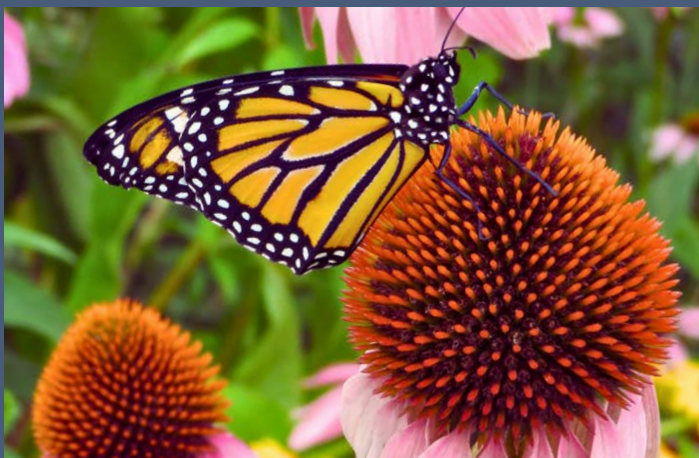




Winnebago County
Land & Water Conservation Department



ANNUAL REPORT 2023

The Winnebago County Land and Water Conservation Department (LWCD) is dedicated to providing a full range of professional services in the planning, design, and implementation of programs and projects that **PROTECT, RESTORE, AND SUSTAIN** the natural resources of Winnebago County.

Meet Our TEAM

The Land & Water Conservation Department (LWCD) has a staff of 8 County employees, with backgrounds in soil and water conservation, resource management, agronomy, watershed management, geography, environmental science, natural resources, graphic design, communications, and geographic information systems. In Wisconsin, locally-led conservation is key to healthy soils, resilient farms, clean water, and vibrant communities. LWCD staff are trusted advisors to private landowners and farmers. The LWCD works closely with the Winnebago County Board the Land Conservation Committee, Winnebago County Departments, and other local, state, and federal agencies to implement the County's Land & Water Resource Management Plan.



Chad Casper
Director



Sheila Smith
Agronomist



Emily Dufek
Watershed Specialist



Melanie Leet
Resource Conservationist



Alix Bjorklund-Patil
Conservation Technician



Brandon Flenz
Conservation Technician

Welcome!

Jody Bezio joined the LWCD team as the Administrative Associate in March of 2023. She has worked for Winnebago County since April of 2017 when she moved back to her hometown of Oshkosh after living in Omaha, Nebraska for 10 years. Jody's experience includes graphic design, website development, marketing & communications, social media, office management, and book-keeping. In her free time, Jody likes to volunteer in the community and can often be found at local festivals, gatherings, or events.



Jody Bezio
Administrative Associate



Andy Maracini
GIS Specialist

Land Conservation Committee (LCC)

Chapter 92 of the Wisconsin State Statutes requires counties to have an LCC that oversees the administration and implementation of conservation programs that meet local priorities and the needs of land users. These programs might be local programs or state programs that are implemented at the local level.

Winnebago County LCC Members

- Chuck Farrey (Chair/County Board Member)
- Julie Gordon (Vice Chair/County Board Member)
- Katherine Horan (Secretary/County Board Member)
- Doug Nelson (County Board Member)
- Doug Zellmer (County Board Member)
- Bruce Bohn (Citizen Member)
- Daniel Stokes (Citizen Member)





Table Of CONTENTS

Meet Our Team	01
Table of Contents	02
Muddy Bottom Farmers	03-04
Installed Best Management Practices	05-06
Conservation Funding: LWCD, NRCS, & FSA	07
Wildlife Damage Abatement & Claims	08
Soil Health: Rat River Watershed	09-10
Wetland Restoration	11-12
Building a Legacy - Spirit Fund Program	13-14
Farmer Roundtable	15
Enhancing Aquatic Monitoring	16-18
Upper Fox-Wolf Demonstration Farm Network	19
Soil Health Challenge	19
Farmland Preservation Program	20
Nutrient Management Planning	20
I&E - Outreach in the Community	21-22
Conservation Poster Contest	23
Tree Planting Supplies & Equipment	24
Conservation Benefits of Manure Storage	25
Livestock Waste Management Ordinance	26



Muddy Bottom Farmers, Inspiring Success

The mission of the Muddy Bottom Farmers Producer-Led Group is to improve water quality and soil structure through the implementation of soil health principles and conservation practices, along with providing outreach and education to farmers and the general public. In 2023 they applied for and received their first Producer-Led Watershed Protection Grant funded by the Department of Agriculture, Trade and Consumer Protection (DATCP).

The Town of Dale in the Rat River Watershed is the highest phosphorus and sediment loading HUC 12 watershed in Winnebago County. In 2021, the Great Lakes Sediment and Nutrient Reduction Program (GLSNRP) grant was received by Fox-Wolf Watershed Alliance (FWWA), in partnership with the Winnebago County LWCD. This grant was dedicated to soil health adoption in the Rat River Watershed.

As part of the GLSNRP grant, the LWCD agreed to do multiple forms of outreach to spread the concept of soil health. This outreach led to a meeting with a farmer where ideas were shared and a success story was just beginning. The farmer spoke about the "Producer-Led Groups" that have been popping up all around the state. He talked about traveling to attend other group meetings, but that he had a passion for starting one in his area.

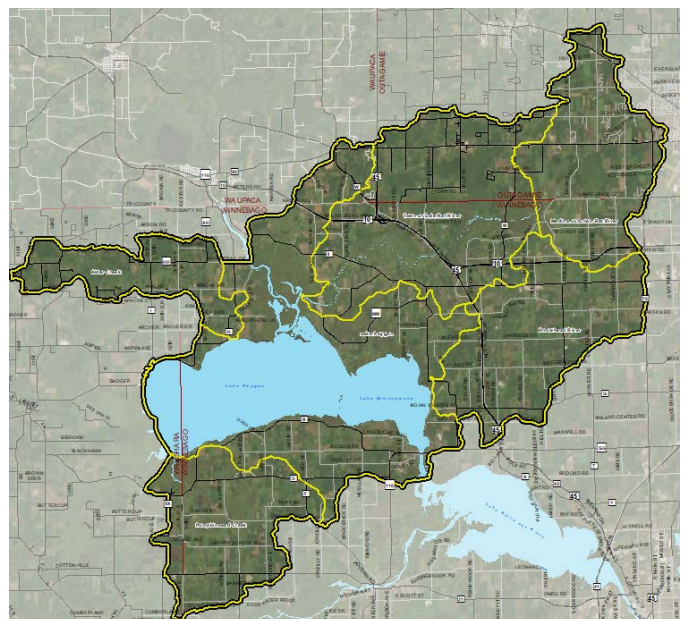
Two months later in August, the LWCD collaborated with this farmer to assist in hosting his first field day to bring together local farmers. At this field day soil health, as well as the benefits and struggles that come along with it, were discussed. Before the event ended, the idea of starting a Producer-Led Group was presented. This field day sparked a lot of interest in forming a group. As the summer turned to fall, a few more field days were held and it seemed as though there was a persistent core group of farmers who always showed up.

