2021 ANNUAL REPORT

Winnebago County

Land & Water Conservation Department

OUR MISSION

The Winnebago County Land and Water Conservation Department is dedicated to providing competent, professional services in the planning, design, and implementation of programs and projects that protect, restore and sustain the natural resources of Winnebago County.

INSIDE THIS ISSUE

Terrell's Island & Samer's Bay Project

By Chad Casper, Director

The 15,000 ft. Terrell's Island Breakwall was constructed by the Wisconsin Dept. of Natural Resources (WDNR) in the late 1990s and enclosed approximately 600 acres of water with the intention of restoring lost wetland and aquatic habitat and improving water quality. The years following construction, the enclosed area showed positive improvements in water quality and habitat. Water clarity greatly increased and desirable aquatic vegetation as well as fish species flourished. Unfortunately, in the late 2000s, conditions within the breakwall began to decline. An excess amount of nutrients from large groupings of birds and a lack of water circulation due to only one opening caused a rapid decline in water quality, periods of low dissolved oxygen, and a loss of aquatic plants.

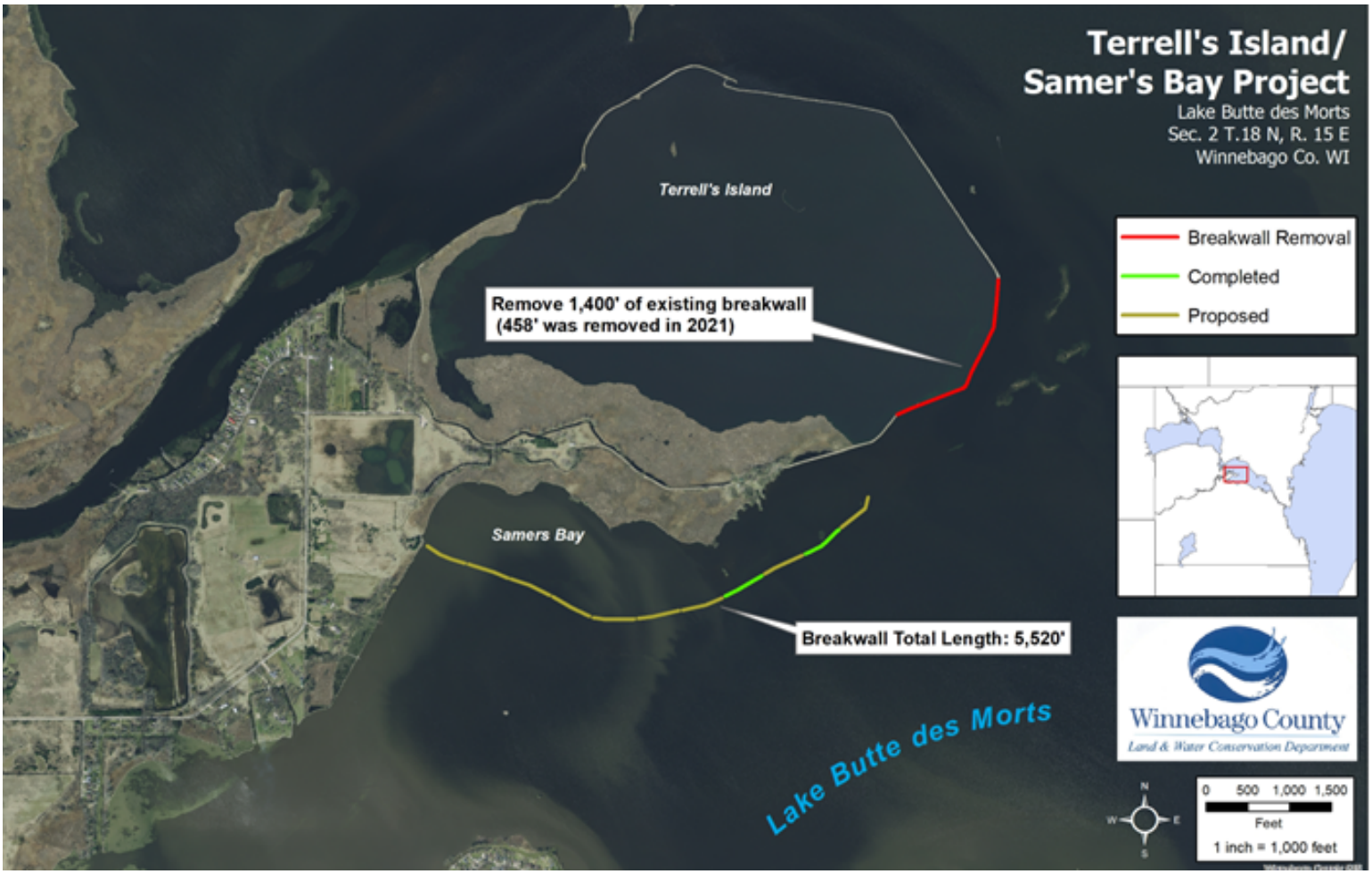
In order to address the current issues present at Terrell's Island, the WDNR, Winnebago County Land & Water Conservation Dept. (LWCD), Fox-Wolf Watershed Alliance and the Butte des Morts Conservation Club partnered on a large-scale restoration project to improve water quality and habitat in Lake Butte des Morts. The project team secured approximately $1 million to fund the project from the Natural Resource Damage Assessment (NRDA) Grant Program, Great Lakes Fish and Wildlife Restoration Act, Wisconsin Habitat Partnership Fund, Butte des Morts Conservation Club, WDNR Lake Protection Grant Program and Winnebago County LWCD.

