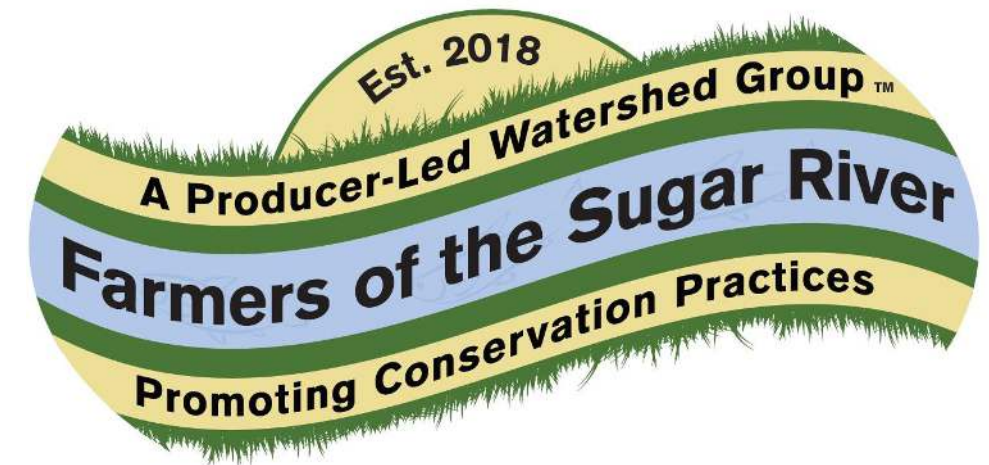


Farmers of the Sugar River
Green County LWCD
1627 4th Ave. West
Monroe, WI 53566



Upcoming Events!

Livestock Carcass Composting Field Day

August 8, 2023

9-11AM West of N4991 Spoerry Rd, Monticello

No RSVP needed



Green County Groundwater Quality Update & Roundtable

August 16, 2023



10-Noon at Albany Lions Club

(402 N Cincinnati St, Albany)

Please RSVP for lunch by Aug 4



Pollinator & Prairie Field Day

August 22, 2023

10-Noon at W3817 County C, Monticello

Please RSVP for lunch by Aug 18

The Value of Grain Crop Rotations

Southern Wisconsin Producer-Led Field Day

August 14, 2023

check out small grain crop rotation studies and tillage comparison on weed suppression at the Lancaster Research Station. Lunch and meeting for producer-led watershed members to follow.

8:30AM-12:15 RSVPs needed by Aug 9

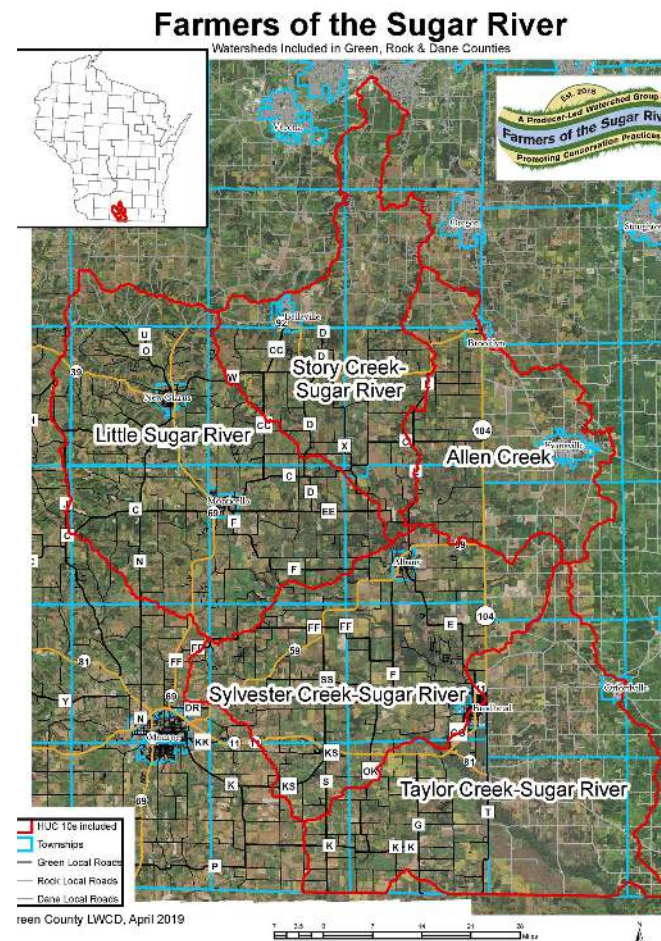
(contact Tonya Gratz for help and carpool)



