
Pesticide Management Plan Status Report

2025-2026 Biennium

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Executive Summary

The Pesticide Control Law directs the Minnesota Department of Agriculture (MDA) to submit a biennial status report on the Pesticide Management Plan (PMP). The report is submitted to the Environmental Quality Board for review and then to Minnesota House of Representatives and Senate committees with jurisdiction over the environment, natural resources, and agriculture. This report fulfills that statutory requirement and summarizes the PMP-related activities conducted by the MDA in the 2025-2026 biennium (July 1, 2024, through June 30, 2026).

The PMP is a guidance document for the prevention, evaluation, and mitigation of pesticides and their breakdown products in Minnesota's groundwater and surface water. The plan describes the state's goals and strategies for protecting water quality, with a focus on non-point source pollution from the legal use of pesticide products. Throughout the 2025-2026 biennium, the MDA coordinated with Tribes, other state agencies, the University of Minnesota, industry groups, and other stakeholders to advance the goals of the PMP.

To prevent contamination of water resources from pesticides, the MDA continued its efforts to educate pesticide applicators and others about practices that protect water quality. Prevention activities included developing and promoting best management practices (BMPs) and other resources, such as videos and interactive maps. The MDA continued to coordinate outreach through its Education and Promotion Team (EPT) and engage with a diverse range of stakeholders through meetings, one-on-one conversations, and newsletters, among other channels.

To evaluate the impacts of pesticides on water, the MDA continued to rely on its top-tier water quality monitoring program. In addition to extensive routine groundwater and surface water monitoring, the MDA tested private drinking water wells for pesticides and collaborated with external groups on supplemental monitoring projects. The MDA worked closely with other state agencies to sample water, share data, and assess potential risks and continued to consult the Pesticide Management Plan Committee on evaluation activities and decisions. The MDA also evaluated BMP adoption and effectiveness in the 2025-2026 biennium through pesticide use surveys, long-term trend analysis on monitoring data, and field studies.

To mitigate the impacts of pesticides on water quality, the MDA targeted education and outreach, developed and evaluated BMPs, and assessed the need for pesticide use restrictions or other enforceable actions. The MDA coordinated mitigation activities with other agencies and stakeholders and through the EPT. Mitigation efforts largely focused on pesticides in common detection status in groundwater and surface water pesticides of concern. The MDA also implemented response plans for impaired waterbodies.

The MDA continues to advance the goals of the PMP through its prevention, evaluation, and mitigation activities and its various pesticide programs that aim to protect Minnesota's water resources.

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Introduction

This status report provides background and outlines major activities conducted by the Minnesota Department of Agriculture (MDA) during the 2025-2026 biennium (July 1, 2024, through June 30, 2026) in support of the Pesticide Management Plan (PMP).

The PMP is a guidance document for the prevention, evaluation, and mitigation of pesticides and pesticide breakdown products in Minnesota groundwaters and surface waters. The plan describes the state's goals and approach to protecting water resources with a focus on non-point source pollution from the legal use of pesticide products. It also addresses how water quality related actions will be coordinated with other agencies and groups. The PMP includes sections on prevention, evaluation, and mitigation, corresponding to the three components required by statute, along with information on other pesticide-related environmental activities. While the PMP is required by statute, it is a guidance document with no inherent enforceable or regulatory requirements. Many of the steps outlined in the PMP, however, are directly linked to the statutory requirements and guidance in the [Pesticide Control Law \(MINN. STAT. 18B\)](#) and the [Groundwater Protection Act \(MINN. STAT. 103H\)](#).

The PMP is available on the [MDA's Pesticide Management Plan webpage](#). Additional information on many of the activities discussed in this report, as well as others undertaken by the MDA, is available through the [MDA's general website](#).

Background

PMP Status Report

The Pesticide Control Law (MINN. STAT. 18B.045) directs the MDA to submit a biennial PMP status report to the Environmental Quality Board (EQB) for review and then to the Minnesota legislative committees with jurisdiction over the environment, natural resources, and agriculture:

By September 1 of each even-numbered year, the commissioner must submit a status report on the plan to the Environmental Quality Board for review and then to the house of representatives and senate committees with jurisdiction over the environment, natural resources, and agriculture.

Copies of previous status reports are available through the [Minnesota Legislative Reference Library](#).

PMP Purpose and Components

The statutory requirements and purpose for the PMP are outlined in the enabling legislation (MINN. STAT. 18B.045 subd. 1):

The commissioner shall develop a pesticide management plan for the prevention, evaluation, and mitigation of occurrences of pesticides or pesticide breakdown products in

groundwaters and surface waters of the state. The pesticide management plan must include components promoting prevention, developing appropriate responses to the detection of pesticides or pesticide breakdown products in groundwater and surface waters, and providing responses to reduce or eliminate continued pesticide movement to groundwater and surface water.

In accordance with statute, the PMP includes components promoting prevention, developing appropriate responses to the detection of pesticides or pesticide breakdown products in groundwater and surface waters, and providing recommendations to reduce or eliminate pesticide movement to groundwater and surface water.

The PMP is to be coordinated with other state agency plans and with other state agencies through the EQB. Development of the original PMP included input from the University of Minnesota (UMN) Extension, farm organizations, farmers, environmental organizations, and industry (MINN. STAT. 18B.045 subd. 2).

PMP Development and Revisions

Development of the PMP began in 1990. The MDA published a final draft in 1996, to which minor revisions were made in 1998. The U.S. Environmental Protection Agency (EPA) provided a formal concurrence with the both the original 1996 PMP and the revised 1998 version. In June 2005, the MDA revised the PMP after conducting an issues forum and several public meetings. Additional revisions were incorporated in November 2007 in response to recommendations from the [2006 Office of the Legislative Auditor's review of MDA's pesticide programs](#).

In December 2019, the MDA announced a plan to again revise and update the PMP ([Minnesota State Register 44 SR 773](#)). Shortly after, in 2020, a [report from the Office of Legislative Auditor](#) was published that recommended the MDA review the PMP on a regular basis and revise it as necessary. In response, the MDA proceeded with the planned revisions and edited the PMP to correct outdated information, elaborate on certain protocols, and improve the overall clarity of the document. The MDA coordinated with Tribes and solicited public comment during the revision process. The current PMP was published in March 2026 ([Minnesota State Register 50 SR 902](#)).

Prevention Activities

Prevention activities are meant to protect Minnesota's water resources from non-point source pesticide pollution. The MDA recognizes that prevention, whenever practicable, is the best strategy for protecting water quality and is key to maintaining groundwater in its natural condition and maintaining the highest possible water quality in surface water. The MDA's prevention approach, as outlined in the PMP, involves coordinating with other organizations, developing and promoting best management practices (BMPs), and targeting education and outreach.

Recommended prevention actions in the PMP (p. 45) include, but are not limited to, the following.