1,000 Feet of Breakwall Installed on the Ice

458 Feet of Breakwall Removed in 2021

The Winnebago County LWCD designed the project with input from the public and all the project partners. The project was highly publicized through press releases, local postings, social media, newsletters, websites and more. Overall, project partners received positive feedback with the acknowledgement that water quality improvements and increased recreational opportunities for fishing, hunting, kayaking and wildlife viewing far outweighed the changes being made to the existing breakwall.

The project design includes creating a 1,400-foot opening on the east side of the existing breakwall to allow for substantial water exchange between the area inside of the Terrell's Island Breakwall and Lake Butte des Morts. This will help create better water quality and reestablish aquatic plants resulting in more use by desirable fish and wildlife species within the 569-acre Terrell's Island Habitat Restoration Area. Since 1941, the damage done by high water, waves and ice has resulted in an average lateral recession of around 8 ft. of the wetland per year in Samer's Bay. To protect the wetlands, the rock riprap material removed from the existing Terrell's Island breakwall to create the 1,400 opening is being re-used to build a large portion of a new Samer's Bay breakwall. The Samer's Bay breakwall will total 5,870 ft. in length (5,520 ft. of breakwall with 35-ft. openings every 500 ft.) and will restore 111 acres of wetland habitat and prevent further wetland losses.

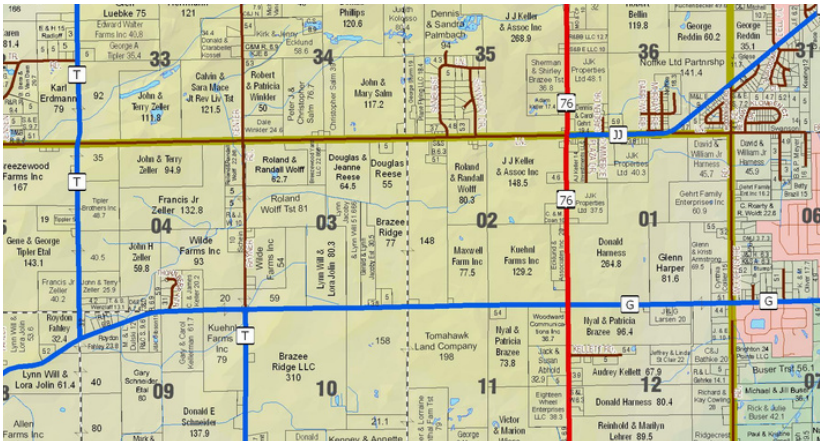


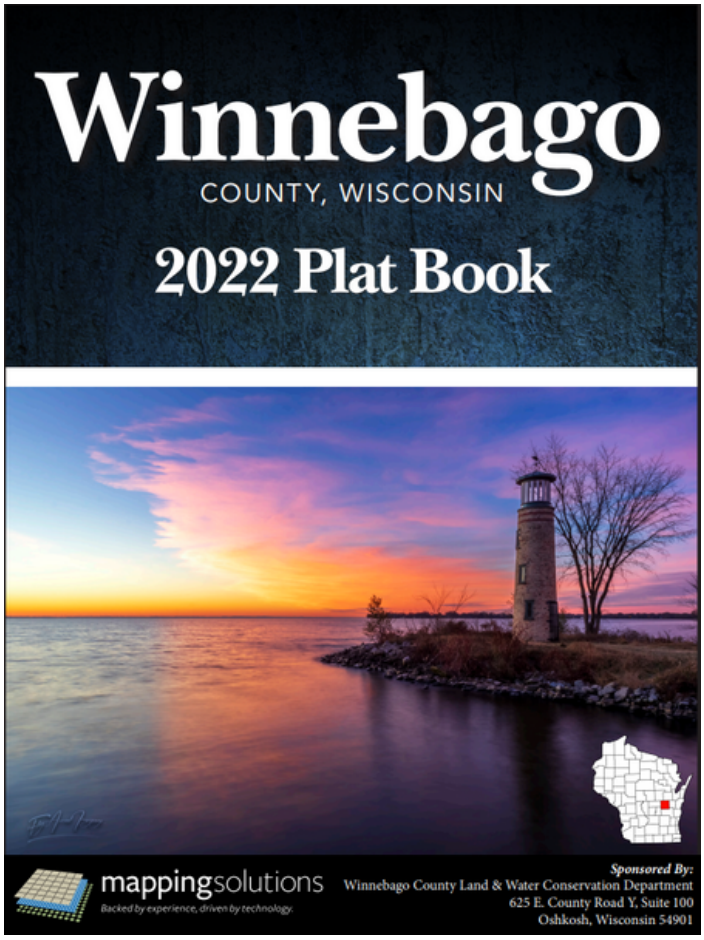
Construction began on Phase 1 of the Terrell's Island and Samer's Bay Restoration Project in February of 2021. The property owner, Butte des Morts Conservation Club, hired two local contractors to complete the work. The contractors had a short window of time in the winter of 2021 for construction due to adequate ice thickness finally occurring later in the season. Despite the less than ideal conditions, 458 feet of the 1,400 feet was removed from the Terrell's Island breakwall and two full sections of the Samer's Breakwall were completed. The project is scheduled to continue construction in the winter of 2022 pending adequate ice conditions.