RSVPs to Tonya @ 608-426-2218 or
Tonya.Gratz@wi.nacdn.net

What is the Farmers of the Sugar River watershed group?

Mission Statement: A producer-led watershed group that shares and learns from other farmers to be profitable, protect and increase soil functions, and improve water quality in the watershed. We strive to teach other local farmers how to make conservation systems work on their farms to be part of the solution for cleaner water and sustainable farms.



Benefits noted from improving soil health

Better weed control
More moisture retention
Less erosion- both wind and water
More resilient soil- to equipment traffic and weather
Saves money on fertilizer and herbicide costs!



The Department of Agriculture, Trade and Consumer Protection (DATCP) has awarded a Producer Led Watershed Protection Grant to this group since 2018. They have been busy teaching other farmers and the public about no till, cover crops and other ways to minimize soil erosion which will improve water quality.

The group is led by a board of 7 farmers and a collaborator from the Green County Land and Water Conservation Department (Tonya Gratz) that plan events for farmers to learn from. There are no membership dues. All farmers are welcome to join one or all events. But in order to participate in conservation practice incentive payments, like no- till and cover crops, the land must be located within the watershed. The watersheds that are covered include the Lower Sugar River and Middle Sugar River (see map left)

Talk your board members!

Jake Kaderly

(608) 558-5589

Alvin Francis

(608) 921-1569

Dennis Miller

(608) 558-1318

Pat Faessler

(608) 558-2960

Dan Truttmann

(608) 513-8363

Nick Faessler

(608) 214-3852

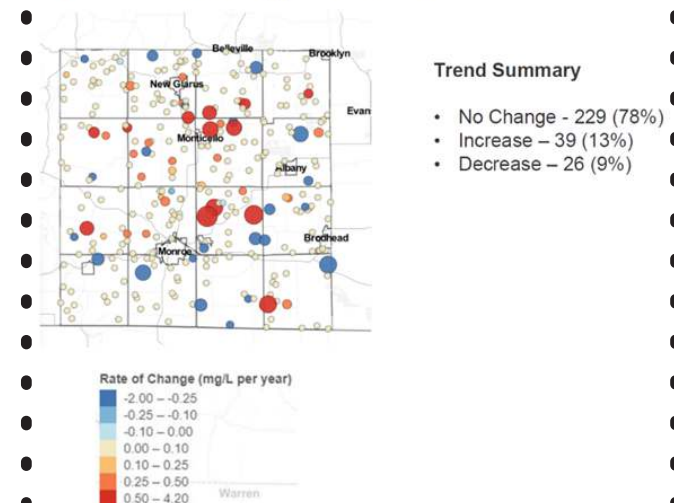
Robert Zurfluh

(608) 214-3787

Groundwater Quality Trends Study Cont.

The map below shows some data from the groundwater quality trends study. It shows current trends of nitrate levels in groundwater that will be discussed at the August 16 meeting at the Albany Lions Club from 10 til noon. RSVPs are needed by Aug 4 for a lunch count.

Nitrate-Nitrogen Trends



Pollinator & Prairie field day- Aug 22nd at Bob & Sherry Zurfluh's- W 3817 County Hwy C, Monticello 10 til noon. Staff from Xercess & UW Extension to help ID plants and insects. Please RSVP for lunch count.



