2020 Wisconsin Report on Soil and Water Conservation

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- Bobbie Webster (Secretary)
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- Brian Weigel
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- John Palmer, FSA
- Ian Krauss, FSA
- Angela Biggs, NRCS
- Dr. Francisco Arriaga, UW-CALS
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Cover Image:
A Racine farmer plants green as part of a full regenerative no-till farming system, complete with a nutrient management plan and established riparian buffer.

Photo courtesy of Racine County.

P-DARM346_2021.indd 06/2021

Contents

Conservation practices installed over three years repaired multiple active gullies in a cropland field over four-acres. Practices included a grassed waterway, three rock-lined waterways and the renovation of a Civilian Conservation Corps structure originally installed in 1934.

Photo courtesy of Jackson County.

Introduction

If 2020 taught us anything, it is that thoughtful stewardship of Wisconsin's natural resources doesn't stop—even when other aspects of life may be put on hold from the threat of a global pandemic. This 2020 Wisconsin Soil and Water Annual Report highlights how the perseverance and passion of landowners, farmers and conservationists—aided by technology and partnerships—supported continued conservation activity during a challenging year. Although these activities looked different in 2020, critical steps to meet conservation goals and to address resource needs continued.

In this report, you will learn about progress reducing nonpoint sources of phosphorus and sediment through the efforts by farmers and landowners to integrate conservation practices on their land. Stories in the report will help you learn about the importance of riparian buffers for water quality, and about how one county is helping to pilot the benefits created by harvestable buffers. You will have the chance to understand the importance of addressing conservation needs at a site comprehensively to achieve nutrient reduction goals. One story will explain how working collaboratively to address nonpoint sources of nutrients and sediment provide conservation benefits for today and for the future. Another story highlights how the realization of a long-term vision benefits northern pike and other aquatic animals in Green Bay. Other stories describe how conservation activities adapted to a virtual forum, and how this adaptation enabled continued progress and increased the audience.

We look with hope for a better year ahead, but we have no doubt that the future of conservation in Wisconsin remains bright due to the dedication of our conservation professionals and the strength of our state's conservation partnership.

Conservation Funding in Wisconsin in 2020

$9.8 million in state funding to cost-share **agricultural and urban conservation practices** ($4 million from DNR; $5.8 million from DATCP).

$9.6 million in state funding available for **local conservation staff and support.**

$1.2 million in state funding used **to support necessary training and the development** of conservation tools and standards.

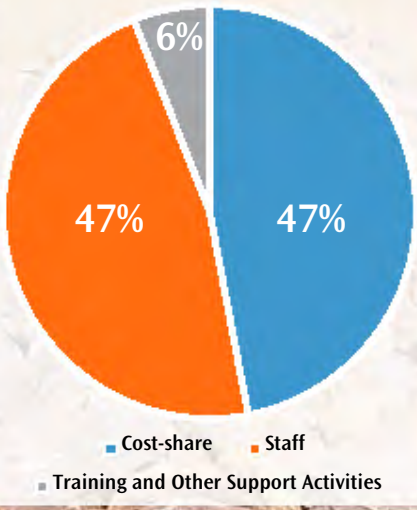
$1.4 million in grant funds **for conservation projects,** not including grants from DATCP and DNR.*

$4.9 million for **urban and agricultural conservation projects** from other sources including county levy, lake districts and associations, permit fees, municipal support, donations, and permitted facilities and other federal programs.*

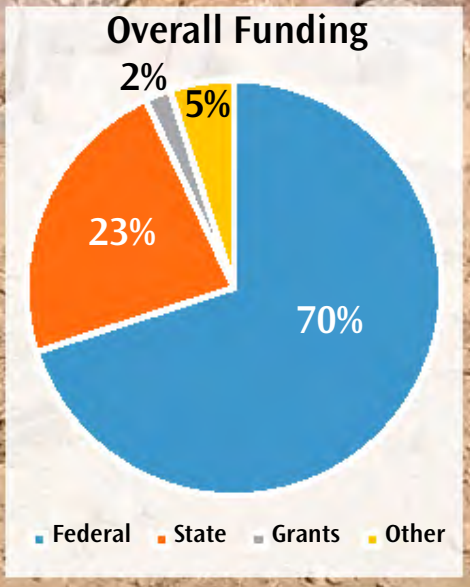
$63.9 million from the federal USDA-NRCS for conservation activities through the **Environmental Quality Incentives Program** ($31 million), the **Conservation Stewardship Program** ($19.3 million), and the **Agricultural Conservation Easement Program** ($13.6 million).

** As known and reported by the counties in March 2021.*

State Funding



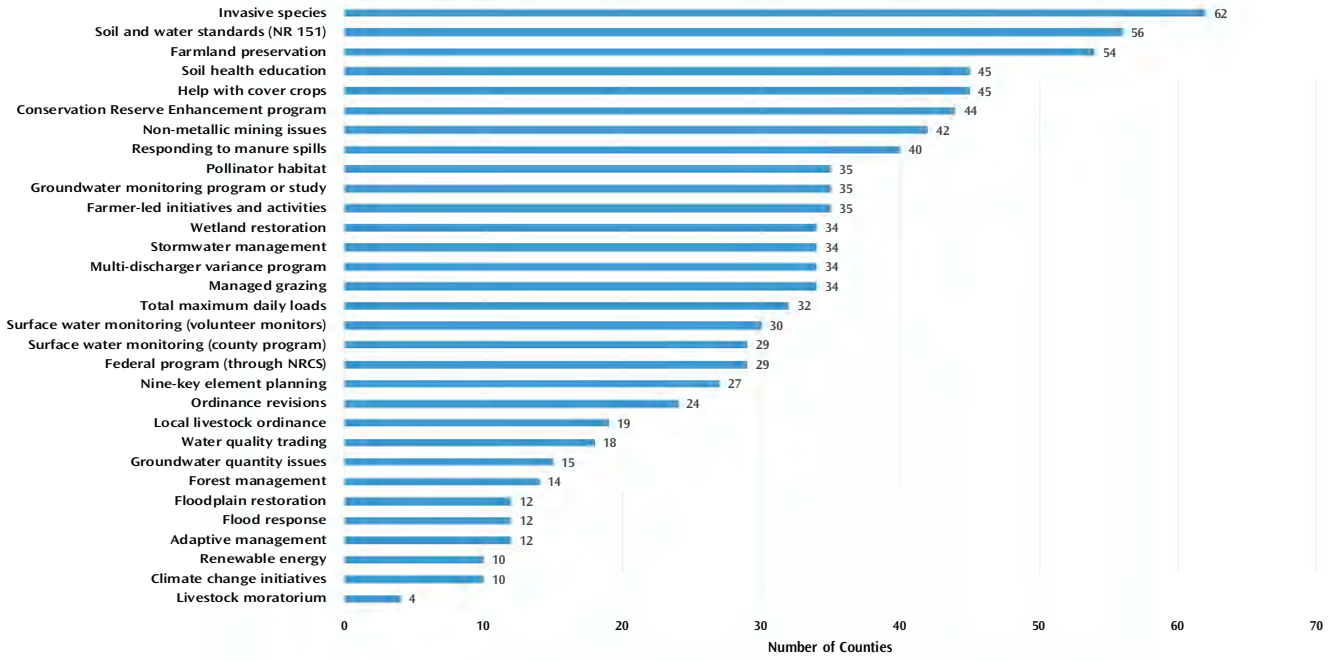
Overall Funding



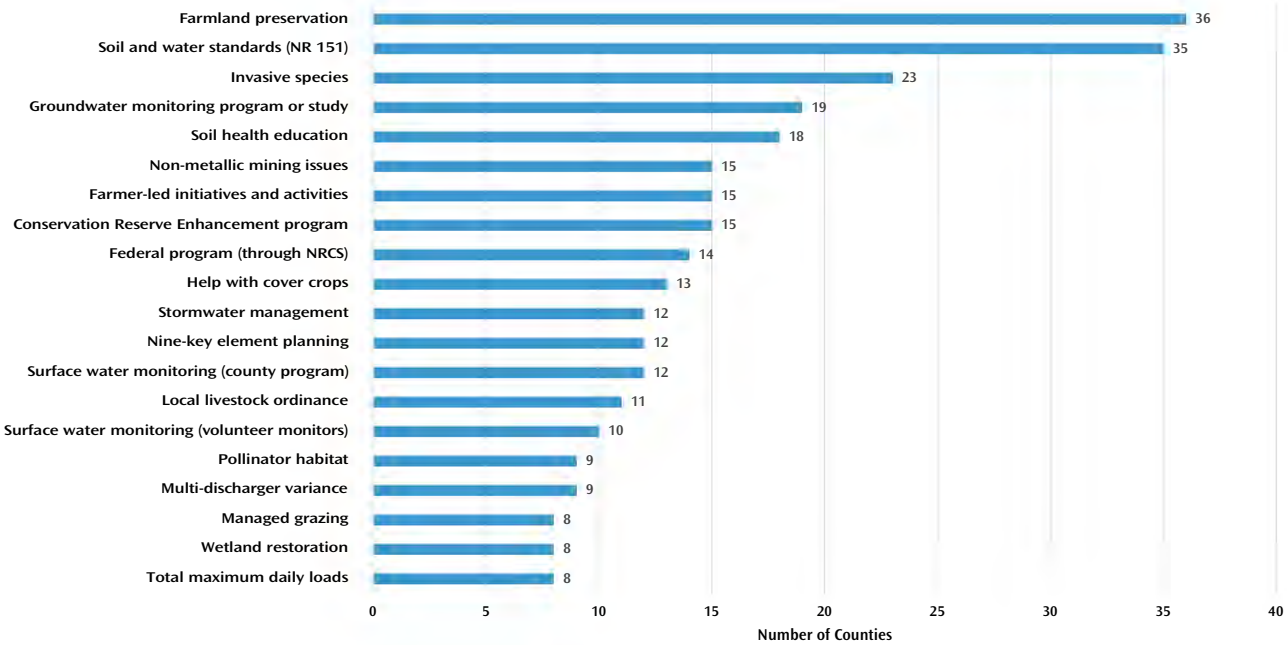
Wisconsin Conservation Activities in 2020

Conservation looks different depending on the site and the resources in need of protection In some places, conservation might be reduced tillage in a cornfield and a newly poured concrete barnyard. In another location, conservation might look like a planting along a lake, a wetland, a new culvert, or brand new gutters on a barn roof. Regardless of the form that the conservation activity takes, if the goal is to protect a natural resource, it is probably something that one of the 72 county conservation departments and other conservation partners are working on.