This core group of farmers along with a few others, held their first official Producer-Led Group meeting in February of 2023 and they call themselves the "Muddy Bottom Farmers". The group's mission is to improve water quality and soil structure through the implementation of soil health principles and conservation practices, along with providing outreach and education to farmers and the general public.

Although the majority of the members are currently producers in the Rat River Watershed, this group expands throughout the Lake Poygan HUC 10 watershed.

The LWCD's outreach efforts in the Rat River Watershed now focus on supporting the Muddy Bottom Farmers through partnering in identifying conservation projects, encouraging innovative projects, and assisting in the education of rural and nonrural neighbors. The Muddy Bottom Farmers applied for their first Producer-Led Watershed Protection Grant funded by the Department of Agriculture, Trade and Consumer Protection in September of 2023.

The group was awarded their full request for the 2024 grant period. These funds will be allocated to support the group's mission by hosting a winter workshop, multiple field days, and promoting the Muddy Bottom Farmers and Producer-Led Groups.



Lake Poygan HUC 10 Watershed



2023

Installed Best Management Practices (BMPs)

Best Management Practice (BMP)	Units Installed
Rain Garden	1 Job
Riparian Buffer	2.1 Acres
Streambank/Shoreline Protection	3,757 Ln Ft
WASCOB - Water & Sediment Control Basin	1 Job
Waste Storage Facility <i>(related article on page 25)</i>	1 Job
Waste Transfer System	1 Job
Waterway System	1.32 Acres
Well Decommissioning	7 Jobs
Wetland Restoration <i>(related article on page 11)</i>	1.32 Acres
Wetland Restoration Repair	1 Job

The Winnebago County LWCD has several funding sources available to provide cost-sharing for the installation of eligible conservation projects. These funds help financially aid operators and landowners with the installation of various eligible Best Management Practices (BMPs). Along with the funding assistance, our department provides surveying, engineering design, and construction supervision to ensure the projects are installed according to proper design specifications. Installing these BMPs will reduce the sediment and phosphorus loading to our local waterways. The BMPs will provide protection of surface water and groundwater resources throughout Winnebago County. See table for a summary of the structural BMPs designed and installed in 2023 (with and without cost-sharing).





Completed Wetland Restoration



WASCOB During Construction: Inlet Structure (Water And Sediment Control Basin)



Completed Waterway System



Closeup: Wetland Restoration During Construction



Waste Transfer System During Construction



Waterway System & Wetland Restoration During Construction

\$1,220,529 of Conservation Funding Administered by LWCD, NRCS & FSA

Conservation program funds totaling \$1,220,529 were utilized to cost-share and support the installation of BMPs and reward conservation land practices throughout Winnebago County. Grant and program funds such as these provide a significant and positive economic impact for our local producers, landowners, contractors, and related businesses.



The Winnebago County LWCD was awarded \$297,481 in state grant funding. This funding was used to cost-share projects and practices for landowners and offset departmental expenses. In addition, the LWCD budgeted \$94,000 of cost-share funds provided to county constituents through the Winnebago County Water Quality Improvement Program (WQIP). The LWCD carried over \$150,327 of state and local contracted cost-share funds from 2022 to be utilized in 2023. The LWCD administered \$132,052 in other funding sources for conservation work in the County. The LWCD also began implementation of the Spirit Fund Program in late 2023 and allocated \$6,900 of cost-sharing for the installation of three conservation projects.



The USDA Natural Resource Conservation Service (NRCS) provided \$172,961 for the installation of BMPs contracted through the Environmental Quality Incentives Program (EQIP) and \$100,740 in incentives to producers/landowners for current and new conservation farming practices through the Conservation Stewardship Program (CSP).

The USDA Farm Service Agency (FSA) provided \$229,546 in annual payments for 144 Conservation Reserve Program (CRP) contracts that total 1,986 acres of enrolled land and \$36,522 in annual payments for 52 Conservation Reserve Enhancement Program (CREP) contracts that total 296 acres of enrolled land.



Wildlife Damage

Abatement & Claims Program (WDACP)

The WDACP is a state program with the Wisconsin Department of Natural Resources (WDNR) and the United States Department of Agriculture: Animal Plant Health Inspection Service - Wildlife Services (USDA: APHIS-WS). The Winnebago County LWCD administers the program which provides local control and helps to reduce costs. This partnership helps to connect the local community to these valuable programs and resources.



Wildlife Damage Abatement and Claims Program (WDACP)

WDACP is a statewide program that assists landowners experiencing crop damage caused by deer, geese, and turkeys. WDACP provides damage prevention assistance and partial compensation to farmers when wild deer, geese, and turkeys damage their agricultural crops. Wildlife managers issue agricultural damage shooting permits to farmers for removal of deer, and occasionally geese and turkeys, that cause damage.

In 2023 Winnebago County had 3 landowners participate in the program who received a total of \$15,805.29 in reimbursements for wildlife damage.

Wisconsin's Deer Donation Program

Hunters can help Wisconsinites in need by donating deer harvested the state through the DNR's Deer Donation Program. Venison from donated deer is processed by local meat processors and distributed to food pantries across the state.

Wisconsin has a network of venison donation partners, including county land and water conservation departments, food pantries, charitable organizations, Hunt for the Hungry, USDA - Wildlife Services, and participating processors who all help implement and administer the program.

In Winnebago County 28 deer were donated by local hunters. 1274 lbs of ground venison were processed and donated to 5 local food pantries.

Soil Health in the Rat River Watershed

Soil health efforts continue in the Rat River Watershed with the National Fish and Wildlife Foundation (NFWF) grant and the Great Lakes Sediment and Nutrient Reduction Program (GLSNRP) grant. These two grants provide incentive funds for producers to implement the soil health practices of cover crops, no-till, and low-disturbance manure applications into their farm operations. The grants are concentrated in the Rat River Watershed because it is the highest phosphorus and sediment loading watershed in Winnebago County. The practices implemented with these two grants saved a total of 8.2 tons of sediment and 209 pounds of phosphorus from entering the local waters in the Rat River Watershed.

