



THE OTTER

Newsletter of Friends of the Big Sioux River

Winter, 2022

Issue #12

Enrollment Remains Low In South Dakota's Riparian Buffer Program


In year four since initial passage, South Dakota's riparian buffer program, enacted to accomplish establishment of grassy strips along the state's rivers, streams and lakes, remains unsuccessful.

Those enrolled in the state's buffer program enjoy a 50% reduction in property taxes on lands developed as buffers along eligible surface waters, but applications by landowners are rare. Thousands of farmers own qualified lands, but in 2021 there were only 48 separate parcels enrolled in the program.

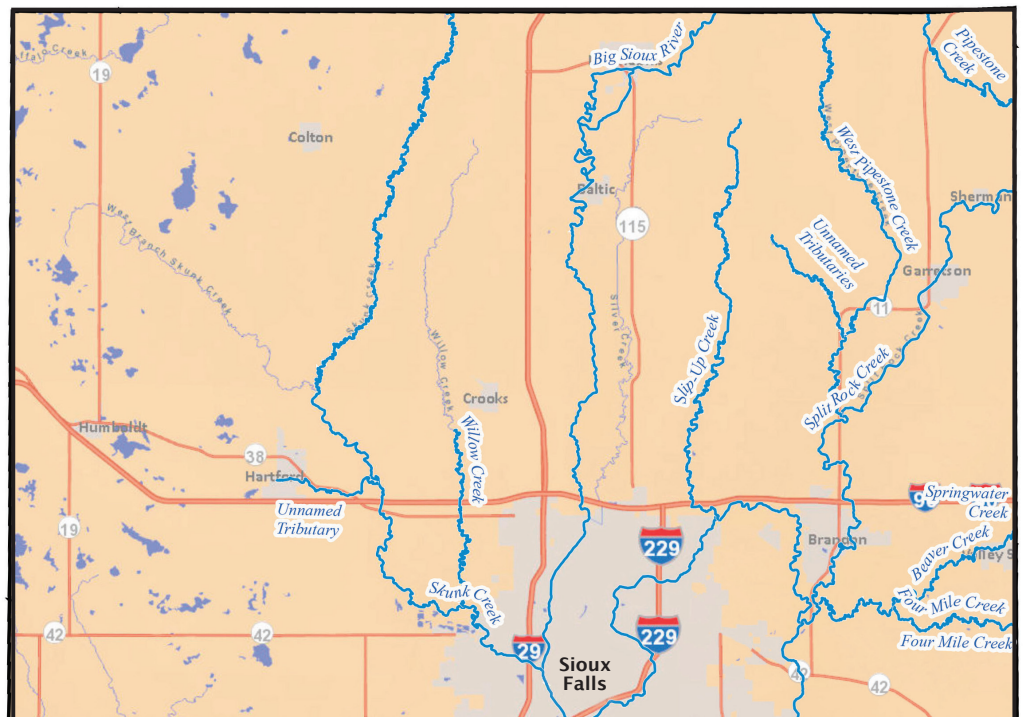
11,000 miles of shoreline along designated public waterways in the state are eligible for inclusion in a program that requires a 50-foot-wide buffer comprised of perennial grass be established and maintained for ten years. A 50-foot-wide buffer on one mile of shoreline equals about six acres. That means about 132,000 acres qualify for the tax reduction. How many acres are enrolled in the program? According to South Dakota's Department of Revenue, the total is 1,260 acres. Also eligible is shoreline bordering 575 lakes.

No one doubts the effectiveness of buffers to protect water quality. Absent the widespread adoption by farmers of non-polluting agriculture, buffers are a valuable and necessary tool to help protect surface waters from runoff containing eroded soil and agri-chemicals commonly used by most grain producers. Growing buffers should be a standard stewardship practice. But farming to the shoreline is surprisingly common.

Hamlin County has more land in the buffer program than any other county, with 24 enrollments totaling 365 acres. Ten of those tracts lie along the Big Sioux River. "We've promoted the program as best we can and have actually contacted eligible landowners about the water quality values of the buffer program," said Chris Schafer, the county's equalization director.