County Engagement in Conservation Topics in 2020*



Top Conservation Issues, by Time Spent in 2020*

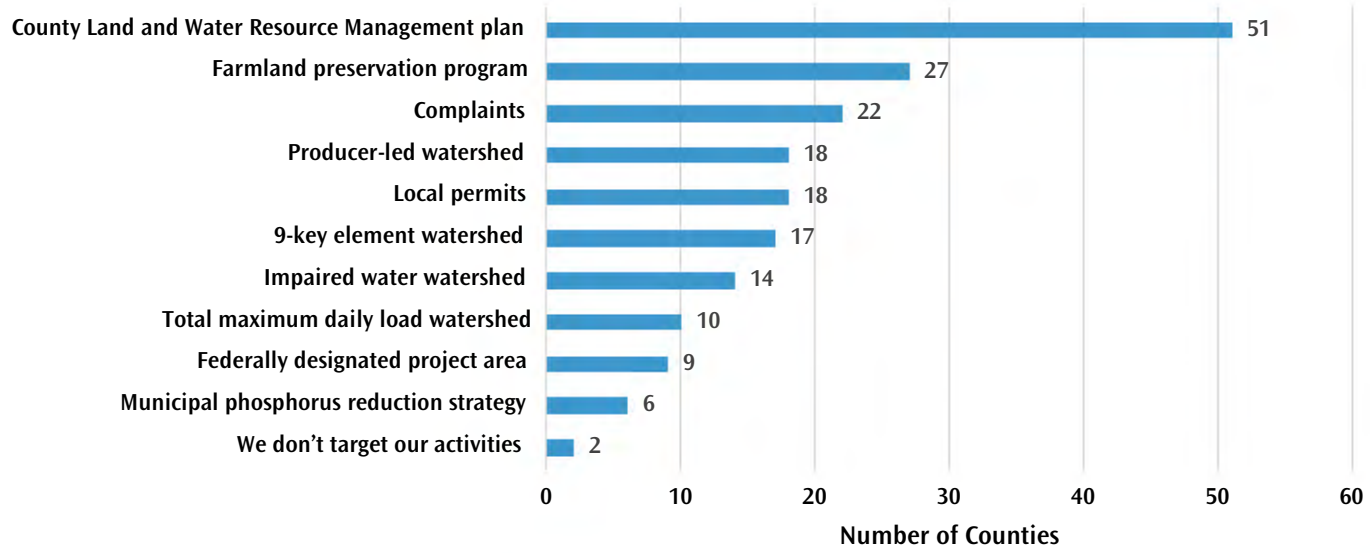


*As reported by counties in 2021

Targeting Conservation

Conservation professionals in Wisconsin use various strategies to target conservation work. By considering factors such as resource health, existing plans, and stakeholder engagement, conservation professionals can prioritize available time and funding. The figure below summarizes the top strategies that county conservation departments used to target areas for conservation activities. The maps on the following pages show the location for where several of these strategies are available across the state. Conservation work is frequently planned and implemented at the watershed level.

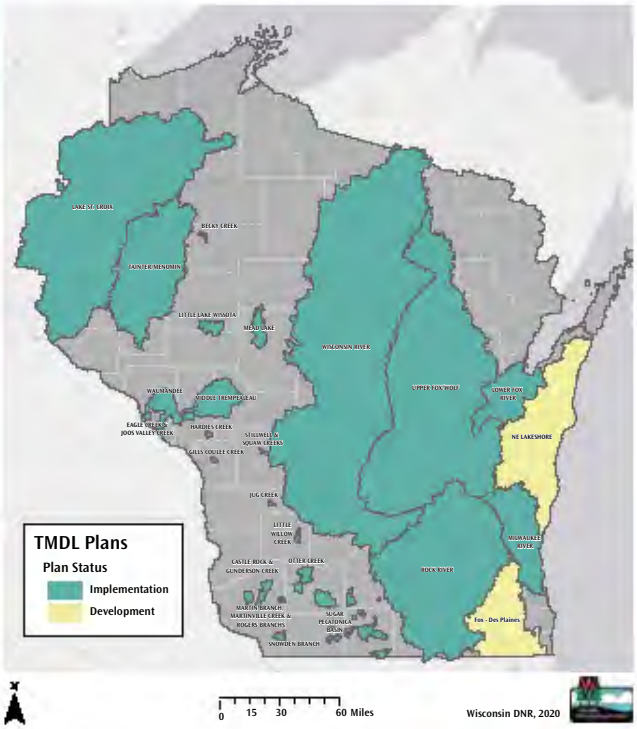
Top Strategies to Target Areas for Conservation in 2020*



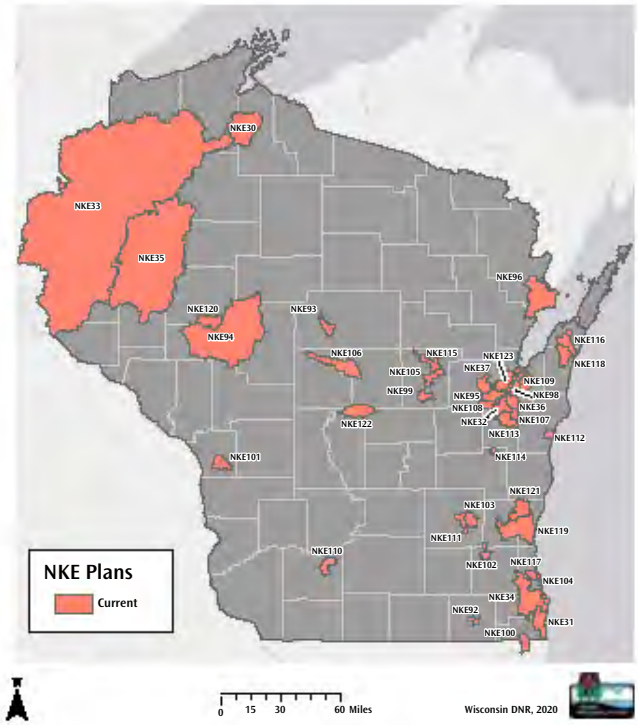
*As reported by Counties in March 2021.

Newly constructed erosion control project in Racine County. Project includes a grassed waterway, a water and sediment control basin, and an underground outlet. *Photo courtesy of Racine County.*

