

Wisconsin River Basin

Clean Waterways Project

August 2015



Updates on the Wisconsin River TMDL and water quality improvement efforts.

What's new in the basin?



There is a major effort underway to improve water quality in the Wisconsin River Basin. The framework for this effort is a Total Maximum Daily Load (TMDL), which is the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards. The [Wisconsin River TMDL](#) is currently under development and scheduled to be finalized in 2017.

Through this newsletter, the Wisconsin River Clean Waterways team is working to communicate progress on the different stages of TMDL development and invite public feedback. This quarterly newsletter also highlights information, tools and resources available to help with conservation efforts in the state.



Photo credit: Ashley Beranek

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[Subscribe](#) to receive email updates about the Wisconsin River TMDL.

Establishing Partnerships with the Agricultural Community



"Farmers by nature are problem solvers. We need them involved in order to solve this problem."

- Wisconsin agronomist

Establishing partnerships with agricultural producers and groups is an important first step in developing an implementation strategy for the Wisconsin River TMDL. With this in mind, the Wisconsin River TMDL team at DNR has been meeting with agricultural organizations, producers and resource conservation and development councils in the basin to explain the TMDL project, find out more about their activities and look for opportunities to partner together on water quality improvement efforts. Two projects that are currently in the works that we are working together with our agricultural partners are:

- ❖ **Civic Engagement and Farmer Led Networks:** DNR staff are working with agricultural partners to submit a grant application for a project that would train conservation staff and agricultural community leaders and citizen steward leaders on tools and techniques to engage their local community in conservation decision making, as well as provide technical and financial assistance to develop and implement an engagement plan in their local communities.
- ❖ **Wisconsin River Nonpoint Source Workshop:** This winter, WDNR is planning to host a full-day workshop that aims to highlight agricultural best management practices, showcase multi-stakeholder projects that have led to water quality improvements, and provide a space for multiple groups to interact with and learn from each other and have solution driven conversations about water quality.



We want to hear from you!

Are you interested in giving us ideas or feedback on these project efforts? Would you like to learn more about them? Do you know (or are you yourself) an agriculture producer, group or business that would be interested in these efforts and that we should chat with? If so, please let us know by emailing dnrwisconsinrivertmdl@wisconsin.gov





Opportunities for Technical Input into TMDL Model Development

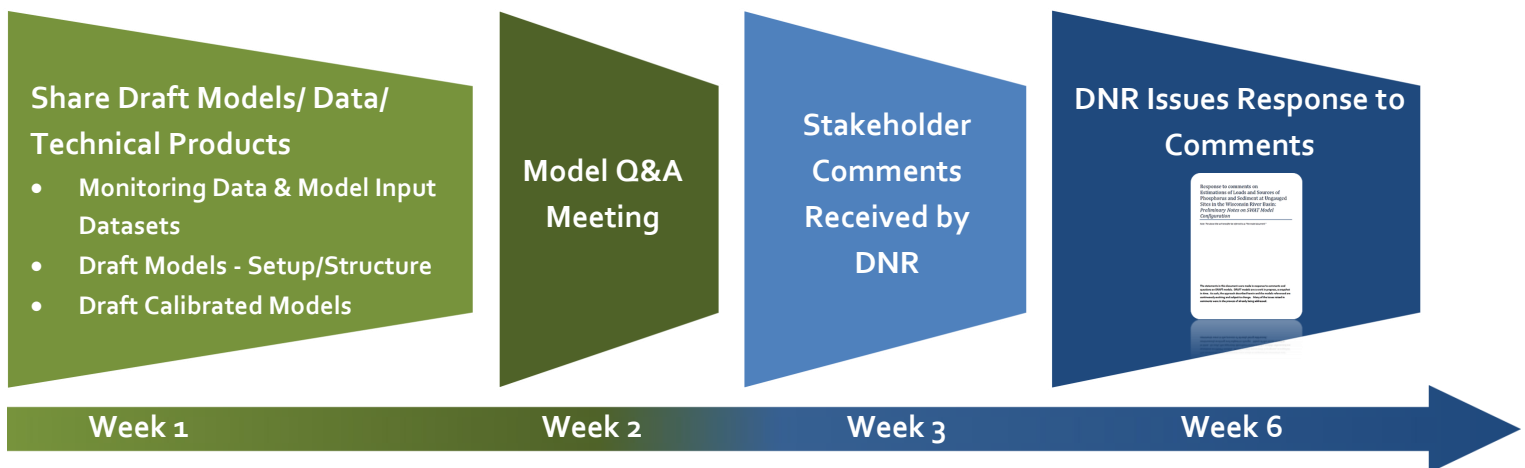
A number of stakeholders in the basin requested the opportunity to access and comment on TMDL models concurrently with their development. In response to these requests, the DNR is making draft models, model data and technical products accessible for review via the Wisconsin River TMDL GovDelivery listserv at set points in the TMDL development process. Further, the scripts used to develop model datasets are externally available continuously as they are developed, on [GitHub](#) [\[exit DNR\]](#). The first round of technical draft products were released in January, the second round were released in mid-August. Below is an updated schedule of estimated dates for upcoming model review opportunities as well as a diagram showing the review process.