Friends of the Big Sioux River welcomes the opportunity to partner with state government and other organizations to promote and increase buffers. Can farmers be persuaded to plant more buffers? Is the tax reduction insufficient? Must incentives match or exceed revenue opportunities related to growing corn or soybeans? Is a voluntary program with more effective incentives the only viable option, or should our state consider requiring buffers along public waters? 

Minnehaha County Public Waters



Minnehaha County contains stretches of 13 different "public waters" waterways (highlighted in bold blue) that are eligible for participation in South Dakota's buffer program, including about 300 miles of shoreline. Not a single acre in the entire county is enrolled in the program.

MORE BUFFERS: Lessons From Minnesota



Buffers should be a standard stewardship practice by farmers.

We recently interviewed Trevor Russell, water program director for Friends of the Mississippi River, based in St. Paul, MN. Russell is an effective change agent, helping facilitate much environmental progress in the state of Minnesota, including the state's innovative riparian buffer rules.

According to Russell, previous buffer rules were ineffective due to poor enforcement at the county level. In 2015, then-governor Mark Dayton became a buffer proponent and pushed hard for a revised statewide buffer rule. His bill passed and was slightly amended the following year. Minnesota now requires 50-foot average buffers on shoreline along rivers and streams defined as public waters. Deciding which rivers and streams qualify as public waters has been a thorny issue, explained Russell. He described agricultural interests seeking to exempt many waterways through lawsuits and lobbying.


Another challenging aspect of the previous buffer rule, said Russell, had been weak penalties if landowners didn't comply. The new rule, accompanied by more robust

monitoring and enforcement by the state's Board of Water & Soil Resources, has resulted in roughly 98% of eligible landowners in compliance. Said Russell, "Part of the success story is that we moved that responsibility away from the counties to the State."

Despite some shortcomings, the buffer mandate legislation is viewed as a victory. Russell noted there is a strong water ethic in Minnesota because of the connection so many residents have to lakes and waterways. "Many Minnesotans value water quality," he reported. Contrary to warnings by farm groups, added Russell, the buffer mandate did not undermine the state's agricultural economy.

The first meaningful analysis of long-term statewide water quality testing will be happening later this year. "We'll know more about the overall successes of the buffer program after this year's testing," Russell said.

Russell cautioned about drain tile in farm fields. "We've unsuccessfully pursued different strategies and approaches to minimize the water quality impacts associated with tile drainages," he admitted. "Tile drains often flow underneath buffers, so the pollution control potential of buffers is negated by tile drains."

Minnesotans enjoy ongoing funding through dedicated sources for water protections, Russell explained. The state's Environment and Natural Resources Trust Fund collects lottery revenue for the environment, and the state's 2008 Legacy Amendment dedicated about three-eighths of one percent of the state's sales tax to water, land, parks, trails and cultural heritage programs each year through 2034. It is anticipated this source will contribute \$11 billion to environmental programs during its lifetime. Since 1990, Minnesota's lottery has contributed 40% of its proceeds to the environmental trust fund, totaling about \$1.5 billion. 

River Quiz

Can you identify this
Big Sioux River location?

See page 3 for the answer.



Personnel Update

Steven Dahlmeier resigned from the board of directors after seven years of service that included helping launch the organization as a member of the original board and serving as chair of the board from 2019 to 2020.

Michelle Hentschel resigned from the board of directors. One of FBSR's original board members, for many years Michelle provided loyal service as treasurer.

Ted Thoms resigned from the board of directors after service from 2018 to 2021. He focused on developing business relations for the organization.

Iona Branscum joined the board of directors. Iona performed water-related regulatory oversight for 17 years for the State of Kansas. She has also worked for POET, a corn ethanol producer.

Amber Lively joined the board of directors. Amber earned a BS degree in geography at South Dakota State University and an MS degree in Environmental Science and Policy from Johns Hopkins University. She works as an Access Network Designer and GIS specialist at Midco.

Lindsey Krause joined the board of directors. Lindsey earned a BS degree in Environmental Science from South Dakota State University and an MS degree in Science, Technology and Environmental Policy from the University of Minnesota. She works at Sanford Research.