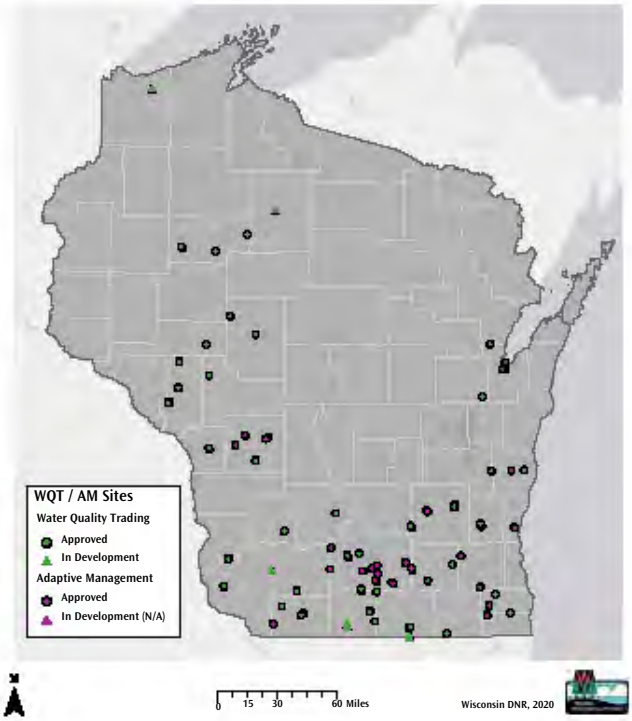
Total Maximum Daily Load Plans, 2021



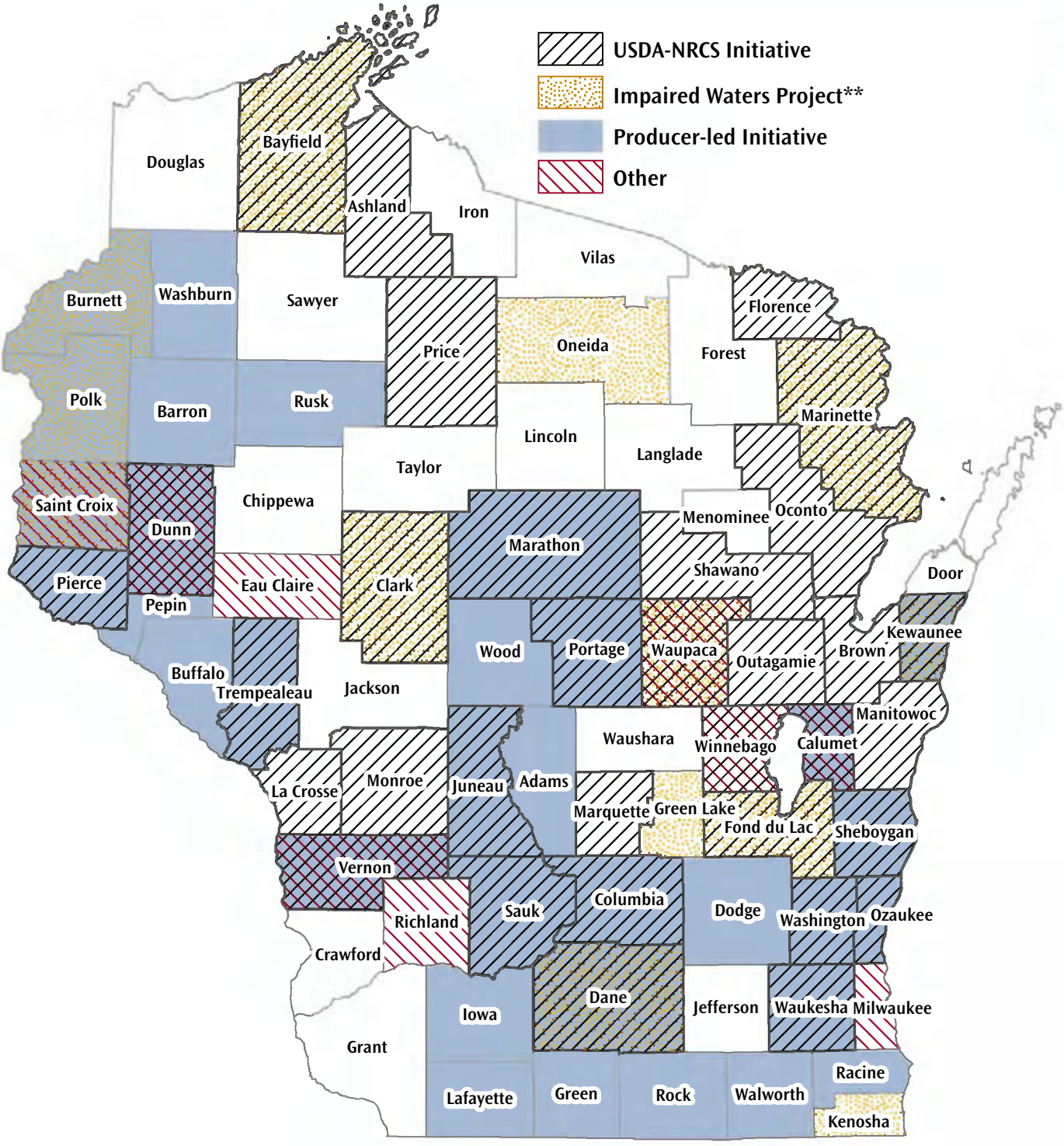
Nine Key Element Plans, 2021



Water Quality Trading and Adaptive Management Sites, 2021



Watershed Based Activities within Counties*



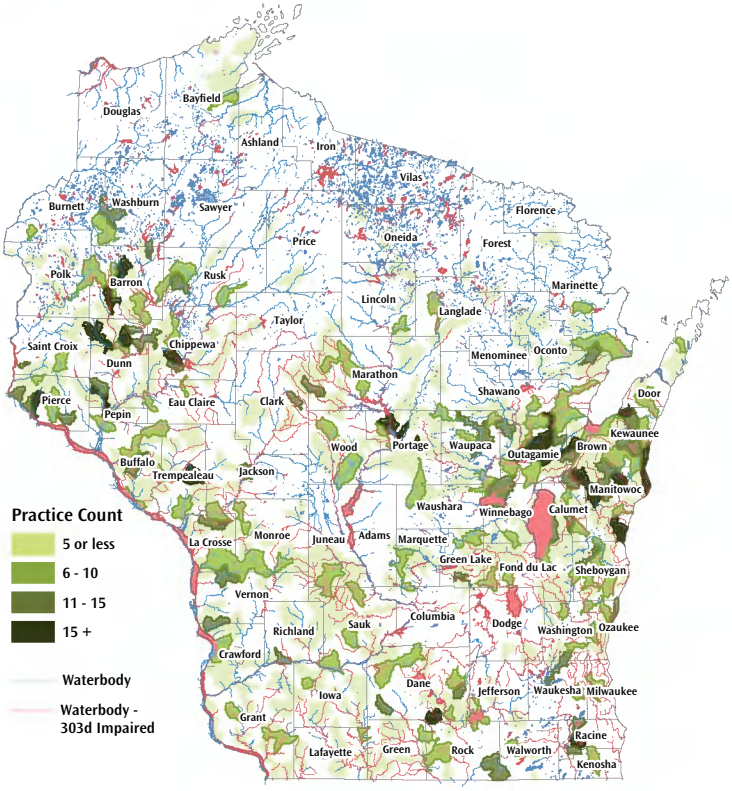
*As reported by counties in March 2021. Activities may be occurring in only a portion of the county.

**Other than TMDL and 9-key element projects.

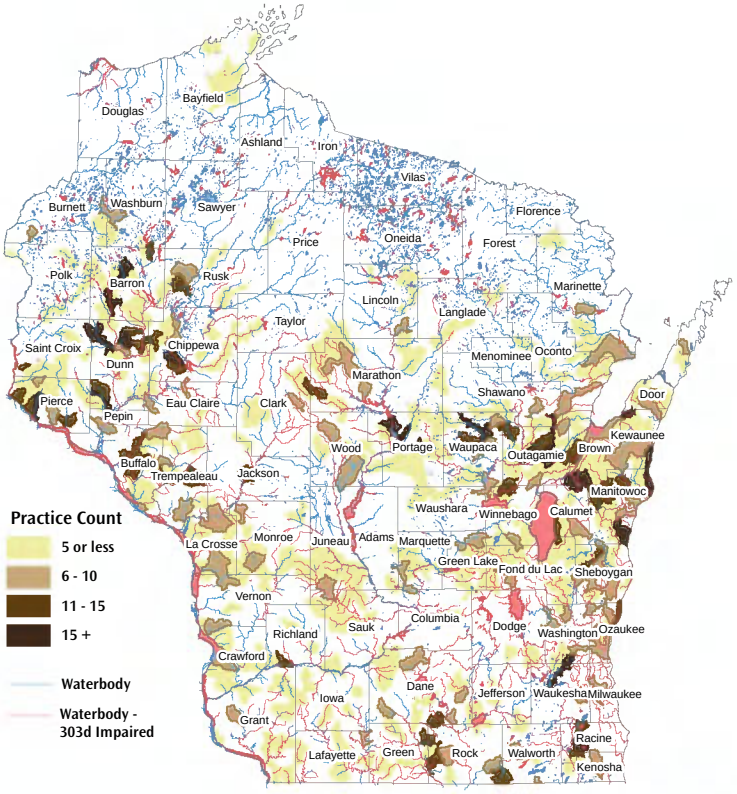
In addition to conservation planning and projects at the local and state levels, the federal government plays a significant role in conservation in Wisconsin.

The following maps show the relative location and number of soil quality and water quality practices obligated through NRCS by watershed in 2020.

Water Quality Practices Obligated by NRCS by Watershed, 2020



Soil Quality Practices Obligated by NRCS by Watershed, 2020



Site Assessment and Evaluation

On-site assessment and evaluations are important aspects of conservation work. Through visits to farms, shorelines, and other sites, conservation professionals can evaluate the needs to protect natural resources at each location. In Wisconsin, site visits and evaluations are also used to determine eligibility for participation in state conservation programs, such as the farmland preservation program, or determine the status of meeting state urban and agricultural conservation standards.

Implementing Practices

When a resource concern is identified or a site does not meet soil and water standards, conservation professionals at the local, state and federal level work with the landowner to develop a strategy to achieve conservation goals. This strategy typically leads to the planning and implementation of a conservation practice. Conservation funding may be available to help landowners achieve conservation goals and to reduce nonpoint sources of nutrients and sediment. The tables at the end of the report summarize how state funding available through DATCP and DNR was used in 2020.

2020 Conservation Site Visits

1,973 visits to determine compliance with state standards (in Wis. Admin. Code § NR 151)

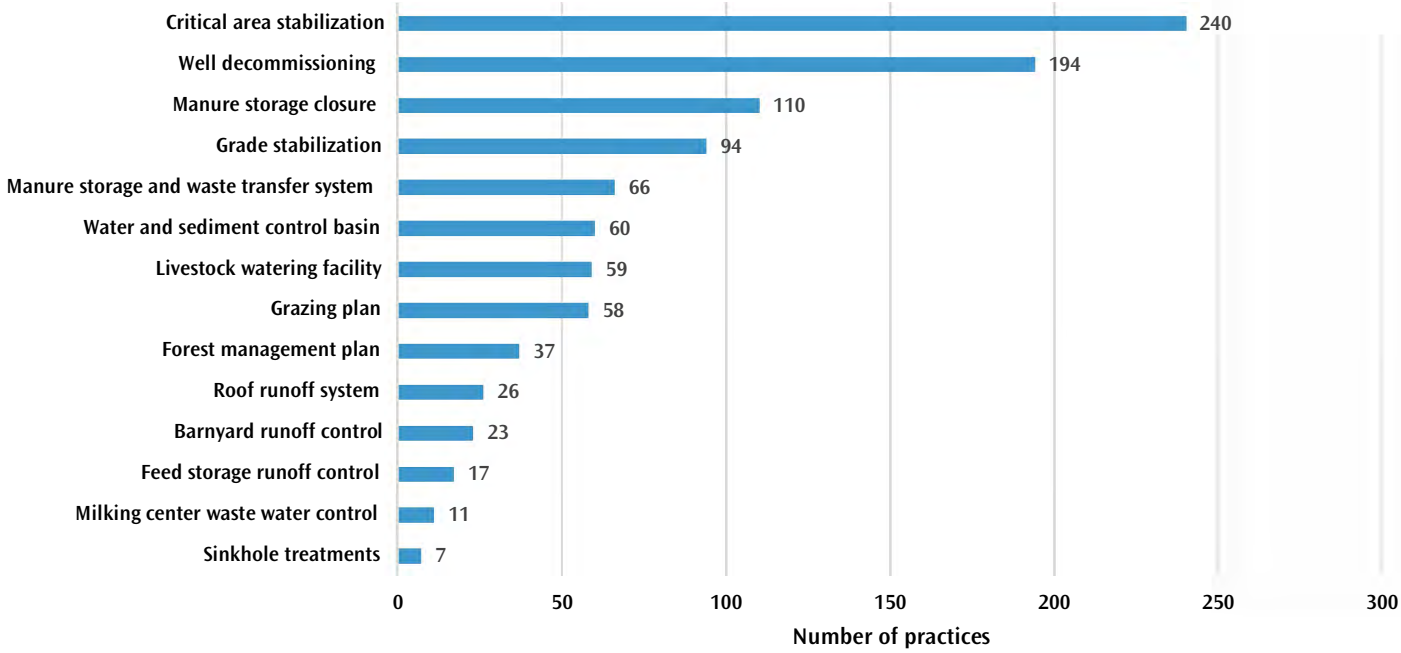
88% of the sites visited met state standards

3,260 farmland preservation program site visits

92% of the sites visited met the requirements for the farmland preservation program and state soil and water standards

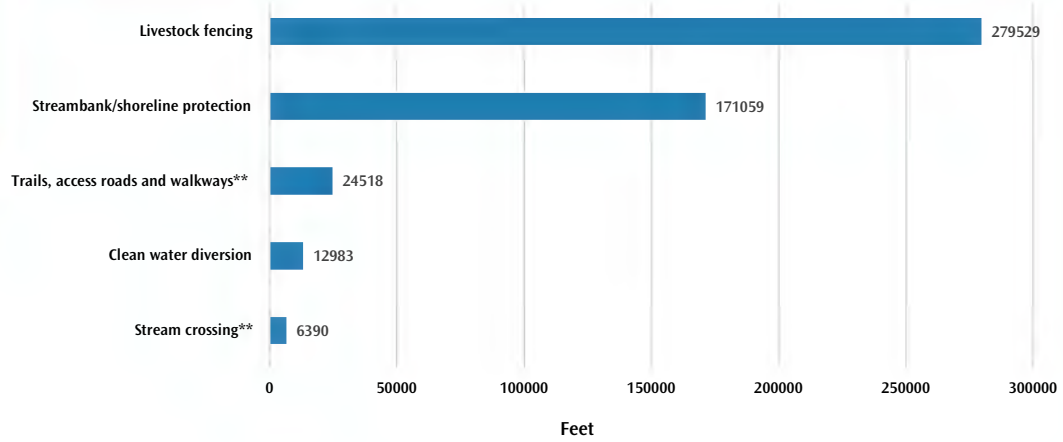
284 other site inspections, including forestry site inspections

Conservation practices installed in 2020, by number*



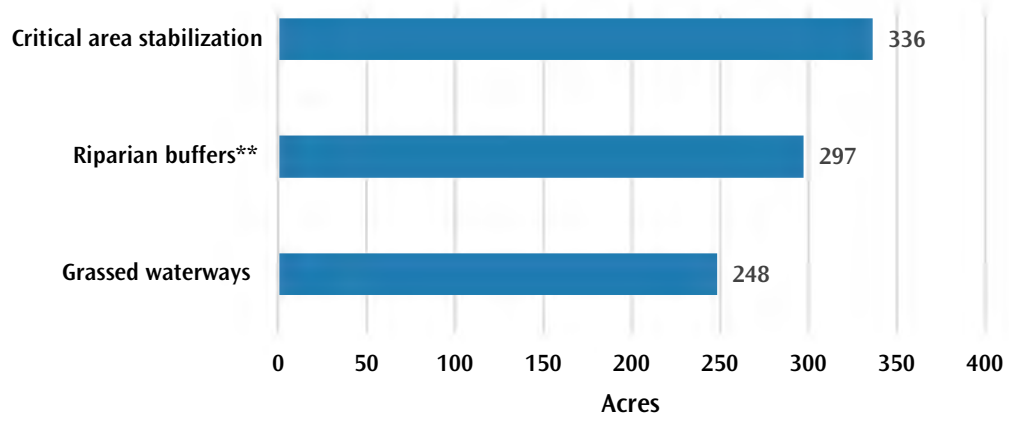
*Installed with county assistance including funding, planning, design, construction or inspection. As reported in March 2021.

