, they blamed the cattle on Mundt's farm for causing the sediment runoff. So he fenced off 2 miles of the stream and has excluded cattle from the creek ever since.

"It was never the cattle that was the problem," he said, "it's the silt underpinning the creek. There's really nothing to keep it in place."

Bill Lillibridge, SWC engineer, agreed. "The geology of the lowlands around Coeur d'Alene Lake is a mix of silt and glacial sand," he said. "Take your pick – they're both extremely difficult to work with."

So Lillibridge's engineering designs called for using large rock and willows to anchor the creek and stop

the erosion as much as possible.

"All of the streambank work we've done so far has held up over the test of time," Mundt said. "But it's an ongoing challenge."

Wolf Lodge Reach 3 Restoration and Habitat Enhancement Project Reinforcement

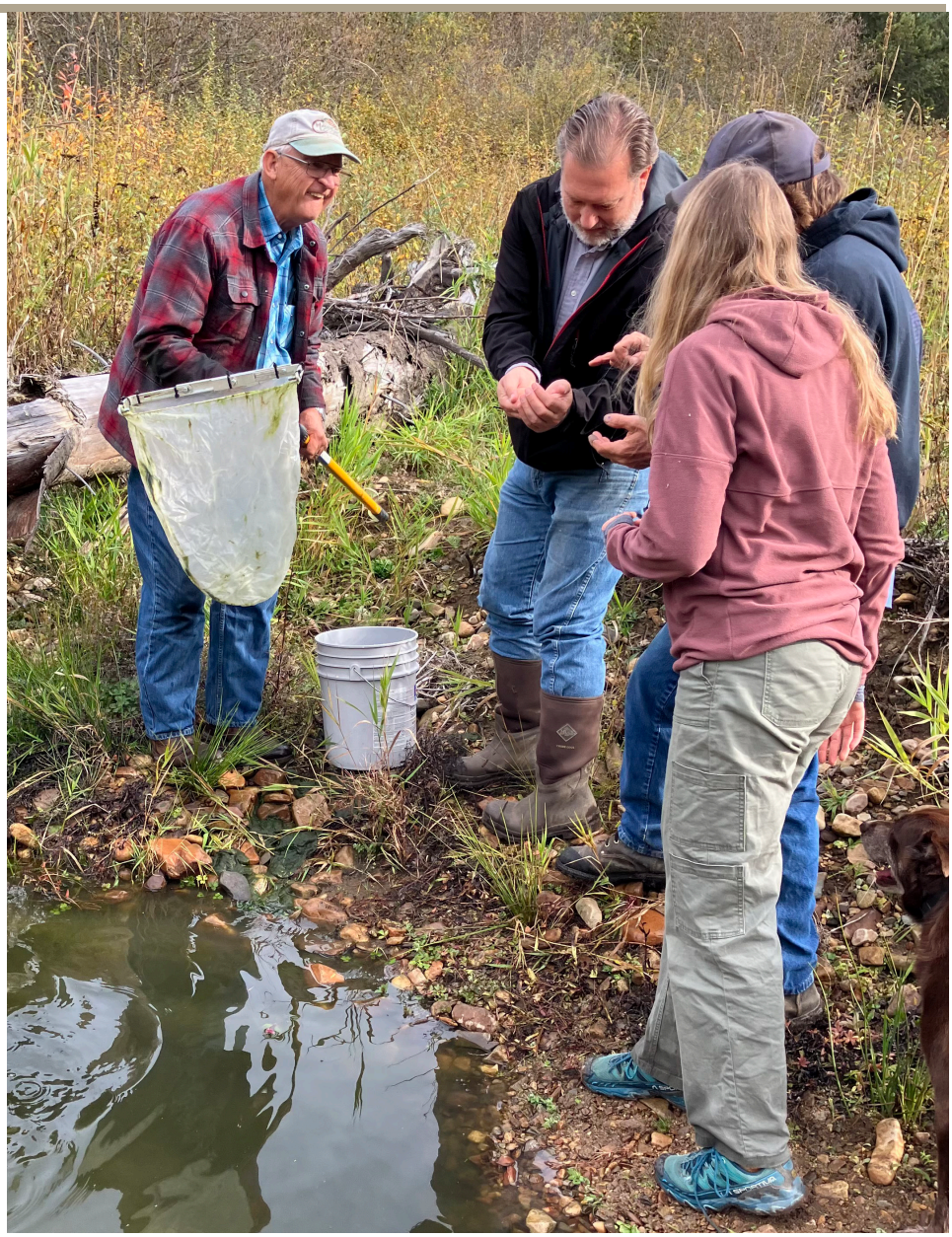
Wolf Lodge Creek is home to native West slope cutthroat trout and has historically provided important habitats for the fish. Stream habitat quality is one of the limiting factors for cutthroats in the Wolf Lodge Creek drainage, KSSWCD officials said. Improved habitats will help provide greater opportunities for cutthroat trout populations to persist and grow.