National Fish and Wildlife Foundation (NFWF) Grant

Brian Krenke and the Ecksteins are the "Farmer Champions" of the National Fish and Wildlife Foundation (NFWF) and Funds for Lake Michigan grant that was awarded through Fox-Wolf Watershed Alliance (FWWA). This grant began in the fall of 2022 and this year was the farmers' second year of planting cover crops. Ted and Clint Eckstein planted a multi-species cover crop mix of oats, field peas, and tillage radishes into their previously planted wheat field. This mix provides a variety of benefits along with each species. Since the field was previously a wheat crop, the cover crop was able to be planted earlier in the season to maximize the growth and benefits of each species. The Ecksteins hosted a field day in September to showcase their cover crop field. This field day had a great turnout where a lot of information and knowledge was shared between agricultural producers and agency staff.

With the weather patterns of 2023, Brian Krenke faced challenges in getting his cover crop planted. Although conditions were not optimal, he was able to get a single species of winter rye planted. The rye germinated and started to emerge. In an ideal season the cover crop would be a couple of inches tall before the first ground freeze.

In the months of November and December when the cropping season slowed down, the farmers were able to review their Farm Progress Reports with staff from

the FWWA and the LWCD to analyze the whole farm's soil and phosphorus losses. The report breaks down each field individually and allows the farmer to compare which fields may be more susceptible to losses and could benefit from soil health practices the most. The Ecksteins and Brian Krenke found the Farm Progress Report information to be interesting and useful.

FWWA reached out to the LWCD toward the end of the year with an opportunity to extend the grant period for one additional year with leftover funds from the NFWF grant. Both farms expressed that they would be interested in continuing the implementation of cover crops and no-till for an additional year. The grant period will now end in the spring of 2025. The LWCD is excited to continue these efforts with Brain Krenke and the Ecksteins.





Great Lakes Sediment and Nutrient Reduction Program (GLSNRP) Grant

The GLSNRP grant is funded by the Great Lakes Commission and was awarded to Fox-Wolf Watershed Alliance in 2021 which partnered with the Winnebago County LWCD to increase soil health adoption in the Rat River Watershed. Dan Rieckmann, Larry Engel, and Lydell Pethke are the three "Farmer Champions" of the GLSNRP grant.

The year started with farmers Dan and Larry attending the Winnebago Waterways Farmer Roundtable event in February. This event brought together farmers from the surrounding area to "Harvest your Farms Potential by Maximizing Soil Health". The event had a great turnout and farmers were able to learn from other farmers in the Winnebago Waterways area.

All three "Farmer Champions" had a successful cover crop termination and planted their main crops without any soil disturbance. The drought conditions this year had many farmers anxious for their yield results however, the fields that were a part of this grant saw no major drags in yield by harvesting time. As the soil health journey in these fields continue the soil should become more drought resistant, which is one of the major benefits of soil health practices. The farmers look forward to seeing these changes in their fields.

Dan Rieckmann hosted a field day in June where he displayed the use of a drone to apply biologicals onto standing crops. Later in the year, Dan used a drone to

seed his cover crops on three of his fields while the main crops were still standing. This should be the last year that Dan has to get a custom drone to do his applications and seedings. Dan has been busy getting certified as a drone pilot and has already purchased a drone for himself.

Lydell Pethke noticed the positive impacts of cover crops on his sloping fields and plans to implement them on more of his acres in the future. Lydell planted a multi-species cover crop on all of his grant acres. Later in the fall Lydell built a low-disturbance manure application toolbar and used that to incorporate his manure without the soil disturbance of a standard manure application.

The weather made it tough for Larry Engel to get his cover crop planted in 2023, but in November, he was able to get the field planted with the use of an air seeder.

All three farmers got the chance to sit down and go over their Farm Progress Reports with FWWA and LWCD staff. They all agreed the information from the report will be useful when converting additional fields to soil health systems.



Wetland Restoration with Water Control Structure

Wetland restorations are a Best Management Practice utilized for benefits that include erosion control, wildlife habitat, and surface water runoff filtration. While this simple practice has many benefits, fitting it to a landowner's particular needs and existing landscape is a necessity to ensure long-term benefits.

In the town of Wolf River, planning for a wetland restoration and water control structure began in 2022. The landowner was experiencing erosion through his agricultural field. The water flowed through the field, into a highly degraded wetland area, then into a culvert that drained directly into a neighboring water body. The landowner was seeking to stabilize the area to control sediment runoff, while also interested in the possibility of creating wildlife habitat and an enhanced wetland.

Due to restrictions caused by a driveway over a culvert it was determined that a berm with a water control structure provided the best solution to the issues present at the site. A grassed waterway rectified gulying in the field while also allowing for further sediment and nutrient trapping.

Construction was finished in September of 2023, resulting in a 0.5-acre wetland scrape with a berm and water control structure along with a 200-foot long grassed waterway. **A vegetated buffer around the wetland and over the berm totaling 0.6 acres was planted allowing for the entire system to filter a 15-acre drainage area. The estimated reduction from this project is over 22 pounds of phosphorus and 15 tons of sediment annually.**

As the vegetation at this site establishes in the coming years and the wetland completely fills with water, it will provide not only aesthetic enhancement but also a very positive impact on the neighboring water body by reducing sediment and nutrient loading.

The water control structure at this site is placed in the center of the berm with a lid that the landowner can access to set elevation planks to control the depth of water within the wetland restoration. This would allow for maintenance of the wetland restoration and inlet pipe, for native plantings, and for wildlife habitat.