Conservation practices installed in 2020, by feet*



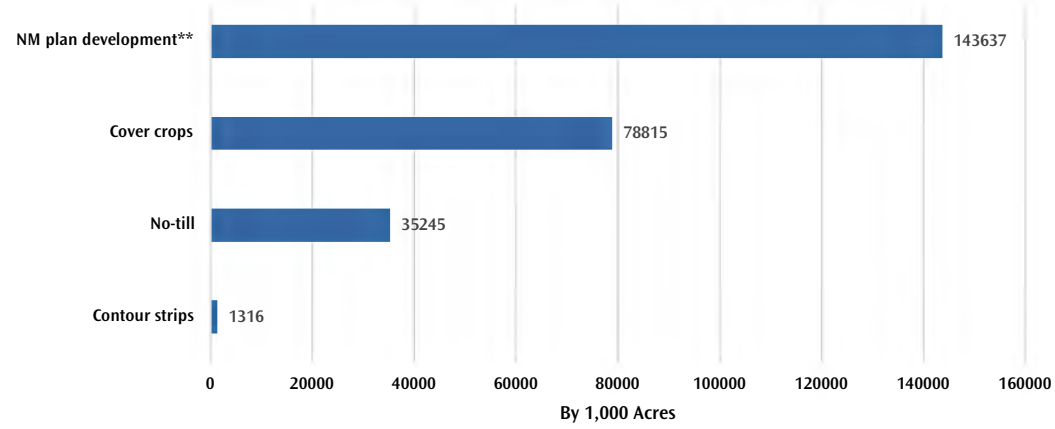
*Installed with county assistance including funding, planning, design, construction or inspection. As reported in March 2021.

Conservation practices installed in 2020, by acre*



*Installed with county assistance including funding, planning, design, construction or inspection. As reported in March 2021.
**Not including CREP acres

Conservation Practices installed in 2020, By Thousand Acres *



*Installed with county assistance including funding, planning, design, construction or inspection. As reported in March 2021.
**New in CY 2020.

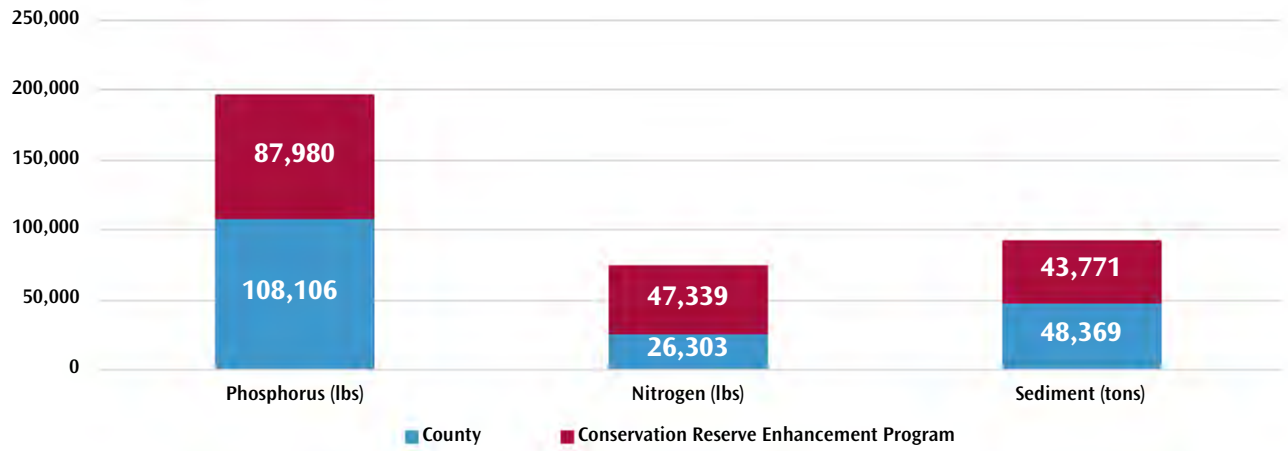
Estimated Load Reductions in 2020

The implementation of various conservation practices helps improve the quality of soil and water resources by reducing nonpoint and point sources of phosphorus, nitrogen and sediment. Nutrients and sediment are the main impairments to Wisconsin's waterbodies. The Wisconsin Department of Natural Resources (WDNR) estimates that more than 70% of the lakes and streams within assessed watersheds are degraded by nonpoint source pollution

As conservation practices are implemented, many counties use models to estimate the reductions in phosphorus, nitrogen and sediment resulting from those efforts (see map Methods Used to Estimate Phosphorus and Sediment Reduction by County, 2020).

The figure below presents the estimated reduction of these pollutants in 2020, as reported by counties in March 2021, as well as reductions calculated in the annual CREP report.

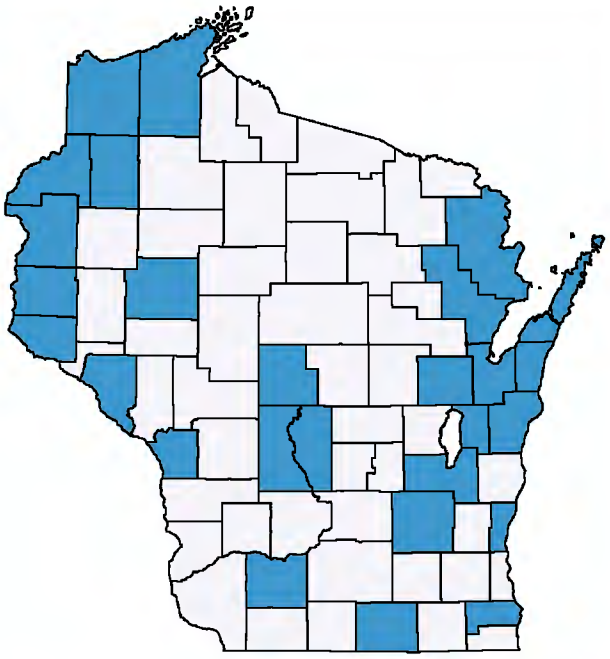
Nutrient and Sediment Reductions, as Reported in 2020*



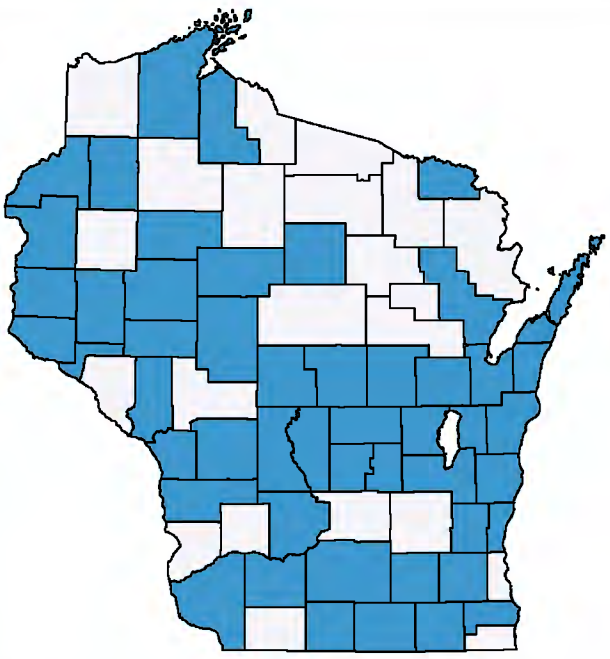
* Not all reductions of phosphorus, nitrogen and sediment achieved through conservation practices implemented in 2020 are tracked and reported. The numbers shown here capture only the known estimated reductions in 2020 as reported by counties in March 2021, or provided in the Conservation Reserve Enhancement Program's annual report. As a result, the numbers shown here are only a fraction of the total reductions in phosphorus, nitrogen and sediment from conservation efforts in 2020.

Work to replace a grade stabilization structure pipe originally installed in 1963.
Photo courtesy of Jackson County.