Upland and instream work being completed in the context of a watershed-scale approach will be beneficial for native trout and other aquatic species, officials said. The Wolf Lodge Creek Reach 3 Stream Restoration project stabilized 2,000 feet of highly eroding streambank that was threatening the integrity/ production of 30 acres of timothy hay with cattle grazing and a larch tree seedling orchard.

Wolf Lodge Reach 3 was identified as a high-priority reach for restoration efforts in the Wolf Lodge Creek Watershed Assessment and Restoration Prioritization Plan, finalized in 2017.

Watershed-restoration planning efforts are made by a collaborative group that includes the Kootenai-Shoshone District, federal and state agencies, the Coeur d'Alene Lake Management Program, the University of Idaho, the Coeur d'Alene Tribe, and members of the Coeur d'Alene Lake Tributaries Watershed Advisory Group.

The Prioritization Plan identified Wolf Lodge Reach 3 as the highest sediment-producing stream reach in the Wolf Lodge Creek watershed — contributing 830 tons of sediment (43 percent of the total sediment load of the watershed) with bank erosion rates ranging from 2-7 feet of migration per year between 2004 and 2015.

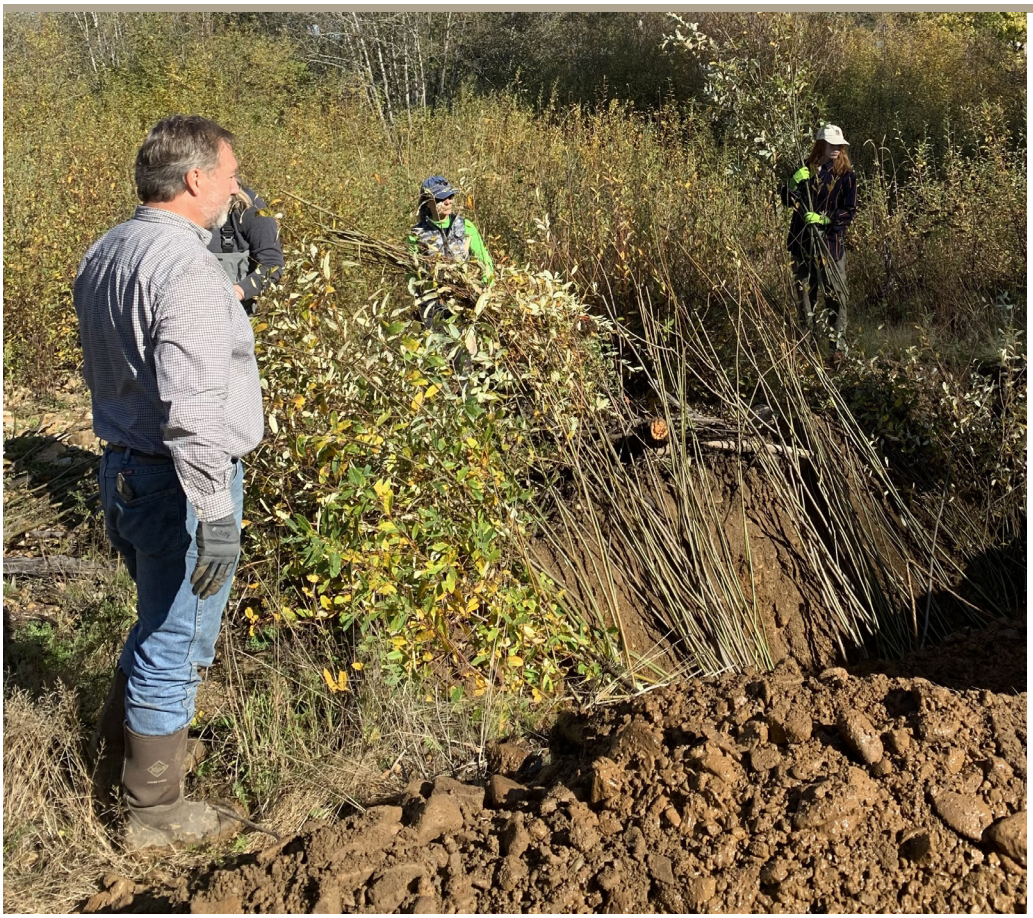


L-R, Steve Funk, SWC Engineer Bill Lillibridge, Paul Schelpp (contractor), and Jenna Ditzel with SWC, look at juvenile cutthroat trout that Funk wanted to save from the construction work. (courtesy Kootenai-Shoshone SWCD)

Upstream from an agricultural production area in the Wolf Lodge Reach 3 project area, an unstable, erosive streambank was at high risk of undermining a shop structure that was less than six feet from the streambank, officials said. Stabilization of the project reach was completed in the Fall of 2020.

In the spring of 2022, a portion of this reach was impacted by heavy flooding at a large bend in the creek. In 2023, the project's goal was to repair and reinforce the protective measures that were placed during the previous restoration project.

At the southern end of the Wolf Lodge Reach 3 project reach, there were several places that needed reinforcement with root-wad