New Winnebago County Plat Book

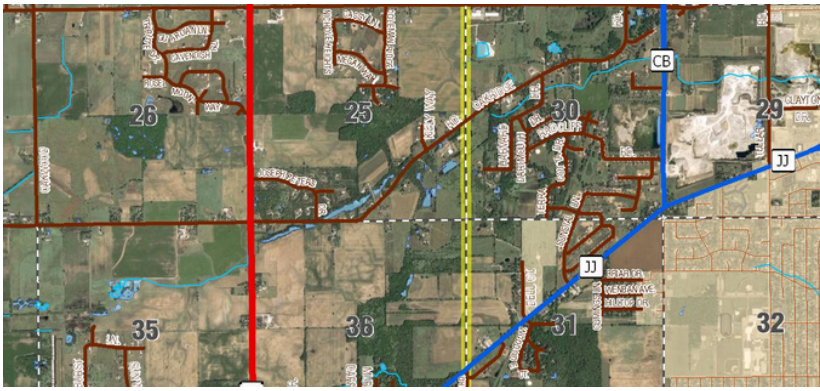
By Andy Maracini, GIS Specialist

Winnebago County will be publishing a new plat book in the spring of 2022. The new book will be an update from the last book that was published in 2017. The book will be available in hard-copy and electronic format and can be purchased online or in person at the Land & Water Conservation Department office or the County Clerk's office. This year the County chose to contract with a specialty map publishing company to complete the book. This approach offered numerous advantages as opposed to producing the book in-house. The reality of online mapping tools such as google maps and even more importantly, the County's own Tax Parcel web maps, have dramatically reduced the demand for hard-copy plat books.





The need for publishing hundreds of books is no longer a driving need. We have seen this over the past 20 years as our inventory of old plat books continues to go unsold and takes up valuable space. By contracting with a publisher, we now have the ability to order smaller amounts of books, offer electronic versions and at the same time reduce labor costs. Our hope is that by moving to a new mechanism for plat book development and publishing, new books will be published more frequently and with more options giving the user the most accurate information in their desired form of media. Please check the Winnebago County website for more information on the new book in the spring and for the most accurate land information mapping anytime visit online at: https://www.co.winnebago.wi.us/planning-and-zoning/gis/ .



The Soil Health Challenge

By Sheila Smith, Agronomist

The Soil Health Challenge (SHC) is a program sponsored by the Winnebago County Water Quality Improvement Program (WQIP).

The SHC is designed to reward participants that are willing to work with the Winnebago County Land and Water Conservation Department (LWCD) by committing a portion of their cropland to soil health principles for six years. These principles mainly include no-till planting and the use of diverse cover crops to increase soil organic matter and microbial activity that will lead to reduced soil erosion, improved water infiltration, increased carbon sequestering, and more wildlife and pollinator habitat. It will also result in healthier crops, healthier soil, and potentially better yields. The main goal of the SHC is for the farmer to educate other local producers on the methods that were used, the challenges that were faced, and the benefits that they were finding along the way.

Early Season Rye Growing in Last Years Corn

In 2021, the Winnebago County LWCD signed contracts with two new farmers, Dave Zwicky and Todd Messerschmidt, who will begin this spring with no-till planting of their crops. Our county is very fortunate to have skilled farmers who are willing to share their knowledge and experiences with the new SHC participants and encourage their success.

Mid Season Soybeans Growing in Roller Crimped Rye

Lake Winneconne Offshore Breakwall

By Chad Casper, Director

The Stabenow Wetland is located in Winnebago County on the east shore of Lake Winneconne. Over 1,700 feet of wetland frontage was currently unprotected and experiencing a high rate of erosion threatening the remaining wetlands. Since 1941, the damage done by high water, waves and ice has resulted in an average lateral recession of around 2.5 ft. of wetland per year. This shoreline recession releases large amounts of sediment and nutrients into Lake Winneconne and results in increased turbidity and a loss of fish and wildlife habitat.

In order to address the wetland loss and erosion concerns, the Winnebago County Land & Water Conservation Dept (LWCD) worked with Allen & Valerie Stabenow on an offshore breakwall project. Three offshore breakwalls totalling 1,220 ft. were designed by the LWCD to protect the wetland frontage from future losses and to reestablish wetlands that have been lost over time. In the winter of 2021, ice conditions allowed for a portion of the offshore breakwall project to be installed. Approximately 50% of the project (626 ft.) was completed before the ice conditions deteriorated and construction had to stop.

The Winnebago County LWCD plans to document any change in species composition and area of plant coverage at the Stabenow breakwall project post construction. Secchi disk readings will be done to document and monitor the water clarity. The Winnebago County LWCD will also fly a UAV (Unmanned Aerial Vehicle) and plans to document the plant response by capturing video and pictures behind the Stabenow breakwall project. The WDNR will also do fisheries monitoring surveys to evaluate fish abundance and population metrics.

This project was funded by the Winnebago County Water Quality Improvement Program, Natural Resource Damage Assessment (NRDA), North American Wetlands Conservation Act (NAWCA), Lake Poygan Sportsman's Club and Allen & Valerie Stabenow.

If Mother Nature cooperates with cold temperatures and enough ice to support the construction equipment, the remainder of the project is planned to be completed winter of 2022.