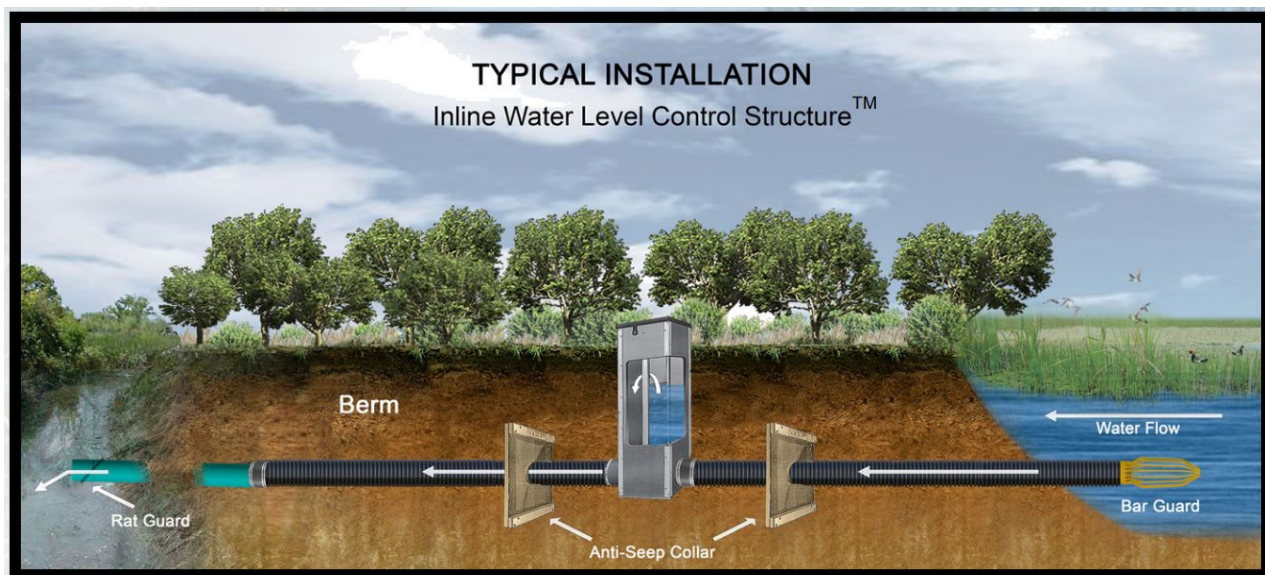


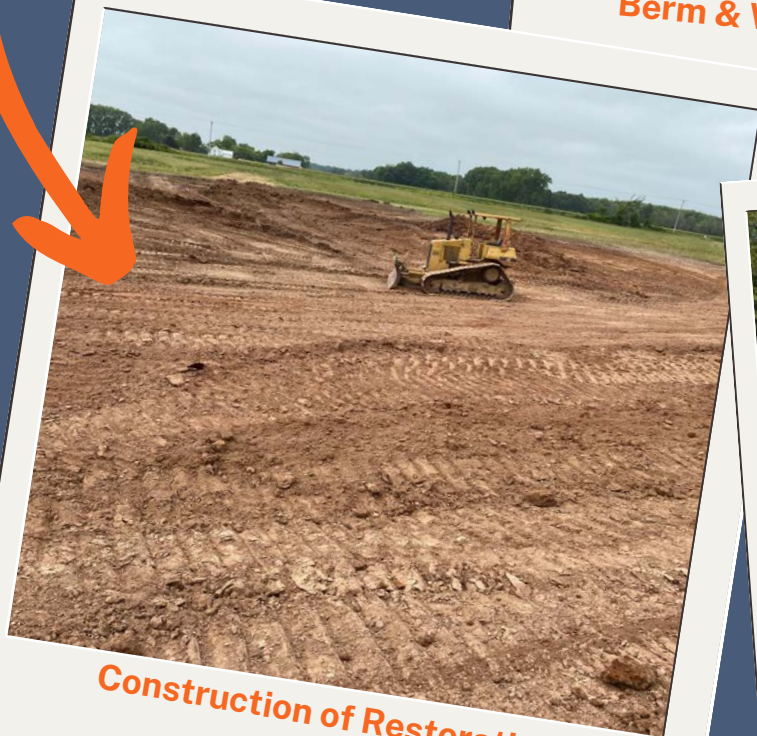
Diagram source: Agri Drain Corporation



Degraded Wetland



**Completed Wetland with
Berm & Water Control Structure**



Construction of Restoration



**Pipe Placement for
Water Level Control System**



Building a Legacy, Embracing the Future

The LWCD was selected as a Spirit Fund recipient by Winnebago County. These additional funds will be used to increase the quantity of conservation practices installed throughout the County. With 3 to 15 year commitments from landowners and producers to maintain their conservation practices, the Spirit Funds will help make a long-term impact on the impaired waters of Winnebago County.



Breakwall project on Lake Winneconne. This 2023 photo shows increased vegetation growth and protection from erosion.
Photo Credit: Tim McEnroe.

With the support of the County Executive and approval by the Land Conservation Committee, ARPA Strategy and Outcomes Commission, and the County Board, the Winnebago County LWCD

Spirit Fund Program (SFP)

was developed in 2023. The approval of the SFP has allocated funds in the amount of

\$3,030,300.00

for conservation projects administered by the LWCD. Funds are to be used to support Best Management Practices (BMPs) that protect surface water and groundwater, reduce soil erosion, and educate and/or demonstrate the importance of resource protection.

After final approval of the fund allocation in November of 2023, **3 conservation projects were installed by the end of 2023, receiving a total of \$6,900 in cost-sharing funds from the SFP.**

The SFP focuses on three main categories:

-  **Structural BMPs**
-  **Soil Health**
-  **Conservation Buffers**



The SFP funding will be used on legacy projects with the primary focus being to improve water quality within Winnebago County, ensuring future generations benefit from these valuable investments.

STRUCTURAL BEST MANAGEMENT PRACTICES (BMPs)



A structural BMP is a conservation practice determined by the LWCD to prevent or reduce runoff pollutants to surface water and groundwater. The SFP will cost-share eligible individual structural BMPs up to 90% of the actual project cost. Some examples of structural BMPs are:

- **Waterway Systems**
- **Barnyard Runoff Control Systems**
- **Streambank or Shoreline Protection**
- **Manure Storage System Closure**
- **Wetland Restoration**
- **Prescribed Grazing**
- **Demonstration Projects**
- **Water and Sediment Control Basins**

CONSERVATION BUFFERS



Conservation buffers are areas or strips of land in permanent vegetation, designed to intercept pollutants and manage other environmental concerns. Three conservation buffer options are available:

- **Field-Road Buffers**
- **Streamside Harvestable Buffers**
- **Streamside Vegetative Out-of-Production Buffers**

The conservation buffers are cost-shared at a 90% rate for initial establishment and also include a 10-15 year incentive payment.

SOIL HEALTH



Soil health is the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans.



