

H A P P Y N E W Y E A R !



VALLEY SWCD INSTALLS NEW ROCK RETAINING WALL VIA LAKE CASCADE PARTNERSHIP PROJECT

By Steve Stuebner

In the summer of 2018, Bill Lillibridge, a staff engineer for the Conservation Commission, assisted the Valley Soil and Water Conservation District (Valley SWCD) with refurbishing a retaining wall next to a popular boat ramp on Lake Cascade, known as the Donnelly Boat Ramp.

A high sandy embankment next to the Donnelly Boat Ramp had been eroding into the lake as the previous retaining wall had fallen into disrepair. The old retaining wall fell apart for several reasons – people had been removing some anchor rock from the embankment to use in their own landscaping projects, and other parts of the anchor rock had been removed from the soil wall to prop up fishing poles at the water's edge, officials said.

The City of Donnelly was concerned about the safety aspects of the boat ramp and the soil slumping into the reservoir. Valley SWCD saw an opportunity to partner with the City of Donnelly to rebuild the wall in a professional manner with proper materials and stop the erosion. But they needed an engineer to design the wall and take care of the permitting work. Enter Bill Lillibridge.

“The retaining wall had been an issue for a while. The City of Donnelly was worried about public safety, and the Valley SWCD was concerned about the erosion,” Lillibridge said.

Fortunately, Valley SWCD had a Section 319 water quality grant from the Idaho Department of Environmental Quality and the Environmental Protection Agency to cover the costs of the project, while the

City of Donnelly chipped in to provide local matching funds. Lillibridge's engineering work also counted toward the match.

“It was a good project, I'm glad we did it,” said Cami Hedges, City Clerk for Donnelly. “We are very happy how it turned out. The whole look of it is so much improved from what it was.”

The project eliminated 332 tons of sediment flowing into Lake Cascade per year, 532 pounds of phosphorous and 35 pounds of nitrogen.

“It was a really great project, and a great benefit to the City of Donnelly and the boaters who use the boat ramp,” added Durena Farr, District Manager for Valley SWCD.

Farr commended Lillibridge for assisting with the project engineering. He has assisted Valley SWCD with a number of conservation projects on Lake Cascade or along the North Fork of the Payette River in recent years. "He's been an amazing resource for our district," she said.

The Conservation Commission provides engineering services for conservation projects throughout the state. Idaho's soil and water conservation districts need to apply to reserve those services in a timely manner each year, because their services are in high demand, and there's quite a bit of competition for them.

"Bill is kept pretty busy during field season and that's the way he likes it. His work ethic, knowledge, and skillset make him a valuable part of the Commission team. He's very popular with districts in North and Central Idaho," said Teri Murrison, administrator for the Commission.

Farr was glad to see a water quality and safety issue get resolved on the banks of Lake Cascade.

But when the lake was closed to public use on Sept. 7 because of public health issues related to a blue-green algae



Prior to the project, this sandy embankment contributed significant amounts of sediment to Lake Cascade.

bloom, it was a signal that much more needs to be done to address sediment and phosphorous issues in and around Lake Cascade, she said.

It was the first time since the mid-1990s that the lake had to be closed to public use because of an algae bloom.

"We had a bad algae bloom," she said.

"It's a wake-up call that we need to do more to control sources of sediment and phosphorous in the lake."

The algae bloom was caused by a "perfect storm of hot weather, drawdowns, and a heavy rainstorm that flushed sediment from fields and tributaries into the low water reservoir," she said.

Valley SWCD has another Section 319 grant to address sediment and phosphorous sources in the coming years, Farr said. "We will meet in March to see where we might want to focus our resources. I want to coordinate with the Idaho DEQ and Bureau of Reclamation on where the hot spots are that contribute to the algae bloom," she said.

Lake Cascade is the fourth-largest reservoir in the state of Idaho with a surface area of 47 square miles. 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; many of them come to Lake Cascade State Park. Multiple campgrounds ring the lake as part of the state park and on U.S. Forest Service land. The lake also is popular for sport fishing in the summer and ice fishing in the winter. Kokanee, big rainbow trout, perch, small-mouth bass and coho salmon all can be caught in the lake.

Valley SWCD has worked on many phosphorous and sediment issues over the last 25 years. For example, after a water quality plan was crafted for the lake in 1995, phosphorous levels were reduced by 57



A blue-green algae bloom caused Lake Cascade to be closed last fall. Photo taken near Crown Point.



Highly toxic, blue green algae blooms are the result of unmitigated nutrient-impaired waters

percent over the next eight years.

In more recent times, Valley SWCD has worked on conservation projects on Willow Creek, Boulder Creek, Gold Fork and the North Fork of the Payette River. Other projects stabilized the banks of Lake Cascade in key areas and the North Fork Payette River below Lake Cascade Dam.

