# Protecting our Sources of Drinking Water

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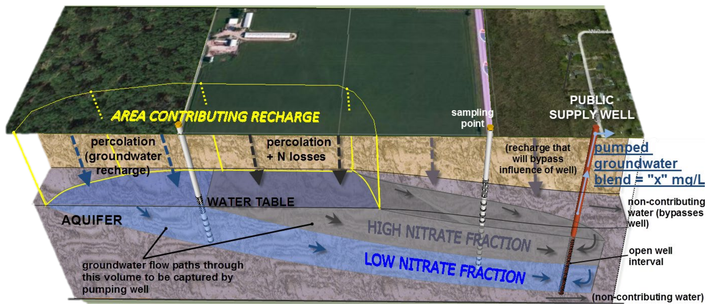
## What is Source Water Protection (SWP)?

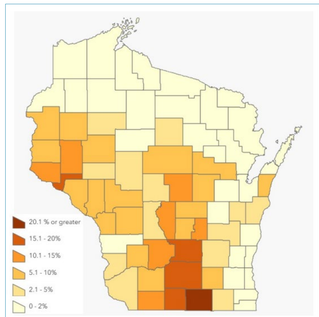



**Wellhead protection concepts: GW transport from a contributing area**

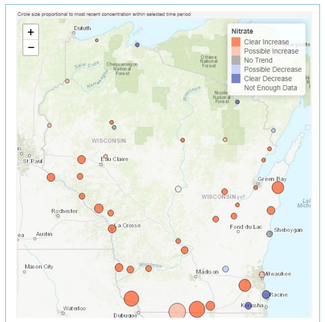
- Proactive multi-stakeholder approach to prevent contaminants from entering drinking water sources
- Focus on groundwater, but surface water systems (e.g., Ashland, Lake Winnebago) also benefit
- Applies to all contaminants – nitrates, pesticides, PFAS, geogenic sources, etc.
- Some SWP activities are supported by federal grants for implementation

## The Need to Meet Water Quality Challenges

- The Nitrate health-based maximum contaminant level has been exceeded at 8% of all WI wells historically (Map 1)
- Nitrate is also increasing in surface water – much of it is transported by groundwater (Map 2)




**Map 1**. Estimated Percentage of Private wells with nitrate (as N) concentrations > 10 mg/L by county (Jan 2023 through June 2024).




**Map 2**. Trends in nitrate (as N) concentration in surface water.

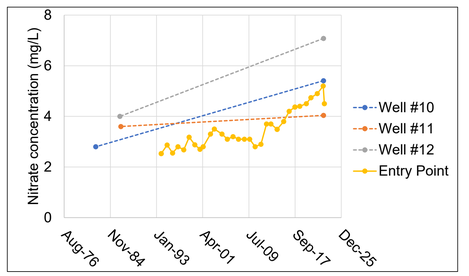
## Some examples of DNR SWP activities and collaborative efforts

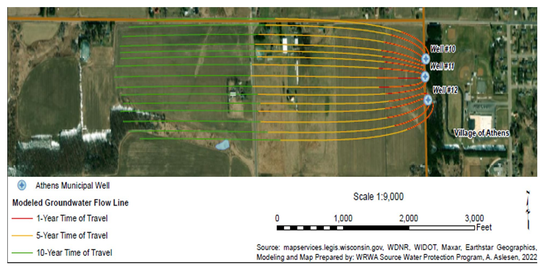
- Reviewing wellhead protection plan
- Setting NR140 groundwater quality standards
- DNR Nonpoint Source Program management Plan
- Decision tools /research
- DNR SW Nitrogen numerical standard science assessment
- Athens project
- NRSC NWQI projects
- Funding groundwater research projects
- Groundwater data management
- Health & Conservation Committee
- Teacher GW workshop
- Lake Winnebago Study
- Abbotsford projects

## Local Collaborations to Co-Manage Drinking Water Sources: DNR + State, Federal, and County Partners + Local Communities

### Athens (Marathon County)

- Identified wells with rising nitrate levels through data analysis
- Collaborated with Wisconsin Rural Water Association, a local farmer, and the municipality
- Modeled nitrate contributions to guide actions
- Engaged a CAFO owner in adopting practices to reduce nitrogen input
- Increased sampling at shallow public wells for better monitoring



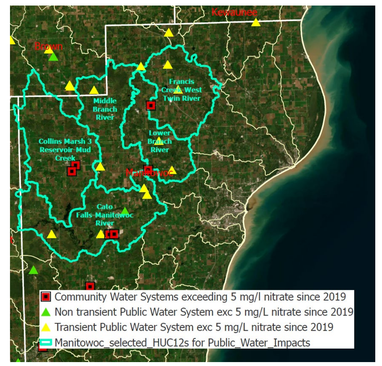




### Abbotsford (Marathon County)

- Identified three wells with rising nitrate concentrations near a 17-acre ag field owned by the Abbotsford School District
- Collaborated with the school, Wisconsin Rural Water Association, WGNHS, and Thriving Earth Exchange
- Replaced farming income with no-nitrate input activities
- Students planted native vegetation. Students observed drilling of monitoring wells and learned about geology and water quality
- Installed monitoring wells at the property to collect additional data

### St. Croix and Manitowoc Counties

- Federally funded through the National Water Quality Initiative – Wisconsin's first groundwater-focused watershed scale projects for public water supplies
- Collaboration with USDA/NRCS and counties
- Identified areas of concern for nitrate in public wells
- Ongoing: Mapping recharge areas for wells
- Ongoing: Partnering with counties for farmer outreach
- Future: Implementing BMPs in recharge areas





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