To be eligible and receive soil health practice cost-share payments, the applicant must commit to a three-year contract for:

- **No-Till (Strip-Till)**
- **No-Till (Strip-Till) & Cover Crops**
- **Cover Crops (No-Till already a practice)**

An incentive is offered to farmers for implementing both no-till and cover crops with a maximum of 100 acres enrolled for three years. A Nutrient Management Plan (NMP) is required on cost-shared fields. The SFP provides an incentive to include "Add-on Practices", but they are only available with no-till and cover crops and only for one year per practice per farmer. The Soil Health "Add-on Practices" are:

- **Spring Interseeding**
- **Planting Green**
- **Adding Tillage Radish to Wheat**
- **Frost Seeding Red Clover into Winter Wheat**
- **Harvesting and/or Grazing Cover Crops on High Phosphorus Fields**
- **Low-Disturbance Manure Application**





Harvest Your Farm's Potential Farmer Roundtable



The **SECOND ANNUAL FARMER ROUNDTABLE** occurred in February at Brighton Acres in Winnebago County. The Keynote speaker, Aaron Augustian, a Door-Kewaunee Watershed Demonstration Farmer spoke about **"How to Incorporate Soil Health Practices into Your Operation to Reach Your Farm's Goals."** After the keynote, there were three break-out Sessions to choose from:



The first session was presented by Upper Fox-Wolf Demonstration Farmer, Rick Gehrke, discussing **"Using Cover Crops to Meet Your Farm's Goals."** *Find out how cover crops can help your farm and learn how to choose a cover crop mix for your operation.*

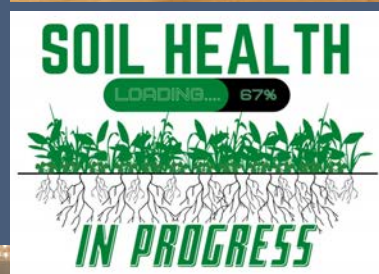


The second session was **"Incorporating Grazing into Cash Grain Operations"** presented by Chris Pollack, Upper Fox-Wolf Demonstration Farmer. *Learn from the perspective of a local farmer how adding livestock grazing to your crop rotation can help you meet your farm's goals.*



The third session was **"Bringing It All Together to Create a Soil Health System."** *Learn how to bring together different practices into a soil health system to meet your farm's goals with the help of regional farmers and agronomists.* This session was led by Eric Lind from the Lind Family Farm.

The day progressed with a Farmer Panel including Tony Peirick, Jim Luedtke, Chris Pollack, and Matt Hintz. Tony, Chris and Matt are Upper Fox-Wolf Demonstration Farmers and Jim is a local long-term no-tiller from Winnebago County. The farmers on the Panel gave a brief background of their farming practices and experience with soil health. The attendees had the opportunity to ask questions of the farmers. The event concluded with a Networking Happy Hour.



Enhancing Aquatic Environmental Monitoring

Throughout the lake systems of Winnebago County, damage from high water, waves, and ice have resulted in substantial lake-adjacent wetland losses annually. These erosive factors result in increased turbidity, loss of fish and wildlife habitat, and loss of property for shoreline property owners. Off-shore breakwalls are designed to reduce wave size reaching shorelines and to protect emergent plants, reducing lateral recession from erosion and aiding in habitat restoration behind the breakwall. These breakwalls are designed with openings to allow for fish and wildlife migration, boat access, and water exchange.



The Stabenow breakwall installation began in the winter of 2021 and was completed in 2022. This structure protects the wetland located on the east shore of Lake Winneconne. This breakwall stretches over 1,000 feet and will restore over 14 acres of open water into new habitat.



The Clark's Bay Wetland is located on the north shore of Lake Winneconne. During February of 2020, the Clarks Bay breakwall was installed with the purpose of protecting 2,100 feet of wetland frontage from erosion and high intensity wave action. In addition, it will restore almost 24 acres of open water into newly created habitat.

After the breakwalls are installed, aquatic plants will return to the area in greater densities and species diversity. To determine the efficacy of the breakwall structures, the LWCD conducts monitoring every two years to determine the regrowth of aquatic plants, both emergent and submergent species.





Geographic Information System (GIS)

GIS combined with tools like Survey123 and Unmanned Aerial Vehicles (UAVs or drones) have emerged as powerful solutions for monitoring aquatic environmental conditions. This article explores the integration of these tools for efficient and comprehensive aquatic environmental monitoring.

Understanding GIS, Survey123 and Drone Mapping

GIS is a technology that captures, analyzes, and presents spatial and geographic data. It allows for the visualization of complex relationships within a spatial context. Survey123, on the other hand, is a mobile data collection app that enables users to create smart surveys with dynamic forms for collecting data in the field. Lastly, drones can be used to create high resolution aerial photos that are integrated into the GIS. These photos provide a clear and easily understandable representation of change on the landscape. By integrating these technologies, we can become much more efficient in the field and create valuable insights into changes that are occurring.



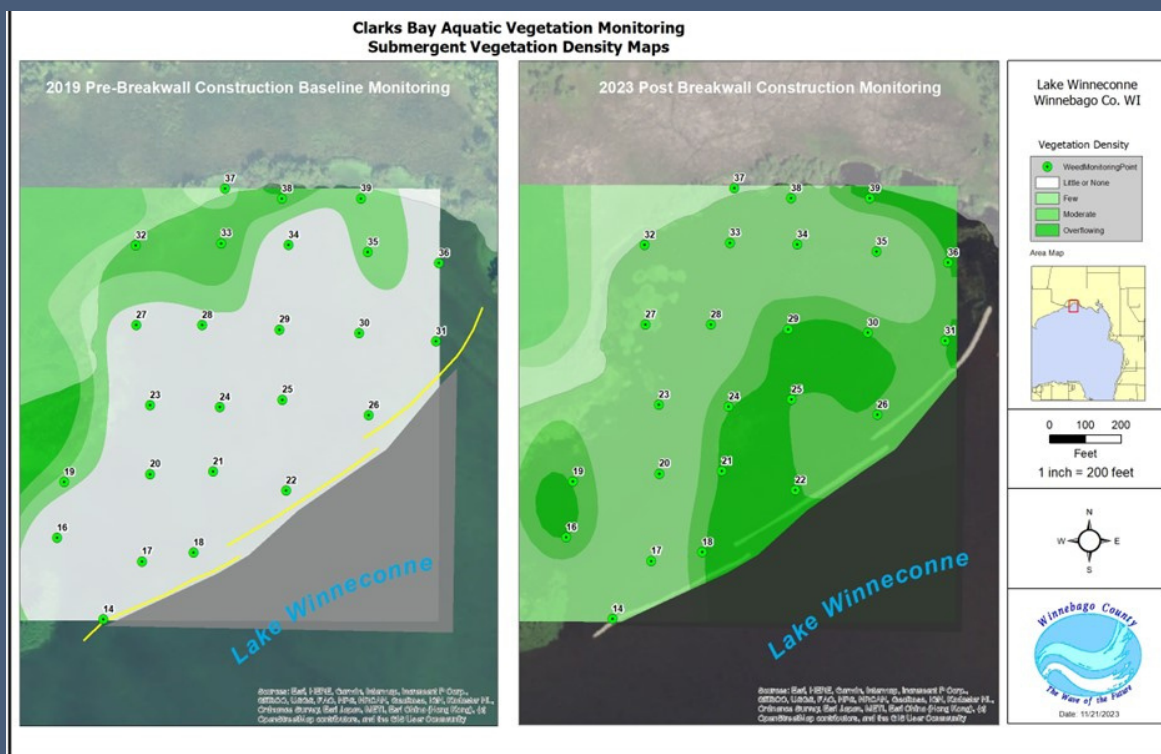
Integration Benefits:

1. **Spatial Context:** GIS provides a spatial context to the collected data. By mapping environmental parameters such as species, quantities, and water clarity, we can analyze spatial patterns and identify trends over time.
2. **Real-time Monitoring:** Survey123 allows for real-time data collection in the field using mobile devices. This enables instant updates on changing environmental conditions. Field teams can input data directly into Survey123 forms and the collected information is immediately integrated into the GIS system.
3. **Data Standardization:** Using Survey123 ensures standardized data collection through customizable forms. This minimizes errors and discrepancies in data interpretation.
4. **User-friendly Interface:** Survey123's user-friendly interface simplifies data collection in the field. Field technicians, even those without extensive GIS knowledge, can easily input data using predefined forms.

