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SPOTLIGHT

## Dundas farmers use of cover crops improving Rice Creek water quality

By ALAN KRAUS Cannon River Watershed Partnership  
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Rice Creek farmers Tim Little, left, and John Becker, right, explain the impact of cover crops on soil conditions by comparing side-by-side fields. (Photo courtesy of Cannon River Watershed Partnership)

**M**innesota's trout streams are treasured resources offering people outdoor recreation and excitement for a lifetime.

Sometimes though, trout streams can have a rough time in farm country due to sediment and fertilizer getting into the water. But thanks to the work of 11 farmers in Dundas, the water quality of the only trout stream in Rice County, Rice Creek, is showing an important sign of improvement. A recent study shows that the nitrate concentration in tile drainage and the stream water is lower than previous years.

As part of a Cannon River Watershed Partnership and Rice Soil and Water Conservation District project, farmers are learning first-hand how an intensive use of cover crops in this 4,100 acre watershed can impact the water quality and stream habitat of Rice Creek. They're also learning how the cover crop practice impacts their farming profit. Since 2018, these 11 farmers have planted cover crops each year on 940 acres, 27% of the tillable acres, in the Rice Creek watershed.



The Cannon River Watershed Partnership along with St. Olaf College has tested water from 15 drainage tiles to compare nitrate concentrations between fields with cover crops and those without. In addition, two stream locations are being tested for nitrate, total suspended solids and total phosphorus along with aquatic macroinvertebrates (water insects) and fish populations to compare the current levels with previous findings.

Our findings through 2019

- 29.7% less nitrate in tile drainage with cover crop

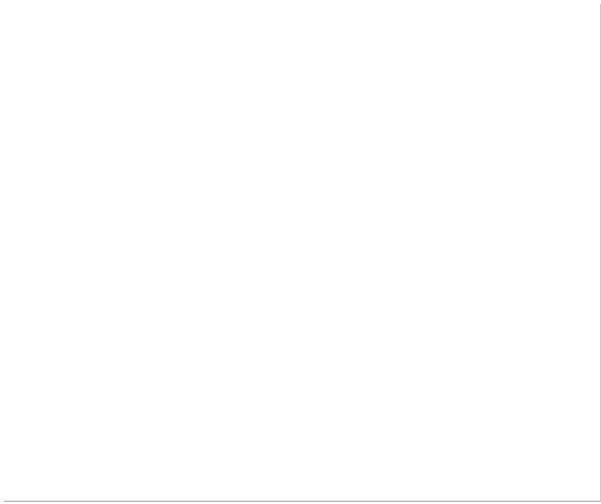


- Lower stream nitrate compared to 2013 – now below 10 mg/liter
- 16.1% higher soybean yields when following a cover crop
- 1.8% lower corn yields when following a cover crop
- 6.1% less Nitrogen/Bu of corn when following a cover crop
- Estimated 9,000 pounds of nitrate and 200,000 pounds of sediment prevented from entering Rice Creek annually

"The decrease in nitrate in tile outlets from cover-cropped fields is interesting and a good sign of progress," said MN DNR Waterville Area Fisheries Supervisor Craig Soupir. "(Waterville Area MN DNR) Fisheries will continue to manage the stream for Brook Trout and are monitoring the population through regular surveys." State officials are also closely monitoring the recent changes in the stream morphology due to more frequent heavy rains and flooding. These events have straightened meanders in the stream that are important habitat conditions for trout and may be "bigger issues for trout and aquatic life than nutrients right now" according to Soupir.

Cover crops are plants such as annual ryegrass, winter (cereal) rye, radish and clovers that are planted in the same field with the corn or soybean crop sometime during the growing season. These plants keep living cover on the landscape until the following spring's planting of cash crops. Cover crops improve water quality by keeping nutrients in the soil and by keeping the soil in the field.





John Becker, one of the Rice Creek area farmers participating in this project said that he is excited about this project because cover crops protect the soil and prevent erosion. "Once the soil gets amended, the soil grows better crops. This is good for the soil, good for the crops and good for the stream," said Becker.

A project like the one in the Rice Creek watershed requires cooperation and support from partners. Along with the leadership and cooperation from the farmers, key to this project's success has been the support of Fishers and Farmers Partnership (FFP), a focused branch of the US Fish and Wildlife Service. "The Fishers & Farmers Partnership is a thoughtful and respectful approach to connect farmers, landowners, and scientists on the health of nearby streams", said Jack Lauer MN DNR Southern Regional Fisheries Manager and FFP Director. According to Mr. Lauer, local conversations are meant to inform and promote better land use practices or ideas that are both sustainable to producers while still protecting the stream conditions and fishery. "Cover cropping practices by Dundas farmers in the Rice Creek watershed is a great example of working together on those attributes to achieve a common goal", he said.

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