- Establish an Education and Promotion Team
- Develop and adopt an assortment of BMPs
- Educate pesticide users on BMPs and promote their adoption
- Incorporate BMPs and other prevention strategies pesticide applicator certification and training
- Promote and coordinate integrated pest management activities related to water quality

The MDA's prevention activities from the 2025-2026 biennium are summarized in the following sections.

Education and Promotion Team

In accordance with the PMP, the MDA established an [Education and Promotion Team \(EPT\)](#) to assist in coordinating prevention activities and programs. The EPT is an integral part of the MDA's approach to prevention and meets at least once annually to review and design education and outreach activities for water resource protection. The team also helps the MDA to identify opportunities for cooperation among Tribes, state agencies, EPT member organizations, pesticide registrants, and other interested parties, including opportunities for joint grant-writing.

The EPT is open to all interested parties, and the MDA encourages participation from a wide range of organizations. The MDA also maintains an EPT core team made up of representatives from the following agencies/organizations that are directed in MINN. STAT. 103H to participate in BMP promotion and demonstration: Minnesota Pollution Control Agency (MPCA), Board of Water and Soil Resources, Minnesota Association of Soil and Water Conservation Districts, and UMN Extension. The MDA works with the core team to develop agendas for future full team meetings. Both core team and full team meetings are important to coordinate messaging and raise awareness of emerging pesticide water-quality issues. The core team and the full team each met twice in the 2025-2026 biennium.

EPT full team meetings were held in November 2024 and November 2025. An overview of the MDA's water monitoring data and outreach actions from the previous year were presented at both meetings along with a review of the resources MDA has available to protect water quality. At the 2024 meeting, MDA staff also presented on preparing for the challenges with outreach, compliance, and enforcement of Endangered Species Act (ESA) labels, MDA's new pesticide water quality monitoring interactive maps, and the revocation of food and feed tolerances for chlorpyrifos. Presentations at the 2025 meeting covered topics including the water-quality benefits of ESA strategies and 4-hydroxychlorothalonil in groundwater. Both the 2024 and 2025 full team meetings included productive discussion sessions.

Best Management Practices

BMPs form the foundation of the MDA's prevention efforts. The MDA has, in coordination with UMN Extension and other stakeholders, developed BMPs for water quality as well as general pesticide management and handling. The MDA continues to develop new BMPs as needed and periodically updates previous BMPs. All pesticide related BMPs are available on the [MDA's Pesticide BMPs webpage](#).

The MDA has water-quality BMPs that focus on the general use of agricultural herbicides and insecticides, as well as BMPs for specific pesticides of concern. While many of these BMPs were developed, in part, to address requirements under the Groundwater Protection Act (MINN. STAT. 103H), they also are intended to protect surface water. The MDA's water-quality BMPs are designed to minimize pesticide detections in groundwater and surface water, prevent groundwater concentrations from exceeding drinking water standards, and avoid possible impairment declarations for waterbodies under the Clean Water Act. With respect to general pesticide management, the MDA has BMPs for pesticide distribution, storage, handling, use, and disposal. Other BMPs include pesticide BMPs for turfgrass and potato fungicide BMPs to prevent drift.

In the 2025-2026 biennium, the MDA developed [Water Quality Best Management Practices for Chlorothalonil \(PDF, April 2026\)](#). The MDA updated, or is in the process of updating, the following BMPs:

- General Water Quality Best Management Practices for All Agricultural Herbicides
- Best Management Practices for Turfgrass Pesticides
- Water Quality Best Management Practices for Acetochlor
- Water Quality Best Management Practices for Metribuzin

In response to suggestions from the EPT, shortened versions of select BMPs were developed to deliver key information in a more accessible format. Shortened versions of the acetochlor water-quality BMPs and stewardship guidelines and BMPs for neonicotinoid treated seed are currently available along with a new handout on acetochlor BMPs targeting Silver Creek. The MDA also developed handouts in the 2025-2026 biennium that pair shortened versions of pesticide-specific BMPs with maps showing where chemicals were detected. These handouts were created for pesticides designated by the commissioner to be “surface water pesticides of concern.”

- [Surface Water Pesticide of Concern: Acetochlor Herbicide \(PDF\)](#)
- [Surface Water Pesticide of Concern: Atrazine Herbicide \(PDF\)](#)
- [Surface Water Pesticide of Concern: Chlorpyrifos Insecticide \(PDF\)](#)
- [Surface Water Pesticides of Concern: Clothianidin and Imidacloprid \(PDF\)](#)

Efforts to promote BMPs and the responsible, safe use of pesticides are further discussed in the Education and Outreach section.

Education and Outreach

MDA Materials and Resources

In addition to BMPs, the MDA developed an assortment of education and outreach materials/resources during the 2025-2026 biennium. Many of these resources were developed in coordination with UMN Extension, commodity groups, registrants, and others. Target audiences for these items include pesticide applicators, retailers, educators, and other interested parties.

Notable new resources developed in the 2025-2026 biennium include:

- Herbicide BMP video series:
 1. [Herbicide Best Management Practices – Review](#). This video is a review of the BMPs and why they are important for protecting MN waters.
 2. [Herbicide Best Management Practices – Land Management](#). This video explores how conservation practices promoted in the BMPs can help minimize herbicide run-off and representatives of the Minnesota Agricultural Water Quality Certification Program discuss options for technical resources and assistance for implementing these practices.
 3. [Herbicide Best Management Practices – New Technologies](#). This video looks at some of the new technologies being implemented by producers to precisely apply herbicides and to reduce the amount of herbicide applied.

- [Pesticide Water Quality Monitoring StoryMaps](#): The MDA developed a collection of interactive maps and charts based on the agency's pesticide water quality monitoring data. The Pesticide Water Quality StoryMaps offer an interactive way for users to learn about the MDA's monitoring program and explore over 30 years of data.
- [Pesticides and the Endangered Species Act webpages and videos](#): The MDA published a series of webpages designed to help applicators, growers, and stakeholders navigate label changes associated with the EPA's ESA strategies. Five new pages were created that cover background information, Bulletins Live! Two, drift mitigation, and runoff/erosion mitigation, and frequently asked questions. The MDA also recorded two informational videos that are available on the ESA webpages.
- [Pesticide Updates & Overview webpage](#): The MDA updated its previous pesticide overview webpage to include a "Pesticide News and Updates" section that provides timely pesticide regulatory updates, news, and resources. The page now serves as a central hub to access important information and complements existing communication channels within the Pesticide and Fertilizer Management Division (PFMD).
- Applicator training modules: (see "Pesticide Applicator Training and Certification" section)
- Expanded [Minnesota Agricultural Weather Network](#) (MAWN): The MDA added multiple new weather stations to the Minnesota Agricultural Weather Network, which is operated in partnership with the North Dakota Agricultural Weather Network (NDAWN). The collected meteorological and soil data is integrated into NDAWN, which has tools and applications available that help producers make informed irrigation and land management decisions including pesticide and fertilizer applications. Available tools include daily crop water use estimates, air temperature inversion detection, disease risk models (e.g. potato blight, rust, etc.), irrigation scheduling guidance, soil temperature and moisture monitoring, and growing degree day models for various crops and pests.

