Summary of Accomplishments of the Red Cedar River Water Quality Partnership for the End of Year Nine (2024) of the Ten-Year Plan

Authored by the Partnership in 2025

Introduction

In 2015, *A River Runs Through Us: A Water Quality Strategy for the Land and Waters of the Red Cedar River Basin* was approved by the US Environmental Protection Agency and the Wisconsin Department of Natural Resources. The Red Cedar River Water Quality Partnership has been implementing this plan for the past nine years. This report is a brief summary of some of the activities of the Partnership in 2024.

The annual Red Cedar River Conference returned for its 12th year in 2024. Many other activities took place throughout the year, all focused on working to improve the health of soils and the quality of water in the Red Cedar River watershed. While this report touches on some of the projects, accomplishments and events that took place in 2024, it is by no means comprehensive. Many people throughout the watershed continue to change land management practices, install best management practices focused on reducing runoff and generally improve the health and sustainability of soils. Much of this work happens beyond the reach of this Partnership. Such practices combined with others and augmented by many events where learning about such practices is the topic of discussion, are the reasons for continued optimism regarding water quality in the Red Cedar River watershed. This report summarizes many of the known activities conducted, attended, or assisted by members of the Partnership.

Lake Associations and Districts

There are many lake associations and districts within the Red Cedar River watershed. Some of these groups are active members of the Partnership, while others work mostly on their own, and a few others are, for one reason or another, idle. Below are reports from the active lake organizations in the watershed that participate in the Partnership.

Red Cedar Lakes Association (Red Cedar, Balsam, Hemlock Lakes, Bass, Mud Lakes & Murphy Flowage)

The Red Cedar Lakes Association (RCLA) is continuing its management of Curly Leaf Pondweed (CLP) as part of a DNR Aquatic Invasive Species (AIS) Control Grant. A survey of pre-treatment areas was completed in early 2024. As a result 15.4 acres on Hemlock Lake and 18.1 acres on Red Cedar Lake were treated with herbicide. In addition, Diver Assisted Suction Harvest (DASH) was used to remove CLP from approximately 2 acres of Balsam Lake, where herbicide treatment is not permitted.

The presence of Yellow Flag Iris was first detected during the summer of 2023. The RCLA has since mapped the location of Yellow Flag Iris on its lakes and has developed a property owner notification and

education process. To date, the presence of Yellow Flag Iris is limited to only Red Cedar Lake. The RCLA will be developing a herbicide treatment plan to eliminate as much of the Yellow Flag Iris as possible.

The RCLA continued its program of identifying and eliminating purple loosestrife within its lakes during the months of July and August.

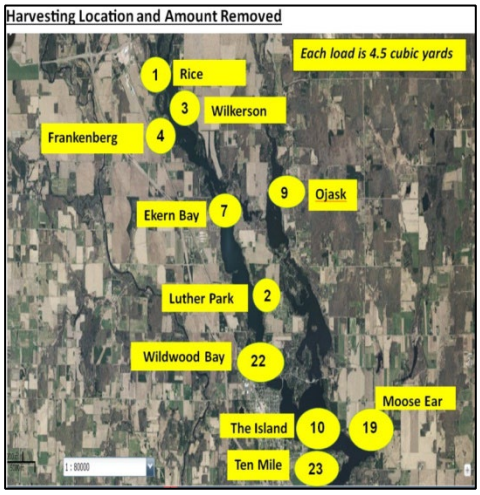
Water quality monitoring is continuing for Red Cedar, Balsam and Hemlock Lakes. In the spring of 2024 this water quality monitoring was expanded to include Birch Lake and the 4 streams flowing into the RCLA lakes. This expanded water quality monitoring is designed to assist the RCLA in identifying sources of phosphorous flowing into its lakes.

The RCLA continued its DNR Clean Boats Clean Waters landing monitoring program. Over 400 hours of monitoring was performed at the four highest volume landings. Decontamination sites have been installed at each of these landings. In addition, a decontamination site was installed at the Murphy Flowage Landing in the fall of 2024. All decontamination sites are monitored and maintained by RCLA volunteers.

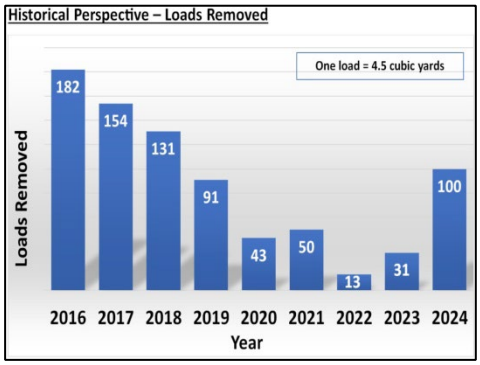
Chetek Lakes Protection Association

Weed Skimming Operations Update

Lake weeds were unusually heavy throughout the chain this year. Many believe it was the result of last winter's minimal snow and ice cover allowing more sunlight to reach the lake bottom sooner. Reports of pondweed and duckweed were received as early as March, well before the ice was even out on many of the lakes. We began harvesting in early June, 4-5 weeks earlier than past years, and continued through mid-August.



Over the 10-week season, we removed 450 cubic yards of weeds (the equivalent of 35 dump truck loads). As you can see from the map, the weeds were more widely distributed this year with the heaviest areas being south Prairie, Chetek and Ten Mile Lakes. This was a change from the past few years when the heavier concentrations tended to be in the northern lakes. Our DNR permit requires that we restrict skimming to clear navigation channels to allow property-owners to get access to the main lakes.



As shown in the graph, we saw a 20-25% year-over-year reduction in the amount of weeds removed from 2016 through 2019 then leveling out through 2023. For 2024, the amount of weeds increased significantly.

This program is totally funded through donations and staffed by volunteers. This year the volunteers logged 321 man-hours of time! THANK YOU to everyone who

donated their time to this effort. Anyone interested in making a donation, volunteering or just learning more about the process can send a note to info@cheteklakespa.org.

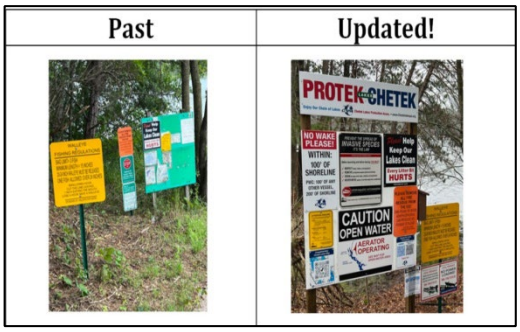
Clean Boats, Clean Waters

Clean Boats Clean Waters landing inspections had the best year yet in 2024! We had seven active volunteers, over 20 hours of volunteer time and a presence at multiple public landings. We will continue inspections in 2025, and if you can assist, please let us know. Training sessions will be offered starting in May.

