

# Pomme de Terre tackles water quality



Ongoing efforts by the Pomme de Terre River Association Joint Powers Board to improve water quality have drawn more than \$4.7 million in state and federal grants to the six-county watershed. In September 2018, contractors rerouted a previously straightened segment of Drywood Creek in Fairfield Township, Swift County, into its historic, sinuous channel. Planners used old photographs as a guide. The project addressed one of the top sources of sediment entering the Pomme de Terre River, and will help reconnect the river to its floodplain.

**Photo Credits:**  
Ann Wessel, BWSR

More than \$4.7 million in grants over 10 years allowed watershed to address top sediment, phosphorus sources in this northernmost Minnesota River tributary



MORRIS — For the first time in nearly 50 years, Drywood Creek is flowing freely this season in a sinuous streambed.

A two-year, \$127,580 Pomme de Terre River Association (PDTRA) Joint Powers Board project removed Drywood Dam in 2017, and then returned the creek to its historic corridor in fall 2018. It's one piece of the PDTRA's ongoing effort to improve water quality within the watershed, which has drawn more than \$4.7 million in state and federal grants in the past 10 years.

The Pomme de Terre River is the northernmost Minnesota River tributary.

Two Clean Water Fund grants from the Minnesota Board of Water and Soil Resources (BWSR) and a grant



from the Minnesota Department of Natural Resources (DNR) funded the project about 17 miles southwest of Morris. The erosion control and habitat improvements at Drywood Creek will keep an estimated 212 tons of

*Andy Albertsen is the Swift Soil & Water Conservation District manager.*

sediment — 16 dump truck loads' worth — out of the river annually.

“What we hope to see here in 10 years is that those banks are nice and stable and you don't have culverts full of sediment,” said Andy Albertsen, Swift Soil & Water Conservation District (SWCD) manager.

Drywood Dam was in Swift County; Albertsen worked directly with the landowner.

The PDTRA collaborates with six SWCDs and six counties within its 874-square-mile watershed. The 106-mile-long river runs from Fiske Lake 16 miles east of Fergus Falls in Otter Tail County to the Minnesota River near Appleton in Swift County.

Projects installed to date include 166 water and sediment control basins, 205 alternative tile intakes (which filter water before it enters streams and rivers), 91 rain gardens, 273 acres of fenced livestock exclusions, 11 lakeshore protections and six manure pit closures. Other work protected 800 feet of Pomme de Terre shoreline, placed 138 acres in a conservation easement and restored a 2-acre wetland.

Some of the installed best management practices drew from Natural Resources Conservation Service (NRCS) Environmental Quality Incentives Program (EQIP) assistance.

Since 2011, the USDA's Conservation Reserve Program (CRP) and Continuous Conservation Reserve Program (CCRP) have brought nearly \$4.9 million in payments to retire 6,750 acres of marginal farmland within the watershed. Together, those programs have reduced phosphorus loading by nearly



*Steve Linow of West Central Technical Service Agency 2 collected data in September 2018 on Drywood Creek in Swift County. The creek is a tributary of the Pomme de Terre River.*



**Top:** Stephanie Adams is the Pomme de Terre River Association's watershed projects coordinator. **Bottom:** Drywood Creek erosion control will keep an estimated 212 tons of sediment out of the river annually.



79,760 pounds a year and sediment loading by nearly 79,760 tons a year. (Note: The numbers are the same; the units of measurement are different.)

Minnesota Pollution Control

Agency (MPCA) staff has evaluated data collected as part two of a 10-year intensive watershed monitoring cycle. A report due out next spring will compare 2017-18 samples with those collected in 2007-08. Raw data show the biggest

## Watershed Details

**AREA:** The watershed encompasses parts of Big Stone, Douglas, Grant, Otter Tail, Stevens and Swift counties; all of Alberta, Ashby, Barrett, Chokio, Dalton and Morris; parts of Appleton, Donnelly and Underwood

**MPCA EVALUATION:** The most significant single sample-site improvements in the MPCA's 2017-18 monitoring were the farthest downstream. A reassessment of one stretch of Pelican Creek south of Ashby eventually could prompt re-evaluation of the entire stretch, which could result in delisting its aquatic invertebrate index of biological integrity (IBI) impairment.