Additionally, the MDA has a large collection of previously developed materials and resources that it continues to promote and use in its education and outreach efforts. The MDA is in the process of reviewing all available outreach materials to ensure they are accessible.

Education and Outreach Channels and Activities

The MDA works with a wide range of partners and uses a variety of channels to share information about statewide and regional impacts of pesticides on water quality and encourage practices to prevent potential adverse effects. The MDA distributes information through the MDA's [PFMD Update](#), UMN Extension's [Crop News blog](#), other newsletters, mass mailings, and social media. The MDA also maintains a "non-point" listserv to communicate with interested parties and disseminates information through the MDA's website and websites of external cooperators. In the 2025-2026 biennium, the MDA continued to rely on these channels and work with external partners to reach target audiences.

Education and outreach activities in the 2025-2026 biennium included presenting to and engaging with a diverse set of stakeholders through multiple venues (see examples below).

- Commercial pesticide applicator training and recertification workshops (presentations)
- Minnesota Agricultural Water Quality Certification Program (more than 250 one-on-one conversations with farmers)
- UMN Crop Extension Staff Annual Meeting (presentation)

- United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Monthly Meeting (presentation)
- Tristate Aerial Applicators Convention (presentation)
- FieldWatch program training for crop growers, beekeepers, and pesticide applicators (presentations)
- Minnesota Crop Protection Retailers Short Course (presentation and booth at meeting, presentation to board)
- Coops and pesticide dealers (visits and presentations to crop consultants)
- Commodity groups (used communications infrastructure to promote BMP adoption before critical application periods)
- Training sessions for pesticide dealers and their technical and sales staff (presentations and direct conversations)
- Minnesota Golf Course Superintendents Association Annual Meeting (presentation)
- State FIFRA Issues Research and Evaluation Group (SFIREG) Meeting (presentation)
- Minnesota Farmfest (booth)
- Minnesota Organic Conference (booth)
- Emerging Farmers Conference (presentation and booth)
- Water Resources Conference (table)
- Minnesota Ag Expo (table)
- MDA Agricultural Chemical Inspectors Annual Meeting (presentation)
- MDA routine inspection visits with compliance assistance (one-on-one conversations)

Pesticide Applicator Certification and Training

Pesticide applicator certification and training is a key part of the MDA's pesticide education and outreach. The MDA coordinates with pesticide recertification sponsors, including the UMN Pesticide Safety and Environmental Education program, to educate pesticide users about water quality and BMPs through pesticide application certification and training programs. In the 2025-2026 biennium, the MDA reviewed/developed applicator training manuals for Category A (Core), Category E (Turf and Ornamentals), Category I (Microbial Remediation), and Category T (Cooling Tower Pest Management). The MDA also provided in-person or recorded presentations for multi-regional commercial, non-commercial, and private applicator recertification workshops. Workshops included presentations on container recycling and ESA, as well as screenings of the MDA's herbicide BMPs videos and distributing copies of various water quality BMPs.

Additional information concerning pesticide applicator certification and training is available on the [MDA's Pesticide Applicator and Recertification website](#) and on the [UMN Pesticide safety licensing, certification and resources website](#).

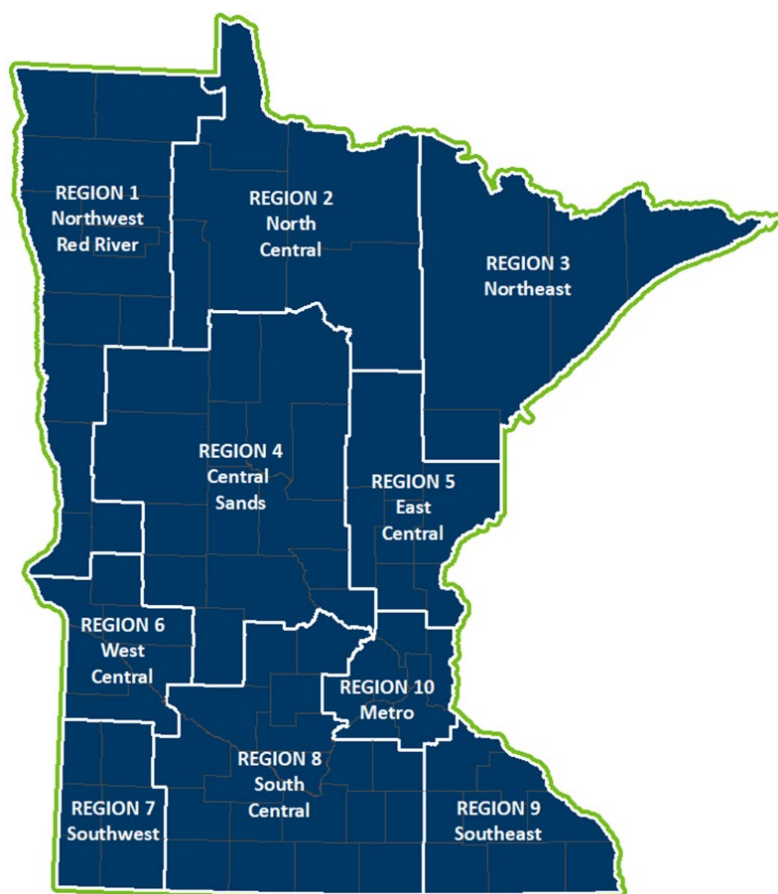
Coordination with State Agencies

The MDA works with the Minnesota Department of Health (MDH) to implement Source Water Protection Plans and the accompanying education and outreach needed to protect public drinking water supplies from the impacts of agricultural crop production in Wellhead Protection Areas. The MDA also works in cooperation with the Minnesota Department of Natural Resources (MNDNR) regarding their aquatic pesticide program to ensure the proper use of pesticide products.

Regional Education and Outreach Efforts

The MDA often targets education and outreach efforts to specific regions to more efficiently and effectively protect water quality. The MDA developed Pesticide Management Areas (PMAs), which it uses for BMP promotion and evaluation. PMAs represent regions with similar cropping practices, soil, hydrogeologic conditions, rainfall, and agro-ecosystem characteristics (Figure 1, Appendix A). The boundaries of the PMAs also define the MDA's Pesticide Monitoring Regions (PMRs) and can be used in surveys on pesticide usage and use practices and in modeling exercises to predict potential leaching and runoff potential. The MDA continued to use the established PMAs throughout the 2025-2026 biennium.