Managing Director's Report


By Travis Entenman



Overall results from our most recent water testing season are in. Between May and September 2021, FBSR regularly sampled lakes, rivers, and streams to help determine water quality in the Big Sioux River Watershed. Testing revealed levels of E. coli, total suspended solids and nitrates.

We have been providing this service since 2018. During each testing season we collect approximately 500 samples, spanning over 100 miles of river and watershed from Dell Rapids, SD to Akron, IA. After samples are processed by the South Dakota Health Lab, the results are publicized, including in the SD Department of Agriculture and Natural Resources water quality portal and on our website.

2021 water testing results show:

- Water quality improved with lower flows. Lower flows correlate to fewer rainfall events. We did observe that contaminant levels spiked following rainfall events. Until land use conditions change, we recommend recreationists avoid immersion recreation following heavy rainfall events.
- Absent rainfall events, Lake Alvin, Lake Lakota, and Wall Lake, all regularly tested by FBSR, are performing well in clarity. However, Lake Alvin suffers from E. coli contamination after heavy rainfall events. The lake's swimming beach temporarily closes after such occurrences.
- Our rivers and streams regularly exceed safe levels for E. coli, caused by several sources, including livestock activities in and along waterways.
- Water quality decreases in the Big Sioux River as the river flows south. Overall, the southern monitoring sites (Newton Hills State Park and Akron, IA) have higher levels of sediment, E. Coli, and nitrates.
- Nitrate levels continue to rise but are within safe levels at locations north of the Rock River confluence, with nitrate levels noticeably rising after the Rock River joins the Big Sioux.
- Mean and median nitrate levels were lower in 2021 than 2020, likely due to drought conditions. However, this is the first year in the past three that nitrate levels exceeded safe parameters in the Big Sioux River. We consider this to be a warning sign.
- More riparian buffers are needed to reduce contaminant runoff into tributaries and the river. 

FBSR encourages you to contact your legislators
and ask what they are doing to protect our water resources.



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River Quiz Answer

Not far south from where the Big Sioux River passes by the town of Baltic, SD is a stretch of river shoreline mantled by abandoned auto bodies. This unsightly and ecologically destructive practice intended to prevent channel erosion or discard unwanted vehicles isn't confined to this short length of the Big Sioux River. Landowners along rivers across the country have so often resorted to this tactic that it has a nickname: Detroit Rip Rap. The concept of using hard materials, especially rock and stone, to shield shorelines from the erosive power of water dates to undetermined times, though the expression rip-rap was first noted in an American English dictionary in 1822. Visitors to the Big Sioux River will frequently find strategically placed rip rap comprised of rock and stone on shorelines near biking/hiking trails, parks and bridges.

Board Member Profile

Reece Almond described an idyllic childhood in Huron, SD, where his dad sold beer and his mom taught high school science. “We did everything together, as a family,” Almond fondly remembered.


Almond and his older brother, often with their parents at their side, spent much time outdoors at Lake Byron, near Huron, as well as golfing and riding dirt bikes in pastures and in the Black Hills on rough trails. These days, Almond satisfies his desire to be active and outside with less noisy activities. “My wife and I love to kayak on the Big Sioux River,” he reported, “and we’ve paddled many different places on the river.” Almond is also an avid golfer and a runner. His wife, Candis, grew up on a farm along the Big Sioux River in South Dakota’s Hamlin County.

Almond, who serves Friends of the Big Sioux River as its vice-chair, is a partner at the Davenport Evans law firm in Sioux Falls. “I’m a litigation lawyer,” he explained. “I like the challenges and competing.”

Almond earned double majors at the University of South Dakota, studying political science and mathematics before graduating from the University of Minnesota’s school of law. He returned to South Dakota for a two-year clerkship with federal judge Karen Schreier, a plum landing place for a new grad. Almond describes Schreier as one of the most important mentors of his career.

“It seems counterintuitive,” said Almond, explaining his undergraduate education at USD, “but the mathematics major serves me better in my profession than the political science major. My work in mathematics sharpened my analytical skills.”

Almond joined Davenport Evans in 2014 and is now a partner. “The culture at the firm is terrific,” reported Almond. “There’s an atmosphere of support and friendship among attorneys and staff.”