## IMPROVED FISH

**COMMUNITIES:** The fish IBI score met the standard on the Pomme de Terre River just downstream of Swift County Road 59 in Appleton. It improved from 46.3 in 2007 to 57.8 in 2018. The threshold is 49 (of 100). The fish IBI score improved from 37 to 42.2 on the Pomme de Terre River downstream of Swift County Road 51 west of Appleton.

## NEW IMPAIRMENTS,

**EXPLAINED:** Six of the seven new fish impairments added after 2017-18 sampling do not reflect worsening conditions, but resulted from new tools available to assess previously unassessed, channelized sites.

improvements occurred in fish communities near Appleton.

“If you really think about that, it's the pour point of accumulation of everything going on above it. If you look at it in a large scale,



**Left:** The Pomme de Terre River flows 106 miles from Otter Tail County to the Minnesota River near Appleton in Swift County. Its watershed includes 874 square miles in all or part of six counties. **Middle:** Planners used old photos as a guide when they rebuilt Drywood Creek's sinuous channel in Swift County. The Pomme de Terre River tributary was a major contributor of sediment within the watershed. **Right:** Streambank erosion such as this contributes to sediment-loading. In the past 10 years, projects within the watershed have focused primarily on reducing phosphorus and sediment.

technically it's getting better," said Aaron Onsrud. A St. Paul-based environmental specialist with the MPCA's environmental analysis and outcomes division, he was involved with the most recent sampling.

To be declared free of the index of biological integrity impairment for fish, all sample results on that final, 48-mile-long stretch of the Pomme de Terre River must meet the standard.

The more forested northern part of the watershed remains in better overall condition.

"Upstream of Barrett Lake, everything was in good shape. Some of it was in really, really good shape. I wouldn't use the word 'pristine,' but it stayed in good shape," Onsrud said.

Five stream segments north of Barrett Lake produced 48 sample results — including measures of fish and invertebrate habitat, water clarity, pH and phosphorus. In three reaches north of Barrett Lake, MPCA staff sampled for ammonia and chloride. Twenty-seven of the 48 results met water-quality standards or supported fish and invertebrates. Five did not. Sixteen were inconclusive or could not be assessed.

**“ A success for us is also that we can get the excess water off the land and make sure the excessive nutrients don't get into the rivers and tributaries.**

— Keith Swanson, Pomme de Terre River Association Joint Powers Board chairman



"We're constantly re-evaluating our success and looking at what our turbidity results are and our phosphorus levels. Sometimes we're disappointed. But we have to say, 'Where would those levels be if we weren't doing anything?'" said Keith Swanson of Hoffman, a Grant County commissioner and chairman of the 12-member Pomme de Terre River Association Joint Powers Board.

The PDTRA formed in 1981 to address both water quality and quantity issues.

The watershed includes 751 river and stream miles.

The MPCA's 2007-08 Watershed Restoration and Protection Strategy (WRAPS) monitoring, assessment and prioritization within the Pomme de Terre River watershed gave the PDTRA a blueprint for action. The MPCA in 2008 approved the

watershed's plan to address fecal coliform bacteria levels in a southern stretch of the Pomme de Terre.

Work began in earnest in 2009 with a \$286,320 U.S. Environmental Protection Agency (EPA) grant to monitor fecal coliform and a \$24,370 MPCA Surface Water Assessment Grant.

In the past 10 years, projects have focused primarily on reducing phosphorus and sediment — sources of the most common impairments throughout the watershed.

Stephanie Adams, the Pomme de Terre River Association watershed projects coordinator, credited funding success to a longstanding collaboration that predates One Watershed, One Plan — a current movement to a locally driven, watershed-based approach that spans political boundaries.

"We have a very, very strong partnership with the counties and the soil and water (conservation) districts. Because of that, for the last 10 years they've been incredibly successful at getting Clean Water Funds and EPA grants to get projects on the ground," Adams said.

In 2019 the Pomme de Terre River Association received a \$541,775 Clean Water Fund grant to address the top sediment-producing catchments on ag land plus stormwater runoff identified in the Watershed Restoration and Protection Strategy.

Projects proposed in that grant would reduce sediment by an estimated 14,690 tons — 1,130 dump trucks' worth — and phosphorus by an estimated 12,270 pounds annually.

Since 2011 the PDTRA has received more than \$2.7 million in Clean Water Fund grants for technical assistance, project development and implementation. It also received a \$115,250 Clean Water Fund grant in 2016 to develop Prioritize, Target and Measure application (PTMApp) — a tool for matching strategies to the best management or conservation practices in priority areas.