Figure 1. Boundaries of the MDA's Pesticide Management Areas (PMAs) and Pesticide Monitoring Regions (PMRs)



Integrated Pest Management

The MDA promotes Integrated Pest Management (IPM) for the control of insect, disease, and weed pests, as directed in the PMP. IPM is a decision-making process that uses all available pest management strategies, including cultural, physical, biological, and chemical control to prevent economically damaging pest outbreaks. Water-quality concerns related to pesticide use can also be mitigated through implementation of IPM principles.

The MDA promotes IPM through multiple resources and channels. For example, the MDA encourages adoption of IPM through its BMPs, and starting in 2019, the Minnesota Agricultural Water Quality Certification Program

began offering an [IPM endorsement](#) for certified producers. The MDA also maintains an [IPM webpage](#) to promote IPM and provide additional information. In 2019, with funding from an EPA grant, the MDA produced a series of videos on IPM and pollinator protection that continue to be used in applicator trainings/recertification and other education and outreach activities. While the focus of these videos and other efforts funded by the grant was primarily on pollinators, many of the IPM practices being promoted also help in protecting water quality. Additionally, IPM is a component of National Pollution Discharge and Elimination System permits for several pesticide use patterns involving direct or indirect applications to water. Permit coverage from the MPCA for such use patterns became a requirement in 2012.

New Active Ingredient and New Use Registration Reviews

The MDA conducts special registration reviews of new active ingredients and new uses of currently registered pesticides to better understand potential water-quality risks and non-target exposure issues associated with their anticipated use. Reviewing new active ingredients and major new uses before registering pesticide products in Minnesota allows the MDA to identify potential risks and consider actions to prevent impacts on water quality. These reviews also allow the MDA to identify potential new analytes that should be added to its water quality monitoring program which is further discussed in the “Evaluation Activities” section.

Since 2012, the MDA has conducted 51 new ingredient/new use registration reviews, including four in the 2025-2026 biennium. More information about these reviews is available on the [MDA’s New Active Ingredient and New Use Special Registration Reviews webpage](#).

Evaluation Activities

The MDA’s water quality monitoring program acts as the foundation of its evaluation efforts. Water quality monitoring data is essential to achieving the two main evaluation goals of the PMP:

- (1) Evaluate detections of pesticides and breakdown products in groundwater and surface water resources from monitoring data
- (2) Evaluate the adoption and effectiveness of prevention and management strategies, including pesticide BMPs

The MDA’s approach to evaluation involves establishing a committee to support the MDA’s evaluation efforts, annually reviewing water monitoring data, and assessing changes in management practices and water resource impacts.

Recommended evaluation actions in the PMP (p. 55) include, but are not limited to, the following.

- Establish a Pesticide Management Plan Committee
- Develop potential pesticide management and monitoring areas based on landform units, agro-ecoregions, watersheds, and other factors
- Conduct water monitoring in regions with considerable pesticide use
- Assist the MPCA in its impaired waters determination process
- Use water monitoring data and other strategies to evaluate the adoption and effectiveness of pesticide management efforts in BMP promotion areas

Other efforts, including identifying human health and environmental toxicity reference values, developing laboratory methods, and conducting pesticide use surveys, also contribute to the MDA's evaluation activities.

The MDA's evaluation activities in the 2025-2026 biennium are summarized in the following sections.

MDA Routine Water Quality Monitoring

The PMP describes the MDA's requirement under the Groundwater Protection Act and Pesticide Control Law to evaluate groundwater and surface water resources for pesticides and their breakdown products. The MDA conducts extensive water quality monitoring across the state to fulfill these statutory requirements and accomplish the PMP evaluation goals. The MDA has been monitoring groundwater and surface water for pesticides since 1987 and 1991, respectively, as part of its ambient monitoring program. With more than three decades of monitoring data, the MDA operates one of few programs nationwide with sufficient long-term data to evaluate changes in water quality over time.

Monitoring Activities and Reports

In the 2025-2206 biennium, as in previous years, the MDA collected groundwater and surface water samples from sites throughout the state. The MDA's approach to monitoring is described in groundwater and surface water network design documents and work plans available on the [MDA's Water Monitoring Reports and Resources webpage](#). Groundwater sampling is generally conducted in shallow monitoring wells where vulnerable soils serve as an indicator for potential losses of pesticides through leaching to groundwater. In Southeast Minnesota, naturally occurring springs and private wells are sampled in lieu of monitoring wells given the difficulty of installing and effectively sampling groundwater monitoring wells in karst geology. Surface water sampling uses the tiered monitoring approach introduced in 2007, which combines a mixture of periodic grab sampling throughout the state and automated sampling in specific, representative watersheds. The MDA continues to use PMRs based on landform units, agro-ecoregions, watersheds, and other factors in its monitoring program (Figure 1).

Details from the 2024 monitoring season are provided below.

- Sampling primarily took place from May through August 2024.
- The MDA collected:
 - 225 samples from 168 groundwater monitoring sites
 - 1,080 samples from 56 rivers and streams
 - 6 samples from one lake
 - 6 samples from one wetland
 - 52 samples from 4 rainfall locations
- The MDA Laboratory analyzed water quality samples for 185 pesticide-related chemicals.

Details from the 2025 monitoring season are provided below.

- Sampling primarily took place from May through August 2025.
- The MDA collected:
 - 227 samples from 167 groundwater monitoring sites
 - 1,090 samples from 57 rivers and streams

- 6 samples from one lake
- 52 samples from 4 rainfall locations
- The MDA Laboratory analyzed water quality samples for 185 pesticide-related chemicals.

The MDA began sampling in May for the 2026 season. Sampling is ongoing and will be summarized as part of the PMP status report for the 2027-2028 biennium.

The MDA continues to report monitoring results on an annual basis to facilitate review by all stakeholders, and to inform refinement and implementation of MDA programs. The MDA's [2024 Water Quality Monitoring Report](#) and [2025 Water Quality Monitoring Report](#) were both published in the 2025-2026 biennium. Monitoring data were made publicly available through the National Water Quality Monitoring Council's (NWQMC) [Water Quality Portal](#) as well as the MDA's new Pesticide Water Quality Monitoring StoryMaps. The 2024 and 2025 results were shared with the MDH and MPCA for comparisons to drinking water and surface water health and environmental standards and/or guidance. Results were also shared with the EPA.