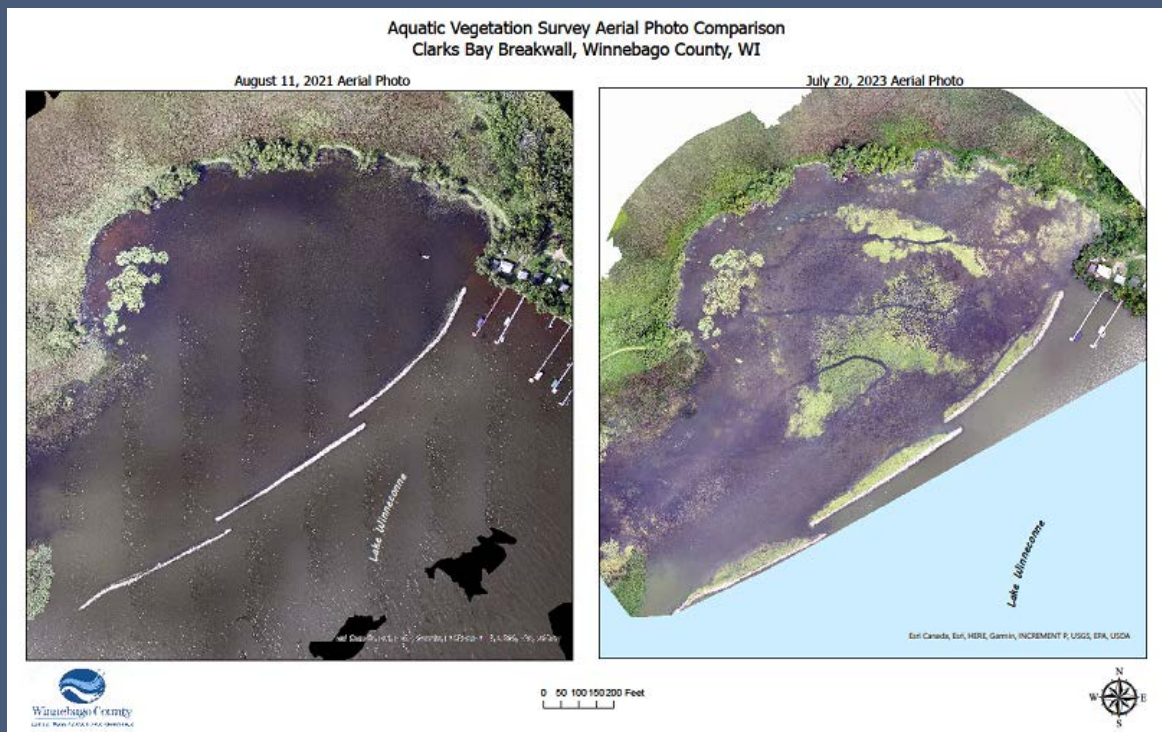


Once data has been collected (photo to right), maps are created to show the change over time by using spatial analysis to create "heat" or density maps that display the increase of vegetation behind the breakwalls. Similarly, the aerial photos created with the drone are used to compare vegetative response. See examples on the next page.





Above: GIS map of Clark's Bay comparing 2019 and 2023. Dark green indicates higher vegetation density. Below: aerial drone photography of Clark's Bay comparing 2021 and 2023.



The integration of GIS, mobile apps, and drone photography significantly enhance the efficiency and effectiveness of monitoring aquatic environmental conditions. This combination provides a powerful toolkit for LWCD staff to create and provide critical information for the conservation and sustainable management of aquatic ecosystems. As technology continues to advance, the integration of GIS and data collection tools like Survey123 and drones will play an increasingly vital role in our work.



Demo Farms Showcasing Soil Health

The Winnebago County LWCD enjoyed being part of the 5th year of the Upper Fox–Wolf Demonstration Farm Network (UFW DFN). This Network is a collaboration of 9 County LWCDs, the Green Lake Association, and the Natural Resource Conservation Service in the Upper Fox River and Wolf River Watersheds. The UFW DFN is funded by the Great Lakes Restoration Initiative. **Currently the UFW DFN is made up of 10 farms, with 2 located in Winnebago County.** The Demonstration Farms represent a wide range of farm types that are working together to share the knowledge learned on their farms by hosting educational field days for other farmers and the public. These farmers test and demonstrate conservation practices to reduce nonpoint source pollution entering the Great Lakes Basin. This shared knowledge helps others implement soil health practices, such as no-till and cover crops.

In 2023, a new agreement was signed which provided funding for new farmers to join the Demonstration Network and added Waushara County as a partner. **4 new farmers joined the UFW DFN, including Jim Luedtke from Dreamhaven Cattle Farm located on the border of Winnebago and Outagamie Counties.** Jim is currently working closely with the Winnebago County LWCD to form a Producer-Led Watershed Group. He will be a great addition to the UFW DFN. Similar to existing Demonstration Farmers, these new farmers will be conducting and sharing the effectiveness and adaptability of conservation and soil health practices.



For more information on the UFW DFN visit the website (UFWDemoFarms.org), follow the UFW DFN on Facebook (facebook.com/FoxWolfDemo), or attend a field day event in 2024!

Making Progress with the Soil Health Challenge (SHC)

The Winnebago County LWCD currently has 3 farms participating in the Soil Health Challenge (SHC). The SHC is a 6 year program funded through the Winnebago County Water Quality Improvement Program (WQIP). The SHC is designed to reward participants willing to work with the LWCD by committing a portion of their cropland to soil health principles. These principles include no-till or strip-till planting and the use of diverse cover crops to increase soil organic matter and soil microbial activity. These practices will lead to reduced soil erosion, improved water infiltration, and increased carbon sequestering. All participants in this program share progress, challenges, and changes they have made through field days, publications, and discussions with other farmers.