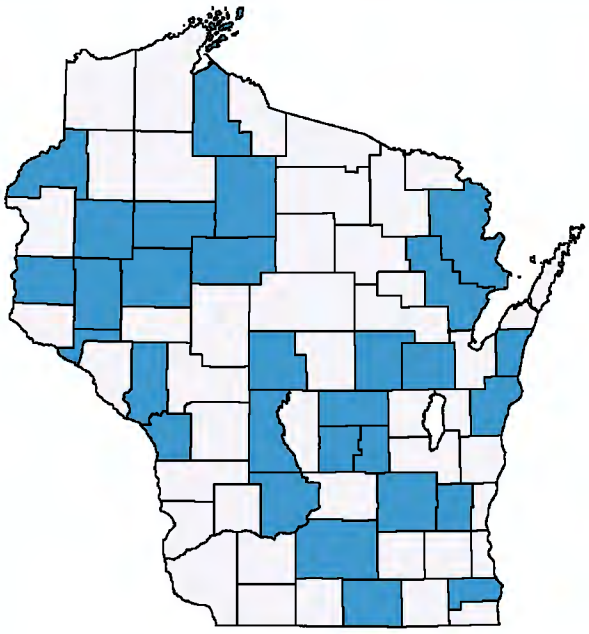
Methods Used to Estimate Nutrient and Sediment Reduction by County



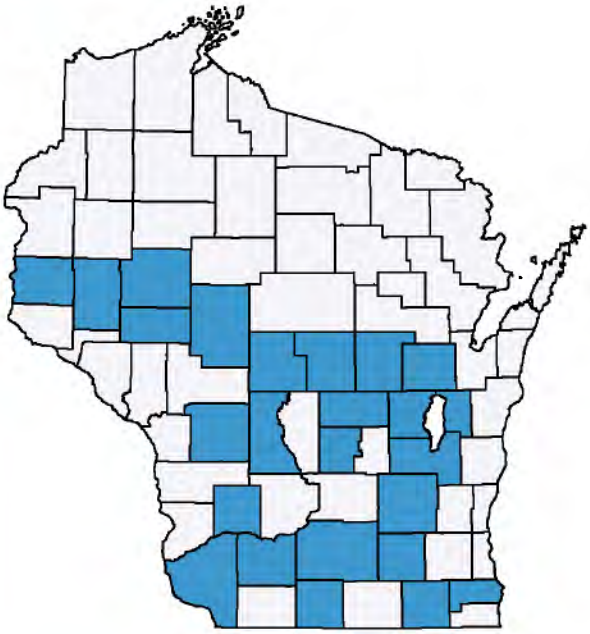
SPREADSHEET TOOL FOR ESTIMATING POLLUTANT LOADS (STEPL)



SOIL NUTRIENT APPLICATION PLANNER (SnapPlus)



BARNYARD EVALUATION RATING TOOL (BERT) or
WISCONSIN BARNYARD RUNOFF MODEL (BARNY)



CONSERVATION RESERVE ENHANCEMENT PROGRAM (CREP)

* As reported by counties in March 2021

Managing Ecosystem Health

In addition to the efforts to address water quality issues from agricultural and rural land use, conservation partners manage the threat to ecosystem health from aquatic and terrestrial invasive species and protect and restore critical habitat for wildlife.

In 2020, 56 counties worked on issues related to aquatic invasive species, and 55 counties worked on terrestrial invasive issues. These efforts often rely on broader partnerships.

> "Much of the county's invasive species work is done though coordination with others including the Timberland Invasive Partnership, Fox-Wolf Watershed Alliance, WI Department of Natural Resources, and the Waterways Association of Menominee and Shawano Counties.
> *Scott Frank,*
> *Shawano County Land Conservation Department*

County Efforts to Address Aquatic and Terrestrial Invasive Species*	
Conducted plant surveys	42
Developed management plans	21
Implemented control or eradication strategies	40
Provided general informational materials	58
Conducted boat inspections	25
*As reported by counties in March 2021.	

Wildlife and habitat management also are important components of conservation plans, including the county Land and Water Resource Management Plans. In 2020, 36 counties worked on wetland restoration projects for habitat; 45 sponsored tree and plant sales; and many others worked to increase pollinator habitat, restore native plant, and complete in-stream habitat work and fish passage. Most counties (63) processed claims regarding wildlife damage.

Enforcing Local Regulations

Many counties across the state adopt local ordinances regulating activities that impact state soil and water resources. When adopted, these ordinances require permits for select rural and urban activities. In 2020, county conservation departments issued numerous permits under their local authority.

Permits Issued by County Conservation Departments in 2020*	
Manure storage construction and transfer systems	89
Manure storage closure	102
Livestock facility siting	20
Winter spreading	111
Nonmetallic/frac sand mining	510
Stormwater and construction site erosion control	1,859
Shoreland zoning	1380
As reported by county conservation departments in 2021. Does not include permits issues by other county departments.	

Once a permit is issued, the county continues to ensure that permit conditions are met through monitoring and inspection. When permittees are out of compliance, the county works with the permittee to address the issue. In some instances, enforcement actions may be needed to ensure that resources are protected and permit conditions are met.

Ordinance Monitoring and Enforcement Actions for Facilities Permitted Under Manure Storage and Livestock Facility Siting Ordinances*	
Compliance inspections	1336
Notices of violation or similar determination issued	37
Facilities cited or fined for violations	33
Referrals to corporation counsel for commencement of legal proceedings	40
*As reported by counties in March 2021.	

Nutrient Management Planning and Education

NM Plans Reported in 2020

7,286 nutrient management plans reported by counties

3,324,634 million acres covered by a 590 and NR243 plan

37% of Wisconsin's of **9 million acres** of cropland covered

Farmer Developed Plans in Wisconsin in 2020

1,433 farmers wrote their own plans

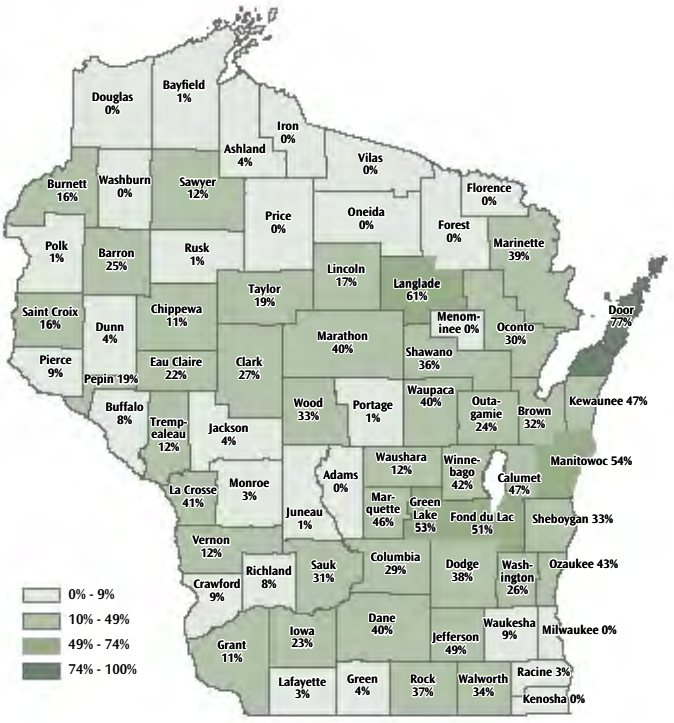
395,510 acres covered by plans written by farmers

20% of all nutrient management plans are written by farmers

Management Farmer Education Grants in 2020

$350,117 awarded through **23** Nutrient Management Farmer Education Grants to support programs teaching farmers to develop their own plans

Percent of County Cropland with 2020 Nutrient Management Plans.



Harvested cropland acres are derived from National Agricultural Statistics Service, Census of Agriculture, 2017.

Please note that these nutrient management data do not include CAFO acres. Since the Wisconsin Dept. of Natural Resources tracks CAFO nutrient management plans regionally and CAFOs often farm in more than one county, double-counting acres created inaccuracies in the data

Planting green in a Racine County field.
Photo courtesy of Racine County.

Keeping Geneva Lake Blue in Walworth County

For many, 2020 was a year to forget. But for a group of concerned residents and conservation professionals near Lake Geneva, the past year was a time to reflect on how they came together to build a partnership for the benefit of Geneva Lake. Social distancing requirements and remote work made routine tasks difficult, but these realities also created new opportunities for partnerships. By embracing alternatives to in-person meetings, and by focusing on opportunities to work together, a watershed group in Walworth County found ways to collaborate during a global pandemic.

For generations, Geneva Lake has lured families to its shores for summer fun. Residents and visitors alike enjoy the many recreational activities the lake has to offer, such as swimming, fishing and boating. The quality of the lake's water and fisheries remains high, but the lake community is concerned about the stress put on the lake. Increased levels of rainfall; shoreline erosion; presence of invasive species; and the impact of residential, commercial and agricultural development all pose a threat to the water quality of Geneva Lake.

In January 2020 the Geneva Lake Conservancy, led by Executive Director Karen Yancy, convened a group of lake stakeholders at George Williams College located on the shores of Geneva Lake. This diverse group consisted of waterfront property owners, specialists from the Wisconsin Department of Natural Resources (DNR), conservation professionals from the Walworth County Land Conservation Department, representatives from the Southeastern Wisconsin Regional Planning Commission (RPC), a state legislator, and other interested citizens. Given the variety of issues impacting the lake, the group knew that it would take more than one person or organization to address them. Once assembled, the group set out to work collectively through the Water Alliance for Preserving Geneva Lake (the Alliance).

Although the pandemic halted in-person meetings, the group adapted and continued to meet regularly via Zoom. The Alliance created three subcommittees to address different challenges to the lake: Phosphorous and Sediment, Invasive Species, and Agricultural and Septic. The flexibility of the virtual meetings enabled continued progress toward the group's goal of elevating awareness about the issues while engaging experts about solutions.

Throughout the year, the Alliance identified priorities and developed plans for next steps. Students from the University of Wisconsin-Whitewater collected water samples from multiple Geneva Lake tributaries during the growing season to gather information about the concentration of phosphorous and sediment reaching the lake. The RPC began developing a watershed plan, and an inventory of Geneva Lake tributaries commenced. The information gathered from these activities helped identify priority areas for conservation within the watershed.

The Alliance recognizes that lake protection efforts must address the challenges from all land uses. The group thoughtfully examined all issues, including agricultural and urban runoff, failing septic systems, invasive species, and shoreline habitat impacts on the lake. The group explored methods and tools to reduce sediment discharges from an active gravel pit in the watershed. The group mapped gully erosion in woodlands and neighborhoods for future action. In addition, local donations were secured to establish more than 230 acres of cover crops in the watershed to help reduce runoff from agricultural areas.

> "I think the most satisfying thing in a year like this was the ability to accomplish so much with such a large group of stakeholders, while practicing social distancing and doing all collaboration virtually," said Brian Smetana, Walworth County's Senior Conservation Technician. "I look forward to when we can all meet in person, hopefully sometime in 2021."

The Alliance also worked to raise awareness of these issues in the broader community. The group coordinated the "Keeping It Blue" column in the Lake Geneva Regional News to inform and encourage others to get involved in protecting Geneva Lake. "We have great authors in the Alliance," said Karen Yancy. "This provided a way for the community to send in their questions and comments, and we had a great response."

Because more people were spending time at home during the pandemic, the group used the Geneva Lake Conservancy's Conservation@Home program as another way to engage property owners. The program encourages landowners to become involved in conservation efforts and recognizes homeowners for their Earth-conscious choices. Five volunteers, three of

whom are master gardeners, met safely outdoors with property owners to discuss how yard improvements can benefit the lake. Nine rain gardens and more than 650 feet of shoreline buffer strips were completed on privately owned waterfront properties.

Over the past year, the Alliance's membership expanded beyond its initial partners to include representatives from local municipalities, the UW-Whitewater, Geneva Lake Level Corp., and the Geneva Lake Association. Going forward, the Alliance hopes to secure more funding for cover crop establishment and the installation of conservation practices. Once the watershed plan is complete, it will create more opportunities for funding and collaboration in priority areas. The Alliance will host soil health field in 2021 in the watershed, and more cover crops, rain gardens, and shoreline buffers are planned for the upcoming year.