Draft Model Availability - Estimated Schedule

Model/ Dataset	Part 1	Estimated Date	Part 2	Estimated Date
SLAMM	<input checked="" type="checkbox"/> Urban Model Area & Reach Mapping	Jan 2015	<input checked="" type="checkbox"/> SLAMM Model Files	Aug 2015
Wastewater Facility Data	<input checked="" type="checkbox"/> Flow & Concentration	Jan 2015	<input checked="" type="checkbox"/> Baseline Data	Aug 2015
SWAT	<input checked="" type="checkbox"/> Model Setup Files	Jan 2015	Calibrated Model Files	Sept 2015
BATHTUB	<input checked="" type="checkbox"/> Lake Wisconsin and DuBay Model Files	Aug 2015	Big Eau Pleine Reservoir Model Files	Sept 2015
CE-QUAL-W2	Model Analysis/Prep Tech Memo	Sept 2015	Calibrated Model Files	Oct 2015



Draft Review Process



For questions or additional information on accessing draft TMDL models-in-progress, contact: dnrwisconsinrivertmdl@wisconsin.gov

Learn more about Blue-Green Algae

By Gina LaLiberte, Statewide Blue-green Algae Coordinator, Wisconsin DNR

What are blue-green algae?

During hot summer months, blue-green algae may “bloom,” or grow to high densities in eutrophic water bodies in Wisconsin. Blue-green algae, or cyanobacteria, are actually photosynthetic bacteria. They grow best at high temperatures, so the warm waters of late summer offer them optimal growing conditions. Blue-green algae float, and calm weather allows them to accumulate at or near the water surface where they become noticeable in high concentrations as blooms. Blue-green algae are in every water body in Wisconsin, but blooms are most likely to occur in water bodies which contain excess nutrients that fertilize both plant and algae growth.

Blue-green algae are not always blue. They are usually green when they are actively growing, and in high concentrations they give water a “pea soup” appearance from the presence of many tiny green particles. These high concentrations of algae are known as a “bloom.” Because they float, blue-green algae can be moved around lakes by wind and currents, and they can be concentrated into scums with extremely high algae densities. When blooms decompose and release pigments, you may see many vivid colors appear, including blue, purple, white, and brown, giving blooms a paint-like appearance.

Impact on aquatic ecosystems and human health

Blue-green algae blooms have an adverse impact on aquatic life. In lakes that have high blue-green algal densities for most of the summer, aquatic plants are shaded, which inhibits their growth. Blue-green algae can displace other types of algae, resulting in poorer food sources for aquatic organisms and potentially affecting the aquatic food web. When blooms die, their decomposition depletes oxygen levels in the water.