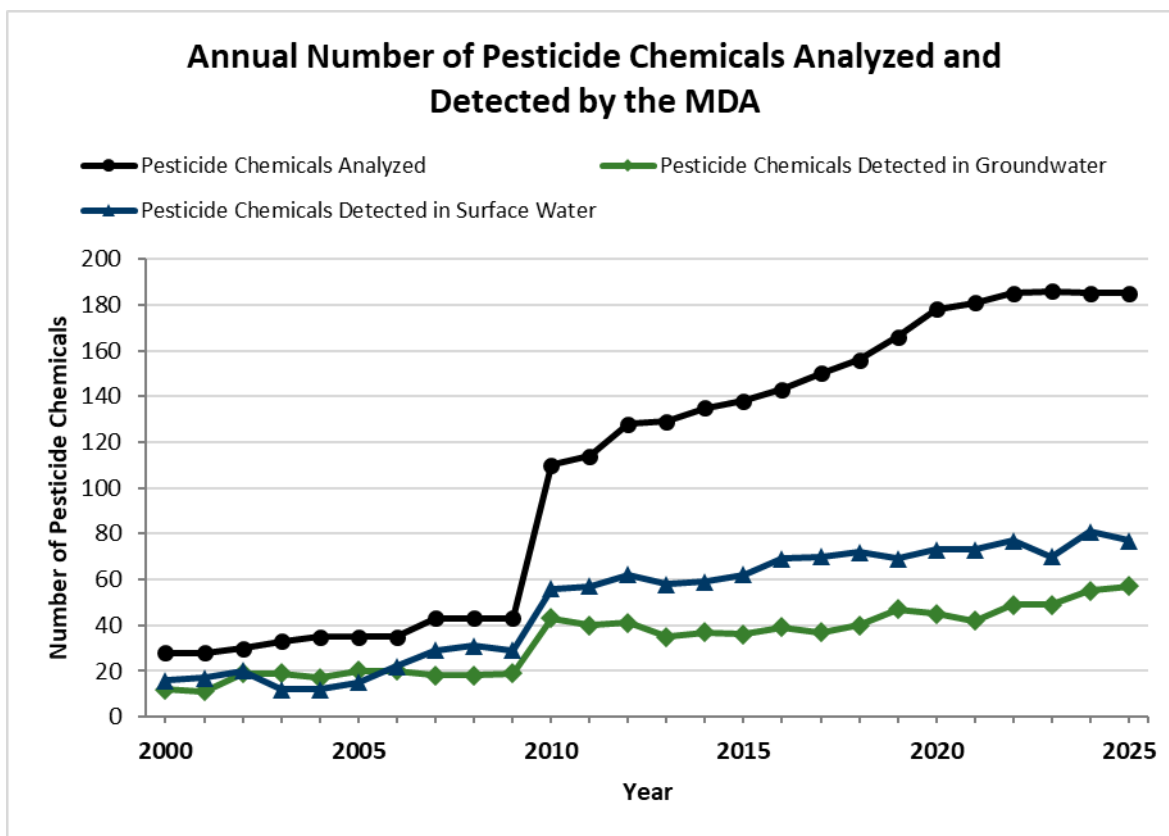
Laboratory Analysis of Pesticides and Pesticide Breakdown Products

The Clean Water Fund appropriations since 2010 have allowed the MDA to upgrade equipment and add staff, thereby expanding its analytical capabilities. In 2010, with funds from the Clean Water Fund and the Environmental and Natural Resources Trust Fund, the MDA more than doubled the number of analytes in its water quality monitoring program from around 45 to 110. Since then, the MDA's analytical methods have continued to improve, and, as of 2025, the MDA was routinely analyzing water samples for 185 pesticides and degradates.

The MDA both added and removed analytes from the water quality monitoring program in the 2025-2026 biennium. In 2024, the MDA Laboratory added fluazaindolizine (nematicide), prothioconazole desethio (degradate of the fungicide prothioconazole), and pyroxasulfone M3 (degradate of the herbicide pyroxasulfone) to the LC MS/MS method. Four analytes also were removed from the monitoring list in 2024: Methoxychlor, 2,4,5-T, 2,4,5-TP, and carbofuran. None of the removed analytes have been registered in Minnesota since at least 2012 or detected in water in Minnesota since 2011. No analytes were added or removed in 2025. Method reporting limits were reduced for several analytes in both 2024 and 2025, thereby allowing them to be detected at lower concentrations in water. Anticipated analyte changes in 2026 include the addition of cyclobutrifluram and pyrasulfatole, the removal of momfluorothrin, and more reduced method reporting limits.

The MDA Laboratory continues to benefit from an annual appropriation of Clean Water Funds that increases pesticide monitoring sample capacity and capability (Figure 2, Appendix B). As a result, Minnesota's pesticide monitoring program is among the most comprehensive in the nation.

Figure 2. Number of pesticides/pesticide breakdown products analyzed and detected by the MDA in groundwater and surface water from 2000 through 2025



Additional MDA Monitoring Efforts

In addition to routine surface water and groundwater monitoring, the MDA monitors private drinking water wells for select pesticides and periodically conducts additional monitoring as part of special projects. External monitoring data are also regularly reviewed.

Private Well Sampling

Since 2014, the MDA has been collecting pesticide samples from domestic wells in areas of the state where groundwater is vulnerable to impacts from pesticides with financial support from the Clean Water Fund. The [Private Well Pesticide Sampling \(PWPS\) Project](#) has been conducted in a series of phases, starting with a pilot phase in 2014-2015. In 2016, Phase 1 began that sampled about 5,700 domestic drinking water wells in 50 counties with vulnerable groundwater resources and significant agricultural row crop production across the state. In 2021, Phase 2 of the project revisited areas sampled between 2016 and 2018 to test for cyanazine degradates (cyanazine degradates were not analyzed before 2019). From 2019 through 2025, the MDA tested 5,371 wells for cyanazine degradates. The MDA initiated Phase 3 of the project in 2025, which involved testing for the 11 cyanazine and atrazine-related compounds, as well as 4-hydroxychlorothalonil (4-HDC) and two neonicotinoid insecticides (clothianidin and imidacloprid) in nearly 500 wells. In June 2026, the MDA published the [Private Well Pesticide Sampling Project Data Summary Report, 2019-2025](#).

As part of the PWPS project, the MDA shared pesticide testing results with homeowners and provided them with information and funding resources for water treatment. The MDA also conducted an [assessment of in-home reverse osmosis systems for removing pesticides and nitrate-nitrogen from private well water](#) to help homeowners make informed decisions regarding water treatment options.

Special Projects

The MDA conducts additional pesticide monitoring through a variety of special monitoring projects. These projects often involve partnerships with other state or federal agencies, Tribes, and local municipalities. For example, in 2022, the MDA partnered with the U.S. Geological Survey (USGS) to study the duration of exposure to clothianidin and imidacloprid in rivers and streams using polar organic chemical integrative sampler (POCIS) technology.

Special monitoring projects conducted by the MDA in the 2025-2026 biennium included the following.