Cover crop in the Geneva Lake Watershed.
Photo courtesy of Walworth County.

Taking a Comprehensive Approach to Conservation in Taylor County

After visiting a farm in Taylor County, conservation professionals knew it would take a comprehensive solution and strong partnerships to address runoff concerns originating at the site. Through collaboration between the Taylor County Land Conservation Department, USDA-Natural Resources Conservation Service, the Wisconsin Department of Agriculture, Trade and Consumer Protection, and the farm owners, a comprehensive infrastructure project was initiated to improve existing facilities and reduce the risk of runoff to groundwater and surface water.

Overall, one of the biggest challenges with the project was the site itself. The farm is fairly small with only 140 cows. It sits upslope from wetlands and has a relatively high groundwater elevation. An existing waste storage facility was built in groundwater due to the shallow depth to groundwater, was not large enough for the landowners, and posed a threat to water quality due to the worsening condition. The site also has a recently-constructed feed pad that is in good shape. The challenge was that there was no way to collect the runoff from the feed pad, which sent runoff into nearby wetlands.

To solve the problems, project partners designed and constructed collection systems to capture runoff from the feed pad and from the milk house. Manure management solutions were also constructed, including multiple transfer systems and a new concrete lined waste storage. In addition, the existing waste storage facility was abandoned using appropriate technical standards. With these changes, runoff from the site is now held in concrete storage instead of seeping into the soil, groundwater or a nearby stream. The larger waste storage facility also eliminates the landowner's need to spread manure during the winter.

The project took nearly four years to complete from planning to construction. The project cost nearly $500,000 and was supported through a combination of federal, state and county funding. The finished product is a great example of a conservation effort that benefits the landowner, the environment and the public. The farm now has better facilities with longer storage duration, and the elimination of runoff protects the health of groundwater and nearby wetlands and streams.

New concrete lined manure storage in Taylor County.

Healthy Riparian Areas – A Hug for Your Water

The health of the area along a lake, river or stream is vital to protecting water quality. This area is known as the riparian area. Efforts taken to protect the riparian area are a key part of conservation work. A healthy riparian area stabilizes banks and shorelines, protecting the area from erosion. The area also serves as a filter to slow runoff, and trap sediment and nutrients. The plants within the area then use these nutrients, keeping them from entering the water. The two examples below showcase the benefit of caring for riparian areas.

Vilas County

Riparian landowners Joe and Jennifer Heitz were concerned that too much sediment was washing from their Vilas County property into Ballard Lake during large rain events. While they had a deep buffer on the shore, the landscape is naturally contoured to funnel runoff from their timber-framed steps and into the lake. During large rain storms, this contouring would wash soil and debris into the lake.

In 2019, Joe contacted the Vilas County Land & Water Conservation Department for help. That call was the beginning of a project that would benefit the water quality of the lake. The county conservation department helped design site plans for installation of infiltration pits within the frames of the steps to his lake access. These pits are lined with landscaping fabric and filled with rocks roughly 2-3 inches in diameter. The spaces between the rocks allow for runoff to soak through the landscaping fabric and into the pit, dropping sediment from the runoff onto the fabric. The fabric must be cleaned annually to function properly, and the Heitz family can continue using their stairs as they always have.

With the county's help, the landowners were able to access funding through the DNR's Healthy Lakes grant program. In the summer of 2020, Joe and Jennifer successfully installed three infiltration pits. By doing the work themselves, the Heitz's were able to use their time as a match for the grant funds. With the completion of the project, the landowners no longer see a pile of sediment and debris at the edge of the lake and are happy they are doing their part to keep sediment and phosphorus out of the lake they love.

The landscape at the site naturally funnels runoff towards Ballard Lake. Homeowners Joe and Jennifer Heitz installed infiltration pits to help control the runoff and protect water quality.
Photo courtesy Joe Heitz.

Forest County

Visitors to Crane Lake in southern Forest County can thank neighboring property owners Rodney and Joan Sternhagen for their patience and persistence to protect the health of the lake. Landowners on Crane Lake sought help in 2018 to address significant sediment loss from the property, a problem created by runoff and an unstable shoreline. Although the project started in 2018 with survey work, they encountered challenges moving the project forward, including rainy weather. When work resumed, a buffer was installed within the riparian area. The planting in the riparian area, which included over 40 shrubs and 400 plugs of grasses and sedges, was handled by a local garden and landscaping company. The county and landowners call the project a success as the riparian project keeps the soil where it should be – out of Crane Lake.

Planting along Crane Lake.
Photo courtesy of Forest County.

Stewarding Water Resources Today and Tomorrow

Buffalo County and Eau Claire County

Partners across Wisconsin continued to prioritize water quality improvement in 2020. Improving water quality is a long-term challenge, yet landowners, counties, and agencies are taking short-term actions toward this goal. In 2020, these included projects with immediate benefits, along with work to set the stage for future, sustained outcomes.

Sometimes, a natural resource concern can be addressed with a straightforward approach that yields immediate results. For example, in 2020 the Buffalo County Land Conservation Department completed a project to address farm runoff. A feedlot in the county was located within a wetland adjacent to a tributary to the lower Buffalo River. The location of this feedlot was not ideal for the health of the cattle and also posed a water quality concern.

Diverse stakeholders were motivated to develop a solution, so Buffalo County convened partners. The U.S. Fish and Wildlife Service was interested in protecting habitat in the wetland, and the Wisconsin Department of Natural Resources wanted to support the county land conservation department to help the landowner manage the runoff risk. A big first step was to move the cattle to an upland site across the road. A roofed barnyard with manure storage, a feed storage pad, and perennial vegetation were installed at the new site.

Additionally, the wetland area was added into the Upper Mississippi River National Wildlife and Fish Refuge. “Besides the projected water quality and habitat benefits, this area is now open to the public for recreational uses including paddling, fishing, and hunting,” said Mary Stefanski, Winona District Manager for the U.S. Fish and Wildlife Service. In the end, the project enabled the farm to meet the state’s soil and water conservation standards, protected sensitive wetland habitat, and improved infrastructure on the farm.

In addition to projects with direct outcomes, efforts that indirectly address water quality are equally important. The ability to build connections within the community is a foundational element of local water quality initiatives. These connections are made through education and outreach and through partnerships.

In 2020, partners in the Eau Claire River Watershed increased communication efforts to support conservation. Eau Claire and Clark counties used funding from Wisconsin DNR through the Targeted Runoff Management grant program to host cover crops workshops and establish farm demonstration sites. The workshops were well-attended and presented an opportunity for farmers and landowners to see the benefits of cover crops for managing soil erosion and soil health first-hand.

One unique aspect of this initiative was the ability to tailor the education to the needs of specific audiences in the watershed, including Amish and Mennonite farmers. “The Eau Claire River Watershed is variable in a couple of ways. The watershed includes some of the northern driftless landscape, as well as glacial till and outwash areas. The landowners within the watershed are just as varied; from lake cabin owners to precision farmers, from large cash-grain farms to very traditional Amish farms. We have had to tailor our outreach for this unique blend,” said Greg Leonard, Land Conservation Manager for the Eau Claire County Land Conservation Division. The outreach efforts that began in 2020 are key steps to building awareness of conservation practices and for moving toward increased adoption of conservation practices over time to meet local watershed objectives.

Using outreach, technical assistance, and funding support, counties and partner networks proactively tackled water quality improvement. This work both enhanced Wisconsin’s water resources and laid the groundwork for further conservation in the years ahead.

Piloting Harvestable Buffers in Waupaca

Waupaca County is a melting pot of soil types and geography. And, like much of Wisconsin, it has plenty of water.

Jim and Susan Clinton own a dairy and cash grain farm on more than 3,000 acres, with ditches leading into Little Creek in the Bear Lake – Lower Little Wolf River Watershed. The ground here is flatter, and it is common to tile and drain fields. "We were tired of investing time and money in row crops on marginally productive ground near the ditches and wetlands," said Jim Clinton. They milk nearly 400 cows and own 100 steers, and they were looking for a solution that would protect the area's water while supporting their operation. "We have steers and heifers that can utilize the grass feed, so it just made sense from an economic and environmental sense to put the areas into harvestable buffers."

Harvestable buffers are established on existing cropland that is usually less productive. Establishing vegetation in these areas can reduce soil and nutrient loss from the field and decrease the amount of runoff getting into streams, lakes, wetlands, and other sensitive areas. In addition to these benefits, producers can harvest the perennial grass cover and keep valuable land in production. Buffers can be cut to a minimum of 4 inches and can only be harvested between May 20 and September 15.

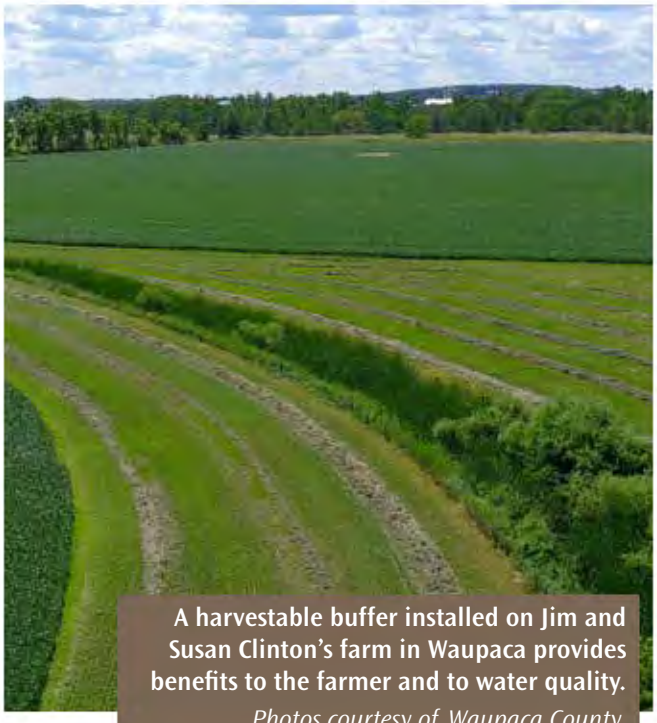
Brian Haase, conservationist for the Waupaca County Land and Water Conservation Department (LWCD), worked with the Department of Agriculture, Trade and Consumer Protection (DATCP) in 2019 to discuss the advantages of harvestable buffers. In 2020, funding from DATCP, the Wisconsin Department of Natural Resources (DNR), and the federal government came together to pilot a harvestable buffer incentive offering with a budget of nearly $86,000. DATCP provided the framework and worked with Waupaca County to create program guidelines, contracts, and the payment structure. "I was shocked it came to fruition so quickly," Haase said. "Harvestable buffers make so much sense; state cost-sharing programs should have allowed them decades ago."