Blue-green algae are a concern because some bloom-forming species may produce toxins that cause illness if people or animals swallow them in water or inhale them in water droplets. Skin contact with blue-green algae may also cause rashes in some people. Since you cannot tell if a bloom is producing toxins just by looking at it, be cautious about any high concentration of blue-green algae in water. For a good rule of thumb, if you can wade knee-deep into water and cannot see your feet because the water is green and opaque or any other unusual color, you should stay out. Algae cell densities are high enough that if the algae are producing toxins, you could become ill if you swallow water or inhale water droplets. Small children and pets should always be kept out of the water in these conditions. At lower densities, you still want to avoid swallowing water because other pathogens may be present.



Photo credit: Rob McLennan

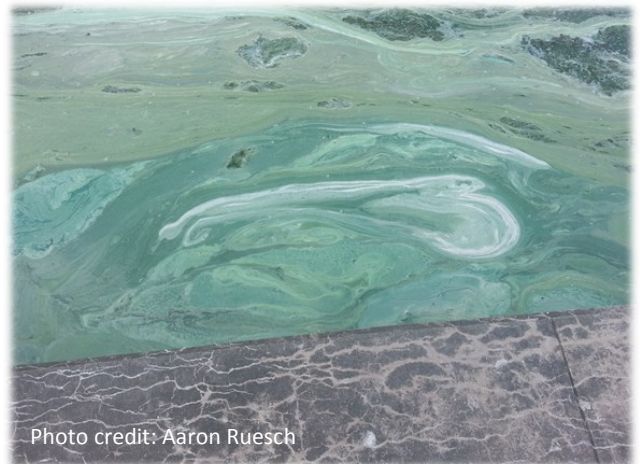


Photo credit: Aaron Ruesch



Photo credit: Gina LaLiberte

Blue-green algae are green when they are growing. Water that is green and opaque from the presence of many tiny particles contains high concentrations of blue-green algae in what is known as a bloom.

With common-sense precautions, you can safely enjoy recreation on Wisconsin's lakes and rivers:

- Choose locations without noticeably green water for swimming without algae concentrated by wind into "pea soup" conditions and avoid areas that look like paint spills or have scums. Keep children and pets out if water is opaque and green or if scums are present.
- To avoid inhaling algae, do not boat or water ski through blue-green algae blooms.
- Always offer fresh, clean water for pets to drink and do not let pets swim in, or drink, waters experiencing blue-green algae blooms, noticeably green water or water containing many tiny green particles.
- Wash off after contact with any surface water and wash pets off immediately after swimming, before they can lick algae from their fur.
- Always avoid swallowing untreated surface water - it may contain pathogens other than blue-green algae that could make you ill.
- Clean fish thoroughly and eat only the fillet, not the viscera or guts. Wash your hands after handling fish caught during blooms and rinse fillets thoroughly before cooking or freezing.



Photo left: When blue-green algae blooms decompose, colors such as blue, purple, white and brown may be visible.

Photo right: Filamentous green algae may be mistaken for blue-green algae. Filamentous green algae grow in long, green strands approximately the size of human hair.

Photo credits: Gina LaLiberte

Learn more about blue-green algae:

You can find more information about the health effects of blue-green algae at the [Wisconsin Department of Health Services website \[exit DNR\]](#). You can also report human and animal illnesses potentially related to blue-green algae exposure at this website.

For more information about blue-green algae, click [HERE](#).



County Land and Water Resource Management Plans and the 9 Key Elements

Watershed scale planning to help focus efforts and increase funding opportunities

What are 9 Key Element Plans?

The EPA has identified nine key planning elements that are critical for protecting and improving water quality. Plans that reflect the nine key elements help assess the contributing causes and sources of nonpoint source pollution within a defined watershed area and then prioritize pollutant reduction strategies to restore or protect water quality. Nine key element watershed plans can be used to restore impaired waters or help protect unimpaired waters. In order to be eligible for Clean Water Act (CWA) Section 319 and Great Lakes Restoration Initiative (GLRI) funding from US EPA, the following nine elements must be addressed in a watershed plan:

1 Identify the causes and sources that need to be controlled to achieve pollutant load reductions. This includes quantifying significant sources and background levels using maps and tables.

