



Green County Water Quality Coalition

2023 & 2024 REPORT

Introduction

The purpose of the Green County Water Quality Coalition is to intentionally collaborate to increase understanding of Green County groundwater quality and take action for water stewardship so we have healthy waters for current and future generations.

The Green County Water Quality Coalition was formed after the development of the 2024-2028 Green County Water Quality Action Plan and following increased cross-departmental collaboration related to water quality. The organizations represented in the coalition include the **UW-Madison Division of Extension Green County, Green County Public Health, Green County Land and Water Conservation, Green County Land Use and Zoning, and the Green County Highway Department**. This annual report highlights the coalition's accomplishments related to water quality during 2023 and 2024.



Goals

In response to the four-year groundwater quality trend data work in Green County, UW-Madison Division of Extension Green County partnered with Green County Land and Water Conservation Department to hold a multi-stakeholder Green County Water Quality Update and Roundtable session in 2023. As a result of this session, the 2024-2028 Green County Water Quality Action Plan was developed. The coalition is working to ensure the goals of this plan are achieved. The goals in the plan include:

One Year Goals (2024)

Goal 1: More farmers in Green County understand and are able to quantify current nitrogen leaching.

Goal 2: Increased use and application of nitrogen management plans in Green County. This includes an increase in communications between farmers and non-farmers.

Goal 3: Increased understanding of practices on the landscape to manage nitrate leaching.

Goal 4: Continued public conversations regarding groundwater quality in Green County. This includes an increase in communications between farmers and non-farmers.

Goal 5: Increased private well testing to increase awareness, call for coordination to help aid the process.

Goal 6: Explore Farmland Preservation zoning programs.

Three Year Goals (2026)

Goal 7: The majority of Green County farmers are considering the economics of nitrogen management and leachability when purchasing and applying fertilizers and manure.

Five Year Goals (2028)

Goal 8: All Green County farmers significantly decrease nitrogen leaching. In this context, "significantly" is considered as at least 20% reduction of nitrogen leaching.

Goal 9: Nitrate levels have stabilized at current levels. "Current levels" in this context means wells do not have increasing trends of nitrates as of January 2024.

Goal 10: Cost share opportunities for variable rate N software.

Water Research

Green County Groundwater Quality Trend Data Program

In 2018, the Green County Board of Supervisors voted to accept recommendations from the Green County Livestock Facility Study Group, which led to a five-year groundwater quality trend data project. The program began collecting data in 2019, and 2023 was the fifth year of data gathering. In 2023, the Green County Board approved funding (\$57,400) for two more years (2024 and 2025) of groundwater quality trend data collection. This program is designed to get accurate data to better understand water quality in Green County by working with a network of private well owners to perform annual testing over an extended period of time. Ultimately, the goal is to use the information to make data-driven decisions for the management of groundwater quality in Green County. Green County is one of the first counties in Wisconsin to use this process to gather data. Prior to this project, little information was available for understanding how groundwater quality has changed over time in Green County.

The UW-Madison Division of Extension Green County and the UW-Stevens Point Center for Watershed Science and Education are coordinating this project.