- Targeted monitoring of private drinking water wells in Becker, Cass, Hubbard, and Wadena counties for 4-hydroxychlorothaliniol and other pesticides
- Expanded acetochlor monitoring in the Sliver Creek Watershed
- Monitoring partnership with the Upper Sioux Community
- Root River Pesticide Study

External Data Review

The Groundwater Protection Act directs the MDA to review relevant pesticide-related water quality monitoring data in Minnesota. The MDA routinely obtains and reviews water quality pesticide data from the NWQMC Water Quality Portal. The Water Quality Portal is a cooperative service sponsored by USGS, the EPA, and the NWQMC, which serves as a repository for data collected by more than 400 state, federal, Tribal, and local agencies. The MDA also regularly reviews data published in peer-reviewed journals as well as reports from other federal and state agencies, Tribes, and local municipalities.

Pesticide Management Plan Committee

The Pesticide Management Plan Committee (PMPC) was established to provide informed and diverse comment to the MDA commissioner for major evaluation activities and decisions related to pesticides and water quality. For example, the PMPC helps the MDA to make informed decisions regarding the status of pesticides as common detection in groundwater or surface water pesticides of concern. Additionally, the PMPC provides diverse input on the implementation of the PMP and in assessing the appropriateness of evaluation activities. The committee is made up of 15 commissioner-appointed members, including representatives from MPCA, MNDNR, MDH, industry, farm organizations, environmental groups, UMN Extension, Tribes, farmers, and other technical experts. The committee's structure and process preserve the commissioner's statutory authority while ensuring meaningful stakeholder engagement in the review and evaluation of water quality, pesticide use, climate and other relevant data.

The PMPC meets at least once per calendar year to review and discuss MDA's water quality monitoring data. In the 2025-2026 biennium, the PMPC met two times, once in June 2025 and once in June 2026. Water quality data from the previous year was presented and discussed at each meeting along with updates on the MDA's water

quality related actions. The most recent PMPC meeting agenda and notes are available on the MDA's [PMPC Meeting Agenda and Notes webpage](#).

Following the annual meetings, PMPC members are invited to provide additional written comments to the commissioner on the water-quality data and pesticide management activities. Members are asked specifically to consider whether there is a need to designate any new pesticides in common detection status of surface water pesticide of concern status and whether there is a need to any new pesticide product restrictions. PMPC member comments and the MDA's response to comments are posted on the "PMPC Meeting Agenda and Notes" webpage.

According to the statutory authority under which the PMPC was created and is convened (MINN. STAT. 15.0597), the PMPC expires every two years and must be re-established. In 2026, the MDA will seek applications for the 2027-2028 biennium.

Interagency Collaboration in Water-Quality Data Collection and Analysis

Cooperative Sampling and Data Sharing

The MDA works closely with several state agencies for the collection of water-quality samples and the evaluation of the results. Memoranda of agreements between state agencies including the MDA, MNDNR, MDH, and MPCA continue to be implemented for both groundwater and surface water monitoring. The MNDNR provides access to the MDA to sample groundwater wells and springs and operates an extensive network of river flow gauges. The MDH provides drinking water reference values to the MDA to assess detections in groundwater and assists with risk assessments. The MPCA develops and enforces water quality standards for surface water and collects many pesticide samples at co-located groundwater and surface water locations.

In 2021, the MDA and MDH entered into an interagency agreement to facilitate sharing of location data associated with pesticide samples. The agreement formalized MDA and MDH roles in assessing pesticide data as it relates to public and private wells. Important water quality data is shared with the MDH and the MPCA and is evaluated in the context of drinking water and surface waterbody assessment activities. This information is routinely reviewed in the evaluation of pesticide impacts to state water resources.

The MPCA, MDH, and MNDNR are all active participants in PMP implementation and have representative members on the PMPC.

Standards Development and Guidance

The MDA works with the MDH and MPCA to develop and/or select water quality standards and guidance. The MDA uses these values, collectively referred to as "reference values," to evaluate detections of pesticides and their breakdown products in water. The MDH is responsible for developing human health-based guidance values that are primarily used for groundwater. Health-based guidance can include Health Risk Limits, Health Based Values, Risk Assessment Advice, and pesticide rapid assessments values. The MPCA is responsible for developing water quality standards for surface water and reviewing other surface water risk guidance such as EPA aquatic life benchmarks.

In the 2025-2026 biennium, the MDA consulted with the MDH to nominate and prioritize chemicals under the MDH's Health Risk Limits program. The MDA also requested that the MDH develop pesticide rapid assessment values for several new analytes added to the monitoring list. With respect to surface water reference values, the MDA requested water quality standards from the MPCA for pesticides and pesticide degradates that were detected in surface water and do not have established values (~75 chemicals). It was noted that standards for clothianidin and imidacloprid are considered high priority.

Impaired Waters Determination

If the concentration of a pesticide in a surface waterbody exceeds a numerical standard or if a pesticide is a cause for exceeding a biological or narrative standard, the waterbody may be subject to formal listing as "impaired" on the Clean Water Act's 303(d) list assembled by the MPCA. The MPCA assesses all waters of the state and creates a list of impaired waters every two years. The inclusion and removal of waterbodies from the list is based on the MPCA's assessment of the MDA's surface water pesticide data compared to Minnesota water quality standards. The MDA provides water quality monitoring data to the MPCA and provides technical assistance to support the MPCA evaluation process for pesticide-based impairments. In the 2025-2026 biennium, the MDA shared data on the occurrence and concentration of pesticide contaminants in surface water from the 2023 and 2024 monitoring seasons. Each year, the MDA met with the MPCA to review and discuss the data. The 2025 and 2026 MDA pesticide water-quality data will be reviewed by the MPCA as part of the 2028 303(d) Impaired Waters List assessment process.

Minnesota's 2024 303(d) Impaired Waters List was approved by the EPA in April 2024 and includes 11 waterbodies in Minnesota that are impaired for currently registered pesticides (Table 1). The MPCA published the 2026 Draft Impaired Waters List in May 2026, which proposes adding one new waterbody (Hazel Creek) to the impaired waters list for chlorpyrifos and removing five waterbodies previously listed as impaired for chlorpyrifos (noted in Table 1).