2 Estimate the pollutant load reductions expected from selected management measures.

3 Describe management measures that need to be implemented to achieve load reductions. Map priority areas for implementing practices.

4 Estimate amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon, to implement the Plan.

5 Develop an information & education component to encourage participation and Plan implementation.

6 Develop a schedule for implementing the management measures identified in the Plan.

7 Describe interim, measurable milestones to assess if the Plan is being implemented.

8 Identify a set of criteria to determine whether Plan objectives are or are not being achieved over time. Outline how and when the Plan will be revised if progress is not being made.

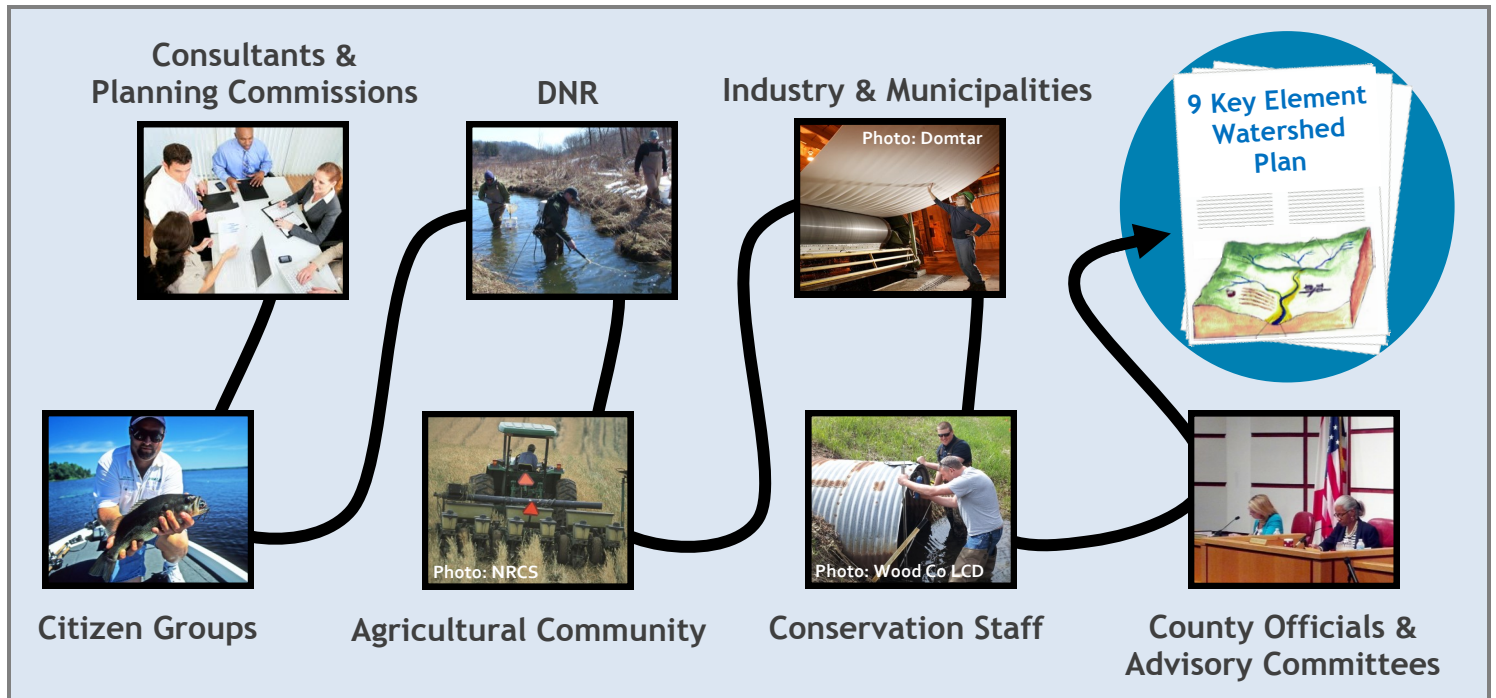
9 Develop a monitoring component to evaluate the effectiveness of the implementation efforts over time using criteria from elements 6, 7 and 8.