Winnebago County
Land & Water Conservation Department

LAKE POYGAN SPORTSMEN'S CLUB

FOX RIVER TRUSTEE COUNCIL

North American Wetlands Conservation Act
NAWCA

Breakwall Constructed on the Ice

Final Constructed Breakwall on the Ice

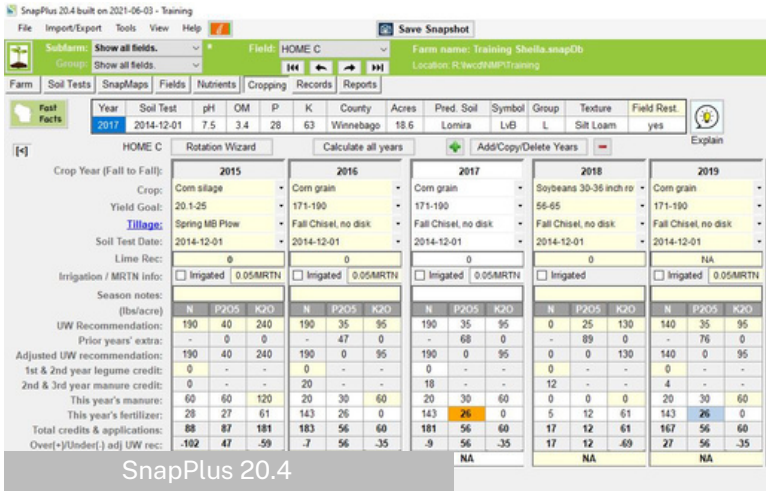
Breakwall One Week After Construction

Nutrient Management Planning

By Sheila Smith, Agronomist

A nutrient management plan (NMP) is an annual plan which helps farmers make the best use of their manure and fertilizer while also protecting the soil from erosion and improving our water quality. A NMP first begins with soil samples. These soil samples 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. SnapPlus software is used to calculate potential soil and phosphorus losses. The farmer can change his tillage system or crop rotation to have less soil loss. Starting a NMP is a proactive stance towards improving, protecting and conserving their cropland. The farmer is slowing erosion and conserving the soil while also fertilizing where needed to keep the soil in place with the nutrients necessary for crop growth. A NMP is not only for the present, but also for the future.

Farmer training classes for nutrient management planning were not held this year due to Covid. Many one on one educational sessions were held to help assist in the learning process. Classes should resume in the winter of 2023. These classes give farmers a better understanding of the required steps to write a Nutrient Management Plan which include working with soil test results, understanding the soil erosion factor of their soil and learning how to improve the phosphorus index within their fields.


SnapPlus 20.4

In Winnebago County the total acreage of land with a NMP was 64,184 acres. There are 1,115 new acres that have been contracted to receive state funded cost-sharing to write a NMP for 2021. Currently 54% of Winnebago County farmland has a NMP. This illustrates the priority the Land & Water Conservation Department has placed on this practice and the impact of the State Agricultural Performance Standards on ag producers within Winnebago County.

Grant Awarded to Implement Soil Health Conservation Systems in the Rat River Watershed

By Chad Casper, Director

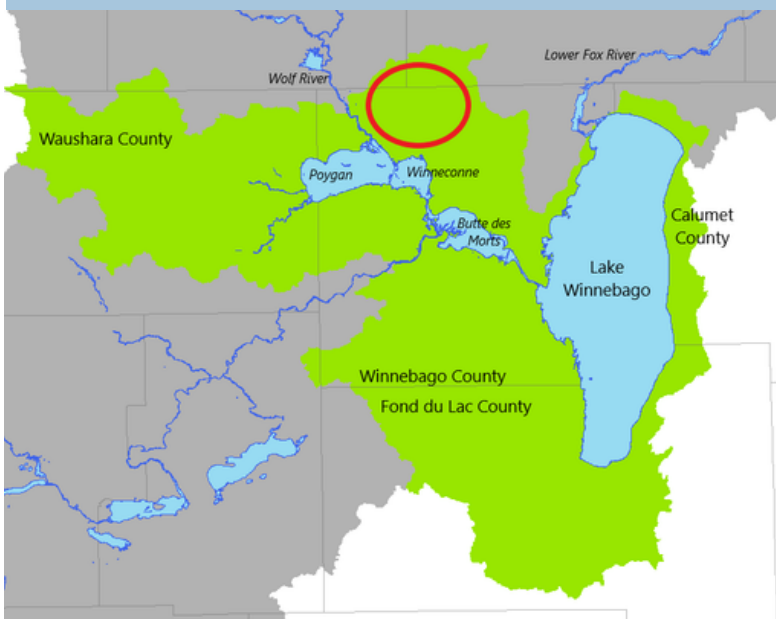
The Winnebago System drains over 5,900 square miles of land from the Upper Fox and Wolf River Basins. This surface water runoff carries with it large amounts of phosphorus and sediment pollution, which ultimately ends up in the lakes. Phosphorus and sediment pollution negatively impacts the water quality of the lakes and rivers in the Winnebago System and has resulted in poor water clarity, degraded habitat and harmful algal blooms. These impairments can reduce recreational enjoyment and can potentially limit economic growth from tourism dollars within the area.

The Rat River Watershed in Winnebago County is at the top of the priority list for targeted efforts to reduce phosphorus pollution from agricultural sources in the Winnebago Waterways Lake Management Plan (LMP). The LMP serves as a strategy for region-wide multi-partner efforts to restore the health of the Winnebago System.