Education and Outreach

Signage

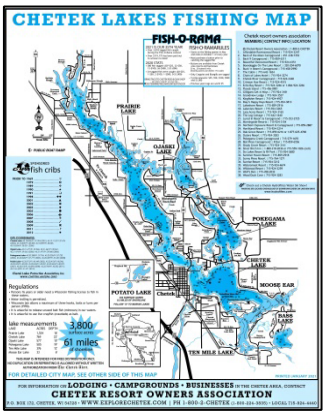
Over the past four years, our dedicated volunteers have successfully replaced all 14 public landing signs throughout the chain. This initiative ensures that each landing is equipped with a weatherproof "Protek Chetek" platform, displaying important messages from the Wisconsin DNR, County, and CLPA Preservation. These signs aim to inform visitors on key topics such as No Wake zones, No Power Loading, Litter Reminders, Prevention of Invasive Species Spread, and DNR Fishing Regulations.



This year we added QR code signs for visitors to access our Resort Owners Association Lakes Map and a Venmo/Credit Card "Donate To Support Lakes Preservation" sign for visitors.

Website Enhancements

We now feature the Chetek Chain of lakes map and fishing regulations on our website. You can also access this information by using the QR code posted on the landing signs.



Communication

The CLPA writes articles and sponsors information sharing events throughout the year. In 2024 the Chetek Alert received a 2nd Place award from the Wisconsin State Newspaper Association for the 3-part article the CLPA wrote describing how we are supporting our lake health!

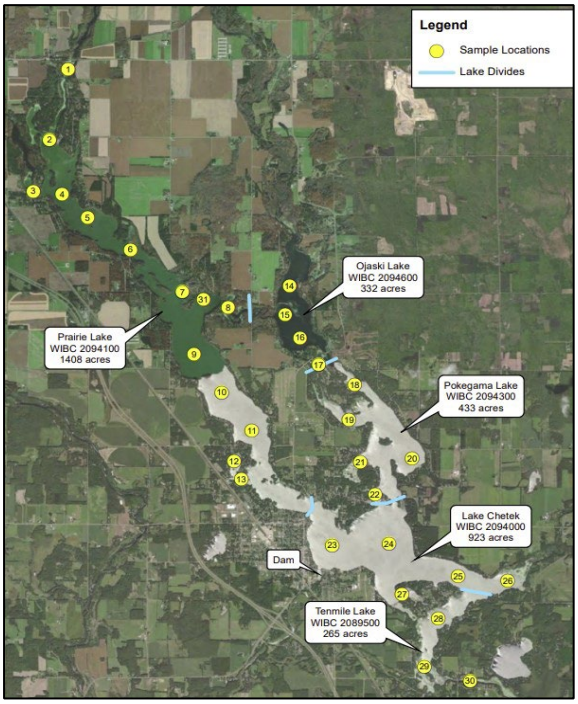
Healthy Lakes and Rivers Grant Projects

The CLPA received approval for two Wisconsin DNR Healthy Lakes and Rivers projects this year. One has been completed with the other being delayed until next year. The project works are designed to reduce runoff and improve shoreline wildlife habitat. This runoff is a leading cause of the green waters we enjoy each summer.

2024 Aquatic Plant Management Plan Updated

The Aquatic Plant Management (APM) Plan for the Chetek Lakes, approved in February, updates the 2012 plan and was partially funded by a Wisconsin DNR Surface Water Grant. The Chetek Lakes Protection Association (CLPA) collaborated with an engineering firm to set long-term goals for managing lake vegetation, focusing on rehabilitating valuable species and habitats. Key activities included a public survey, stakeholder engagement, and an on-water assessment of plant life and lake conditions.

The plan outlines five primary goals, which guide the Association's efforts in weed and algae harvesting, Clean Boats Clean Waters, Healthy Lakes, and other programs. It also provides essential data for securing the annual Mechanical Plant Harvesting permit and compares plant life and lake conditions from 2012 to 2022. The complete report can be found on our website at: cheteklakespa.org/education and outreach/lake management plans.



2023/2024 Chetek Chain Sediment Study

In 2024 the final report was completed and released for the lake bottom sediment study that was started in 2023. This was the first comprehensive sediment study that was done across the entire chain of lakes. The goal was to determine the impact of sediment in our lake system by studying depth and content of sediment through broad sampling. By going to the full report available at our website, you can look up content and depth samples taken near your property or any/all sample sites.

The report shows that there would be benefit in dredging stagnant bay areas, but the lake as a whole is not suffering from excess sediment in other areas. In addition, the high iron content in the sediment is likely preventing large amounts of phosphorus from being released from the sediment. We will continue to work with Barron County and Engineering Consultants to determine next steps.

Tainter Lake Rehabilitation District

In its second year of existence, The Tainter Lake Rehabilitation District focused on creating an organization that was forward-looking based on positive relationships with the constituents and related conservation groups regionally and state-wide. The Board of Commissioners is interested in addressing the challenges and opportunities it faces in an organized and meaningful manner. The means to accomplish these goals is through the development of a strategic plan that defines the mission and vision of the organization and organizes or prioritizes future actions and activities of TLRD.

The TLRD has completed a five-year strategic plan. This plan was developed with the aid of a WDNR Surface Water Grant, input from community members, (either through a series of community meetings and electronic survey) and the work of Lake District Commissioners.

Vision: The vision for the Tainter Lake Rehabilitation District is a cleaner and healthy Tainter Lake for future generations.

Mission: Revitalize and protect Tainter Lake*.*

The TLRD began work on the strategic plan by structuring the lake district organization around the central goals or themes identified in the strategic plan. These standing committees are: Water Quality, Sedimentation, Boating and Safety, Aquatic Vegetation and Fundraising/Community Connections. The work of these committees is directed by objectives and action items outlined in the plan document.

TLRD's Boating and Safety Committee began their work by taking responsibility for the Tainter Township ordinance regarding Slow-No-Wake zones. This meant the township rescinded its ordinance and the TLRD passed an updated ordinance. The TLRD also assumed the financial responsibility for placement and maintenance of the SNW buoys. This work continues and the group will focus on educating users of the lake about local and state rules for water safety.

The Sedimentation Committee has been working with Dunn County Land and Water Department and individual land owners on river restoration. There have been a number of erosion sites identified on the Red Cedar River from Colfax, WI to the headwaters of Tainter Lake. These erosion sites are contributing to the filling in of the north end of the lake. This sedimentation not only contributes to expansion of the headwater delta but adds to the nutrient load of the lake.

The Water Quality Committee conducted a series of public information sessions. The goal of these sessions was to educate the public regarding shoreline ordinances, shoreline best practices, invasive species (plant and animal) and stocking of muskie.

This committee also sponsored the first annual carp tournament. The goal of this program is to remove carp and assist in maintaining a balance level of game fish. The District is planning to plant approximately four hundred ten-inch Muskies in the fall of 2025. This effort has been aided by a matching donation from Muskies Inc-Chippewa Valley Chapter.

The Aquatic Vegetation Committee began the harvesting of aquatic vegetation. This activity is on an experimental basis until a DNR approved Aquatic Vegetation Management Plan can be developed. The

goal of the plan is to manage the large vegetation mats that are located predominately on the north end of the lake. The District will be writing this vegetation management plan during the winter of 2026 and the document will eventually become part of the larger management plan of the lake. This decomposing vegetation adds to the nutrient load and impedes the use of watercraft on the lake.