Many LWRM Plan requirements are consistent with the nine key elements. See Page 4 for a comparison of LWRM Plan components to the nine key elements.

Myths and Facts about Land and Water Resources Management Plans and the 9 Key Elements

Fact: *Nine key element plans are meant to be a team effort.*

Federal, state, and local agencies, and other key stakeholders that reside within the selected watershed, should all be involved in developing and implementing the plan. **Collaboration is key!**



Myth: *County Land and Water Resource Management Plans must contain the nine key elements and must be approved by the EPA.*

Fact: Section ATCP 50.12, Wis. Adm. Code, was revised in 2014 and included changes to the Land and Water Resource Management (LWRM) plan content requirements. These revisions **DO NOT** require that LWRM plans meet the nine key elements or have EPA approval. However, many plan requirements are **consistent** with the nine key elements (*see comparison on next page*). Accordingly, when counties update their LWRM plans to meet s. ATCP 50.12, the county's plan may also meet the nine key elements within a specific watershed(s), thereby avoiding duplication of planning efforts and ensuring that goals and targeted activities are aligned. DATCP will confirm if the plan meets all ch. ATCP 50 requirements. DNR and EPA will confirm if the plan is consistent with the nine key elements.

Federal and state grant funding, the nine key elements, and your LWRM Plan. The EPA requires that at least 50 percent of CWA Section 319 grant be used by states to fund the implementation of EPA approved nine key element plans. Along with state funding sources, the DNR currently allocates a total of \$1.2 million of CWA Section 319 funding through the Targeted Runoff Management (TRM), Notice of Discharge (NOD), Lake Protection and River Management Grant Programs. TRM Grant applicants receive 10 bonus points for projects that implement nine key element plans. To be eligible for the CWA Section 319 portion of these grant programs counties have two options:

1. *Revise their LWRM Plan to reflect the 9 key elements for specific watersheds.*
2. *Develop a separate 9 key element plan and reference it in the LWRM Plan.*

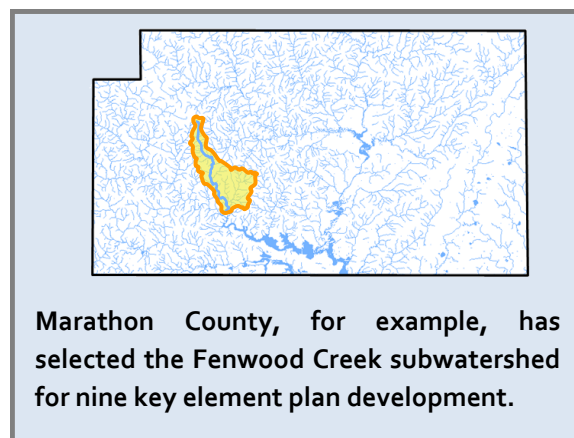
Myths and Facts Continued...

Fact: Nine key element plans do not need to be massive, long documents.

With that said, some of the current/active nine key element plans in Wisconsin posted on the [DNR website](#) include a robust amount of background information, history, and additional detail. In these cases, the plan developers already had the information readily available and included it in their plan. This level of detail is **NOT** required for all plans. Plan developers are encouraged to present plan information in a clear and concise manner that is easily understood by watershed partners and stakeholders. The nine key elements provide a framework for incorporating existing activities, plans, and information. Much of the required information can be pulled or referenced from readily available sources, such as County Land and Water Resource Management Plans, Total Maximum Daily Loads (TMDLs), ordinances, grant applications, and habitat and water quality monitoring data.

