

# Conservation the Idaho Way

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## TEENS PARTNER WITH LOCAL CONSERVATION DISTRICT ON STREAM BANK RESTORATION PROJECT

By Steve Stuebner

Ten juniors and seniors from Cascade High School helped out the Valley Soil and Water Conservation District this spring by working on a project that will improve fish habitat and create shade to decrease water temperature in the North Fork of the Payette River in the town of Cascade. But the project also has benefits for streambank-stabilization as more stream-restoration work is planned immediately downstream from the project this coming fall.

The Cascade High environmental science students worked for about five hours,

planting approximately 1,500 willow cuttings along 650 feet of the North Fork streambank next to "The Strand," a pedestrian trail next to the river. The project is downstream from the popular Kelly's Whitewater Park in Cascade. The kids used four water-jet stingers on loan from the Idaho Department of Fish and Game to plant the willow stems.

"The stingers are a big long pole with hydraulic pressure," said Cheyenne Jedry, Cascade High School environmental science teacher. "You pull the trigger, and the water digs a hole for you."

Four IDFG employees helped the kids with the planting project, in addition to providing the stingers.

"We really enjoyed the project as educational experience about working with the community," Jedry said. "It's a great example to set for the students about giving back."

Prior to working on the project, the students learned about hydraulics, streambank erosion and streambank-restoration techniques from Bill Lillibridge, an engineer for the Idaho Soil and Water

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Conservation Commission. Lillibridge is assisting Valley SWCD with a number of water-quality improvement measures as part of a new Section 319 grant that the district received from the Idaho Department of Environmental Quality.

"The kids really enjoyed Bill's presentation," Jedry said. "It also was cool for the kids to work side by side with people like Bill and the Fish and Game employees. It gives them an idea of what natural resources professionals do in the real world."

Jedry's environmental science students got so excited about natural resources this year that they ended up forming a team for the Idaho Envirothon natural resources education event in Challis. This was the first year that Cascade High has fielded a team for the Idaho Envirothon in quite some time, and the Valley SWCD was pleased to sponsor them, said Durena Farr, project manager for Valley SWCD.

"Our district sponsored the team, and their interest in participating came about because of the North Fork project," Farr says. "These things tie together really well. We are creating future conservationists!"

After giving his presentation, Lillibridge went out to a private property location with several volunteers from the Valley SWCD and IDFG employees to collect the willow cuttings in the field. The next day, the group did the willow-planting project along with the Cascade High School students.

"We're very happy to have Cheyenne on board," Farr says. "She's doing amazing things!"

Clint Kennedy, a former Cascade High science teacher, was very active with the Valley SWCD and other local natural resources agencies, but he is retired now. "Having Clint retired is difficult, but Cheyenne is doing some great projects. She helped the kids build a solar go-kart for a regional competition. She's got a lot of things in the works," Farr said.

On a broader level, the Valley SWCD has a number of projects planned around

Lake Cascade and on the North Fork of the Payette River to work on improving water quality as part of the new 319 grant. The total grant amount is about \$190,350, with \$76,350 in matching funds, she said.

Some of the projects planned include developing an off-site stock-watering project on private land, some culvert work along West Mountain Road on the west side of Lake Cascade, a new culvert in the Boulder Creek area near Lake Cascade, and more.

Improving water quality in Lake Cascade and in the North Fork of the Payette River drainage overall has been a long-term endeavor involving many projects over the years. Lake Cascade is the fourth-largest lake in the state of Idaho. At full pool, it's 20 miles long, five miles wide, and it has 110 miles of shoreline. The popular lake receives more than 200,000 visitors per year. Multiple campgrounds ring the lake as part of Lake Cascade State Park. The lake also is popular for ice fishing in the winter and sport fishing in the summer. Kokanee, big rainbow trout, perch, small-mouth bass and coho salmon all can be caught in the lake.

In the early 1990s, a big algae bloom caused by low water levels, high phosphorous and hot weather raised concerns with the public and multiple public agencies. Improvement plans implemented beginning in 1995 lowered

the phosphorous levels by 37 percent. In 2003, phosphorous levels decreased by 57 percent from eight years previous because of multiple water quality improvement projects incorporating best management practices on roads, ranch-lands and tributary streams.

Valley SWCD has continued to work on water-quality issues around the lake on an ongoing basis. As of 2009, total phosphorous levels were being stabilized, and according to Idaho DEQ, they continue to track close to the goal that was set by the TMDL plan for Lake Cascade -- 25 micrograms per liter. The latest water quality report for Lake Cascade will show average total phosphorous levels of about 30 micrograms per liter, DEQ officials said.

The levels of chlorophyll A (algae) in Lake Cascade have been decreasing quite a bit over the last eight years, said Graham Freeman, watershed coordinator for the DEQ regional office in Boise. Last year, levels of chlorophyll A (algae), were averaging in the 1.78 ug/liter range, Freeman said. That's down from levels that exceeded 10 ug/liter 10 years ago. "That's a pretty good reduction," Freeman said.

"Every little bit helps," said Kay Coski, former district manager for Valley SWCD.

Those readings show that Lake Cascade is close to meeting the goals of the TMDL water quality improvement plan. "We're always pleased to see those kinds of



Cascade High 2017 Envirothon Team

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trends take place where our partners and our agency work together on improving water quality to benefit public health and aquatic life," says Teri Murrison, administrator of the Conservation Commission.