TLRD continues to raise funds to supplement and support the tax dollars contributed by lake district residents. The Fundraising and Community Connections goal is to support the TLRD budget with funds raised in the community and potentially on a county and state level. There are at least two future projects that will have large price tags and need the support of additional funding sources. The District also mails a newsletter to residents and other interested individuals/organizations every four to six weeks.

The Tainter Lake Rehabilitation District, while in its infancy, has created a set of goals to guide decision-making and a comprehensive approach to research and project development for a cleaner and healthier Tainter Lake.

County Governments

Parts of nine counties are included in the Red Cedar River watershed. Many of these have small portions of their counties within the watershed, with Dunn and Barron Counties having the largest share. With the close contact county land conservation staff have with farmers and land managers in their counties, they are an integral part of the efforts to reduce runoff, promote infiltration, and decrease the pollutant loads flowing to both surface and groundwater in the watershed, and are key members of the Partnership.

Dunn County Land & Water Conservation Division

The Dunn County Land & Water Conservation Division (LWCD) completed the following work within the Red Cedar Watershed, specifically the Lake Menomin and Tainter Lake TMDL Watershed. The LWCD had 8 employees that worked to implement conservation practices and manage grants and financial responsibilities for conservation practices and programs within the watershed. It is important to note that LWCD staff work and administer conservation practices and programs throughout Dunn County. While many more technical and financial resources were expensed throughout the county, this report is specific to the TMDL watershed.

In 2021 Dunn County revised its Manure Storage Ordinance to include the State of Wisconsin's Agriculture Performance Standards as described in Administrative Code NR151. The County Ordinance is now known as the "Agriculture Performance Standards and Manure Storage and Management Ordinance" – Chapter 10 of the Dunn County Code of Ordinances. This ordinance is applicable to all agricultural lands in Dunn County and is not limited to those lands or farms with manure. All farms must meet tolerable soil loss (T) and follow a nutrient management plan on all cropland and pastureland that receives nutrients, including commercial fertilizers. In some instances an offer of cost-share is required prior to enforcement of the standards.

A large Notice of Discharge (NOD) Grant project ($796,150) was started in 2023 to properly close a manure storage structure and construct a new storage structure. The need of the new structure was to ensure conservation standards are being met and to prevent winter application of manure within the watershed. The project was completed in early 2024. The overall project cost was $1,603,204 and reduced phosphorus loading to the watershed by 2,355 pounds per year.

The following table describes the activities installed in the Dunn County portion of the Red Cedar Watershed using county/state cost-share funding. It also describes other farm related activities:

Conservation Practice	Quantity	Cost-share $
Nutrient Management Plans (new)	642 acres	$25,680
Manure Storage Closure	6	$16,048
Manure Storage (new)	1	$796,150
Grade Stabilization Structure	0	$0
Critical Area Planting	0 acre	$0
Ordinance compliance reviews	3 farms	NA
Farmland Preservation compliance reviews	29 participant farms	NA
No Till Drill rental	221.5 acres (15 individuals)	NA

Surface Water Monitoring

The LWCD continued to partner with the Department of Natural Resources in maintaining a systematic surface water monitoring program. Nineteen (19) sites within the Red Cedar River Watershed were monitored in 2024 by LWCD staff. These sites were found on Beaver Creek (1 site), Bronken Creek (3 sites), Eddies Creek (1 site), Hay Creek (3 sites), Popple Creek (3 sites), Red Cedar River (3 sites), Sand Creek (1 site), and Trout Creek (4 sites). Funding for this monitoring was supported by Multi-Discharger Variance (MDV); Department of Natural Resources (DNR); Department of Agriculture, Trade, and Consumer Protection (DATCP); and Red Cedar Conservation Farmers (RCCF). These sites were analyzed primarily for phosphorus and nitrogen except for one of the Red Cedar River sites. This site was paid by DATCP and was also analyzed for a variety of neonicotinoids

Red Cedar Demonstration Farm

The Red Cedar Demonstration Farm hosted two public field days this year. These events highlighted the conservation practices implemented on the farm to improve soil health and the impacts to the return on investment of the farm. The Red Cedar Demo Farm is operated by the agronomy classes at Chippewa Valley Technical College (CVTC) with advisory roles from Dunn County LWCD, USDA-Natural Resources Conservation Service (NRCS) and UW-Extension.

Dunn County Transect Survey

The LWCD conducted its annual Soil/Crop Transect Survey in 2024. The Soil/Crop Transect Survey is an inventory of cropping data identified at pre-determined locations throughout the County. The following data is specifically for the TMDL watershed, and is a small representation of the data available from the survey. Based on the 2024 Transect Survey the TMDL watershed within Dunn County consists of:

29% of cropland was in Corn;

30% of cropland was in Soybeans;

29% of cropland was in a form of forage such as alfalfa, grass, hay;

26% of the crops were planted using a no-till system;

The average tolerable soil loss value for the soils within the watershed is 3.9 Tons/acre/year; and the rotational average soil loss for the cropping years of 2020-2024 was 2.5 tons/acre/year. In general, based on the Transect Survey, farmers are implementing conservation practices that are meeting "T" or tolerable soil loss. Even though the rotational average soil loss is less than what is considered "tolerable" there are several instances of individual fields that exceed the tolerable level. Continued work by the LWCD and partners is needed to assist those responsible for those fields in meeting T.

Multi-Discharger Variance Program (MDV)

The LWCD participated in the Multi-Discharger Variance Program through the Department of Natural Resources in 2024. The goal of this program was to use funds generated from point source facilities to implement eligible conservation practices that reduce nonpoint source nutrient contributions in the watershed. As mentioned above some of the MDV funding was also used for stream nutrient monitoring. In 2024, MDV funds were spent primarily on two waterway projects to reduce erosion on agricultural land. One of these projects stabilized crop land while the other stabilized an area that has been used as pasture. The estimated reduction for these combined stabilization projects is 160.5 tons of soil per year and 39 pounds of phosphorus.

Conservation Reserve Enhancement Program (CREP)

In 2024, there were a total of four (4) CREP practices installed, buffering approximately 4,194 feet of surface water resources. These practices are estimated to reduce the phosphorus load by approximately 40.3 pounds. Additionally, the practices are also estimated to reduce approximately 19.3 pounds of nitrogen and 14.3 tons of sediment from reaching surface waters.

Red Cedar Conservation Farmers

Red Cedar Conservation Farmers

The Red Cedar Conservation Farmers (RCCF) is one of two farmer-led watershed councils within Dunn County. The watershed covered by this group falls in both Chippewa and Dunn Counties, but staff from Dunn County Land & Water Conservation Division worked as the county collaborator for RCCF. In 2024, a Wisconsin Department of Agriculture, Trade, and Consumer Protection (DATCP) grant was awarded to RCCF to fund

conservation practice incentive payments to farmers. The group was also awarded a grant from The Nature Conservancy. The practices installed in 2024 with these funds and donated match are shown below.