To help address these issues, the Winnebago County Land and Water Conservation Department (LWCD) partnered with the Fox-Wolf Watershed Alliance (FWWA) and received a grant award for approximately $200,000 from the Great Lakes Commission (GLC). The funding is through the GLC's Great Lakes Sediment and Nutrient Reduction Program.

Beginning in 2022, the Winnebago County LWCD, with assistance from FWWA, will be working with 3 Winnebago County farmers to overcome hurdles of installing cover crops, no-till, and low-disturbance manure injection for 3-years on 271 acres of cropland.

Location of Rat River Watershed



The ultimate goal of this grant is to increase adoption of these conservation practices by other farmers through long term on-farm demonstrations and other outreach activities. These efforts will help showcase the benefits of soil health practices to other farmers within the region. When these practices have been consistently implemented multiple years in a row, farmers have found significant benefits to their business's bottom line and the health of their soil, while also helping to protect local water quality.

Low Disturbance Manure Injection

TIME FRAME: 2022 to 2025

AWARDED: $199,366

3 FARMER CHAMPIONS

271 SOIL HEALTH ACRES

Winnebago County LWCD, NRCS & FSA Administer $1,342,075 in Conservation Program Funding

By Chad Casper, Director

In 2021, the Winnebago County Land and Water Conservation Department (LWCD) was awarded $248,226 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 $87,500 of cost-share funds provided to county constituents through the Winnebago County Water Quality Improvement Program. The LWCD carried over $229,795 of state and local contracted cost-share funds from 2020 to be utilized in 2021. The LWCD also administered $159,295 in other grant funding for conservation work in the County.

The USDA Natural Resource Conservation Service (NRCS) provided $208,813 for the installation of Best Management Practices (BMPs) contracted through the Environmental Quality Incentives Program (EQIP) and $141,001 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 $223,265 in annual payments for 158 Conservation Reserve Program (CRP) contracts that totaled 2,434 acres of enrolled land and $44,180 in annual payments for 59 Conservation Reserve Enhancement Program (CREP) contracts that totaled 385 acres of enrolled land.

These conservation program funds, totaling $1,342,075 are utilized to cost-share and support the installation of BMPs and reward conservation 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.

Annual Tree Sale

By Mary Koch, Administrative Associate

In 2021, 21,425 trees and shrubs were planted by landowners in Winnebago County, 575 trees were distributed to schools for handing out to students as part of the Arbor Day Program and 12,000 trees were planted by landowners outside of Winnebago County. Annually, the Winnebago County Land & Water Conservation Dept. (LWCD) distributes the trees through the Wisconsin Department of Natural Resources (WDNR) Tree Program. The trees mainly come from the WDNR's Wilson Nursery in Boscobel and arrive in mid to late April.

Tree Planter for Rent

As part of the tree distribution day, the LWCD offers many materials and tools for landowners to ensure the growth of a healthy tree . In 2021, the department sold 153 bags of root gel, 2,650 fertilizer tablets, and 296 four foot tree shelters. Another service the LWCD offers, is the rental of tree planters. The planters are used mostly by landowners with large tree amounts. In 2021, eight landowners took advantage of our tree planter rental service and planted 15,300 trees. All materials and equipment listed above are available year round for purchase and/or rental.

Landowners may 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.

Multi-discharger Phosphorus Variance

By Melanie Leet, Resource Conservationist

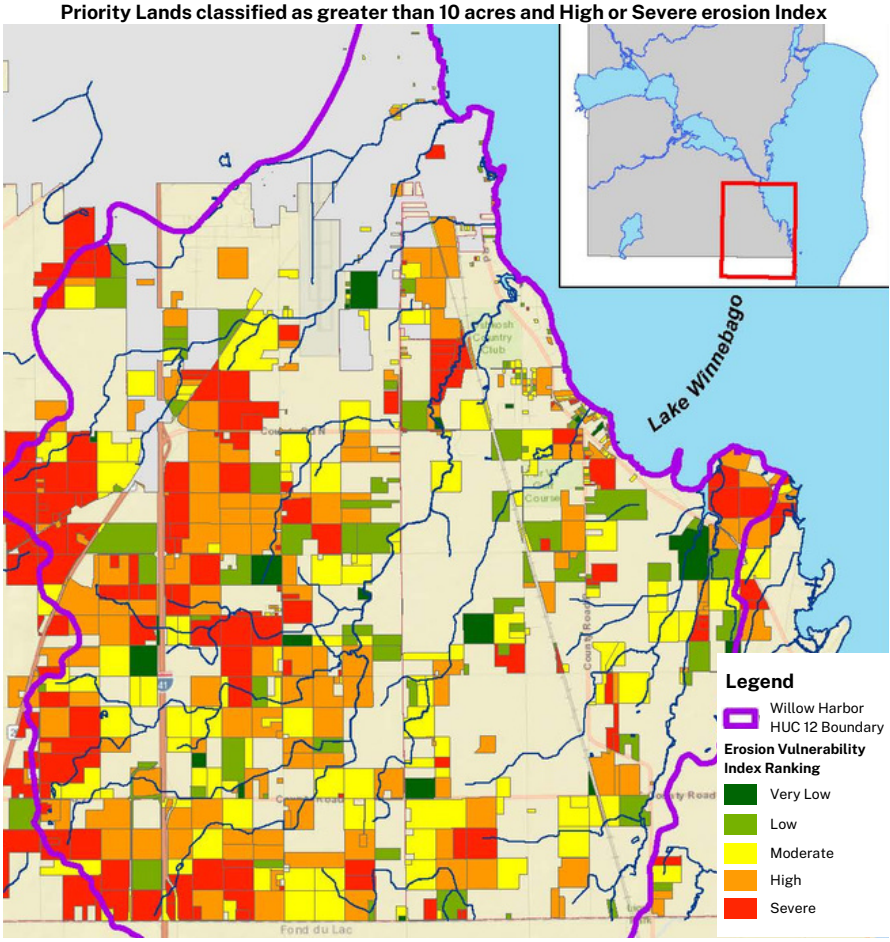
A multi-discharger variance (MDV) is a time extension for point sources facing restrictive phosphorus limits to comply with reduction requirements. A point source is responsible for evaluating its compliance options, such as facility upgrades, water quality trading, adaptive management, or potentially a phosphorus MDV. If a facility meets the eligibility requirements and requests the MDV, they may enter into an agreement through the DNR to offset their phosphorus loading above the target value through different options. One of these options is to make payments to county Land and Water Conservation Departments (LWCD) of $50 per pound times the number of pounds of phosphorus their discharge exceeds their target value. Counties can then request a share of the funds from that point source. The funds are divided based on the watershed area in each county.