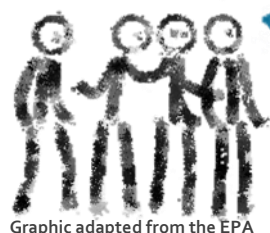
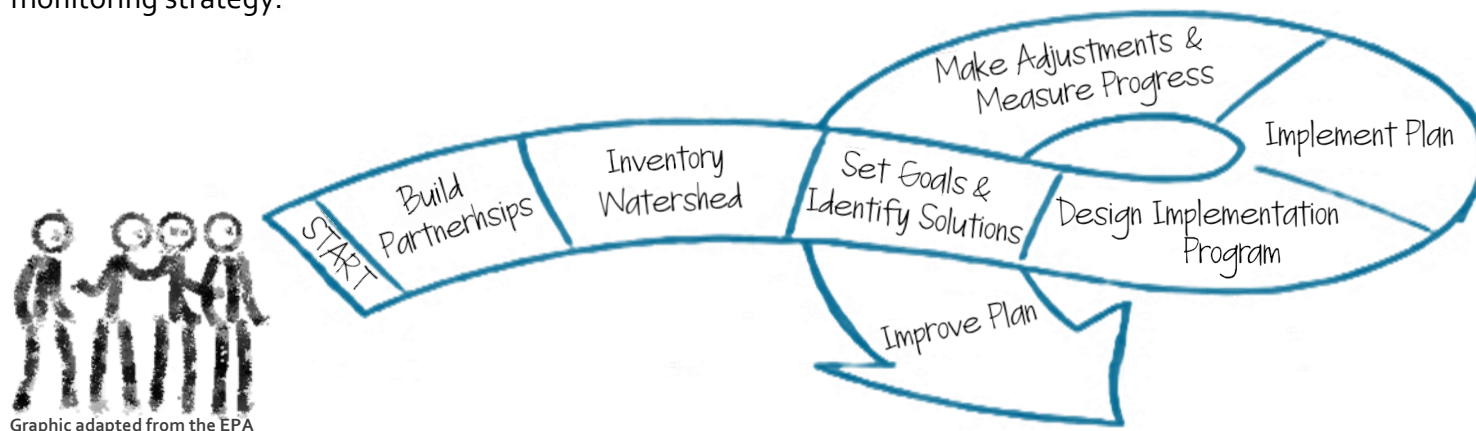
Fact: Nine key element plans do not need to cover the entire county.

It is possible to develop a nine key element plan for an entire county if the necessary information is available. However, it is more likely a county will have the data available for some, but not all, watersheds within its boundaries. The DNR recommends identifying one or more priority areas within a county to develop a nine key element plan (at the HUC-12 scale, approximately 35 square miles). The scale of nine key element plans can be larger or smaller than this and should be determined based on available information, staff resources and funding to reduce nonpoint pollution sources within the selected area(s).



Fact: Element No. 9 (follow-up monitoring) should be a team effort.

The monitoring component (element No. 9) of a nine key element plan can be met, at a minimum, by tracking if the plan schedule and milestones (elements Nos. 6 and 7) are implemented over time. Monitoring can also be accomplished using water quality sampling, computer modeling and tallying the number of practices (and calculating pollutant load reductions) implemented in specific areas. Monitoring should be a team effort at the state and local level and will be implemented as available resources allow. Counties are encouraged to consult with regional DNR water quality biologists to help craft the monitoring strategy for the watershed plan. Other federal, state, and local agencies and groups should also be involved in developing and implementing a monitoring strategy.



Comparing the 9 key elements to s. ATCP 50.12 requirements

Key
element
#

ATCP 50 LWRM Plan Content Requirements *(abridged)*

A Land and Water Resource Management Plan shall describe all of the following in reasonable detail:

1

(a) Water quality and soil erosion conditions throughout the county, including **identification of the causes of water quality impairment and pollutant sources**. The Plan shall include water quality assessments for each watershed in the county available from DNR, if any.

4

(b) **State and local regulations that the county will use** to implement the county Plan. DATCP may require the county to provide copies of relevant local regulations, as necessary, and may comment on those regulations.

2

(c) **Water quality objectives for each watershed, including any available pollutant load reduction targets**, consistent with conditions identified in par. (a). The county shall consult with DNR to determine water quality objectives and to identify pollutant load reduction targets.

1&3

(d) **Key water quality and soil erosion problem areas**. The county Land Conservation Committee shall identify key water quality problem areas in consultation with DNR.

2&3

(e) **Conservation practices needed** to address key water quality and soil erosion problems.