Almond views recreational opportunities as a critical and motivating factor in restoring and protecting water quality in the river. “Right now, we can’t swim in the river, and at times there are fish-eating advisories for the river. Can you imagine if people could always swim and eat fish caught in the river? Recreation potential for the river is huge. But we need cleaner, safer water to get there. I believe the best approach for us to achieve healthy flows is to create change at the policy level.” 



Reece Almond, a Sioux Falls attorney, serves the organization’s board of directors as its vice-chair.

Water is densest at four degrees Celsius. Frozen water floats because ice is less dense than liquid. Warmer water sinks, leaving lighter, colder water at the surface. Flowing water must be colder than still water to freeze, and the faster the flow, the colder the air must be. Ponded water temperatures in rivers are stratified. Cold air can freeze the top layer of a river, but the blended waters below remain open. When air temperatures are severely low, even the Falls will freeze.



Christian Begeman Photo

Unnatural Data

Outdoor Recreation Survey Among Millennials

A 2019 survey of students at South Dakota State University revealed relevant information about favorite outdoor activities among college-educated millennials, ages 19-27. The most popular outdoor activity -walking/hiking/running- was identified as “highly favorable” by 67% of survey respondents. The rest of the ranking showed other highly favorable activities: Swimming (38%), Biking (30%), Fishing (30%), Camping (29%), and Canoeing/kayaking (25%). Only one percent pursued trapping as a favorite activity, and hunting held a special appeal to just 17 percent of survey respondents. The strong interest in kayaking/canoeing, walking/hiking/running, swimming and camping should prompt appropriate actions by South Dakota’s outdoor, tourism and job creation agencies.



The recreation potential of the Big Sioux River can be realized, but water quality must be improved.

Not a Good Time to be a Freshwater Fish

The Big Sioux River is what scientists describe as freshwater, as opposed to saltwater. While freshwater habitats -lakes, ponds, rivers and streams- comprise less than one percent of Earth’s liquid water, they are home to 10 percent of all known species, including a third of all vertebrates. There are more species of freshwater fish—18,075 and counting—than there are fish species living in the oceans and seas. Freshwater fish populations across the world have declined by an average of 84 percent in the last 50 years, twice the rate of terrestrial or marine ecosystems. Almost one-third of freshwater fish species are now threatened with extinction. What are the issues? Climate change, invasive species and industrial and agricultural pollution are major threats.

Important Big Sioux Study Continues

The relationship of the Big Sioux River and the Big Sioux aquifer is the subject of a multi-year study led by South Dakota’s Geological Survey. Scientists are studying three public well fields tapping the aquifer to learn more regarding the interactions between river and aquifer, including water quantity and quality conditions. The aquifer, situated along the Big Sioux River for much of the river’s length, is especially important to the residents of Sioux Falls and Watertown and members of several rural water systems as a drinking and municipal water source. Approximately 300,000 people rely on the aquifer for their water. The City of Sioux Falls maintains a well field a short distance north of Sioux Falls that draws water from the aquifer. That water serves half the city. The section of the Big Sioux aquifer extending from Dell Rapids, SD, to Sioux Falls is about 18 miles long, 2 miles wide, and 80 to 100 feet deep. A previous study determined that the river between Sioux Falls and Renner, SD discharges more water to the aquifer than the river receives from the aquifer. In that stretch, water loss from the river seeping into the aquifer can range between 60 to 90 percent of river flows. That’s a significant recharge and demonstrates the direct relationship between river flows and aquifer water.

Beware of Greenwashing

The term “Greenwashing” refers to self-promotions circulated by industry, business groups or companies intended to mislead the public. This type of deceptive advertising presents businesses as eco-conscientious. As more citizens adopt stronger feelings about the need to protect water, soil and ecosystems, some businesses have adjusted their advertising campaigns to access this rising sentiment. The expression, greenwashing, was coined by environmentalist Jay Westerveld in 1986 in an essay criticizing the irony of the “save the towel” movement in hotels at the time. Hotels had begun allowing guests to refuse towel changes and presented the plan as reflecting the progressive environmental spirit of a hotel. Westerveld investigated a “save the towel” hotel and found building expansion underway on fragile land, as well as waste and bad practices everywhere. In ridiculing the disingenuous promotion, Westerveld explained that the real reason the hotel pursued the project was to reduce its laundry expense, not an unreasonable purpose, of course, but a purpose not compelled by the hotel’s environmental concerns. Greenwashing is now a huge business unto itself, and greenwashing advertising campaigns are often unrelenting, using a variety of mediums to barrage the public. Typically, the more a business or an association advertises itself as promoting and practicing sustainability and stewardship, the less likely it is that they are doing as good a job at it as they want us to believe. If you pay attention, you can easily identify greenwashing.