Table 1. Minnesota waterbodies with impairments for currently registered pesticides on the 2024 303(d) Impaired Waters List (IWL)

Pesticide	Impaired Waters List Year	Waterbody	County	Violation that Resulted in Impairment
Acetochlor	2016	Silver Creek	Carver	Chronic (3,600 ng/L) Minnesota water quality standard
Chlorpyrifos	2022	Bevens Creek	Carver	Maximum (83 ng/L) Minnesota water quality standard
Chlorpyrifos	2020 (Proposed for removal on 2026 IWL)	Double Lake	Cottonwood	Chronic (41 ng/L) Minnesota water quality standard
Chlorpyrifos	2016 (Proposed for removal on 2026 IWL)	Dry Weather Creek	Chippewa	Maximum (83 ng/L) Minnesota water quality standard
Chlorpyrifos	2020 (Proposed for removal on 2026 IWL)	Dutch Creek	Martin	Maximum (83 ng/L) Minnesota water quality standard

Pesticide	Impaired Waters List Year	Waterbody	County	Violation that Resulted in Impairment
Chlorpyrifos	2018	Jack Creek	Jackson	Maximum (83 ng/L) Minnesota water quality standard
Chlorpyrifos	2018 (Proposed for removal on 2026 IWL)	Lac qui Parle River	Lac qui Parle	Maximum (83 ng/L) Minnesota water quality standard
Chlorpyrifos	2024	Shakopee Creek	Swift	Maximum (83 ng/L) Minnesota water quality standard
Chlorpyrifos	2014 (Proposed for removal on 2026 IWL)	Tamarac River	Marshall	Maximum (83 ng/L) Minnesota water quality standard
Chlorpyrifos	2020	Three Mile Creek	Lyon	Maximum (83 ng/L) Minnesota water quality standard
Chlorpyrifos	2020	Yellow Medicine River	Yellow Medicine	Maximum (83 ng/L) Minnesota water quality standard

BMP Evaluation

In accordance with the PMP, the MDA takes actions to evaluate both the adoption and effectiveness of its water quality BMPs. Because many of the approaches to evaluate BMP adoption and effectiveness carry a relatively high cost if they are to be conducted in a meaningful manner, the MDA's implementation of evaluation activities is tied directly to the availability of funding and other resources. Additionally, it is important to acknowledge that factors such as weather, cropping patterns, weed resistance, and use of alternative pesticides can impact the apparent adoption and effectiveness of BMPs.

Rates of BMP adoption can be measured through surveys (farmer, applicator, and dealer) and other means such as focus groups, field audits, and direct interviews (including through the Minnesota Agricultural Water Quality Certification Program and the Farm Nutrient Management Assessment Program). Evaluation of BMP adoption in the 2025-2026 biennium involved reviewing the results of the MDA's biennial surveys of pesticide usage and use practices. Every two years the MDA conducts surveys in cooperation with the USDA National Agricultural Statistics Service (NASS) to capture information about corn, soybean, wheat, and hay pesticide use practices. These surveys are further described in the "Pesticide Use Information" section of this report.

BMP effectiveness can be measured through plot and small watershed-scale projects where specific pesticide use practices can be correlated with water monitoring and pest control data. Pesticide concentration trends also can be used to evaluate, at a broad level, the need for additional protective actions, if a sufficient level of groundwater and surface water monitoring is conducted at key locations in Minnesota. In the 2025-2026 biennium, the MDA's evaluation of BMP effectiveness involved analyzing trends in monitoring data and collaborating with UMN-Extension to conduct small-scale field studies.

Trend Analysis

The MDA routinely conducts trend analysis on monitoring data from the past 10 years to evaluate pesticide water-quality BMPs and publishes the results in its annual water quality monitoring reports. In the 2025-2026 biennium, the MDA analyzed trends for detection frequency and concentration for select pesticides and degradates in both groundwater and surface water. Trend analysis primarily focused on pesticides with pesticide-specific BMPs that have been promoted for multiple years. In groundwater, this included the common detection pesticides acetochlor, atrazine, metolachlor, metribuzin, and alachlor (Note: alachlor BMPs are no longer promoted since its use ended in 2016). In surface water, this included three of the five surface water pesticides of concern: acetochlor, atrazine, and chlorpyrifos. Trend analysis for the other two, clothianidin and imidacloprid, will be included in future monitoring reports starting in 2027. Trends were calculated at the regional level for all PMRs with sufficient data for statistical analysis. Results from the MDA's trend analysis varied by region and chemical.

Regional detection frequency and concentration trends in groundwater for the parent compounds of acetochlor, atrazine, metolachlor, metribuzin, and alachlor all show stable, and in some cases, decreasing trends. Trends of the breakdown products of acetochlor and metolachlor show no trend or increasing trends in some regions, while trends of the breakdown products of alachlor and atrazine show no trend or decreasing trends in some regions, and metribuzin breakdown products show no trend. Detections of these compounds in groundwater occur at extremely low concentrations when compared to drinking water reference values established by the MDH. It also is worth noting that there has been an increase in sales of acetochlor, atrazine, and metolachlor in recent years that would presumably favor increasing detection trends; therefore, the steady and decreasing trends associated with these herbicides across many regions suggest that BMPs and outreach efforts have been effective for groundwater.

Regional detection frequency and concentration trends in surface water for acetochlor and atrazine largely show no trend, and detections of chlorpyrifos are rare in Minnesota. Again, considering the increasing sales of acetochlor and atrazine, BMPs appear effective for surface water. Regional trends for clothianidin and imidacloprid will be assessed are part of the 2027 water quality monitoring report.

Field Studies

In 2025, the MDA collaborated with UMN Extension to initiate field studies at the Southern Research and Outreach Center in Waseca to evaluate the effectiveness of acetochlor BMPs. The MDA provided funding to support soil and water testing efforts for various alternative active ingredients and crop-production practices. Specifically, trials included efficacy and yield impacts of acetochlor alternatives on field corn and soybean, and residual levels of active ingredients present in the soil over time. Additionally, the impact of several cover crop scenarios and acetochlor formulations were evaluated in field corn. In this trial, evaluations included efficacy, yield, and soil microbial population assessments along with soil and tile drain water sampling for acetochlor and clothianidin presence over time. The trials are being repeated during the 2026 field season.

In recent years, the MDA also conducted additional data analyses and field studies to evaluate detections and BMPs for clothianidin and imidacloprid in surface water. Water quality BMPs for these neonicotinoid insecticides were published in February 2023 and focused on their use in agriculture, including their use as seed treatments. To better understand the contribution of seed treatments to detections, the MDA began evaluating the timing

of clothianidin and imidacloprid detections in surface water and documented a relationship between detection frequency and concentrations of these insecticides and the planting of corn and soybean (see [Detection Patterns of Neonicotinoid Insecticides in Minnesota Rivers and Streams 2018-2022](#) for details). The MDA continued to study this relationship during the 2025-2026 biennium. From 2019 through 2024, the MDA conducted a field study as part of the Nicollet County Drainage Demonstration Project evaluating the potential movement of clothianidin and imidacloprid from treated seeds to surface waters via tile drainage.

Pesticide Use Information

For the MDA and its stakeholders to evaluate the source of pesticide detections and concentrations in water resources, information on pesticide use is frequently needed or requested. To better document relationships between water quality and overall pesticide use, rates, and BMP adoption, the MDA continues to work with the NASS to collect information via phone and mail surveys. Pesticide use and rate information is gathered every two years on the four major crops in Minnesota: corn, soybeans, wheat, and hay. Thousands of farmers are surveyed each year to obtain information on active ingredients used, acres treated, and application rates. [Pesticide use and sales surveys](#) have been conducted since 2003. NASS also surveys pesticide use in crops through its [Agricultural Chemical Use Survey](#). In years that NASS surveys one of the four crops, the MDA forgoes its survey of that crop.