Please pass this on to a neighbor or friend and invite them along to a field day or meeting! If you are interested in learning more, to get on our email list (more frequent communication) or you want to keep receiving a paper newsletter please contact Tonya Gratz via email Tonya.Gratz@wi.nacdnet.net or by phone (608)325-4195 ext. 121 or 608-426-2218

for more information check out the website
<https://greencountylwcd.com/farmers-of-the-sugar-river/>

Groundwater Quality Trends Study

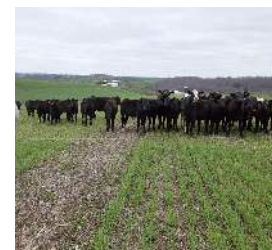
The 5-year process is specifically designed to get good data in order to better understand water quality in Green County. 2023 marks the fifth year of the study. Tracking groundwater quality trend data will help local officials and Green County residents make data-driven decisions when managing groundwater quality. Currently, little information existed that allows for an understanding of how groundwater quality has changed over time in Green County. Establishing a network of private well owners to perform annual testing over an extended period of time will help inform residents and local leaders whether groundwater quality is getting better, worse, or staying the same.

Confidence in this trend data enables isolating areas where nitrate, chloride, and alkalinity are increasing or decreasing. Nitrate is an important test for private well owners. Levels greater than 10 mg/L nitrate-nitrogen should not be consumed by infants, and women who are or trying to become pregnant. Nitrate is a chemical commonly found in agricultural and lawn fertilizer. It is also produced when organic rich materials such as manure, bio-solids, septic system effluent, etc decompose. Nitrate is a very soluble form of nitrogen and can easily leach past the root zone of plants into groundwater. Levels of nitrate in groundwater are generally less than 1 mg/L in natural or areas of little human influence. Elevated levels generally occur in areas of agricultural activity or areas of dense rural development (ie. small lot sizes with septic systems, lawn fertilizers, etc). Soils and geology make certain areas more prone to nitrate losses to groundwater. For these reasons, nitrate is a good test to perform if trying to understand the impacts of land use on groundwater quality as well as trends over time.

Like nitrate, chloride is a useful tool for understanding the impacts of land use.

Major sources of chloride to groundwater include fertilizer, road salting and septic system drainfields. Potash is used to add potassium to soil. The most common form of potash is potassium chloride; the chloride is susceptible to leaching. Road salt (usually sodium chloride) helps in deicing roads, but is then washed off roads into ditches or other pervious areas where it soaks into the soil and can eventually leach to groundwater. Septic system drain fields dispose of wastewater which contains chloride from human waste and water softener salt.

Alkalinity is a measure of water's ability to neutralize acid. It is generated by the dissolution of carbonate minerals common to Wisconsin. Groundwater alkalinity measurements are relatively stable from one year to the next. Testing for alkalinity would help in understanding if a particular sampling event was influenced by rainfall or snow melt because alkalinity should be relatively consistent under normal conditions.



5 Principles of Soil Health

1. Soil Armor

Protecting the soil from precipitation's impact so the soil can't splash out of place. Having living or dead plant material reduces evaporation so the soil has more moisture available longer. The armor also helps to regulate temperature of the soil. Weed seeds are not able to germinate with reduced sunlight in a heavily armored system. Mulch also feeds and provides habitat for the surface dwellers of the food web.

2. Minimizing Soil Disturbance

Soil disturbance can generally occur in different forms: biological, chemical and physical disturbances. Biological refers to limiting the plants ability to harvest carbon dioxide and sunlight from overgrazing. Chemical disturbances can come from over application of nutrients and pesticides that disrupt the soil food web and their functions. Physical disturbances are the ones we think of most often- tillage. Tillage disrupts the pore or air spaces in the soil that allow the water to infiltrate through the soil along with destroying biological glues that help hold our soil particles together. We can reverse the effects of tillage and see improvements in organic matter, pore space, aggregation and infiltration with less physical disturbance to the system.

