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SOUTH METRO

# Record rainfall causes erosion problems in southern Minnesota river towns

Runoff from the summer's soaking has eaten away riverbanks, landscape.

By Dan Browning (<http://www.startribune.com/dan-browning/10644516/>) Star Tribune |

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ZUMBRO FALLS, Minn. – With yet another storm looming, the mayor of this waterlogged southeastern Minnesota river town sat down last week with a roomful of state and federal officials looking for some financial help.

A flood channel and a dike built years ago to protect this city of 207 residents from high water had been seriously damaged by erosion caused by a series of storms that had pounded southern Minnesota since spring, and Zumbro Falls needed nearly \$200,000 for repairs.

The Zumbro River carved a 300- to 400-foot slice off a dike that runs the length of town, and jostled loose a series of boulders in a coulee built after a 2010 flood swamped the city and destroyed 10 houses, including Mayor Bruce Heitmann's place.

"We're just kind of a little afraid, with all this hurricane stuff that's been going on, that maybe FEMA isn't going to have the money to help us out here," Heitmann said before meeting with Federal Emergency Management Agency officials. "So we're just kind of holding our breath to see what's going to go on here."

The summer's soaking across southern Minnesota has been especially hard in the counties that border the Minnesota, Blue Earth, Cottonwood and Zumbro rivers and tributaries that feed them. The steady rain has been bad enough, but the erosion that followed has scarred the landscape, causing costly problems.

Those who study river systems say Minnesota is nearing a crisis that will require significant changes in everything from river and land management to farming.

"This isn't likely going to be a one-and-done thing," said Dan Dieterman, Mississippi River habitat specialist with the Minnesota Department of Natural Resources (DNR). "We've got really good evidence of significantly increasing changes due to climate change."

The swollen rivers carry dirt and trees along with farm chemicals, pushing runoff to Lake Pepin and down the Mississippi. Faster currents and higher flows have carved wider channels, eroded islands, degraded water quality, altered backwater habitat and choked out flood plain forest trees that help return water to the atmosphere.

"It's a real domino effect that we're feeling right now, and nobody really knows how it's going to end up," Dieterman said. "The [Mississippi] river is always changing anyways, but the changes we're seeing right now, they're not very pretty."

## 'Really ramped up'

Patrick Lynch, a veteran flood plain hydrologist with the DNR, said he's seen big changes in the past five to eight years. "It's really ramped up," he said.

This spring's flooding was especially bad because water levels stayed high for so long. As a result, Lynch said, saturated riverbanks, both those made up of sandy and clay soil, were more vulnerable to sloughing or failure at the "toe" supporting a bluff at the bottom of a slope.



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Kelly M. Hagggar, program delivery manager for the Federal Emergency Management Agency, walks Zumbro Falls Mayor Bruce Heitmann

Officials with the Department of Public Safety's division of Homeland Security and Emergency Management recently submitted a state disaster request for Dodge, Goodhue, Fillmore, Olmsted, Redwood, Renville and Wabasha counties stemming from flooding between June 27 and July 7, a spokeswoman said. HSEM recently completed preliminary damage assessments in all seven counties and verified \$5 million in eligible damages.

Most was to roads, bridges and water facilities. The destruction wasn't great enough to qualify for federal-disaster aid, which requires \$8 million in damages. But if Gov. Tim Walz declares a state-level disaster, that would authorize the use of a contingency account to help communities recover. The state would cover 75% of the cost, with local governments responsible for the remainder.

In June, President Donald Trump authorized [federal-disaster \(https://www.fema.gov/disaster/4442\)](https://www.fema.gov/disaster/4442) relief for Minnesota to help it recover from a severe winter storm, straight-line winds and flooding in March and April. The federal assistance covers 75% of the cost with the state picking up the rest. About 750 applicants are seeking aid under the federal disaster declaration in counties adjacent to the Dakotas and along the Iowa border.

Heitmann, Zumbrota Falls' mayor, has applied for \$110,000 in federal and state aid to help restore the ravine he calls the "Buckman dry run" that hugs a highway at the edge of town and acts as a kind of spillway during heavy rains. It was built with federal money after the 2010 floods, and includes several banks of large boulders designed to slow runoff as it makes its way to the Zumbro River. But its design, Heitmann said, causes a wave to form at the bottom that has caused the coulee to erode.

A team of FEMA officials met with Heitmann last week to help him apply for federal aid. Kelly Hagggar, a program-delivery manager with FEMA, acknowledged that the computer forms and rules can be daunting.

"Don't get intimidated by the dropdowns inside of dropdowns — I'm here to get you through the knot," Hagggar said.

Heitmann said he is grateful for the help. The bigger concern, though, is a dike, built in 1964, that runs between the Zumbro River and town. In July, the river carved off 300 to 400 feet of the earthen flood wall. It will cost more than \$70,000 to repair, Heitmann said, and at this point it's unclear if it qualifies for public aid.

"We're only a little over 200 people and we don't have much of a budget, and there's definitely no money there for that project, that's for sure," he said.

### **Mankato troubles**

Mankato, a city of about 42,000 residents that sits at the juncture of the Blue Earth and Minnesota rivers, is facing even bigger problems.

The rivers drain 14,500 square miles of prairie and farmland and feed into the Mississippi. Storm erosion now threatens three areas not protected by Mankato's flood levee system, said Patrick Hentges, city manager.

He said the confluence of the rivers has been eating away the bank along the Land of Memories and Sibley parks for years, but the rate of erosion is accelerating "at an alarming rate — so much so that we're within 15 feet of the actual collector well" from which the city draws nearly a third of its water.

Erosion also threatens the viability of Riverfront Park and its amphitheater — near the regional wastewater treatment plant — and has damaged the Kiwanis Recreation Area next to Hwy. 169 at the edge of town, Hentges said.

"These events have less to do with spring runoffs and more to do with what seems to be 100-year rains that are coming every year," he said.

Hentges said Mankato needs \$20 million to fix the short- and long-term erosion issues. That includes money to address water-quality problems caused by farm chemicals that bind with sediment and wash into Lake Pepin.

“We are in an emergency situation,” he said.

Urbanization accounts for some increased flow, but most comes from farm fields, where water that would normally slowly dry up quickly runs off through a soil-tiling network that feeds into drainage ditches, said Carrie Jennings, research and policy director for Freshwater Society, a St. Paul-based nonprofit that works to protect watersheds and freshwater resources.

“And so you have ravines kind of unraveling, and bluff faces along the river falling into the river and a lot of sediment coming in there, and it’s deposited in the channel and on the flood plains and a lot of it stays suspended all the way to Lake Pepin,” Jennings said.

“In all of the tributaries to the Minnesota [River] and in the Minnesota itself, in places it’s 200% wider than it used to be. And this is creating all kinds of infrastructure problems,” she said. “It’s drowning out small towns and businesses that used to be on the Minnesota River or eroding the banks away from them. ... As rivers widen, banks steepen, and failures are inevitable.”

Jennings said long-term, farmers must find ways to simultaneously produce food and store water on the land.

“What we’re seeing now, which is even more disheartening, is tile drainage going in in areas that are irrigated,” she said. “So it’s like having the faucet open and the drain open at the same time.”

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