Practice	Amount
Cover Crops (acres)	816.95
No Till (acres)	1668.86
Planting Green (acres)	759.36
Bundle* (acres)	715.2
Multi-species Cover Crops (acres)	141.9
Biologicals (acres)	1087.12
Nitrogen Stabilizer (acres)	1116.42
Soil Samples (number)	297

*Bundle includes one of the following options:
Option 1: Cover Crops, No-till and planting green on the same field in a rotation
Option 2: Cover Crops, No-till, Cover Crop Terminated by Livestock
Option 3: Cover Crops, No-till, Biological
Biologicals includes a range of biological products such as plant growth regulators, beneficial microbes and bio stimulants.
Nitrogen stabilizers were limited only to those that address denitrification.

In 2023 RCCF was awarded a Commercial Nitrogen Optimization Pilot Program (NOPP) grant from the Department of Agriculture, Trade, and Consumer Protection. The grant provided funding for research conducted in 2023 and 2024 on farms operated by RCCF members. Two trials were conducted. The first looked at how cover crop termination timing impacts optimum nitrogen fertilizer rates. The second looked at how incorporation of manure vs surface application impacts optimum nitrogen fertilizer rates. RCCF presented results from the 2023 research at a workshop in Colfax in February 2024 and again at the Red Cedar Watershed Conference in March 2024.

The RCCF held or participated in several field days, presented at the Red Cedar Watershed Conference, one workshop, and public meetings to share information about their group and to provide an opportunity for outreach and education. Nine (9) different events were attended by 323 individuals.

Small scale trials/demonstrations were conducted to try several cover crop mixes, including multi-species cover crops and to observe if cereal rye cover crop germinated faster on tilled ground than in no till.

Beyrer Family Farms, RCCF members, celebrated Earth Day with a farm tour with DATCP Secretary Randy Romanski and Wisconsin Land+Water. During his visit the group discussed the DATCP Producer-led Watershed, Farmland Preservation, and NOPP DATCP Grant program.

Hay River Farmer-Led Watershed Council

In 2024, County staff continued to work as the county collaborator for the Hay River Farmer-Led Watershed Council (HRFLWC). Wisconsin Farmers Union (WFU) is also a collaborator with the Council. Grants through the Department of Agriculture, Trade and Consumer Protection (DATCP) and the McKnight Foundation helped fund conservation practice incentive payments to farmers. The following chart describes the practices implemented using both grant funds and what was donated by the participating farmers.

Practice	Amount
Soil Sampling (number)	571
Diverse Crop (acres)	4
Cover Crops (acres)	2788

The diverse crop was sunflowers and pumpkins.

The Council held one pasture walk, one workshop, one community conversation event, and held multiple meetings to share information about their group and to provide an opportunity for outreach and education. Seven (7) different events were attended by 223 individuals.

Between both the Hay River Farmer Led Watershed Group and the Red Cedar Conservation Farmers and the implementation of cover crops and no-till practices, the groups reduced phosphorus loading in the watershed by 1,645 pounds; nitrogen loading by 882 pounds; and sediment loading by 1,619 tons. It should be noted that these estimates do not include reductions from other conservation practices that these groups or other farmers have implemented in the Red Cedar Watershed.

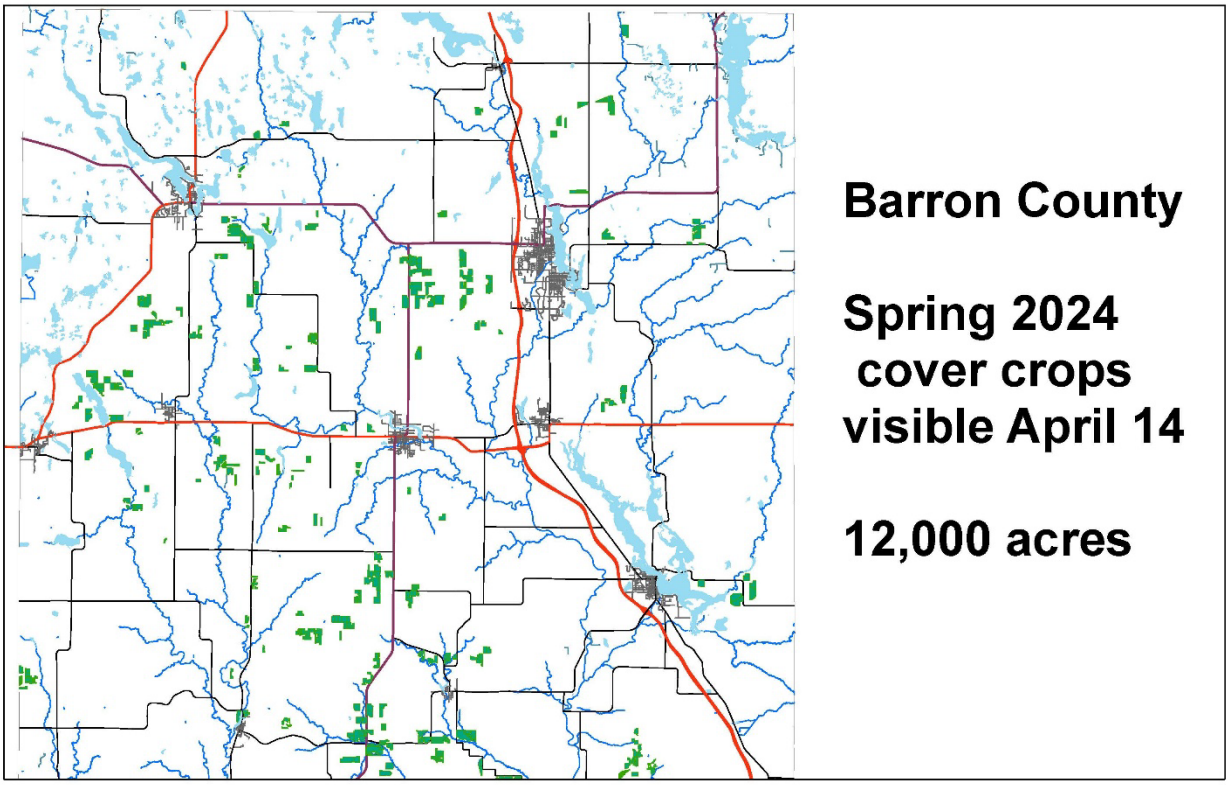
Barron County Soil and Water Conservation Department

In 2024, Barron County Soil and Water Conservation Department staff assisted with the implementation/installation of the following practices in the Red Cedar River watershed:

Practice	Acres	Number	Estimated Sediment Reduced	Estimated Phosphorus Reduced
Manure Storage Facilities Closed		13	NA	NA

Grass Waterways		1.5 miles	136 tons	84 lbs
Cover Crops	800			
Nutrient Management Plans	24,000		NA	NA

The 800 acres of cover crops listed above were only those that were assisted with cost-share dollars from the county. An air photo survey of the county produced an estimate of 12,000 acres of cover crops growing in the county in the spring of 2024.



