



*The Mid-Snake region is popular in the summer months for power boating, kayaking, Stand-Up Paddle Boarding, and whitewater rafting. Photo: courtesy Southern Idaho Tourism.*

## MORE TO DO: WATER QUALITY IN THE MIDDLE SNAKE A HIGH PRIORITY

*By Steve Stuebner*

Tackling the complex and challenging water-quality issues in the 93-mile Middle Snake region is now seen as a higher priority for state officials considering that the major water-quantity issues in that area have been largely resolved, House Speaker Scott Bedke said during the 2019 Legislative Session.

The 2015 historic water settlement between the Surface Water Coalition and Idaho Ground Water Appropriators, mediated by Bedke, should produce a net gain of 240,000 acre-feet of water into the Eastern Snake Plain Aquifer (ESPA) each year from a 13 percent reduction in water use on the part of approximately 5,500 ground water users across the ESPA region.

In addition, the Idaho Water Resource Board has committed to recharging an average of 250,000 acre-feet of water into the ESPA each year through its managed recharge program.

Multiple strong winters in a row have provided surplus water flows, have increased those water contributions to the ESPA region by more than double, and have led to the largest single year increase in ESPA levels – 1.6 million acre-feet – in 80 years in 2018.

All of that is good news for increased water flows into the ESPA, and that should lead to increases in spring flows in the Thousand Springs region, the outlet for the aquifer. Higher spring flows should help with dealing with low summer flows in the Mid-Snake region, officials say.

The Idaho Legislature set aside \$200,000 in the 2019 Session to increase the amount of water quality testing and data collection in the Mid-Snake region. Experts are meeting this spring to determine how best to allocate those testing dollars to benefit the Mid-Snake water quality program.

Maintaining good water quality in the Mid-Snake is complicated because it's a rapidly developing area with large agricultural operations – from hundreds of row crop farms to cattle feedlots to large, industrial dairies – and municipal community wastewater plants for the cities of Twin Falls, Jerome, Filer, Buhl and Hagerman. It is also home to the nation's largest production of rainbow trout at Clear Springs Foods and 80+ other aquaculture facilities.

In the midst of the teeming agribusinesses, there are large dairy processing plants like Jerome Cheese, the Chobani yogurt factory, potato processing plants like Lamb Weston and Simplot, and McCain Foods.

Low flows in the summertime occur because of the zero-flow requirement below Milner Dam to facilitate irrigation between June and September when the Snake River’s flows split into canals to irrigate about 500,000 acres of cropland in the eight-county Magic Valley region. Even with spring flows rejuvenating the river in the Thousand Springs reach, there are a number of areas with heavy algae growth and macrophyte plants in the lower section of the Mid-Snake region between Crystal Springs and King Hill. This even after the natural springs have added clean flows to the river, officials say.

Overall, the total phosphorous load in the river seems to be the biggest issue facing the region today.

“I was glad to hear from Speaker Bedke that water quality is going to be the next big thing in the Mid-Snake region,” said Brian Olmstead, general manager of the Twin Falls Canal Company. “We’ve had three good flushing years in a row. We need more water and less sediment to fix this situation. Everybody’s got some room for im-



Heavy algae and macrophyte plants are a fixture in some areas of the Mid-Snake. Photo courtesy Idaho DEQ.

