



*Restored streambank on Squaw Creek.*

## GEM, SQUAW CREEK DISTRICTS WORK ON PROJECTS TOGETHER IN PAYETTE RIVER WATERSHED

*This is the first in a series of articles detailing the various conservation activities being accomplished by Idaho's Conservation Districts. This month we focus on Gem and Squaw Creek.*

By Steve Stuebner

Gem and Squaw Creek Soil and Water Conservation Districts work together cooperatively on a number of projects to improve water quality in the Payette River watershed.

The districts share an administrator, Leanne Buck, they share \$319 grants funds,

work together on \$319 projects, and even share a No-Till drill.

"Sharing the same administrator really makes the communications easier," says Kirk Vickery, chairman of the Gem SWCD. "We really need to work together more than ever. Water doesn't know the boundaries of one district or another, it just flows downriver."

"We've had the No-Till drill for over 15 years – it gets quite a bit of use," said Art Beal, board secretary of the Squaw Creek SWCD.

The No-Till drill was used by 15 producers on more than 300 acres in the districts in the last year, according to the Gem SWCD newsletter. It rents for \$100 for the first 12 acres treated, and \$5/acre thereafter, officials said.

In 2019, the Squaw Creek SWCD worked on reducing erosion on stream banks on the Carlock farm near Ola. Gem partnered on the project by sharing \$20,212 in \$319 grants funds from the Idaho Department of Environmental Quality. Improvements in water quality on Squaw Creek will also benefit the Payette River



downstream of the Squaw Creek confluence, officials said.

Four areas of streambank were treated, covering 1,390 linear feet on the Carlock farm near Ola. Bill Lillibridge, an engineer for the Conservation Commission, designed the projects and assisted with obtaining permits from the Idaho Department of Water Resources and Army Corps of Engineers.

The total project cost was \$33,943; the landowner covered a portion of the cost as well.

The treated sites on Squaw Creek had vertical, bare, eroding streambanks, officials said.

"All four projects focused on new stream meanders that were cutting into hay land," Lillibridge said. "The banks were treated with vegetated riprap and lots of willows."

"Incorporating willows in the treatment plan is vital for long-term streambank recovery and improvement of riparian habitat, and often times can be a stand-alone practice," Squaw Creek district officials said in their newsletter.

Robin Rood, a Carlock family member, said the project worked out "extremely well."

High water over the last 2-3 years have carved away more than a foot of streambank each spring during high runoff, prior to the installation of the project, she said. The family used existing rock from their farm, used their own heavy equipment to install the riprap and willows, and hired an operator to do the rock work. All of those things can be used as cost-share match for the project.

Lillibridge visited the site to work with the heavy equipment operator on installing the rock and willows to ensure the repairs fit the engineering plans, she said.

When high water came in the spring of 2020, the banks held solid, she said. "It didn't erode the banks at all."

The \$319 grant funding made the project affordable. "We'd like to do another section of the stream if we can in the future," Rood said.

The Gem and Squaw Creek districts

also devote time and resources to issues of importance to them. Gem SWCD officials are perhaps most excited about a new pollinator garden that was planted by 5th grade students at Shadow Butte Elementary School, located on the bench northwest of Emmett.

"This has been a very enjoyable and exciting project to work on," said Shadow Butte Principal Todd Adams. "We already do plant projects at multiple grade levels, and our school is in the middle of a large agricultural area in Gem County, so we felt this was a great fit."

The project worked well for the district, too. The theme of the Idaho Association of Soil and Water Conservation Districts in 2019 was "where would we BEE without pollinators." Buck, who has a background working with students in hands-on activities, approached the school about planting a pollinator garden.

"She wasn't content with just taking poster board to the 5th graders and having them make posters for a contest, she really wanted to add an element of hands-on learning," added Loretta Strickland, a water quality specialist for the Conservation Commission in Emmett.

Initially, district and school officials planned to plant the garden in the spring. But then, after Covid-19 shut down schools, they moved the project to this fall. First, the Emmett District maintenance staff installed a drip irrigation system for the garden. Once that was completed, the students put down cardboard for an eco-friendly weed barrier, then they mapped out where to put the plants and started digging, officials said.

After they finished planting, students covered the cardboard and with compost and started watering the plants. All plants that were chosen for the garden



*The streambank on Squaw Creek before the installation of riprap.*

are native to the area and attract bees and butterflies. The area is also designed so it can grow and still have enough space to be used as an outdoor classroom, Adams said.