Rusk County Land and Water Conservation Department

A small portion of the entire western edge of Rusk County is part of the Red Cedar River watershed, and includes parts of seven HUC12-scale watersheds. Although Rusk County is an active participant in the Partnership, no projects were undertaken in 2024 in the County's portion of the watershed.

Chippewa County Land Conservation and Forest Management Department

Small portions of western and northwestern Chippewa County are part of the Red Cedar River watershed, including portions of seven HUC12-scale watersheds. In 2024, the following projects

occurred in the watershed with the assistance of Chippewa County Land Conservation and Forest Management Department staff.

1) Cost-shared the installation of 1,105 acres of cover crops.
2) Provided assistance in nutrient management planning for 7 plans.
3) Installed a free water refill station for those affected by high nitrate levels in their private water wells.

Other Partners

In addition to the categories listed above, other entities and agencies are key members of the Red Cedar River Water Quality Partnership and play vital roles in the work they do with the Partnership and with their constituencies.

Wisconsin Department of Natural Resources

The WDNR's presence in the Partnership is crucial to implementation of the ten-year plan on many levels. They provide advice and counseling on various grant programs available to the partners for work toward improving water quality. They provide valuable science data regarding water quality monitoring and modeling. They have institutional knowledge of the history of waterways and waterbodies in the state. And WDNR staff are a valuable networking partner, having connections to their own divisions, and to other agencies, non-profits, and resources. In 2024 they provided valuable assistance in all the above areas, and the Partnership continues to rely on them as a vital connection to the state and its resources, especially as efforts have now turned towards renewing/updating the plan for another 10 years.

Nonpoint Source Pollution Program

Nonpoint source (NPS) pollution, or runoff, caused by rainfall or snowmelt picks up pollutants as it moves over land on its way to waterbodies and is a leading cause of water quality problems. The Nonpoint Source Coordinator representing the program in this partnership addresses NPS issues through administering the Runoff Grant Program and enforcing Wisconsin Administrative Code Chapter NR 151 Runoff Management.

Federal 319: Wisconsin submits a 5-year Nonpoint Source Program Management Plan (currently 2021-2025) that meets U.S. Environmental Protection Agency (EPA) Clean Water Act requirements and ensures Wisconsin's eligibility for Section 319 funding. Time spent developing/renewing/implementing 9 Key Element Plans/TMDL Implementation plans with groups such as the Red Cedar Water Quality Partnership is used as match for this federal NPS Program grant.

Grants: There are several categories within the Runoff Grants program. Targeted Runoff Management (TRM) and Notice of Discharge (NOD) grants are typically applied for by County Land and Water Conservation Divisions (i.e., Dunn and Barron Counties). Municipalities like the City of Menomonie (or

Rain to Rivers through Regional Planning Commission) apply for the Urban Nonpoint Source & Storm Water (UNPS) Planning or Construction grants. There are other NPS funding sources like the Multi-discharger Variance (MDV) which is more of a collaboration between point source and nonpoint source efforts.

Targeted Runoff Management (TRM)

Due to the landowner backing out of the project, Rusk County was unable to complete their small scale TRM grant for nutrient management, barnyard runoff control systems, and clean water diversions for a small beef operation, and the funding was returned.

Notice of Discharge (NOD)

An NOD grant awarded to Dunn County to replace a failing manure storage structure was completed in 2024. The total final cost of the project wat $1,603,204.94, of which the NOD grant reimbursed $796,150, and reduced 2,355 lbs. of phosphorus per year.

Before (left) and after (right) of Dunn County manure storage NOD grant project. In picture on the right, the blue arrow indicates the location of the access ramp, and the red arrow the waste transfer building.

Multi-Discharger Variance (MDV)

The multi-discharger variance (MDV) for phosphorus extends the deadline for point sources of phosphorus to comply with lower phosphorus limits in their permits. This variance to the phosphorus limit can cover multiple point source permits, whereas an individual variance would only apply to a single facility. This provides for administrative streamlining while benefiting the watershed as a whole. While point sources are investing in gradual reductions of phosphorus at their facilities, they are also paying into a fund that is dispersed to counties to spend on nonpoint pollution reduction projects. MDV funds, totaling $46,476.61, were allocated among Barron, Dunn, and St. Croix Counites in 2024 to be spent in the Red Cedar Watershed. These funds were generated from 6 point sources: Village of Luck, Village of Almena, Downsville Sanitary District Wastewater Treatment Facility, Crystal Lake Sanitary

District, Lakeland Sanitary District, and Jennie O Turkey Store Inc Barron Plant. Each county gets an amount proportional to the percentage of area within it that is covered by the watershed.

Enforcement: Enforcement activities include responding to manure spills and complaints pertaining to small and medium (non-permitted) farms and conducting site inspections. For facilities in violation of NR 151 performance standards and prohibitions, Notice of Noncompliance (NON) and Notice of Discharge (NOD) letters are issued. If this is not enough to resolve the noncompliance, and it becomes necessary to escalate enforcement, Notice of Violation (NOV), Enforcement Conferences, and Department of Justice referrals, among other consequences, are then recommended by the NPS program to DNR's Environmental Enforcement staff. The following are some specific examples of enforcement activities in the Red Cedar Watershed during 2024.

A facility in Chippewa County came into compliance with a notice of violation for s. NR 151.055 Wisc. Admin. Code, Process wastewater handling performance standard, in 2024.

Before (left) and after (right) of Chippewa County feed leachate noncompliance resolution. Landowner's solution was to install a concrete collection tank intercepting the flow path, which can be seen in right picture.

In 2024, an operation in Dunn County with a long history of enforcement actions, including a notice of violation and citations, came into compliance with ss. NR 151.02 sheet, wind, and rill erosion, and NR 151.07 nutrient management Wisc. Admin. Codes.

Before (left) and after (right) pictures of Dunn County erosion noncompliance resolution. Landowner's solution was to seed the entire field in a continuous cover of rye.

In 2024, an enforcement conference was held for a facility that was issued a notice of violation for NR 151.06 clean water diversion, NR 151.08(3) no unconfined manure pile in a water quality management area, and NR 151.08(4) direct runoff from a barnyard. The facility submitted a depopulation plan to the department they implemented throughout 2024 in order to come into compliance and are in the process of meeting deadlines set for 2025.

Before (left) and progress towards enacting the landowner's depopulation plan (right) of Dunn County barnyard noncompliance. Landowner's solution is to gradually depopulate livestock from the site.

Finally, Rusk County began the process of updating their 10-year Land and Water Resource Management plan, which DNR has been a partner in providing information and edits. The plan update includes many references to the Red Cedar Watershed as a priority.