The Winnebago County LWCD first applied for these available funds in 2019. The City of Fond du Lac was the point source which made the Lake Winnebago HUC 8 Watershed area eligible for MDV Funding. The Winnebago County LWCD was awarded $76,114.05 to date. These funds may be used for best management practices and staffing costs.

Out-of-Bank Flow

Regraded Streambank

EVAAL Model Output, Winnebago County, WI
Frontal Lake Winnebago (HUC 12) Willow Harbor Watershed
Priority Lands classified as greater than 10 acres and High or Severe erosion Index



As soon as funding was allocated to the County, the planning process began through modeling. EVAAL (Erosion Vulnerability Assessment for Agricultural Lands) modeling was run on the watershed areas within Winnebago County. This model was designed to quickly identify areas vulnerable to erosion and therefore, more likely to contribute nutrient loading, such as phosphorus, to surface water. The erosion potential is then ranked to help prioritize and focus efforts for projects.

Continue on page 11.

Due to wet weather, Covid-19, permitting, and other unexpected delays, the construction projects and outreach for the 2019 MDV funds were mostly deferred until 2021. Two projects were identified, designed, and ready for construction by 2021, also, a renewed focus was placed on allocating the remainder of the funds and the prioritized areas identified by the EVAAL modeling were contacted through mailings.

In the spring of 2021, 103 letters were sent out and multiple new projects were identified. Some of these identified projects were allocated with MDV funding, however, additional projects were identified that will be funded through different sources.

In fall of 2021, construction began on 4 different projects. In total, 4,006 feet of streambank protection, 2 stream crossings, 3.3 acres of waterway systems, and a 0.5 acre critical area stabilization were constructed. These projects will reduce phosphorus loading to surface water by approximately 2,308 pounds per year and will stabilize these areas for many years to come.

Gully Erosion

Constructed Grassed Waterway

Farmland Preservation Program

By Sheila Smith, Agronomist

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). The intent of the program is to preserve farmland from development and urban sprawl.

The Town of Nepeuskun is the only township to move forward in 2021 with the changes to their FPP Overlay in order to maintain FPP in the future. Their Farmland preservation plan was certified by Department of Agriculture, Trade and Consumer Protection (DATCP) in December 2021. This allows new participants to claim the 2021 FPP tax credit if they are deemed in compliance by the Land and Water Conservation Department (LWCD).

The Winnebago County LWCD will continue to assist current and previous participants to maintain compliance with the State Agricultural Performance Standards. Once a farm has become compliant with the State Agricultural Performance Standards (NR151), they must remain in compliance.

Installed Best Management Practices

By Melanie Leet, Resource Conservationist

The Winnebago County Land and Water Conservation Department (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 water quality and groundwater resources throughout Winnebago County. The following table illustrates a summary of the structural BMPs designed and installed in 2021 with and without cost-sharing.

Best Management Practice (BMP)	Units Installed
Critical Area Stabilization	1 Acre
Rain Gardens	2 Ea.
Riparian Buffer	6.1 Acres
Stream Crossing	2 Ea.
Streambank/Shoreline Protection	7,207 Lin Ft
Waterway Systems	3.8 Acres
Wetland Restoration	7.05 Acres
Well Decommissioning	13 Ea.

Onshore Riprap

Wetland Restoration

Riparian Buffer

Waterway System

Upper Fox-Wolf River Demonstration Network

By Sheila Smith, Agronomist

UPPER FOX-WOLF
Demonstration Farms Network

The Winnebago County Land & Water Conservation Dept. (LWCD), along with seven other counties in the Upper Fox River and Wolf River Watersheds, the Green Lake Association and the Natural Resource Conservation Service, partnered together to form the Upper Fox – Wolf Demonstration Farm Network (UFW DFN). Winnebago County has two participating farms, the Albright Brother's Farm and the Gehrke Family Farm, both in the Township of Rushford. Participating farms implement, demonstrate and educate other local farmers on the effectiveness and adaptability of soil health principles and conservation practices that reduce erosion, sedimentation and pollution, as well as improve the soil.