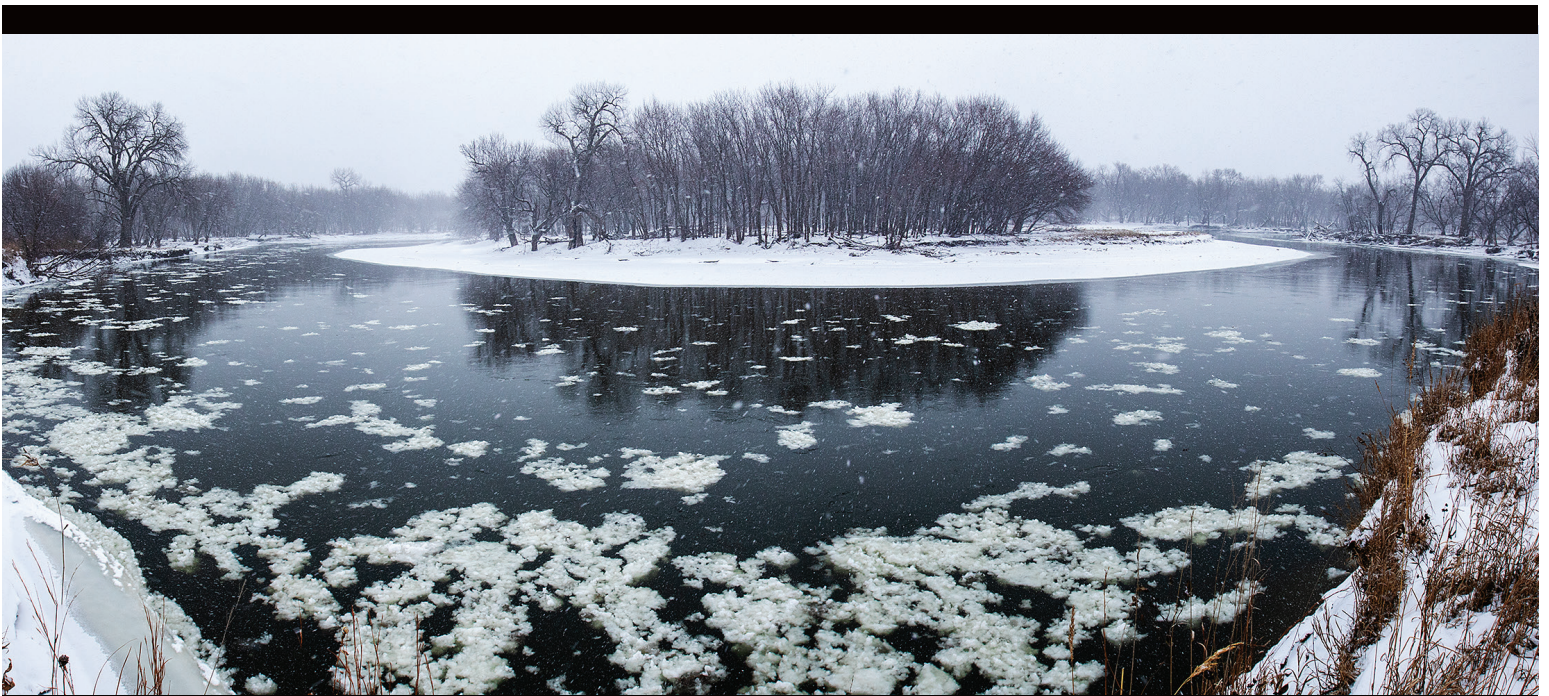


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During winter, the river waits.

Big Sioux River at Big Sioux Recreation Area

Christian Begeman Photo

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