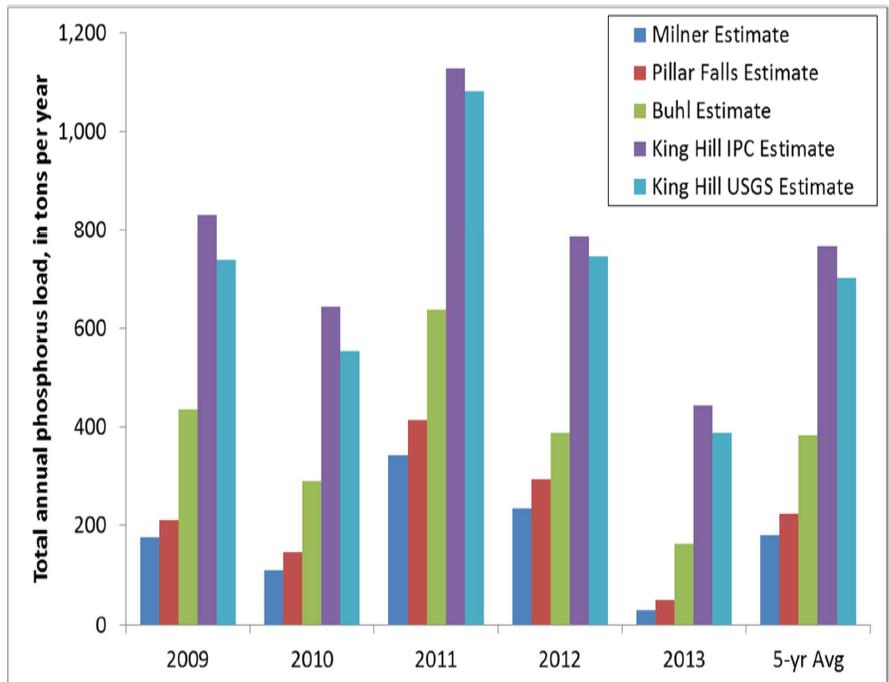


Figure 140. Annual estimated TP loads (on a water year basis)

Total phosphorous levels in the Mid-Snake Region from 2014 Tetra Tech report.

provement to clean up the river, but at the same time, we want to keep all of our industries in business.”

In addition, the Middle Snake supports a variety of recreation activities that depend on clean, swimmable water, such as people kayaking on the river in the summertime from Centennial Park to Pillar Falls or the base of Shoshone Falls, anglers fishing for trout, bass and sturgeon, pleasure boating and swimming behind Idaho Power dams, and whitewater rafting adventures in the Murtaugh reach of the Snake and the Hagerman reach of the Snake.

The first TMDL process – an exercise under the Clean Water Act in which

experts calculate the Total Maximum Daily Load in the Snake River – was completed in 1997. The challenge then was to reduce total suspended solids in the river, and through the first TMDL plan, that was achieved in the first decade. Total suspended solids have been averaging 22.5 milligrams/liter, compared to the EPA/DEQ standard of 52 mg/l, officials say.

Total phosphorous levels, however, are averaging about 0.091 mg/l while the TMDL standard is 0.075 mg/l.

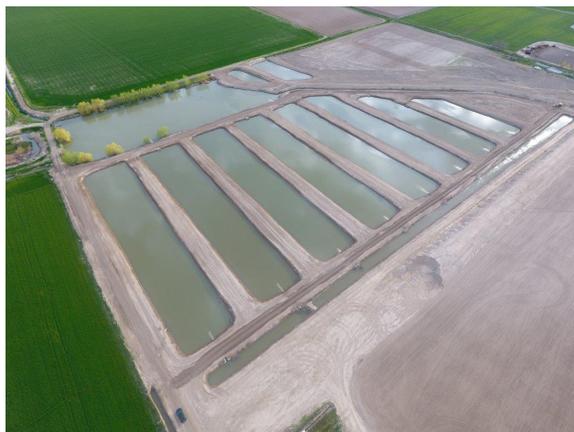
Most people agree that the total phosphorous levels are the primary area of concern with direct ties to the growth of algae mats and macrophytes in the river. Excessive sediment running off farm fields can add to the phosphorous load. The rooted macrophytes obtain their nutrients from sediments. Having enough surface water and spring water flows to dilute phosphorous levels is paramount.

The DEQ/EPA manage point-source discharges in the Mid-Snake through National Pollution Elimination Dis-

charge System permits, regulating wastewater treatment plants and fish farms. Dairies and feedlots are supposed to be self-contained facilities emitting no surface pollutants. And the non-point source pollution from sediment and chemical runoff from farms are managed through voluntary projects involving the installation of best management practices.