Jamie Albright

Rick Gehrke

Some of the exciting developments this year include:

Outreach was expanded in many ways: A new website was built (UFWDemoFarms.org), and a Youtube channel was created. A new promotional video created by Dan Hagenow Video Creations can be viewed on the website. UFW DFN can also be located on FaceBook. It's a great way to showcase the farms throughout the UFW DFN.

One planned field day was held in July. Three Field Days on the Fly occurred in August. Two field days demonstrated different types of Low Disturbance Manure Applicators. The third field day demonstrated installing a Harvestable Buffer and showcased the new Esch No-Till drill the UFW DFN purchased.

A previously fall planted rye field was rolled and crimped and soybeans were planted directly into the crimped rye in the spring. By using a roller crimper, the farmer doesn't have to work the field previous to planting and it reduces weed pressure.

UFW DFN also continued to monitor the impacts of the innovative soil health practices our farmers are doing. One project performed soil temperature tests to evaluate how cover crops affect them. These results will be made available to farmers in 2022.

Cover crops were planted on many other fields in the fall after harvest.

During the next few years the Demonstration Farm Network will continue to host field days, meetings, and other public events for these conservation minded farmers to share their experiences with fellow farmers and promote sustainable and profitable farming methods while improving the soil.

Annual Poster Contest

By Mary Koch, Administrative Associate

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 our winners! Our poster contest would not be possible without the many extremely talented students and several dedicated teachers. This year's theme was "Healthy Soil: Healthy Life." There were 60 posters submitted for this year's Conservation Poster Contest. All posters that won first place at the local level went on to the Area Level Competition.

GRADES 4-6

1 Ryanne Lefeber, Butte des Morts Elementary

2 Shayla Litton, Butte des Morts Elementary

3 Sam Kubicki, St. Gabriel Catholic School

GRADES 7-9

1

Abigail McClone, St. Mary Catholic Middle School

2

Breelyn Pauly, St. Mary Catholic Middle School

3

Nicholas Miller, St. Mary Catholic Middle School

Technology Update

By Andy Maracini, GIS Specialist

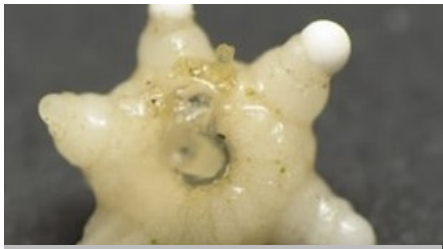
When it comes to technology, we know that advancements occur at a lightning pace. Oftentimes, hardware or software becomes obsolete within 5 years. Our old drone affectionately known as "Blinky" was beginning to show her age. Blinky was purchased in 2018 and it was used on a wide variety of projects, taking photos to document issues, construction progress, and even creating new aerial photos for use in GIS.

As it became apparent that we would no longer be able to replace batteries, and software support was no longer available, plans were made to upgrade to a new model. After research and consulting with other drone pilots, the DJI Phantom 4 Pro was selected. Not only is DJI an industry leader with a reputation for excellent quality hardware and software, it was the same brand as our old drone meaning there would be less of a learning curve for our pilots.

The advancements that happened over the course of 3 years was staggering; battery life doubled from 15 to 30 minutes, new sensors with obstacle avoidance make in-flight collisions almost impossible, a "precise" landing feature has the ability for very accurate landings, it has a much-improved camera for high definition photos and intelligent airspace detection that includes FAA authorizations online in minutes. Two other very important factors were size and cost. Not only was the new model about half the size, it was about 30% less expensive!

Once we took delivery of the new drone, we had the important task of choosing a name! Our newest hire, Haley Lucas submitted "Starry" based on the similarity between the new UAVs' shape and an invasive species plant called Starry Stonewart (see photos). Haley will also be studying to become a new FAA licensed UAV pilot and hopes to earn her wings this spring. The FAA requires any commercial or government use of a drone to have a UAV license. Each licensee must pass an initial exam and subsequent renewals every 2 years.

New DJI drone "Starry"



Starry Stonewort *(Nitellopsis obtusa)*

The UAV will continue to be used to help communicate the important conservation work getting done in Winnebago County. The use of UAVs in land conservation will no doubt continue to advance. Moving drone work into actual engineering and design workflows is a real possibility that is being explored. Exciting developments such as RTK (Real Time Kinetic) drones can effectively do high precision surveys, or using drone-based LIDAR (Light Detection and Ranging) for 3D modeling and surface creation, are two new technologies that are to be monitored for possible implementation in the future.