Farmers of Barron County Watersheds

The producer-led watershed group in Barron County, known as the Farmers of Barron County Watersheds are members of the Partnership, and continue to work toward expanding innovation in regenerative agriculture on the land they manage. In 2024, the group consisted of 50 members, farming >10,000 acres. In 2024 the group built on the successes of 2023 by expanding membership, hosting well attended field days and workshops, and provided cost share funding for innovative practices that lead to better management of nitrogen and phosphorus. A recurring major accomplishment was a Winter Agronomy Conference, held in December. Experienced presenters at the event included a research agronomist sharing demo plot data, UW extension conservation cropping specialist Chris Bandura presented on legume cover cropping, Red Cedar Water Quality Partnership lead Dan Zerr presented to the group on farmer roles and opportunities for advocating local water quality, and Farmer Jon Stevens from Pine City, MN presented on his journey integrating regenerative agriculture into his operation. Roughly 50 people from within the watershed group and surrounding communities as well as conservation professionals attended.

Summer cost share initiatives focus on soil testing using the Haney Test, which provides a detailed profile of the health of soil. This testing across a number of participant farms provided first hand experience of a lab tool for measuring nitrogen values pre-sidedress. The main learning outcome was awareness of soil nitrogen levels prior to this application. Results across most farms showed much higher than expected soil nitrogen levels, with some participants choosing to reduce side dress application rates based on the test data provided.

The group also cost-shared application of cover crop into standing row crops, as a means to incentivize earlier establishment of covers in corn and soybeans. Nearly 2000 acres of cropland had drone-applied covers seeded down prior to row crop harvest.

The 2024 demonstration/research plot was host to a summer field day, attended by 30+ members, where various cover cropping strategies and measurement tools were highlighted, nitrogen rate trial on corn was observed, and small grain management strategies were discussed. A demo of aerial drone cover crop application was also conducted.

In summary, the Farmers of Barron County Watersheds is proud to partner with the Red Cedar Water Quality project and remain steadfast in our collective goal of reducing nitrogen and phosphorus contributions to our precious waters. We look forward to continuing these efforts in 2025 and beyond.

City of Menomonie

In 2024, the City of Menomonie accomplished several projects and practices aimed at improving water quality. Water quality projects practices in 2024 included:

- Wastewater Treatment Plant Upgrades: The City continued to commission a construction project at the wastewater treatment plant focused on reducing the amount of phosphorus in the discharged effluent to meet upcoming DNR standards of 0.1 parts per million (ppm).
- Outfall Repair: The City performed a project to substantially repair a failed outfall that discharges into Wilson Creek.
- Increased Street Sweeping: The City continued to implement targeted, increased street sweeping frequency in the fall, within 24 hours of curbside leaf pickup, in select residential neighborhoods with moderate tree canopy based on DNR technical guidance.
- Phosphorus Modeling: The City continued to work with the DNR to work towards concurrence on submitted phosphorus and TSS modeling for TMDL compliance. The City Council approved a locally funded planning project to update the TMDL delineations and complete WinSLAMM modeling in September 2022. Work was completed and submitted to the Wisconsin Department of Natural Resources (DNR) in October 2023. The City estimates that it reduces 56.2% of total suspended solids (TSS) and 48.7% of total phosphorus (TP) as compared to implementing no stormwater management controls in the TMDL regulated area of the City. This equates to a load removal of 382,439 pounds of TSS and 695.9 pounds of phosphorus annually. This analysis does not include the water quality improvements from the city's street sweeping practices, curbside leaf pickup or any privately owned stormwater best management practices.
- The City is an active member in the regional water quality consortium, Rain to Rivers of Western Wisconsin. The City participates and helps promote stormwater education and outreach activities across the region and watershed.
- The City continues its annual efforts to improve water quality and maintain compliance with the requirements in the City's MS4 permit. Highlights of these efforts include:
    - 17 educational events with a focus on water quality
    - Inspected 143 stormwater outfalls
    - Conducted 15 erosion control inspections at construction sites with one or more acres of land disturbing construction activity
    - Inspected 31 municipally owned stormwater ponds
    - Inspected 6 privately owned stormwater ponds
    - Approved the construction of 6 new stormwater ponds
    - Investigated and resolved on illicit discharge complaint
    - Collected 599 tons of material during spring and fall street sweeping operations
    - Cleaned 43 catch basin sumps
    - Collected bagged yard waste and leaves curbside on eight days (4 spring/4 fall); leaves were composted at the City Solid Waste Site and finished compost was provided to residents for free.

Landmark Conservancy

Landmark Conservancy is a nationally accredited, non-profit land trust serving 20 counties in western and northwestern Wisconsin. They work primarily with private landowners who wish to conserve their land in perpetuity. They also work with local municipalities, state, and federal entities to create public preserves and trails for all to enjoy. Their primary tools for land protection are conservation easements and land acquisition.

Although Landmark Conservancy did not have any new projects in the Red Cedar River watershed in 2024, they continue to be a valuable member of the Partnership and will continue to work in western and northwestern Wisconsin to serve those looking to preserve natural lands in perpetuity.

3M

The 3M plant in Menomonie manages several hundred acres around the plant just east of Lake Menomin, and in the past has leased it for farming. However, a decision was made in 2022 for that to be the last year they would lease this land for farming. In 2023, this land underwent a change. A decision was made to plant low-maintenance ground cover on much of this land. In 2024, 3M initiated these efforts and did some prairie management on the east side of the main plant building. Natural prairie and permanent vegetation produces less runoff than cropland, and should minimize the runoff coming from this portion of 3M's property.

UW-Stout

Having the UW-Stout campus in Menomonie, within the Red Cedar River watershed, is advantageous for the Partnership in many ways. Students often provide data regarding the watershed. Faculty does work within the watershed, in the natural sciences as well as disciplines such as rural sociology…helping the Partnership better understand the people who live, work and manage land in the watershed. Here are the 2024 highlights of work done by UW-Stout with regard to the goals of the Partnership.

1. The LAKES REU hosted their third cohort of students under their current 3-year funding from the NSF in the summer of 2024. 9 students from around the country participated. All research posters and summaries can be found at the program's website. Projects covered a variety of topics including (only a partial list):
    - Zebra mussels in Lake Menomin
    - How residents of the Red Cedar Watershed envision its future
    - Perceptions of drinking water quality and actions taken to protect it
    - Community survey on attitudes and practices that might contribute to urban run-off
    - How wind impacts the spatial distribution of cyanobacteria
2. Work on Freshwater Collaborative of Wisconsin grants continued:

- A Freshwater Science Summer Field Experience for high school students during the summer of 2024 brought 16 students from across the state to UW-Stout for stream and habitat sampling.
- Continuation and Expansion of the Red Cedar Basin Monitoring Group (Dr. Keith Gilland, Dr. Nicole Hayes, Dr. Amanda Little, and Dr. Julia Chapman) supported five undergraduates in sampling local waterbodies including Gilbert, Galloway, and Birch Creeks and lakes Menomin and Tainter and local black ash swamps.
- Data Collection and Parameter Estimation for a Dry Bean Yield Response to Irrigation Model (Dr. Keith Wojciechowski; project with Chippewa Valley Bean) supported students learning to set-up and operate remote weather stations and parameterize water use in bean plants from sprouting through senescence.
- Field Hydrology, a field course for science majors was co-taught by UW-Stout, UW-Eau Claire, and UW-River Falls. Eight students from across the three universities participated in stream, riparian habitat, and wetland sampling over four days.