Nitrate Level Key

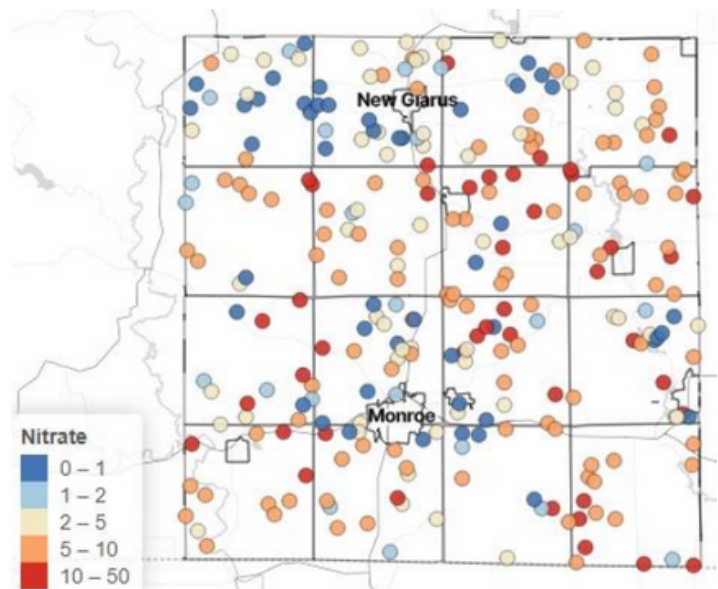
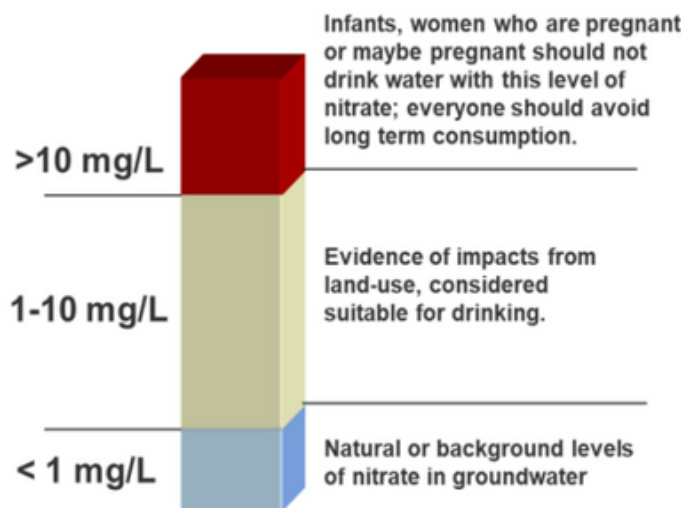


Figure 1: Nitrate-nitrogen results for Year 5 (2023) of the Green County Well Water Monitoring Project.

Nitrate-Nitrogen (mg/L)	Number of Samples	Percent
None Detected	32	11%
Less than 2.0	46	17%
2.1 - 5.0	64	24%
5.1 - 10.0	93	35%
10.1 - 20.0	39	14%
Greater than 20.0	1	<1%

Table 1: 2023 Green County Groundwater Quality Trend Program data.

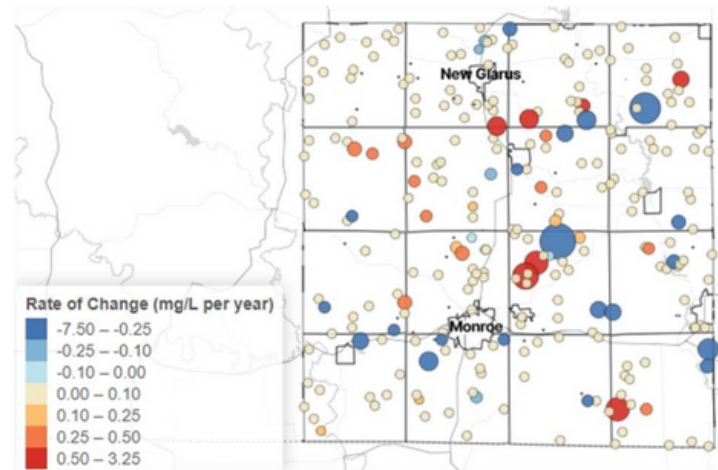


Figure 2: Year 5 (2023) nitrate-nitrogen trends for wells with five continuous years of data. Data shows 9% (26 wells) detected increasing trends, 10% (24 wells) detected decreasing trends, and 81% (219 wells) that did not detect a trend in nitrate-nitrogen concentrations.

Water Research & Education

Innovative Nitrogen Use Efficiency Plots in Green County



Green County Land and Water Conservation and UW-Madison Division of Extension Green County are leading nitrogen rate studies at the County Farm, in addition to three private farms that have also established nitrogen rate studies in their corn in 2024. This effort stems from the need for more efficient nitrogen application practices and to reduce overapplication. Land and Water Conservation recruited interested participants, and the UW-Madison Division of Extension Green County is leading the data collection. The data from these plots will be used in forthcoming articles and presentations.