Students from the Emmett High School shop class are building planting beds so the 5th graders can plant a vegetable garden next spring. The students will start the vegetables from seed indoors and then plant them outside, added Vickery.

The school is located close by Vickery's farm. He's grown seed crops on his farm, he maintains pollinators around the edges of his fields, and his family grows produce sold locally to friends and neighbors. As the chairman of the Gem District, Vickery was a big help to the students because of his knowledge of plants, agriculture and farming, said Leann Buck, the Gem district administrator.

"We're excited to do a project with the community," she said. "Especially with the pandemic, for the kids to have an outdoor classroom is really cool. I had



low expectations for the 5th graders, but they really got into the project; they were amazing."

"It was a collaborative effort between many at Shadow Butte Elementary," Buck said. "We couldn't have done it without help from the maintenance staff, administration, or Mrs. Maxwell and her 5th grade class."

"We are so excited for spring to come so our students can see the fruits of their labor, watch plants bloom and see the different types of pollinators in our area," Adams said. "With us being a rural school and community, this is a natural fit that supports our local farmers and will also help our students become aware of the variety and importance of pollinators in our area."

While the project is teaching Shadow Butte 5th graders about bees, butterflies and pollinator plants, Vickery sees educational outreach with students and the greater Gem County community as being critical for them to learn about agriculture, water and natural resources.

"With all of the new people moving in, I see education as our biggest challenge in the future," he says. "We need to educate them about the importance and value of our natural resources, specifically our soil and water."

Many people are moving into the rural agricultural area without much knowledge, if any, about the importance of managing natural resources in a sustain-

able way, Vickery says.

"It's important for us to tell our story, the value and use of our natural resources, and the need to manage them in a wise way," he says.

To that end, Art Beals worries about the Squaw Creek watershed and Payette River watershed in light of the lack of forest management activities going on in the Boise National Forest. He notes that the Squaw Creek district is a member of the Boise National Forest Coalition. "There's a super abundance of fuel out there, and that poses a major risk to the watershed," he said.

The Good Neighbor Authority allows for cooperative forest management projects between the Boise National Forest and the Idaho Department of Lands. The authority may also get expanded to allow for projects on private lands, he said.

Noting the damage to IDL and Boise National Forest lands in light of the tussock moth outbreak over the last couple of years, "we've seen a major amount of timber get defoliated and killed by the tussock moth," he said. "If we had good forest management out there, we could keep our timber stands thinned out



*Kirk Vickery helps.*

where the tussock moth wouldn't be able to spread like it did.

"What we need is more active forest management."

Going back to water quality projects, the districts have been working together on replacing flood irrigation with more efficient pivot irrigation projects basin-side. Eighty-eight conversion projects have occurred over the years, Vickery says. Cost-share funding for those projects have come from \$319 grant funds or NRCS Environmental Quality Incentive Program (EQIP) funds.

Since 2003, the Gem District has received \$914,000 in \$319 grant funds, implement-



*5th grade students at Shadow Butte Elementary School at work planting a pollinator garden.*

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*Rock, riprap, and willows in place.*

ing over \$1.56 million in water quality projects in the Gem and Squaw Creek Districts, involving 44 landowners who treated 1,508 acres of farm land, Strickland said. All told, those projects have reduced sediment levels in the Payette River watershed by 2,513 tons per year as well as reducing bacteria and nutrient levels, she said.

The Gem District has been tracking water-quality results through monitoring sediment levels in agricultural drains, Vickery says. As one example, they tested water at the top of Bissel Creek and then again at the bottom, before it flows into the lower Payette River.

In the fall of 2017, Gem SWCD worked with a landowner to install a center pivot at the top of the watershed adjacent to Bissel Creek. The project converted 85 acres of a cropland field which has a corn/alfalfa/grain crop rotation. Under the prior furrow irrigated irrigation system, the estimated sediment loss from this field, planted with corn, was 845 tons, Strickland said.

A year later, the 2018 monitoring results showed a 3,834 pounds per day sediment-reduction at a monitoring site on Bissel Creek. According to the DEQ monitoring report in 2018, the monitoring site showed an average in stream concentration below the in-stream targets (22 mg/L) set in the Lower Payette River TMDL. That location is

now meeting its TMDL allocation, Strickland said.

“By monitoring at the top of the drainage, and then also at the bottom, we can track our results,” Vickery says. “The data show we are making progress. The projects we are putting in are working.”

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

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