3. Dr. Keith Gilland and Dr. Julia Chapman continued collaborations with the City of Menomonie and the Red Cedar Colfax Preserve and Recreation Area on a variety of restoration projects including habitat planning, invasive species removal, and burns to maintain open prairie ecosystems.
4. The Human Dimensions of Conservation concentration in the B.S. in Environmental Science program (launched in Fall 2023) has 4 students.
5. Work on a USDA SARE Grant concluded. The grant established a Red Cedar Learning Hub, an effort led by John Strausser from Grassland 2.0. The group aims to promote more generative agriculture in the watershed using a process they term "Collaborative Landscape Design." Interviews were also completed to better understand what futures community members would like to see in the Watershed.

UW-Madison Division of Extension

Staff from UW-Madison Division of Extension continue to provide assistance and resources to the Partnership.

Agriculture Water Quality Program

UW-Madison Division of Extension's Agriculture Water Quality Program continued their 2023 Phosphorus Stratification project with new farmer participants in 2024 totaling 80 farms over 2 years (Figure 1). Participants included several farmers from the "Farmers of Barron County Watersheds," "Red Cedar Conservation Farmers," and the "Hay-River Farmer-Led Watershed Council" and other farmers within the watershed. Research shows phosphorus concentrated at the soil surface is a risk factor for phosphorus losses to water bodies (Zegler, 2023). To explore this locally, shallow soil sampling was offered on 3 fields per producer to build knowledge about phosphorus stratification in soil health systems, identify individual field's water quality risk, and provide phosphorus drawdown strategies to reduce water quality risk without sacrificing yield. This project raises awareness about phosphorus management, balancing water quality tradeoffs, and dissolved phosphorus losses. Furthermore, it aligns with goals set out in the original water quality plan: "Draw phosphorus levels down to 25ppm on ⅓ of cropland with the highest delivery rates (86,000 acres)." Models show this would reduce approximately 31,500 lbs of phosphorus per year in the Red Cedar River Basin. Results from this project were

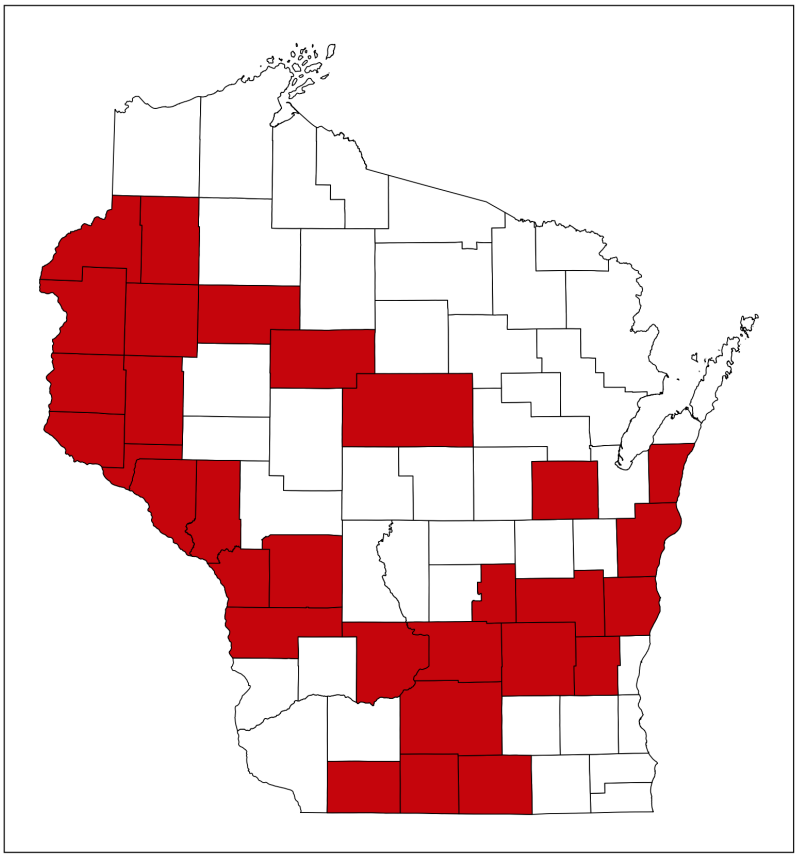
presented to individual farmers and group outreach is planned for a session at the 2025 Red Cedar Conference.

Outcomes of this project include raised awareness and planned behavior evidenced by reflections from an agronomist and a farmer in the Red Cedar Basin:

"As an agronomist, this confirms my thoughts and provides me with more evidence that the first thing we should be doing on a lot of farms is slashing phosphorus inputs. We just don't need them when we have this much phosphorus in the soil."

" . .the benefit is not really there for continued turkey litter, unless actual soil tests call for it. More to follow at some point in the future. Again, my thanks for all you do!"

2023-2024 Statewide Soil Test Phosphorus Project
30 counties, 80 farms, 224 fields



Further sampling, analysis, and outreach on this project will continue into 2025. Additionally, as a result of this project, the Red Cedar Conservation Farms are exploring starter phosphorus fertilizer demos with UW-Extension to explore reducing phosphorus inputs on high testing fields for economic and water quality benefit. Planning is underway for a 2025 trial.

Planning is also underway for a soil dislodgement demonstration with the Red Cedar Conservation Farmers in partnership with the Ag Water Team to evaluate soil movement on different landscape positions as a supplement to their Nitrogen Optimization Pilot Program (NOPP) landscape position study.

Extension Regional Natural Resources Education Program

UW-Madison Division of Extension Regional Natural Resources educator, Dan Zerr, continues to facilitate and lead the Red Cedar River Water Quality Partnership, and has been in that role since the group's inception in 2012. This involves overseeing implementation of the watershed management plan, coordinating meetings, agendas, and minutes, writing reports and press releases, representing the group in letters of support and at events, and presenting the Partnership's activities at various conferences and workshops.

Estimated Load Reductions from Best Management Practices

The ten-year watershed plan calls for reducing annual phosphorus loads to the watershed by a little less than 200,000 lbs. by year ten. As listed above, many of the various partners have been involved with the installation of best management practices that help reduce phosphorus loads to the watershed. Such reductions will help lead to fewer and less intense algae blooms in the lakes and rivers of the Red Cedar River watershed.

In addition to the practices listed previously, there are landowners participating in other cost-share programs through the federal Natural Resource Conservation Service (NRCS). It is hoped that as education and outreach efforts, field days, mentoring, and other activities occur in the watershed, more

farmers would begin to adopt many of the best management practices listed in the ten-year plan as being effective methods to reduce nutrient loads to water bodies. It's virtually impossible to know what every landowner is doing toward the use of best management practices, as some farmers are installing best management practices but not participating in cost-share programs, or not reporting what they're doing to any official agency; while others may have tried some practices in recent years and decided for whatever reason to discontinue such practices. However, in addition to what was captured above, we also have limited access to some of the NRCS cost-share activities in the watershed. Below is a summary of BMP data obtained for this report. Using modeling and calculations specific to individual projects, or using the calculation formulas contained in the ten-year plan to estimate load reduction projections from certain BMPs, an estimate of load reductions from the 2024 data collected is included, and shows that 11,379 lbs. of phosphorus was kept from the waters of the Red Cedar watershed through these various programs. This is a substantial increase from 2023 where data available showed only 6,874 lbs. reduced and considerably fewer acres in both cover crops and no till.