By increasing understanding of local nitrogen rate work farmers may feel more comfortable experimenting with lower nitrogen rates and have the capacity to evaluate economic and environmental decisions.

- Chelsea Zegler, Ag & Water Quality Outreach Specialist, UW-Extension



Expanding Well Water Testing in Green County

Awarded
\$9,228
in grant
funds.

9 Well Owners in
Green County
received Grant
Funds to
Remediate their
Well

In 2023, Green County Public Health received a grant from the Wisconsin Department of Health Services to increase well water testing in Green County and to encourage private well owners to apply for well compensation grant funds from the Wisconsin Department of Natural Resources (DNR) to replace or repair their well. Green County Public Health worked with the UW-Madison Division of Extension, Green County Land and Water Conservation, and the DNR to develop messaging for an educational marketing campaign to promote well water testing.



Research & Education Highlights

- In 2023, 346 private wells were tested in Green County, and in 2024, 121 private wells were tested.
- In 2023 and 2024, Green County Public Health tested 35 transient non-community wells, which are small community water wells like those at golf courses, campgrounds, and other establishments that aren't on municipal water.
- Green County Public Health and Green County Land and Water Conservation increased education about well water testing by publishing four press releases during the two years.
- During 2023, 76 new well permits were issued in the county, and 11 old wells were properly abandoned.
- Green County Zoning issued 86 new sanitary permits in 2023 and 37 replacement permits. A total of 7,303 sanitary systems are on maintenance and are inspected once every three years.
- The UW-Madison Division of Extension Green County and Green County Land and Water Conservation hosted three educational events, with 40 attendees, throughout 2024. These events focused on nitrogen leaching, nutrient management, yield plot calculation, and nitrogen use efficiency.

Water Action

Green County is a Leader in Using Brine on Roadways



The Green County Highway Department is using brine from local cheese factories on winter roads. The brine solution helps reduce the amount of rock salt needed on roads, making it more cost-effective to use than rock salt alone, and it helps reduce the amount of salt pollution in lakes, streams, and drinking water.

Cheese brine costs **\$6 per mile** compared to rock salt which costs **\$25 per mile**.



The benefits also are the [decreased] amount of salt that we're putting back into the environment. We all rely on groundwater or surface water for drinking or for recreation...

- Chris Narveson, Highway Commissioner, Green County Highway Department



Planning for 2025

Research

- Green County Public Health will be establishing a certified water testing lab to test well water for bacteria and nitrate.
- The Groundwater Quality Trend Data Program will continue to gather and analyze data.
- The Annual Drinking Water Testing Program will continue to be offered through grassroots efforts from the Green County Towns Association and Green County Land and Water Conservation.

Education

- Coalition members will work together to continue to host educational events, including new events about landscaping practices to manage nitrate leaching.
- The coalition will participate in the Regional Water Quality Meeting to learn from peers.
- Green County Public Health will increase community awareness of the Wisconsin Well Testing Access Program (WellTAP) which provides fee-exempt well water testing to eligible individuals.

Action

- The coalition will continue to meet and collaborate on projects.
- Green County Land and Water Conservation will work with one township to establish Farmland Preservation Zoning.
- There will be an increase in the use and application of Nutrient Management Plans among farmers as a result of working with Green County Land and Water Conservation.
- The Green County Highway Department will continue to use cheese brine on roads.

Coalition Members

UW-Madison Division of Extension

Jordyn Sattler, *Regional Crops and Soils Educator*
Victoria Solomon, *Community Development Educator*
Landon Baumgartner, *Nutrient & Pest Management Outreach Specialist*
Chelsea Zegler, *Ag & Water Quality Outreach Specialist*
Kevin Masarik, *Water Specialist*

Green County Public Health

Bridget Zimmerman, *Public Health Educator*
Geoff Briggs, *Environmental Health Specialist*

Green County Land and Water Conservation Department

Tonya Gratz, *Conservation Technician*
Todd Jenson, *County Conservationist*
Mason Jarosinski, *Conservation Technician*

Green County Land Use and Zoning Department

Adam Wiegel, *Zoning Administrator*

Green County Highway Department

Chris Narveson, *Highway Commissioner*



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GREEN COUNTY