Weather can always add challenges for farmers and the fall of 2023 was not any different. Wet conditions made it a bit challenging to harvest and get cover crops planted. The SHC farmers did a great job of finding different ways to get their cover crops planted.

A 4th farmer was signed up at the end of 2023 to join this group and the LWCD has a goal to sign 2 more farmers for the SHC in 2024. The LWCD is also looking forward to multiple field days in 2024 to share what the current participants learned with other farmers.





Farmland Preservation in the town of Nepeuskun

The Wisconsin Farmland Preservation Program (FPP) provides an income tax credit to Wisconsin farmers in exchange for keeping land in agricultural use and maintaining compliance with the State Agricultural Performance Standards (NR151). **In 2023 the tax credit rate changed from \$7.50 per acre to \$ 10.00 per acre. The Town of Nepeuskun is the only township remaining in FPP, which allows participants in Nepeuskun to claim the FPP tax credit if they are deemed in compliance by the Winnebago County LWCD. In 2023 there were 34 participants with 3782 acres.** The Winnebago County LWCD will continue to assist new and current participants to maintain compliance with the State Agricultural Performance Standards (NR151). Once a farm has become compliant with the State Agricultural Performance Standards (NR151), it must remain in compliance.

Nutrient Management

Right Source, Right Rate, Right Time, Right Place

A Nutrient Management Plan (NMP) is an annual plan that helps farmers make the best use of their manure and fertilizer while also protecting the soil from erosion and improving water quality. A NMP first begins with soil samples that are sent to a lab and analyzed to determine the amount of available nutrients in the soil. The results help the farmer determine their fertilizer needs on a field-by-field basis. The Snap Plus software is used to calculate potential soil and phosphorus losses. The farmer can change their tillage system or crop rotation for less soil loss. Starting an NMP is a proactive stance towards improving, protecting, and conserving cropland. The NMP assists farmers in slowing erosion and conserving the soil while also fertilizing where needed to add the nutrients necessary for crop growth. A NMP is not only for the present but also for the future.

LWCD staff held many one-on-one educational sessions to assist farmers in the process of developing and utilizing their NMP including the required steps to write a NMP, working with the soil test results, understanding the soil erosion factor of their soil, and learning how to improve the phosphorus index within their fields while maintaining yield.

In 2019, approximately 38% of Wisconsin's 9 million acres of farmland had NMPs. In Winnebago County, the total acreage of land with a NMP was 64,887 acres. **In 2023, 338 new acres have been contracted to receive state-funded cost-sharing to write a NMP. Currently, 55% of Winnebago County farmland has a NMP.** This illustrates the priority the LWCD has placed on this practice and the impact of the State Agricultural Performance Standards on agricultural producers within Winnebago County.

Information & Education (I&E)

Outreach in the Community

Winnebago County is fortunate to have a large amount of surface and ground water available to its citizens. One of the main goals of the Winnebago County LWCD is to protect and improve these important water resources that citizens rely on to provide drinking water, recreational opportunities, and habitat for a large variety of wildlife. The LWCD staff engage the public through a variety of educational opportunities to inform them about the impact they have on these resources and changes that individuals can make in their day to day activities to improve water quality. Community outreach and education is also utilized to inform landowners and producers about water resource concerns and the types of assistance the LWCD may be able to provide for installation of BMPs to address these concerns.

Conservation Field Day

Winneconne 4th Grade Students



It is important to educate all different age groups and one of the most important age groups are children. Our Department works with the Winneconne Community School District to put together an annual education event for fourth grade students at the Norbert Rich School Forest. Our staff teamed together with the Department of Natural Resources and Pheasants Forever to provide an educational event for students which focused on Forestry, Soil Health, Wildlife Habitat, and Water Quality. These stations offer hands-on experiences that educate the youth on vital areas of the environment, the problems that are occurring, and solutions to correct these problems along with information about what the students can do to help protect and improve their local environment.

Career Day

Winneconne 8th Grade Students

LWCD Staff participated in a Career Day for Winneconne 8th grade students at the Norbert Rich School Forest. These events give students an understanding of the different career paths that are available to them so they can focus their studies to their career goals. Staff also participated in a spring and summer tour for Fox Valley Technical College students. These tours show college students the practices that our department works with to protect and improve water quality, what our jobs entail, and the challenges and successes that come with the job. This tour educates the students and also gives them a glimpse to see if this might be their career path.





Sharing Innovation & Opportunities

With Farmers & Landowners

With the increased push for soil health, a large portion of our I & E efforts in 2023 was focused on educating farmers and landowners on the benefits, methods, and funding options for the implementation of soil health practices. Various field days, roundtable meetings, presentations, and articles and reports were written to promote programs and educate farmers. LWCD staff also worked one on one with landowners throughout the county. All of these meetings are extremely important, whether it's visiting with a landowner to discuss an erosion problem, planning a wetland restoration project, or helping a farmer with a nutrient management plan. The LWCD also continues to grow a larger social media presence via contributions through Facebook, published articles, newsletters, and the department website.

Educational Displays

In The Community

The Department also presented at the Wisconsin Woodland Owners Association Winter Conference on the importance of wetlands and the best management practices associated with wetland restoration. The LWCD also set up staffed and unstaffed displays at various events. These displays allow us to provide information to the community that we might not normally interact with. Displays were presented at the Winnebago County Fair, the WPS Farm Show, the James P. Coughlin Building, and the Grilled Cheese on the Farm event.



Community Involvement

Steering Teams & Work Groups

Beyond the above listed I & E activities, the Department continues to participate in various other activities mentioned in different articles in this annual report as well as participating on steering teams and work groups. Our department continues to be receptive to new opportunities to present to the community and are looking forward to many more I & E opportunities in 2024.



Conservation Poster Contest



Winnebago County Land & Water – Conservation Poster Contest 2024
“May The Forest Be With You Always“



Each year, Winnebago County participates in the National Association of Conservation Districts (NACD) Poster Contest. The Conservation Poster Contest is open to kindergarten through 12th-grade students. Students compete at county and area competitions with the winning posters moving on to compete at the State Competition in March at the WI Land+Water's Annual Conference. The first-place posters from the state competition will represent Wisconsin at the National Association of Conservation Districts' annual meeting.

52 posters were submitted to the County Contest.

The Winnebago County Land and Water Conservation Department would like to extend our THANKS to all the students that participated in this year's contest with a big CONGRATULATIONS to all the winners! This poster contest would not be possible without the many extremely talented students and dedicated teachers & parents who promoted the contest and assisted their students. This year's theme was “May The Forest Be With You Always.”