Clarks Bay Breakwall Monitoring

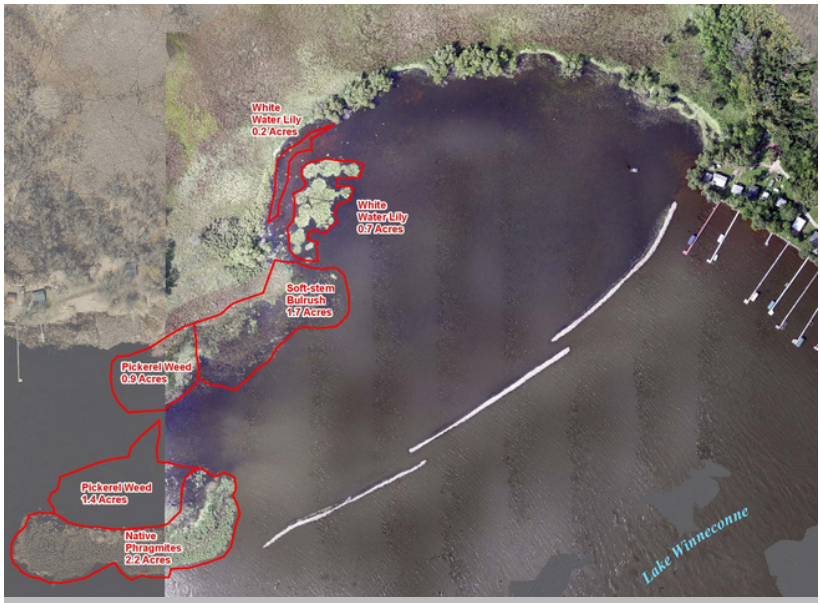
By Haley Lucas, Conservation Technician

The Clark's Bay Wetland is located in Winnebago County on the north shore of Lake Winneconne. Concerns for Clarks Bay arose because damage done by high water, waves and ice were resulting in an average lateral recession of over 1.5 feet of wetland per year. Increased erosion has resulted in increased turbidity and loss of fish and wildlife habitat. During February of 2020, the Clarks Bay Breakwall was installed with the purpose of protecting 2,100 feet of wetland frontage from ice and high intensity wave action.

Haley Lucas & Andy Maracini

In August 2021, the Winnebago County Land & Water Conservation Department conducted emergent and submergent species surveys, water clarity measurements and drone aerial photography to determine the effectiveness of the breakwall structure. The findings from these surveys showed that aquatic plants are growing in greater densities. Secci disk measurements showed that there is greater water clarity behind the breakwall structures, indicating that the wall is effective in reducing wave energy. Drone aerial photography was used to quantify the area of emergent plants and will be used as a baseline to compare against future surveys.

An exciting discovery of the survey was the identification of a new emergent plant species, Sagittaria rigida (Sessile-fruited Arrowhead), a native to the region but rare to find and not previously known to grow in this waterbody. When the plant grows in deeper water (as we found) the leaves are expressed in a slender, lance-linear shape, rather than the traditional arrowhead shape known for the Sagittaria genus. We hope to find more native plants taking root in future surveys. The next monitoring event for Clarks Bay will take place in the summer of 2023.



Emergent Aquatic Plant Populations, Clarks Bay, 2021

Wetland Restoration

By Mike Haase, Conservation Technician

In 2017, planning began on the design of a large wetland restoration project in the Town of Omro. The site was previously marginal farmland that the landowner harvested hay off of a few times a year. The finalized project ended up consisting of two wetland scrape areas with berms and adjacent vegetated buffer areas for extra filtration and stabilization. Additional ponded area can be created by adding a berm to a wetland scrape. The north 2.6 acre wetland has 25 acres of cropland draining into it and the south 2.2 acre wetland has an additional 116 acres of cropland draining into it.

Before

During Construction

Both wetlands were constructed with water control structures through the berms which allow the landowner to control the water elevation in the wetland area. Water levels can be raised to create more edge habitat or they can be lowered for repairs, maintenance if needed, or to plant duck food plots. The north wetland is approximately 2' higher in elevation than the south wetland which allows the water control structure to act as the main spillway and outlet directly into the south wetland. Because of the large drainage area of the south wetland, a rock lined main spillway through the berm was necessary. This will stabilize the outlet and prevent it from eroding. Both wetlands also have vegetated emergency spillways to handle any extra flow from large rain events.

Including the wetlands, berms, and vegetated buffer, the entire project area is 11 acres. This wetland restoration project will act as a filter for the 141 acre drainage area and will remove an estimated 504 tons of soil and 756 pounds of phosphorus each year from the water runoff. Wetland restorations are an incredibly effective conservation practice because of the multifunctional values they provide. They add flood storage to help alleviate flooding, they protect water quality by removing sediment and nutrients from runoff and they also provide habitat for a multitude of wildlife.

Near Completion

Menasha High School Rain Garden

By Haley Lucas, Conservation Technician

The addition of a rain garden to a school landscape adds pollinator habitat, reduces surface runoff and provides education opportunities for students. This is exactly what Heckrodt Wetland Preserve and Menasha School District had in mind when they teamed up to create a rain garden at Menasha High School. The project planning began in 2019 and involved calculating runoff volumes, selecting native plant species and applying for funding. Through grants and cost-sharing, the rain garden was funded by Wild Ones Fox Valley Chapter, Cellcom Green Gifts and Winnebago County Land & Water Conservation Department.

Rain Garden Design


Rain Garden Installation

The project involved students throughout the planning process and especially when it was time to dig out the garden! Installation of the rain garden utilized the efforts of 27 students for about 6 hours. Only native plants were used in the garden and there was special attention to selecting plants that have staggered bloom times to provide color and food sources for pollinators all season long.

The garden was designed to capture water runoff from a nearby roof through an underground pipe that outlets directly into the rain garden. Calculations estimate that, in a one-inch rainfall the rain garden will capture 655 gallons of water. Wisconsin receives an average of 29.9 inches of rain a year, that is potentially 19,000 gallons of water captured per year. By keeping this water in the rain garden, it will help to reduce flooding, prevent the runoff from flushing pollutants from the lawn and parking lots, and will help recharge the groundwater.


Completed Rain Garden

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