



# North Raccoon Farm to River Partnership Project



## Spring 2023 Update

The North Raccoon Farm to River Partnership is wrapping up the second year of a three-year Water Quality Initiative (WQI) project through the Iowa Department of Agriculture and Land Stewardship. Agriculture's Clean Water Alliance (ACWA) oversees the partnership, which includes Sac, Calhoun, Carroll and Greene counties in the North Raccoon River watershed.

As part of the project, farmers and landowners can adopt agriculture conservation practices through cost-share funding up to 100%. Cover crops on new acres, bioreactors, saturated buffers, targeted wetlands and oxbow restoration can be added to the landscape with financial help.

"The Farm to River Partnership is a great way to add these conservation practices with little to no cost for the farmer or landowner," says Joe Wuebker, project coordinator. "The benefits of these practices all help to improve water quality in the rivers and tributaries in the watershed and downstream."

Installation of edge-of-field practices, such as a bioreactor, are increasing, but slowly, Wuebker says. Once installed, bioreactors aren't visible, so producers may not know what they look like when finished. To make things more cost-effective, Wuebker is in the process of implementing a "batch-and-build" program, where multiple projects are done at once instead of one or two at a time.

Several free informational meetings are being planned to inform attendees about these conservation practices and to discuss the "batch-and-build" process and possible easement payments. Details about these meetings will be announced soon.

## Water Monitoring

In 2000, ACWA began monitoring the Raccoon and Des Moines rivers to establish a benchmark of nutrient levels and to gain insight into where efforts should be focused to reduce nutrients in the waterbodies. The outcome from these measurements led to Elk Run and Farm to River Partnership WQIs. Rivers and their tributaries as well as private farm tile drains in the project area are monitored annually.

Anthony Seeman oversees the water monitoring and sampling for ACWA. He is also in charge of Iowa Soybean Association's certified water lab, where all the samples are processed.

"The main takeaway from stream water sampling in 2022 is a high amount of variability," says Seeman. "A strong northwest-to-southeast increasing gradient of rainfall led to stark differences in nitrate export in both the Raccoon and Des Moines River Basins."

After a dry finish to 2021, there were concerns that levels of nitrate remaining in the soil were high and a large flush

### Watch for Details! Informational Meetings June 15 & August 2

Santa Maria Vineyard & Winery  
218 W. 6th Street, Carroll

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"I'm working with local community members to find potential partners and locations for edge-of-field practices," says Wuebker. "If we can get contractors lined up for several projects in a specific area at the same time, it will help to simplify the paperwork and funding process as well as speed up the installation."

Wuebker believes that the more farmers are informed about these practices, the more likely they will adopt them. He is available to help determine potential locations for a bioreactor or other conservation practice.

The Farm to River Partnership includes ACWA members Nutrien Ag Solutions, Landus Cooperative and NEW Cooperative, with additional support from the Iowa Soybean Association and a federal Regional Conservation Partnership (RCPP) project.

|                          | Upper North Raccoon River | North Raccoon River | Middle Raccoon River | South Raccoon River |
|--------------------------|---------------------------|---------------------|----------------------|---------------------|
| <b>Acres</b>             | <b>1,030,905</b>          | <b>1,462,636</b>    | <b>384,544</b>       | <b>240,291</b>      |
| <b>2022</b>              | <b>4.1</b>                | <b>7.5</b>          | <b>5.9</b>           | <b>8.2</b>          |
| <b>2007-2021 Average</b> | <b>16.8</b>               | <b>17.1</b>         | <b>10.2</b>          | <b>14.4</b>         |

Comparison of nitrate-N discharge in the Upper North Raccoon River between 2022 and previous years average.

could come in 2022. As the year unfolded, those concerns were somewhat realized in watersheds that had adequate precipitation and streamflow, but large areas of northwest Iowa remained dry, limiting the amount of nitrate flushed into the Raccoon River. While this was good for the quality of water coming into Des Moines Water Works, it also means that nitrate levels may be even higher in those areas in spring of 2023. Based on results from last year there is still a chance of significant export from the North Raccoon River again in 2023.

## Tile Water Sampling

The tile water sampling from 2022 is similar to stream sampling results and reinforces that data. In important project areas such as the North Raccoon River headwaters and Farm To River Partnership, Seeman says that flowing tiles were hard to come by later in the season.