1&3

(f) A strategy to **identify priority farms** in the county.

4

(g) County strategies to encourage voluntary implementation of conservation practices under s. ATCP 50.04. A county shall **estimate the amount of information and education, cost-sharing and other financial assistance, and technical assistance needed** to implement its Plan.

(h) **Compliance procedures**, including notice, hearing, enforcement, and appeal procedures, that will apply if the county takes action against a landowner for failure to implement conservation practices required under ch. ATCP 50, ch. NR 151 or related local regulations.

4&6

(i) The county's **multi-year workplan** to implement the farm conservation practices under s. ATCP 50.04, and achieve compliance with performance standards under ch. NR 151. The Plan shall **identify priorities, benchmarks for performance, and expected costs**, including an estimate of costs to implement conservation practices to achieve the objectives identified in par. (c).

7,8,9

(j) The **measurable annual and multi-year benchmarks** the county will utilize to periodically monitor and measure its progress in meeting performance targets and achieving plan goals and objectives under the workplan in par. (i).

5

(k) How the county will **provide information and education** related to land and water conservation, including information related to farm conservation practices and cost-share funding.

1-9

(l) How the county will **coordinate its land and water conservation program with federal, state, and local agencies**.



For more information on nine key element plans, contact:

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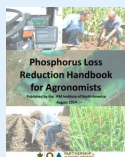
Or visit: dnr.wi.gov/topic/nonpoint/9keyelementplans.html



Tools and Resources

This page highlights tools and resources available to help with conservation efforts. Tools and resources on this page have not been tested or endorsed by DNR. Please explore what is available to determine what will meet your specific needs.

Conservation Toolbox:



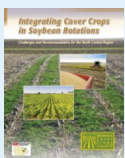
Agronomist Handbook: Roadmap for Reducing Phosphorus Losses

The Partnership for Ag Resource Management has a [handbook](#) [exit DNR] to help agronomists and their customers increase their awareness of products and services that reduce phosphorus, agrichemical and soil movement from fields. Also check out the [webinar](#) [exit DNR], *Increasing Cover Crop Sales for Ag Retailers*.



Improving Conservation Outreach to Female Non-Operator Farmland Owners

The Women, Food and Agriculture Network has a program called Women Caring for the Land, designed to serve female non-operator landowners who are interested in learning more about conservation. Click [HERE](#) [exit DNR] to access the curriculum manual and learn more.



Cover Crop Information

The Midwest Cover Crops Council has recently released a [manual](#) [exit DNR] with recommendations for *Integrating Cover Crops in Soybean Rotations* in the North Central region. Sustainable Agriculture Research and Education also has a [manual](#) [exit DNR] on *Managing Cover Crops Profitably* as well as a [fact sheet](#) [exit DNR].



4R Nutrient Management Planning Specialty Certification for CCAs

The American Society of Agronomy (ASA) and the International Certified Crop Adviser (ICCA) program have announced a new specialty certification in 4R Nutrient Management Planning (NMP). Click [HERE](#) [exit DNR] to find out more.



New Wisconsin Waterways app from UW - Stevens Point

The Wisconsin Waterways app (free on android devices) shows depth contours and map information for 13 central Wisconsin water bodies. Search "Wisconsin Waterways" in Google Play to download the app..



Grant Opportunities

Edge of Field Monitoring (NRCS)

The Natural Resources Conservation Service is making available \$2 million to interested farmers to help install voluntary edge-of-field monitoring stations on agricultural lands in eight states, including Wisconsin. Click [HERE](#) [exit DNR] to find out more or contact your local [NRCS District Conservationist](#) [exit DNR].



Conservation Incentives for Working Grass, Range and Pasture Lands (USDA NRCS)

Beginning September 1, farmers and ranchers can apply for financial assistance to help conserve working grasslands, rangeland and pastureland while maintaining the areas as livestock grazing lands. This initiative is part of the voluntary Conservation Reserve Program (CRP). Click [HERE](#) [exit DNR] or visit your contact your local Farm Service Agency office to learn more.



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