Volunteers lay in willow cuttings prior to be anchored into the streambank with heavy equipment. SWC Engineer Bill Lillibridge supervises. (courtesy KSSWCD)

revetments and willows, KSSWCD officials said.

Project actions for Wolf Lodge Reach 3 project were as follows:

•Install eight banks of willow clumps, each 40' long and 2' wide.

•Augment previous willow plantings with 1,000 more willows in the vicinity of the willow clumps.

The project addressed the following localized problems:

•Excessive downcutting and overtopping at the downstream extent of the project.

•Low vegetation survival and a relatively open floodplain at the upper large bend.

•A breach at the southern end of the project site. This plan will stabilize the forming bank failures and add more willows into the floodplain.

A volunteer day with the Idaho Conservation League allowed about six people to help with willow-planting on the streambanks, Freeman said.

Lillibridge, who did the engineering for the 2023 Wolf Lodge Creek repair work, said they also created some off-stream floodways upstream to slow down the water velocity and spread out the flood waters during flood events.

Funk liked the idea of adding that floodway component to the creek-restoration project. "You can't do anything about the volume of water coming down the creek during a flood, but you can guide it into these flood ways and slow it down and pull the energy out of the water," he said.

About 30,000 willows were planted during the repair project. Some areas of the 2020 work did not establish good willow growth, Lillibridge said. The repair effort focused on digging down up to 6 feet to the water table to ensure willows had water access during the heat of the summer.

Funk guessed about 80 percent of the willows have taken root and are sprouting this spring. "I'm hoping they all get well-established before the next flood," he said.

He's pleased with the project overall. "It's been a team effort, as it always is," Funk said. "We're pretty happy with it."

Steve Stuebner writes for Conservation the Idaho Way on a regular basis.

IDAHO
SOIL & WATER
CONSERVATION COMMISSION
322 East Front Street, Suite 560 Boise Idaho 83702
P: 208-332-1790 • ww332-1799
info@swc.idaho.gov • www.swc.idaho.gov