Tree Planting

Supplies & Equipment

Annually, the Winnebago County LWCD distributes trees through the Wisconsin Department of Natural Resources (WDNR) Tree Program. **In 2023, 35 landowners purchased trees and shrubs; 10,400 trees were planted by landowners in Winnebago County and 12,400 trees were planted by landowners outside of Winnebago County.** The trees come from the WDNR's State Nursery(s) and arrive in mid to late April.

Landowners typically purchase the trees and shrubs for installing riparian buffers, creating a wildlife enhancement area, or for tree production. Often, landowners purchase the trees as part of an incentive program which may include the Conservation Reserve Program, Conservation Reserve Enhancement Program, or Wisconsin's Managed Forest Law.



As part of the tree distribution day, the LWCD offers supplies and equipment for landowners to ensure the growth of a healthy tree. In 2023, the department sold **93 bags of root gel, 3,250 fertilizer tablets, and 110 four-foot tree shelters.** Another service the LWCD offers is tree planting equipment such as planters that are pulled by a tractor and planting bars for hand planting trees. **In 2023, 5 landowners took advantage of our tree planter rental service and planted 11,400 trees. 2 landowners rented hand tree planting bars and 8 landowners purchased planting bars.**

All tree planting supplies and equipment are available year round for purchase and/or rental.

Conservation Benefits of Manure Storage

In the realm of environmental conservation, manure storages may not be the first thing that comes to people's minds. However, these simple structures play a crucial role in nutrient management, waste management, and preventing water contamination.



Photo: 10 million gallon Pipping Structure installed in 2023 for Manure Storage in Winnebago County

While manure is often associated with unpleasant odors and environmental concerns, well-designed manure storages are effective tools for mitigating these issues. The Land and Water Conservation Department (LWCD) has helped farmers with the design and construction oversight of these storages and in some cases, have assisted with finding cost-share opportunities.

One of the primary benefits of manure storages lies in their ability to capture and hold the nutrients from the manure. Livestock manure is rich in nitrogen, phosphorous, and potassium, which are all vital for plant growth. Instead of farmers cleaning their barns and animal lots and then immediately having to spread the manure, farmers can store the manure in their storage and apply it to the fields according to a Nutrient Management Plan (NMP) as an organic fertilizer. This process reduces the amount of synthetic fertilizers used and enhances soil health and structure.

Farms without any manure storage must deal with the manure that comes from cleaning out the barns and animal lots right away. This can lead to spreading manure in adverse conditions, such as in winter when the ground is frozen or right before a rain event. Both

of those scenarios can lead to manure running off the field it was spread on, or contaminating the surface water and groundwater. Having storage can give the farm a place to go with the manure during these poor spreading conditions. Waste storages are built to hold month's to one year's worth of manure and can vary in size depending on the size of the farm.

The LWCD permits the manure storages under Winnebago County's Livestock Waste Management Ordinance (LWMO). This is to ensure the safe handling and application of livestock waste as well as regulating the location, design, construction, and maintenance of these facilities. This ordinance also regulates the abandonment of manure storages. Once farmers no longer need/use their storages, the LWCD assists with the abandonment process to ensure safety and confirm there is no water pollution.

Manure storages may not seem like conservation tool, but their role in sustainable agriculture and waste management cannot be overlooked. When implemented responsibly, these structures can help farms with nutrient and waste management. The department encourages expanding farms to reach out to our department for assistance with the permit process, design and construction of storages.



Livestock Waste Management Winnebago County Ordinance

Winnebago County has had a Livestock Waste Management Ordinance (LWMO) since 1985. The LWMO is currently Chapter 13 of the General Code (<https://www.co.winnebago.wi.us/GeneralCode>). It has been updated several times over the years to reflect the changes made by the State and Federal government.

The main goals of the LWMO is to prevent water pollution, protect the health and safety of residents, prevent the spread of disease, and promote the prosperity and general welfare of the citizens of Winnebago County.

What does a LWMO do?

1. Regulates and permits where manure storage and transfer systems are located and verifies they are built to protect the environment.
2. Permits livestock facilities and livestock lots to maintain a safe distance from surface water and wetlands to prevent runoff pollution.
3. Regulates and permits the abandonment/closure of a waste storage facility and verifies environmental safety.
4. Regulates the distance to wells from livestock waste to protect groundwater.
5. Follows the Agriculture Performance Standards Livestock Waste Prohibitions (NR151).
6. Follows the Manure Spreading rules for all livestock waste detailed in Wisconsin NRCS Code 590 to protect water quality.

What is considered "livestock" in Winnebago County?

"Livestock" means animals that are kept for human use or raised for sale or profit, including but not limited to bovine animals, equine animals, goats, poultry, sheep, swine, farm-raised deer and elk, farm-raised game birds, camelids (llamas) and ratites (emu).

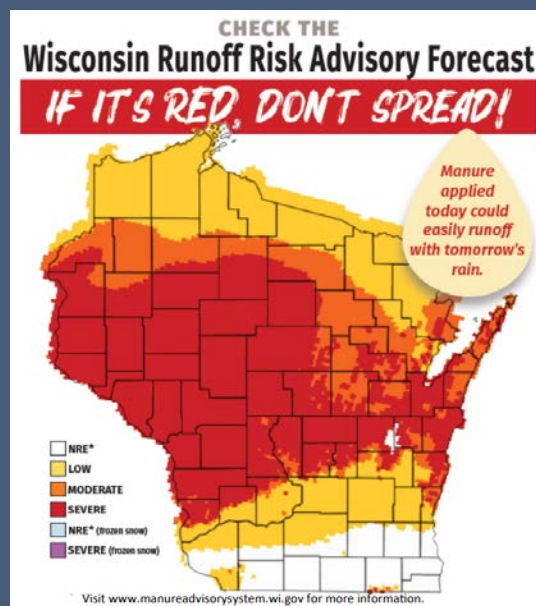
What is Shoreland Zoning and a Water Quality Management Area?

"Shoreland Zoning" and "Water Quality Management Area" mean any of the following:

1. The area within 1,000 feet from the ordinary high-water mark of a lake, pond, or flowage.
2. The area within 300 feet from the ordinary high-water mark of a stream or river.
3. A site that is susceptible to groundwater contamination or that has the potential to be a direct conduit for contamination to reach groundwater.

19 LWMO Permits were issued in 2023.

- The LWCD continues to do yearly reviews throughout the County. 15 reviews were conducted in 2023, resulting in 8 permits for livestock facilities.
- An additional 11 landowners contacted the LWCD directly and were issued permits for 9 livestock facilities and 2 manure storage systems.





Winnebago County

Land & Water Conservation Department



www.co.winnebago.wi.us/lwcd



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Winnebago Land & Water Conservation



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