The LWCD led the local implementation of the pilot while targeting farmers and landowners who were either ineligible for or otherwise not interested in the Conservation Reserve Enhancement Program (CREP). In April 2020, they started contacting farmers with whom they had already had discussions about a program where buffers could still be used for feed.

Participating Waupaca County landowners receive $125 per acre every year through 10-year contracts. The LWCD chose to create an escrow account at the county level that allows for yearly payments. This allows for yearly inspections before each annual payment, and an opportunity to check in with participants on land management concerns.

In 2020, Waupaca County farmers installed more than 68 acres of harvestable buffers through 10-year contracts, exhausting the pilot's budget. In addition to the annual incentive payments, all participants intend to use the hay as heifer or steer feed for their own operations. Plus, consistent harvesting removes accumulated nutrients and other contaminants that have been deposited in the buffer, resulting in improved water quality. It is estimated that the 68 acres of buffers prevent 622 pounds of phosphorus, 342 pounds of nitrogen, and 301 tons of sediment from entering Wisconsin waters each year.

Waupaca County is continuing the pilot in 2021, and interested owners are lining up. An existing watershed protection plan will help target additional potential sites in Waupaca County; DATCP is also funding two additional pilot projects in Manitowoc and Walworth counties. Everyone involved expects to learn a great deal from the expanded pilots and hope that harvestable buffers will soon be available as a standard statewide conservation practice.



A harvestable buffer installed on Jim and Susan Clinton's farm in Waupaca provides benefits to the farmer and to water quality. *Photos courtesy of Waupaca County.*

Creative Connections in a Virtual World

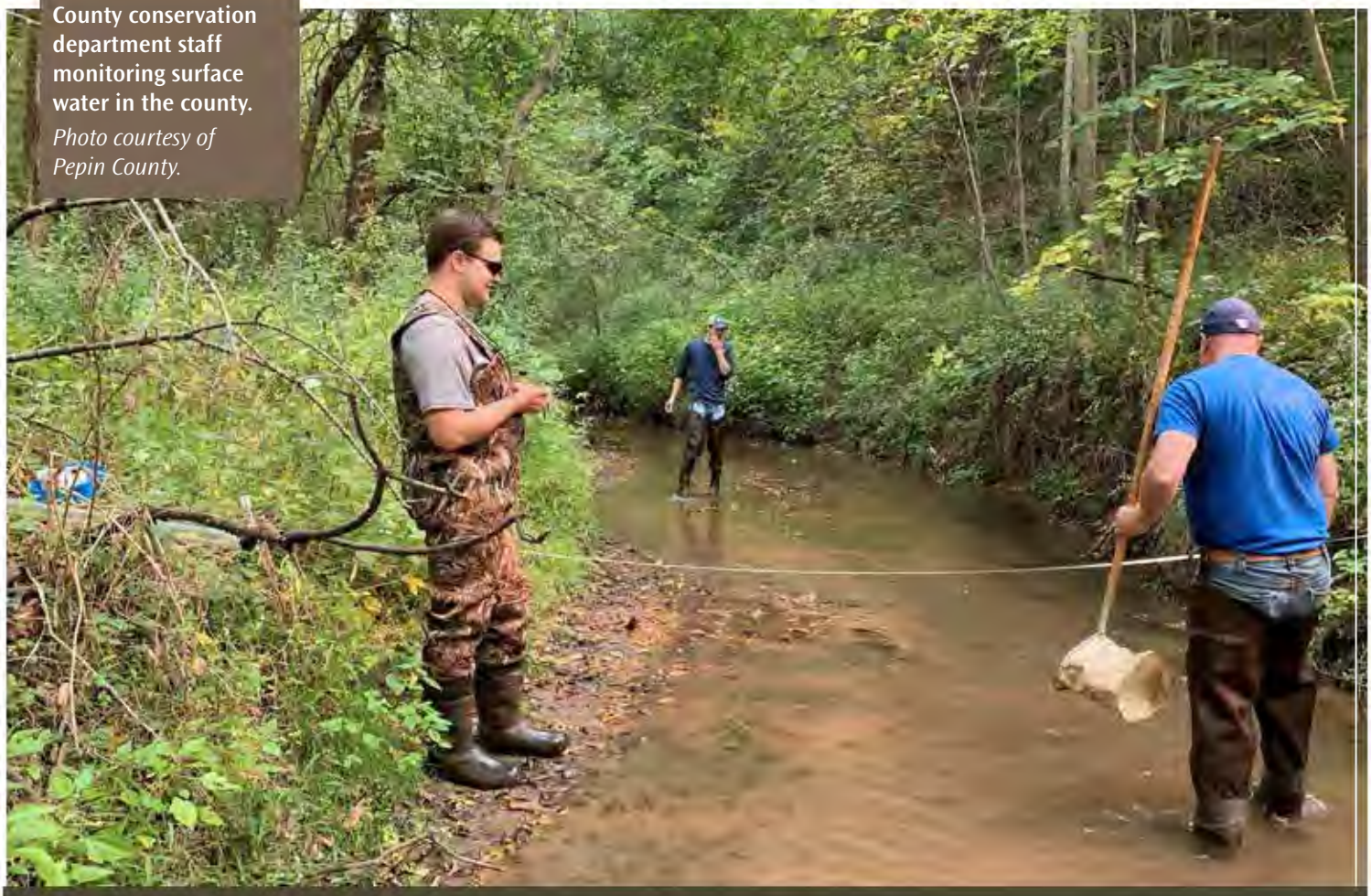
Each year, conservation professionals across the state spend time developing educational and outreach programs to build knowledge about natural resource issues and conservation. Like most things in 2020, these in-person events had to be put on hold. However, the need for continued conversations about conservation remained, and county land conservation departments found a way to ensure these discussions continued – in some cases, to an expanded audience.

"COVID-19 made many of us step outside our comfort zone, and this included the Oneida County L&W Dept. Thanks to Zoom and a staff that was ready to chart new waters, our workshops saw increased attendance. Additionally, we saw increased numbers and engagement at committee meetings by the general public."
Michele Sadauskas,
Oneida County Conservationist

Pepin County

Conserving on a Prayer. It was Pepin County's turn to host the summer tour in 2020 for counties in west-central Wisconsin. The annual tour typically gives counties an opportunity to showcase their conservation work and what makes them unique. With COVID-19 putting most group activities on hold, the county wanted to lighten the mood while sharing highlights from the county. The conservation department is often asked what it does, so the tight-knit department came up with something "outside the box" to answer the question.

Kevin Trushenski, the Administrative & Outreach Specialist, is known for his love of music. After deciding to film a music video parody for Bon Jovi's "Living on Prayer," Kevin was able to rewrite the lyrics for the entire song in less than an hour. The lyrics capture the department's work and offer a glimpse at the wide range of responsibilities within the department. The department's staff shot video footage while conducting their regular duties. The video, like conservation work in the county, relied on partnership, and the department credits its NRCS



County conservation department staff monitoring surface water in the county.
Photo courtesy of Pepin County.

partner for some of the video. Although the video cannot cover everything, the final product sheds light on conservation activities in the county, including a nitrogen use efficiency project, surface water monitoring, composting studies, conservation practice installation, support for producer-led watershed activities, park improvements and responsibilities related to zoning, floodplain management and recycling. To view the video: https://www.youtube.com/watch?v=csAaTKVG71w.

Iowa, Grant, Lafayette, and Green Counties Helping Landowners Help the Land.

Conservation issues and land ownership don't always stay within county boundaries. That's why four counties recently partnered with UW-Extension to address a growing conservation challenge: Practices on rented agricultural land.

Often, there are fewer conservation practices on rented ag land, particularly those with year-to-year leases. Farmers are more willing to invest in longer-term practices like cover crops, no-till, or managed grazing when they know they will be able to farm the land for several years. Communication can also be challenging; landowners may not understand their options, what to look for, or what to ask.

County conservationists and UW-Extension agriculture agents from Iowa, Grant, Lafayette, and Green counties—along with regional Extension water resources, nutrient management, and soil health specialists—recently held a three-part webinar series for non-operator landowners. The goal was to help landowners better understand their soil, available conservation practices, and lease development. This way, they can be more involved in farming decisions on their land and facilitate protection of their soil and water resources.

Webinars included *Understanding Your Farmland, Protecting Soil and Water,* and *Developing a Farmland Lease*. Forty landowners attended the courses, and many offered helpful suggestions and positive feedback in an evaluation survey: "Very informative and well presented. Thank you to all of the presenters," "Excellent series … lots of enthusiasm demonstrated for topics," and "Great program, really got me thinking about my farm as a whole."

The program was a success, and the team is already planning its next set of webinars and workshops for operators and non-operator landowners.

Postcard invitation to landowners for the webinar series for non-operator landowners in Iowa, Grant, Lafayette, and Green Counties.

Crawford County

Youth Conservation – Virtually! In 2020, Crawford County Land Conservation found themselves confronting the challenge providing area youth with conservation education. Typically, nearly 250 students in the fifth and sixth grade gather to explore demonstration stations highlighting a range of topic from soils, forestry, aquatic invertebrates, outdoor safety, and fish shocking. The students also experience a live-animal presentation of either birds of prey or reptiles and amphibians.

Instead of canceling the event, the county was determined to find a solution that would continue conservation education. The county created a website for schools to incorporate natural resource related material into their curriculum. Conservation partners from the Wisconsin DNR Fisheries and Forestry teams and the Crawford Stewardship Project all graciously created videos for the initiative. In addition to this new content, the website highlighted material from the USDA-Natural Resources Conservation Service, Discover Wisconsin TV, and Wildlife of Wisconsin. The county hopes to host in-person education soon, but until then the videos ensure conservation content is available to engage and educate.