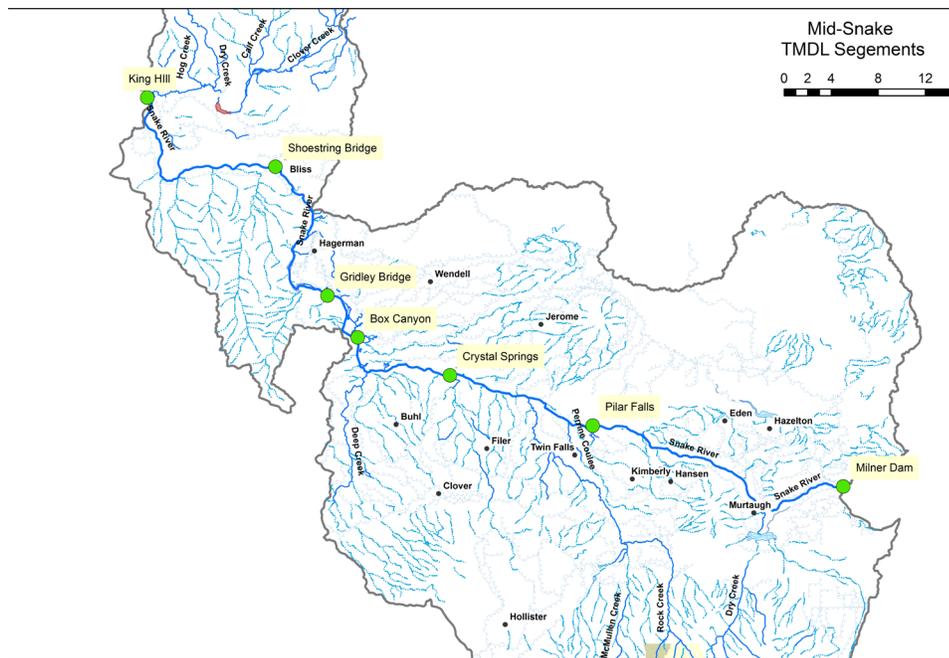
“We’ve been working really hard for a long time to clean up the sediment,” Olmstead says. “We’d rather work on holistic solutions from everyone involved rather than hammer on the point-sources through the permit process.”

The aquaculture industry has made substantial gains in reducing its contribution of total solids and total phosphorous by reducing the amount of phosphorous in fish food, said Randy MacMillan, Vice President of Clear Springs Foods. That has led to a 60 percent reduction in the discharge of phosphorous from the aquaculture industry over the last 20 years, he said.



Twin Falls Canal Company installed this sediment and flood-control project to address water quality concerns. Photo: courtesy Twin Falls Canal Company.

“In our view, we’ve done a good job,” MacMillan said. “But it’s a slow, complicated process to solve the water quality issues in the river. The plants don’t seem to be going away.”



The Mid-Snake Region. Map courtesy of the Idaho DEQ.

In 2014, the EPA threatened to reduce the permitted level of phosphorous from the Twin Falls Wastewater Plant by 98 percent, and that sent shock waves through the region. “That would cost us \$100 million to upgrade the plant to meet that standard,” said Jason Brown, manager of the Twin Falls Wastewater Plant.

The City of Twin Falls has since negotiated a reprieve with the EPA by committing to work with farmers on more sediment-reduction ponds and also installing bio-phosphorous removal capabilities at the wastewater plant, Brown said. Microbes can uptake phosphorous in the treatment process at the plant, so they create a situation where the microbes thrive and reduce phosphorous through the treatment process. In addition, the Twin Falls plant does land-application with wastewater effluent to reduce point discharges to the Snake River.

“There’s frankly a lot more we can do

in spending tens of thousands on new sediment-reduction projects, rather than \$100 million on the wastewater treatment plant,” Brown says.

Both the Twin Falls Canal Company and Northside Canal Company have done a number of sediment-reduction projects over the years. In 2018, Twin Falls Canal Company spent \$591,800 on a 24-acre sediment-control and flood-management project called the East Perrine Pond Wetlands project. It will reduce the amount of phosphorous flowing into the Snake River by 5,000 pounds per year, Olmstead said.