On the North Fork of the Payette River, Lillibridge said the amount of erosion that occurs with granitic soils in the watershed is a challenge. "We're looking for some long-term solutions. The area is really sandy. In fact, Cascade is like a giant sandbox," he said. "There are many forces at work on top of a giant pile of sand that wants to shift with the currents of the river."

A TMDL plan was written in 2005 for the North Fork in hopes of reducing sediment in that reach. The TMDL set a suspended sediment target of 25 micrograms per liter as a seasonal average and a target of 80 percent bank stability, DEQ officials said. In 2012, a five-year review showed the bank stability was rated to be about 74 percent, slightly below the target, the latest data available.

Planting willows can be a great "stabilizer" to keep the streambanks intact, Lillibridge says. "The willows provide some nice shade, and the vegetation will bring in bugs and provide food for fish,"



*Bill Lillibridge explains the benefits of stabilizing streambanks with willows, to students at the river's edge.*

he says. "It's amazing the benefits you can get from putting the willow cuttings in the bank."

Below where the students planted the willows, Lillibridge is designing a longer-term solution on an eroding streambank that may need more robust treatment – some log revetments perhaps combined with some rock. The engineer is still working on the details.

In the upper part of the watershed, Farr worked with a number of partners to propose a grant project to build a vault toilet at the Boulder Lake Trailhead, one of the most popular trailheads in the McCall area. The Valley SWCD partnered with multiple agencies and also a Donnelly Elementary science class in the grant application.

The Idaho Department of Lands owns the land where the rest room would be built, so it stepped up to help with the project, along with the Valley County Road Department, Trout Unlimited and Idaho Fish and Game. The Forest Service did not have any funds to participate, Farr said.

"That was an important project because no one wanted to touch it, and we helped to facilitate a solution," she said. "It was really the Valley County Commissioners that stepped up to make this happen. They committed resources for annual maintenance, and it was key to have the Valley County Road Department commit to help us with site prep."

Students from Donnelly Elementary took a field trip to the Boulder Lake trailhead, and saw a lot of toilet paper strewn about because of the lack of facilities. Valley SWCD had been providing a temporary portable toilet at the location to help.

For example, a student named Kayla wrote, "We really need a real toilet at the Boulder Lake trailhead. The porta-potty reeks badly! It's not very sanitary in there. You can smell it from the creek. We need a real toilet. Please, please, please."

The grant for the toilet was still pending with the Idaho Department of Parks and



*Planning their willow planting*

Recreation at press time. But she is hoping that the multiple partners involved and relatively reasonable cost -- \$22,846 – will make the grant competitive.

Overall, Farr is excited about the water-quality improvement work planned for the North Fork and Lake Cascade, but she's just as stoked about school kids getting involved in conservation work. "We're teaching kids to be stewards of the land – that's what this is all about!" □

*Steve Stuebner writes about water quality improvement projects on a regular basis for Conservation the Idaho Way.*



*Students using stingers to drill holes for planting*

## LOOKING AHEAD: dealing with flood damages will be challenging

Fiscal Year (FY) 2018 starts July 1st. Are you ready?

We are, although we're concerned about what heavy winter snows and high runoff has done in waterways around the state. We can't see much yet because the waters are still high, but count on lots of related challenges to be addressed on private and public land. And count on sticker shock. Merriam-Webster's dictionary defines sticker shock as "*astonishment and dismay experienced on being informed of a product's unexpectedly high price*".

Factoring in limited available local, state, and federal resources for restoration activities, this year will be one for the history books.

It's been a busy year for Idaho's conservation partners. The Commission has provided technical support to 39 districts

(awarded 68% of the hours districts told us they needed - up from 53% the year before), distributed \$1.25 million to Idaho's 50 conservation districts, held our own in writing water quality improvement implementation plans, loaned money for conservation practices, and more.

"We worked hard and are proud of what got done last year," says Delwyne Trefz, Commission District Support Services Specialist, "but until winter, this year was a 'normal year'. Since then it's been anything but. We're all going to have to step it up - if such a thing is possible. The partnership'll need more people and dollars to get things done."

Many Idaho rivers won't likely drop until July, but statewide, the Commission's engineering and field staff planning hours have already been allocated. We'll shift hour allocations at district board requests.

"The Commission's work plan is already in place for next fiscal year, but I anticipate shifting priorities as we learn how bad things are. That said, none of us have the resources we'll need to address everything," she cautions.

Hydrologists warn that by the time all the snow in the mountains melts, run-off will far surpass the ability of dams to store it. The Treasure Valley's had a reprieve (like other some other areas) due to cooler than expected weather, but at some point, flows may increase again. As it is, rivers here and everywhere have been scouring soil and trees from riverbanks for months.

"Even though the Corp of Engineers has been reducing flow rates on some Idaho rivers," Curtis Elke, State Conservationist for the Natural Resources Conservation Service warns, "there's going to be a lot of streambank restoration work ahead. And



*Flood damage on the Weiser River*

while the waters are high, we just don't know what work there'll be and how much of it to expect."

The Weiser River SCD was the first district to ask for help. February's flooding there was caused by unusual ice flows that wreaked havoc, and there could be more flooding ahead. The Commission has assigned 200 engineering hours there, but at the end of those hours, they won't have a single project done - we'll just have engineered some of the fixes. Their biggest challenge will be finding the implementation funds to put the fixes in place.

And Weiser River SCD is just one district out of 50 in the state: between them, the President and Curtis Elke have declared disasters in every county in Idaho. So, stay tuned. And cross your fingers. □

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