“Early in the sampling season, the usual amount of samples were collected and monthly average concentrations were the highest since 2015 and 2016, confirming that residual soil nitrate was high following the warm, dry fall of 2021,” says Seeman.

Again in 2022, the crop year ended with very dry conditions, this time causing yield decline in some areas, unlike 2021. This suggests that nitrate in the soil was not able to get into the crops or leached downward and may still be vulnerable in the spring.

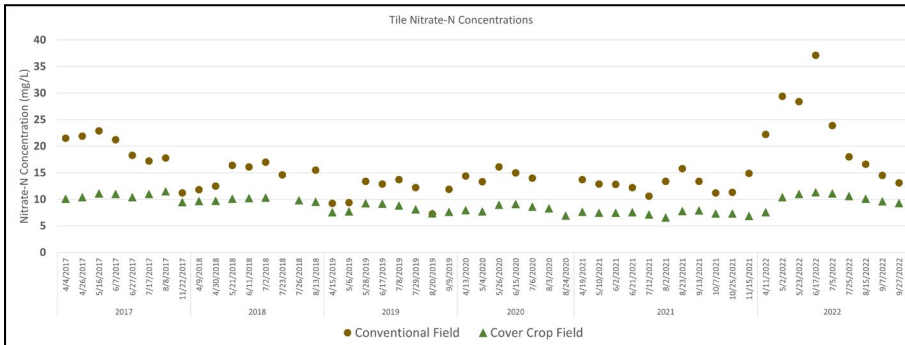


Figure 1. Comparison of Nitrate-N concentrations from tile drains in Carroll County in a conventional field and one with cover crops.

One way to mitigate excess nitrogen in the soil is to plant a cover crop after harvest. While many producers use cover crops in a rotation only ahead of soybeans, there are some who implement the practice every year regardless of the following crop.

A comparison of two sites in Carroll County shows the impact that continual cover crops can have on tile water quality both on the long-term results, and more dramatically in a scenario like last year where the conventional field had a large spike in the peak nitrate-N concentration while the cover crop field had a more gentle and lower increase, reinforcing that cover crops act to trap excess nitrogen and keep it from leaching down to tile lines. (Figure 1).

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## Cover Crops In Action

In 2021, Farm to River Partnership project coordinator Joe Wuebker brainstormed with Ethan Thies, Black Hawk Lake watershed coordinator, to create a self-guided tour of area fields with cover crops. They created a Google map of the fields, which also contains a description of what was planted and when.

“In the first year, we had 13 sites of various cover crops including single species and mixes,” Wuebker says. “This year, we increased the sites to 25 and added other conservation practices as well.”

The tour has been successful and Wuebker shared their idea with other conservation agronomists. Wuebker has created additional site tours

in the area and others have created tours in northwest and eastern Iowa. As conservation practices are installed, the maps can be easily adapted to include sites with bioreactors, wetlands and more.

Interested folks can download the map via a QR code and drive to the locations of interest to view the cover crops in action. They can revisit anytime to see how the fields look at different times of the season, but between April and June are the recommended times for viewing.

The tours are in partnership with several groups, including Iowa Soybean Association and some Soil and Water Conservation Districts.

Visit the Iowa Soybean Association website for more information and QR codes for current tours.

[www.iasoybeans.com/research/cover-crops-in-action/](http://www.iasoybeans.com/research/cover-crops-in-action/)

### PROJECT GOALS:

**20** EDGE-OF-FIELD PRACTICES:  
BIOREACTORS, SATURATED BUFFERS,  
WETLANDS, OXBOWS

**7,000** COVER CROP ACRES  
FINANCIAL ASSISTANCE AVAILABLE  
UP TO **100%**

The North Raccoon Farm to River Partnership: an Iowa Water Quality Initiative to implement in-field and edge-of-field practices that keep nitrogen and phosphorus out of Iowa waters.



ACWA is a non-profit organization of Iowa ag retailers that agree water quality is vital to the future of farming. By helping their farmer clients with management options, adopt conservation practices, ACWA members are making strides toward the alliance's goals of farmer profitability combined with improving water quality.

[www.acwaiowa.com](http://www.acwaiowa.com)