“We need 10 more wetland projects like that above the Snake River rim,” he said, to reduce sediment.

Farmers have been doing more to

**CURIOUS ABOUT  
HOW YOUR PUBLIC  
FUNDS ARE SPENT?**

visit <https://transparent.idaho.gov/>



*Twin Falls Canal Company's Jay Barlogi demonstrated a wetland's ability to positively impact water quality.*

reduce sediment flow from their croplands, adds Chuck Pentzer with the Idaho Soil and Water Conservation Commission. Pentzer has worked with farmers on best management practices in the region for more than a decade. He's seeing more farmers engage today in no-till farming, reducing erosion by maintaining soil cover and planting cover crops in between raising row crops.

"No-till farming is increasingly of interest," Pentzer says. Many producers are considering and adopting no till and strip till type practices into their rotations and as the confidence of these practices increases, even more of the sediment will be retained at the source, reducing the maintenance needed for the wetlands.

Mike Trabert, former environmental coordinator for the City of Twin Falls, is the chair of the Mid-Snake Watershed Advisory Group, which oversees the TMDL plans and processes. He would like to see more effort taken on reducing phosphorous.

"There are a lot of things we could do to reduce phosphorous that aren't that costly," he says.

For example, Trabert would like to see the 13 cities in the region outlaw products that contain phosphorous in soap and laundry detergents. Other communities with water quality con-

cerns have done that, he noted.

Trabert's main concerns today are about rapid population growth and trust, he said. "I'd like to see people working together toward a common goal," he says. "Some people are threatening lawsuits instead of working together."

Trabert is very complimentary of the canal companies for working on sediment-reduction projects, and he'd like to see those continue. He'd like to see the WAG identify lands in strategic locations that could be purchased or leased for sediment control.

There's been a move by several of the participants in the Watershed Advisory Group to form the Southern Idaho Water Quality Coalition to address potential pollution issues outside the purview of the Watershed Advisory Group and attract more funding. MacMillan sees that as a positive to bring outside players into the fold that could provide multiple benefits.

"We think we're better off working as a team and not pointing fingers at each other," MacMillan says.

Trabert hopes that the Southern Idaho Water Quality Coalition can help, but he wants to make sure that the WAG continues to do its job to reduce pollutant loads in the Snake River. "It almost seems like people are going to their respective corners instead of coming to the table," he says. "We are supposed to be good stewards of the river and the environment."

One of latest issues to arise is that the EPA may change the base average yearly river flow that's been used to

## BILL KENYON JOINS THE PARTNERSHIP

We're pleased to announce that Bill Kenyon has been hired to fill a Soil Conservationist position in Pocatello after the departure of Roni Pasi. Roni elected to return to the organic farming industry and will be missed.



We're all excited to get to know and work with Bill! He will be supervised by Nate Matlack, the NRCS District Conservationist.

Bill graduated from Humboldt State University with a degree in Range-land Management.

He's been working for the Idaho State Department of Agriculture as an Agricultural Inspector in the Blackfoot area and also worked as a range technician for the US Forest Service in Douglas, Wyoming and Idaho Falls.

Bill's excited to be embarking upon a career in conservation with federal, state, and local partners here in Idaho. He says "I am ecstatic to work with like-minded folks!"

Welcome, Bill!

calculate the TMDL. The base flow that's been used in the formula is about 5,500 cfs, and the actual river flows that have occurred have fallen below that average. If that number changes, it may be more difficult to meet the pollution standards, DEQ officials said.

"They're finding that 75 percent of the time, the flow has been below that number," said Graham Freeman, TMDL program coordinator for Idaho



*The reaches of the Mid-Snake that are seeing the most macrophyte growth are from Crystal Springs to King Hill. Photo courtesy of the Idaho DEQ.*

DEQ.