(Note: It is not easy to calculate load reduction projections for all BMPs, so any BMPs listed above or otherwise happening in the watershed where calculations of load reduction are not possible are not listed below. This would include practices such as grassed waterways, managed grazing, grade stabilization structures, and others. It IS possible to do load reduction calculations for some of these practices, but not without detailed information about each specific project.)

Practice (NRCS data)	**Acres**	**Pounds of Phosphorus Reduced**
Conservation Cover	3.7	3.2
Cover Crops	11,170.9	1,876.7
Critical Area Planting/Field Borders	21.8	18.8
Field Borders	18.3	15.8
No Till	6,480.9	4,645.6
Total NRCS	**17,695.6**	**6,560.1**
Totals from Counties and Producer Led Watershed Group Activity		**4,819.3**
Estimated Overall Annual Load Reduction for 2024		**11,379.4**

It's important to emphasize that these load reduction calculations are based on ONLY those practices for which some sort of cost-share or monitored program report can be referenced. Thus, we reiterate that this is not a comprehensive picture of practices in the watershed. It is very difficult to assess all acres, but we can offer examples of alternative estimations. If we were to refer to the item under Dunn County Land and Water Conservation's section previously listed in this report that discusses the County's transect survey, we could estimate that 26% of cropland in Dunn County's portion of the Red Cedar River watershed is planted in a no-till system. This is considerably more acres than just those contracted with NRCS, for whose data is listed above. We also know from Barron County's section of this report that, according to aerial photo analysis, there are 12,000 acres of cover crops in Barron County…again considerably more than those reflected in the NRCS contracts for the entire watershed. Which of these acres are "new" conservation in 2024, we don't know. There are other variables which are hard to sort in such a way to make it possible to track all the changes on the landscape over time. But all these numbers and estimates are valuable, and good for tracking load reductions year to year.

Point Sources

Phosphorus loads into the watershed from point sources, such as wastewater treatment plants, are monitored and managed through the WPDES permits those sources are mandated to have. However, it is beneficial for us to track those loads over the years to monitor changes.

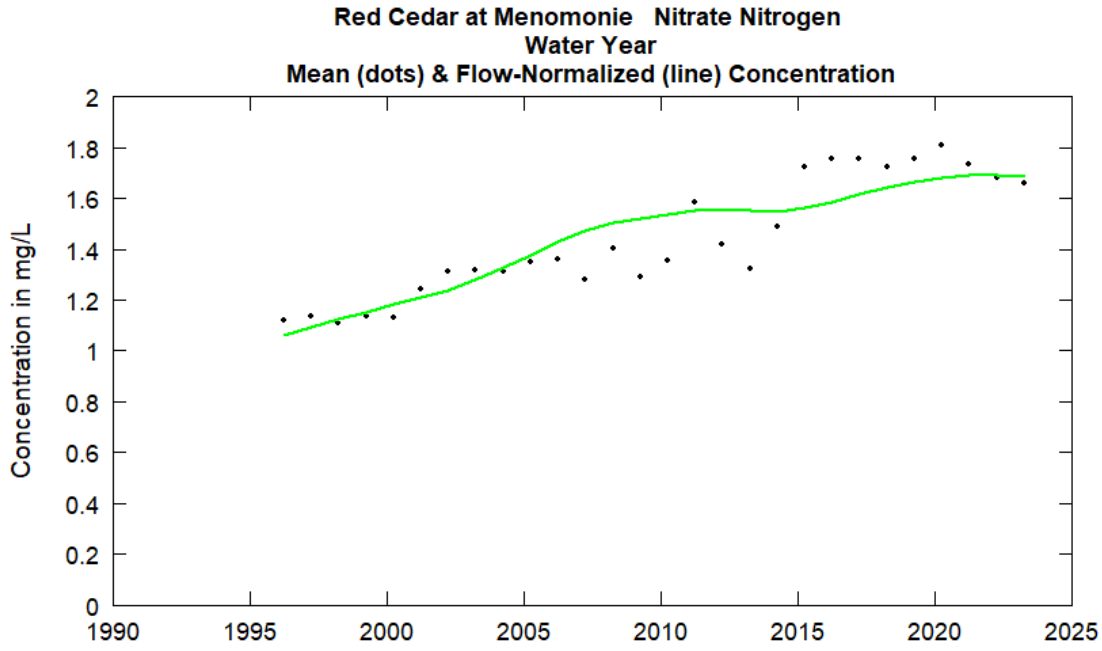
The TMDL for the Red Cedar River watershed calls for a phosphorus load goal from point sources, of 20,100 lbs. per year. In 2024, total point source loads from all permitted sources were recorded to be 5,812 lbs. (source: WDNR), considerably below the stated goal, and the lowest reported in the past 13 years. Four of the 16 WPDES-permitted entities did report levels higher than their designated allocation, but the other 12 were all below their goals. However, it's important to note that from year to year, this load varies. In 2014 a high of 17,258 lbs. was recorded which was still below the TMDL goal of 20,100 lbs. This tells us that point sources of phosphorus are generally doing their part and meeting their goals for reduction.

Water Quality Monitoring in the Red Cedar Watershed

In addition to special monitoring projects, DNR does regular monitoring of phosphorus and nitrate levels below the Lake Menomin dam on the Red Cedar River near the bottom of the watershed. This monitoring has been going on for several decades and is a good historical picture of nutrients in the Red Cedar River. Unfortunately, due to limited staff resources within WDNR, 2024 data is not yet available. However, the trends in the data have been apparent for several years. In 2023 phosphorus levels continued at levels considerably lower than when measurements began over 30 years ago, with another slight drop in the normalized P concentration from 2022 to 2023 from 0.0995 mg/l to 0.0983 mg/l (see graph below). The Partnership sees this as progress toward goals and would like to be able to say it's because of our work. However, that's a difficult connection to make directly, with so many variables involved. Still, the trend of declining phosphorus levels is a positive trend and moves the Partnership toward goals laid out in the plan, and this will hopefully continue. However, nitrate levels in the river continue to be high but have leveled off slightly in recent years. Higher nitrate levels in surface water likely also means higher nitrate levels in ground water, and this presents a different set of problems than the phosphorus issues. This data will inform future discussions and actions within the Partnership.

In the graphs below provided by WDNR, the dots represent the annual mean total phosphorous or nitrates for each year, and the green line is the annual concentration normalized for the annual flow.

Nitrate levels below the dam in Menomonie (source: WDNR)



Total phosphorus levels below the dam in Menomonie (source: WDNR)