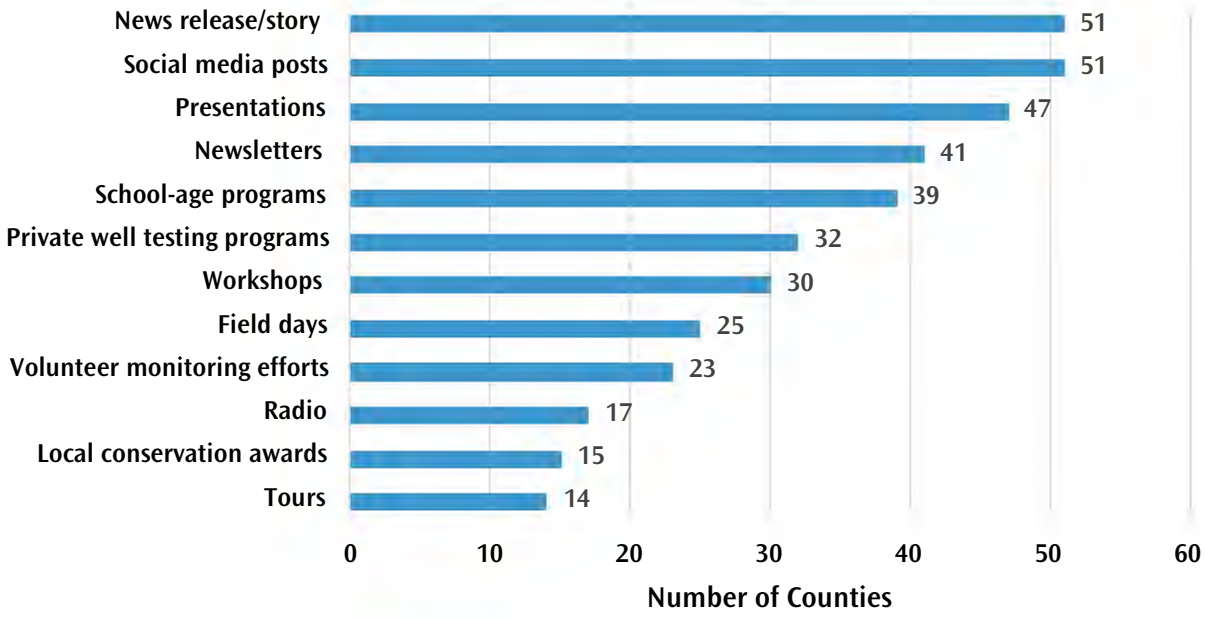
Sampling soil as part of the nitrogen use efficiency project.
Photo courtesy of Pepin County.

Wood County

Exploring Profitability and Resiliency in Central Wisconsin. The Central Wisconsin Farm Profitability Expo is a revival of a past event, formally known as "Healthy Soil, Healthy Water." In 2020, with an expanded network of more than 20 local partners including farmers, watershed group representatives, agency staff, and agricultural and natural resource specialists, they found themselves shifting to hosting a series of virtual conversations exploring farm profitability amidst today's challenges. The group sought the best knowledge in the industry, brought it back to Wisconsin, and made it applicable to farmers in the central part of the state.

Although this effort was virtual, the goal of the conversation was the same—encourage profitable farming by building resiliency, diversifying farming operations, reducing inputs, and increasing farmers' return on investment. The virtual event reached nearly 240 individuals. These conversations often consider how to address the specific barriers faced by farmers in central Wisconsin when it comes to adopting conservation practices on the farm. The group hopes to offer an in-person event in the winter of 2021 and will maintain the newly established YouTube channel and Facebook page.

Outreach Strategies Used by Counties in 2020*



*As reported by counties in March 2021

Menominee County

Hands-on Learning Prior to Pandemic. While nearly all outreach and education events in 2020 were canceled or held virtually, more than 100 students from Keshena Primary School in Menominee County enjoyed a hands-on Outdoor Education Day in early March before the COVID-19 pandemic halted in-person gatherings. The Menominee County Land Conservation/Forestry/Zoning Department collaborated with the Legend Lake Legend Lake Property Owner's Association (LLPOA), Timberland Invasives Partnership (TIP), and the Menominee Indian Tribe of Wisconsin to develop three educational stations. One station taught students about tree identification, and because the event took place at LLPOA's community composite site, students could learn about the benefits of composting.

LLPOA property manager Rick Moses, Jr. was on site to help with the day's activities. TIP Coordinator Alix Bjorklund's station included an interactive game allowing students to assume the role of native and invasive species in order to visualize how quickly invasive species can take over. Menominee Tribal Conservation Warden Mike O'Reilly brought numerous skulls and furs for a wildlife identification station. Because there was still some snow on the ground, Lacy Dixon from Menominee County Conservation/Forestry/Zoning Department also assisted in wildlife education with a tracking activity. For Jeremy Johnson, Director of Menominee County Land Conservation/Forestry/Zoning Department, youth education plays a key role in environmental advocacy. "The students are smart and impressionable, so they really take it to heart and learn it," Johnson said. "They'll take this information and share it with their friends and families, and my hope is that they pass on that fun education and broaden environmental awareness."

Alix Bjorklund, TIP Coordinator and a group of students at the Outdoor Education Day in Menominee County.
Photo courtesy of Menominee County.

Giving Northern Pike Room to Grow in Brown County

There will likely be more northern pike in Green Bay after Brown County began a northern pike spawning marsh project in the summer of 2020.

The marsh is located on state-owned property in the Town of Little Suamico. The site, known as "Mosquito Farm," was initially part of a beef operation owned by Don and Patricia Zeller. More than 25 years ago, the Zeller's wanted to preserve the area and protect the farm from development pressures and sold 70 acres to the State of Wisconsin. The state hoped to use the area for fish spawning projects just like this.

The ditch is nearly a half mile from Green Bay and is one of the heaviest used spring migratory corridors for northern pike on the bay's west shore. Irregular weather patterns, drainage and seasonal impediments to flow can hamper the adult pike migration along the spawning run, and low flows can strand fry and young of the year pike in upstream areas of the Brown Road Ditch. Although this is natural, this project was an opportunity to improve the spawning pike habitat and estuary areas for developing fry.

The 2020 project created a 5-acre wetland complex with six excavated backwater scrapes positioned along a constructed 3,200-foot-long horseshoe shaped grassed wetland slough. Both ends of the waterway's horseshoe design connect with the Brown Road ditch for uniform flow and fish migration pathway. The wetlands can be used by adult northern pike during their spring spawning run and as an estuary area for the developing fry and young of the year. The project design also includes diversity of water depths, irregular shapes, water temperatures, flow, safety and no fish stranding areas. This allows the pike to choose what is best in a given year. The pike are not the only beneficiaries of the project—the habitat also benefits amphibians, insects, waterfowl and non-target fish species like native forage fish, perch, lake suckers and even walleye.

The work completed in 2020 will serve as a base to which additional wetland scrapes may be added in the future if funding and additional habitat restoration efforts are pursued. Efforts to make this project a reality began with the purchase of the site and continued over the past couple of decades as assessments of the property were completed and a strategic plan developed to ensure wise use of the site. Partnerships have been critical and, in addition to the Zellers, Brown County worked other landowners, WI Department of Natural Resources, and the Department of Agriculture, Trade and Consumer Protection. Funding for this project came through grants from the NRDA and Ducks Unlimited. The Zeller's love the project and can't wait to see the spring 2021 spawning run.

View of the northern pike habitat project in Brown County on the old "Mosquito Farm."

Conservation Activities Planned for 2021

Cropland and Pasture Practices

- **98** water & sediment control basins/grade stabilization structures
- **71,125** acres of No-till and cover crops in 39 counties
- **44 counties** will help review and revise nutrient management plans
- **40 counties** will install over 210 acres of grassed waterways
- **8 counties** will install trails, walkways, or lanes

Livestock-related practices

- **71** manure storage facilities
- **88** manure storage closures
- **79,691** feet of livestock fencing (15 miles)
- **18** clean water diversions
- **29** barnyard/livestock runoff control systems
- **19** watering facilities/spring developments
- **40** roof runoff systems
- **5** feed storage runoff control systems
- **18** milkhouse treatment practices
- **10** roofs
- **6,698 feet** of stream crossings
- **19** counties will assist in developing grazing plans

Other water quality practices

- **240** well abandonments
- **39 counties** will install over 10 miles of streambank stabilization
- **37.5 acres** of critical area stabilization

Conservation site visits and inspections

- **3,251** farmland preservation conservation site visits
- **1,619** visits to determine compliance with NR 151 standards
- **590** county animal waste permit inspections
- **135** livestock facility siting permit inspections
- **1,903** stormwater and construction site erosion control permit inspections
- **1,563** non-metallic mining permit inspections

Water Quality monitoring

- **42 counties** are involved in lake and/or stream monitoring
- **29 counties** have a groundwater monitoring program

Invasive Species

- **34** counties conduct surveys
- **47** counties conduct education activities
- **41** counties engage in control activities

Forestry and Wetlands

- **27** counties engage in forestry-related work
- **30** counties will install wetland restorations
- **35** counties have Tree and Plant sale programs

Conservation Practices Installed in 2020 With State Funding

Practices Installed Using Soil and Water Resource Management Funds in 2020, WI DATCP

Conservation Practices		Practices Installed		
		Acres	Feet	Number
Soil Erosion Control	CREP Equivalent	18.8		
	Animal Trails and walkways		4,953	
	Cover and green manure crop	1980		
	Critical area stabilization			42
	Diversions		5,495	
	Field windbreaks		19,134	
	Grade stabilization structures			41
	Riparian buffers	33.03		
	Sinkhole treatment			1
	Streambank crossing		3,348	
	Streambank and shoreline protection		34,837	
	Subsurface drains			20
	Terrace systems		2,184	
	Underground outlet			26
	Water and sediment control basins			25
	Waterway systems	217.16		
Manure Management	Manure storage closure			52
	Manure storage systems			9
	Access roads		4,301	
	Barnyard runoff control systems			6
	Livestock fencing		52,374	
	Livestock watering facilities			21
	Milking center waste control system			3
	Nutrient management	35,179		
	Residue management	627		
	Roof runoff systems			7
	Roofs			1
	Sediment Basins			0
	Waste transfer systems			2
	Wastewater treatment strips		0	
Other Practices	Prescribed grazing; permanent fencing		121,891	
	Prescribed grazing; est permanent pasture	436		
	Well decommissioning			128
	Wetland development or restoration	87		
	Feed storage runoff control systems			3

Table 2: Agricultural Best Management Practices Installed in Calendar Year 2020, WI DNR

Best Management Practice	Installed Amount
Barnyard Runoff Control Systems	3
Cover and Green Manure Crop	778 Acres
Critical Area Stabilization	2 Acres
Diversions	1,265 Feet
Feed Storage Leachate	1
Grade Stabilization	1
Heavy Use Area Protection	1 Acre
Manure Storage System Closure	1
Manure Storage Systems	3
Milking Center Waste Control Systems	1
Other Streambank/Shoreline Protection (incl. assoc fencing)	2,990 Feet
Residue Management	3,580 Acres
Roofs	1
Streambank/Shoreline Rip-rapping/Shaping & Seeding (incl. associated fencing)	544 Feet
Streambank/Shoreline Shaping & Seeding (incl. assoc fencing)	9,000 Feet
Waterway Systems	4 Acres
Wetland Development or Restoration	1 Acre

Table 3: Urban Best Management Practices Installed in Calendar Year 2020, WI DNR

Best Management Practice	Installed Amount
Information and Education Program	1
Storm Water/Erosion Control Ordinance	2
Street Sweeping	1
Urban Detention system	2
Urban Infiltration System	1
Urban Practice Design	2
Urban Stormwater/Erosion Plan	9

Work to stabilize over 2,800 feet of Timber Creek protects the stream corridor, reduces erosion and enhances fish habitat.
Photo courtesy of Jackson County.

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