Another possibility is that river flows below Milner Dam could be shaped in a more site-specific way to increase water depth, increase velocity and in general create a less-favorable environment for macrophytes to grow, Freeman said. Olmstead also said he favored looking into water flow-shaping efforts to help reduce plant growth.

Another concern is that recent testing is showing that natural spring flows contain background levels of nutrients, which could mean that dairy ponds or other nitrate sources are leaching into the ground water on the north side of the Snake River Canyon and then emerge in surface water as the springs exit the aquifer at Thousand Springs.

“I think the sleeping giant is the ground water issue in the long-term,” Trabert says.

All of the key players agree that there is more work to do in the years ahead.

“We’re all part of the problem, and we all can be part of the solution,” MacMillan says.

“I think all of us would agree that we have room for improving our operations to clean up the river,” adds Olmstead. □

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



# GOODING TEAM TAKES STATE ENVIROTHON, AGAIN!

Gooding High School's Envirothon team has once again won the Idaho Envirothon competition!

The event was held earlier this week at Living Waters Ranch outside Challis, with fifteen teams vying for first place and the opportunity to represent Idaho at the NCF Envirothon later this summer in North Carolina.

Members of the winning team are Jacob Flick, Paige Larsen, Charlotte Brockman, Kaysie Freeman and Dale Shaw, Captain. Advisors are Becky Freiberg and Tom Woodland. This is the second year in a row a team from Gooding High School has won the Idaho Envirothon competition.

The team now moves on to compete in the NCF (national) Envirothon event July 28 to August 2 in Raleigh, on the campus of NC State University. Fifty 5-member teams from across the U.S., Canada and China are expected to participate in the event.

"From land owners to state and federal partners, everyone pitched in making the 2019 Idaho competition a successful event," said Lynn Bagley, Idaho Envirothon Committee Chair. "We can't thank our partners enough."

"We especially want to thank the many individuals who assisted with the Idaho event as judges, station presenters, and in every possible way. Thank you" said Bagley.

Also winning awards, and cash prizes, at the Idaho event were 2nd Place – Rigby High School (\$500), 3rd Place – Mackay High School (\$300), 4th Place – Weiser



The team from Gooding is North Carolina-bound this summer.

High School (\$200) and 5th place – Gooding High School (\$100) – Team B.

Station plaque winners were as follows: Forestry – Gooding High School (A team), Soils – Rigby High School, Wildlife – North Gem High School, Aquatics – Weiser High School and Cascade High School (tie), and the Current Issue – "Agriculture and the Environment – Technology to Feed the World" Mackay High School.

The "Spirit of Envirothon" Award went to Compass Honors High School from Meridian, Idaho.

As part of the Envirothon competition, high school students study five different natural resource areas – soils, aquatics, forestry, wildlife and a current issue which changes from year to year. In 2019 the current issue focuses on "Agriculture and the Environment: Knowledge and Technology To Feed the World".

Idaho has been part of the nation-wide Envirothon program since 1992. Envirothon was first organized in 1979 by a soil and water conservation district in Pennsylvania. ☐

## Ask us! We fund...

Sprinkler irrigation, no-till drills  
livestock feeding operations, fences  
solar stock water, pump systems,  
and more!

## LOW INTEREST CONSERVATION LOANS

Interest rates as low as 2.75%  
Terms 7 to 15 Years



IDAHO SOIL & WATER CONSERVATION COMMISSION

### COMMISSION

H. Norman Wright, Chairman  
Cathy Roemer, Vice Chairman  
Dave Radford, Secretary  
Gerald Trebesch, Commissioner  
Erik Olson, Commissioner  
Teri Murrison, Administrator



### SOIL & WATER CONSERVATION COMMISSION

322 East Front Street, Suite 560 Boise Idaho 83702  
P: 208-332-1790 • F: 208-332-1799  
[info@swc.idaho.gov](mailto:info@swc.idaho.gov) • [www.swc.idaho.gov](http://www.swc.idaho.gov)

*Conservation the Idaho Way: Sowing Seeds of Stewardship*