Ongoing issues include:

Septic tank runoff from private cabins on the west side of the lake

Septic runoff from pit toilets in Lake Cascade campgrounds

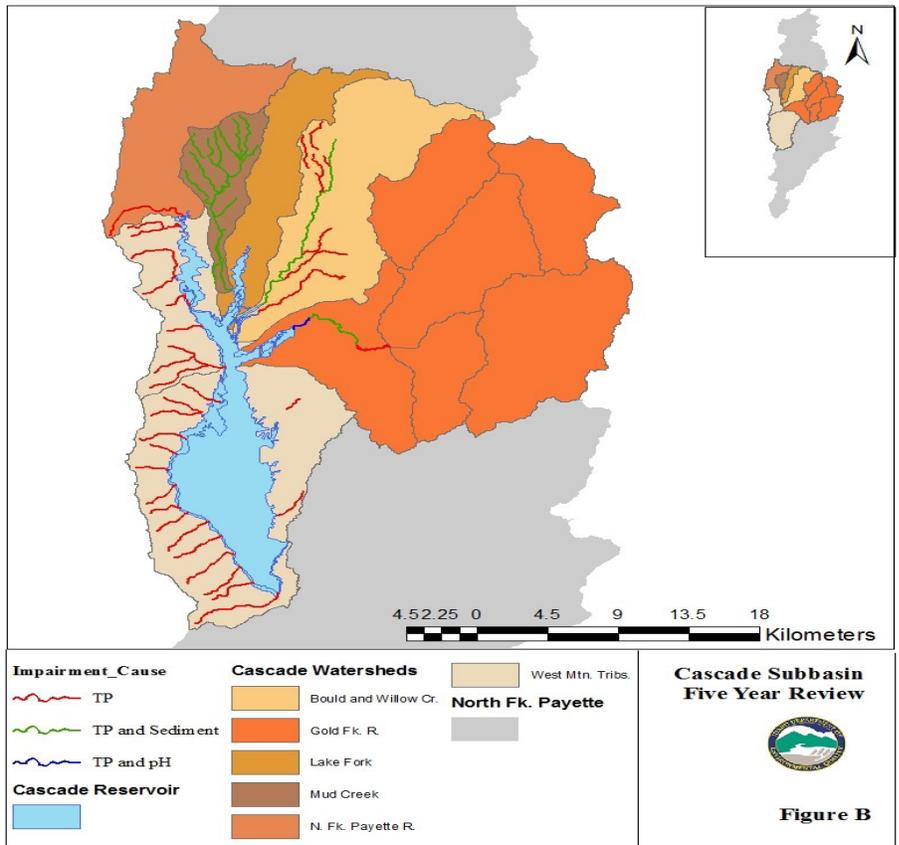
Sediment issues in the Gold Fork river drainage

Sediment runoff from cattle ranching around the lake

Phosphorous flows from the McCall Sewage Treatment Plant coming down the North Fork of the Payette River and flowing into Lake Cascade

“We will hold several community meetings to set priorities for projects,” Farr said.

CASCADE WATERSHEDS



Chase Cusack, watershed coordinator for Idaho DEQ in the SW region, said the previous conservation work around the reservoir has helped, but more needs to be done.

“There’s always cyanobacteria in the water, and the sediment is often times nutrient-rich,” Cusack said. “These bacteria have adapted to utilize the nutrients from the sediments before rising to the surface to photosynthesize. That is when we see these algal blooms.”

One of the big concerns that occurred last summer is that the bacteria and nutrients got flushed down the North Fork of the Payette River below Cascade Dam by heavy rain during the time when the reservoir was closed to public use.

“That causes concern,” Cusack said.

Property owners around the lake have been calling Idaho DEQ and Valley SWCD to show support for learning more about the problems and issues and crafting solutions, Cusack and Farr said.

“We need to do more sampling and monitoring,” Cusack said.

Going back to the retaining-wall project, Lillibridge said he was approached by Valley SWCD to provide assistance with the design, engineering and permitting.

The new retaining wall was designed to be about 180 feet long and about six feet tall, Lillibridge said. They removed the old cinder blocks that were being used to hold the soil back, and excavated the sandy slope to a 45 percent slope. The contractor, Falvey’s Earth Work in McCall, put down a filter layer of gravel against the soil, and then built the retaining wall with large rock 24-48 inches in diameter.

The City of Donnelly’s public works employees placed willow cuttings inside the rocks to help prevent sediment flow from the wall. The City of Donnelly also took care of demolishing the old wall. Both of



Newly planted willows should help reduce the flow of sediment to the Lake.

those activities helped with the project match, Farr said. And the City of Donnelly also provided a cash match to make the project work.

The partnership between the Conservation Commission, Valley SWCD and the City of Donnelly made it possible to tackle a project that a small community couldn’t necessarily afford to do on its own, Farr said.

“I think it turned out great,” Lillibridge said. “That’s going to be a much better long-term solution for preventing sediment from running off that slope next to the boat ramp. On a larger scale, we still have much to do to improve Lake Cascade water quality, but I think the Conservation Commission will do what it can to serve as a partner in that endeavor.” □

Steve Stuebner writes about conservation success stories regularly for Conservation the Idaho Way.

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