3. Plant Diversity

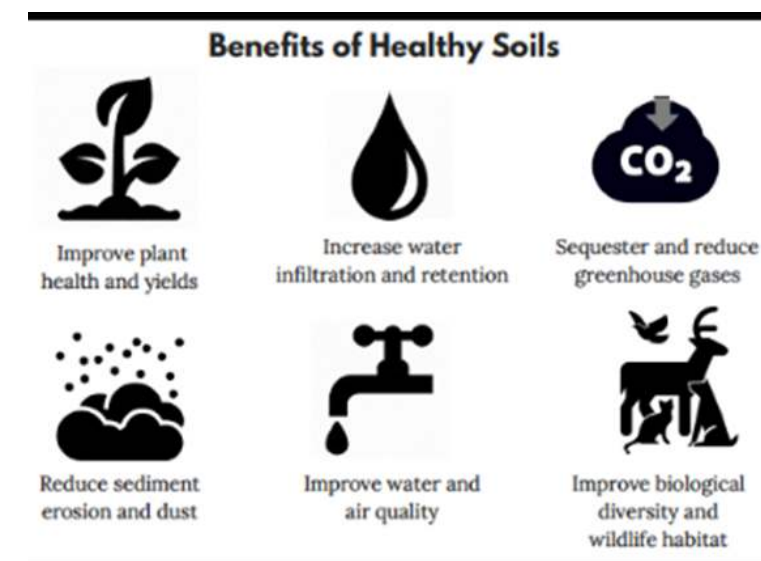
Diverse crop rotations provide more biodiversity, benefiting the soil food web. This, in turn, improves rainfall infiltration and nutrient cycling, while reducing disease and pests. Crop rotations can also be designed to include crops that are high water users; low water users; tap root; fibrous root; high-carbon crops; low-carbon crops; legumes; and non-legumes, to name a few. Diverse crop rotations mimic our original plant diversity landscapes. They are important to the long-term sustainability of our soil resource and food security.

4. Continous Live Plant/Root

Our perennial grasslands consist of cool-season grasses, warm-season grasses and flowering forbs. Consequently, adaptable plants are able to grow during the cool spring and fall weather, as well as the summer heat. This allows for a continual live plant feeding carbon exudates to the soil food web during the entire growing season.

5. Livestock Integration

Animals, plants and soils have played a synergistic role together over geological time. In recent years, animals are playing a reduced role due to being placed in confinement and fewer farms now include livestock as part of their overall operation.



Conservation/ Regenerative Practices we use in our watershed!



No-tilling is leaving the soil residue on the soil surface and just planting the seed at the right depth. The residue on the surface helps to retain moisture and regulate soil temperatures. This is very important during the summer months when rain is not always guaranteed and the temperature soars. Soil biology slows and stops in temperatures greater than 85 degrees. Keeping the soil cool is critical to keeping processes functioning to help grow cash crops.

To the right is a picture of cover crops (radish, oats, annual ryegrass, rapeseed, balansa clover and alsike clover) that were interseeded into corn (with a modified drill) that was almost knee high in mid June of last year. This shows that the cover crop is already growing once the corn silage was harvested. There is potential for grazing in this system, besides providing a living root to feed the soil biology.



Cover crops can be flown on with airplanes, helicopters, drones, air seeders or broadcast. The picture to the left is of cover crops (cereal rye & radish) that were flown on with an airplane over soybeans that were starting to yellow in fall. There seems to be better establishment with drilling in cover crops.

Planting a diverse cover crop mix is easiest after winter wheat- there is plenty of growing season (Aug- Oct) left to harvest the sun's energy to grow plants for grazing, harvest or adding organic material to the soil. This is a chance to grow nitrogen fixing crops for next year's crop. Diversity in plants is diversity in root structure and soil biology, creating a healthier system.



Planting green- is no-till planting your cash crop into a living cover crop. In this picture, corn is being planted into a multispecies cover crop mix heavy with hairy vetch. The cover will then be terminated with herbicide or roller crimped.