In the 2025-2026 biennium, the MDA shared and used data about pesticide use from multiple sources.

1. The MDA publishes sales data for pesticide active ingredients annually in a searchable [Pesticide Sales Database](#).
 - The MDA occasionally surveys farms in localized areas (several hundred acres) where community water supplies exhibit vulnerability to land-use impacts or where other water-quality concerns exist. Survey results are published by the MDA or other cooperators.
 - The MDA cooperates with the MNDNR on [aquatic pesticide permitting and practices](#); the MNDNR publishes an annual report on the use of aquatic pesticides permitted under its authority.
2. The MDA uses USGS [Estimated Annual Agricultural Pesticide Use data](#) compiled as part of the Pesticide National Synthesis Project.

Special Registration Reviews

In addition to the new active ingredient/new use registration reviews described in the “Prevention Activities” section, the MDA also conducts more [in-depth special registration reviews](#) to further evaluate key issues, often related to pesticides and water quality. For example, the MDA has completed reviews on atrazine and dicamba. In the 2025-2026 biennium, the MDA explored potential topics for a new review.

Mitigation Activities

The purpose of mitigation is to implement practices to reduce or eliminate the movement of pesticides to Minnesota’s water resources. If the implementation of voluntary practices is ineffective over time, the MDA may implement mandatory practices through rule development, product label changes, or state restrictions on registration.

The MDA's approach to mitigation involves intensifying and targeting education and outreach efforts, refining or developing BMPs, considering the cost vs. benefit and technical feasibility of mitigation measure, and exercising regulatory authority to restrict use. The PMP indicates that mitigation activities begin when a pesticide is determined by the commissioner to be common detection status in groundwater or a surface water pesticide of concern.

Recommended mitigation actions in the PMP (p. 71) include, but are not limited to, the following.

- Develop and promote educational materials through the EPT
- Develop pesticide-specific BMPs
- Evaluate water-monitoring data to determine BMP effectiveness, review BMP adoption data, and refine BMPs, if needed
- Support the MPCA's process for determining impaired waters and development of total maximum daily loads
- Consider Water Resource Protection Requirements (WRPRs) or other enforceable actions
- Take enforceable actions (e.g., restrict product registration) for common detection pesticides in groundwater or surface water pesticides of concern in surface water
- Enforcement, as required

The MDA's prevention activities from the 2025-2026 biennium are summarized in the following sections.

Education and Awareness

Raising awareness about environmental concerns among pesticide users is one of the most important activities to both prevent pesticide contamination and mitigate observed impacts in Minnesota's water resources. Therefore, there is considerable overlap between the MDA's prevention and mitigation activities. The MDA makes use of the EPT and many of the same outreach channels described in the "Prevention Activities" section in its efforts to mitigate pesticide detections. Depending on the use and detection patterns associated with specific pesticides, PMAs can play an important role in regionally targeting education and awareness for mitigation.

BMP Development, Promotion, and Evaluation

After a pesticide is determined by the commissioner to be either a common detection pesticide or a surface water pesticide of concern, the MDA develops and promotes pesticide-specific BMPs and educational materials (See "Prevention Activities" section for more information on BMPs). Rates of adoption and effectiveness of pesticide-specific BMPs are evaluated on a regular basis through surveys, water monitoring, and other means outlined in the "Evaluation Activities" section of this report.

Response to Water Quality Pesticide Impairments

Based on the MDA pesticide water monitoring data, the MPCA determines which waterbodies do not meet Minnesota water quality standards and are listed as impaired on the Clean Water Act's 303(d) list (See "Evaluation Activities" section). The MPCA also evaluates potential delisting of impairments.

When a waterbody is designated as impaired due to a currently registered pesticide, the MDA and MPCA work cooperatively to respond to the issue and maximize the use of both agencies' available resources. Section 303(d) of the federal Clean Water Act requires the MPCA to conduct a total maximum daily load (TMDL) study for impaired waterbodies. As part of the TMDL process, the MDA develops a response plan for the specific pesticide that caused the identified impairment(s) and submits it to the MPCA for review. The MDA also is directly involved in pesticide applicator training and many other grower outreach activities that support the TMDL implementation process.

Chlorpyrifos Response Plan

The MDA developed a chlorpyrifos response plan to address chlorpyrifos impairments in Minnesota surface waters in September 2019. This plan was approved by the MPCA and includes activities such as:

- Continued monitoring for chlorpyrifos and its degradate in surface waters
- Education and outreach to pesticide applicators and crop producers through mailings, articles, meeting presentations, and other means
- Inspections of application practices and records

The MDA continued to implement the chlorpyrifos response plan throughout the 2025-2026 biennium and plans to publish an updated response plan in 2026.

The MDA adjusted its implementation of the chlorpyrifos response plan in recent years due to changing federal regulations of chlorpyrifos. In February 2022, in response to an order from the Ninth Circuit Court of Appeals, the EPA revoked all food and feed tolerances for chlorpyrifos. As a result, chlorpyrifos products with food and feed use were no longer permitted for sale and distribution in Minnesota. In November 2023, the Eighth Circuit Court of Appeals vacated EPA's rule revoking all tolerances, and the EPA, in turn, reinstated all chlorpyrifos food and feed tolerances in February 2024. In December 2024, food and feed uses were again cancelled for all but 11 crops. Since then, the MDA has annually registered chlorpyrifos products that include approved food and feed uses with the condition that a copy of the MDA's Water Quality BMPs for Chlorpyrifos must accompany the sale of each chlorpyrifos product.

Acetochlor Response Plan

In 2024, the MDA developed a multiyear acetochlor response plan to address the acetochlor impairment in Silver Creek. The plan includes collaborating with dealers, UMN Extension, and the Acetochlor Registration Partnership, among others, to raise awareness of the impairment and promote the MDA's Water Quality BMPs for Acetochlor. The plan also includes targeting education and outreach through mailings, articles, field days, social media, local events/fairs, and UMN Extension events. Additionally, the MDA added two new monitoring sites in the Silver Creek watershed in 2024 to further evaluate acetochlor in surface water.

The MDA continued to implement the acetochlor response plan throughout the 2025-2026 biennium. The MDA also developed a handout to support mitigation in the Silver Creek watershed: [Follow BMPs to Keep Acetochlor Out of the Silver Creek and Protect Its Future Use \(PDF\)](#).

Delisting Impaired Waterbodies

Effective mitigation efforts can help lead to the delisting of impaired waterbodies. Since 2014, eight waterbodies have been removed from the EPA 303(d) Impaired Waters List for currently registered pesticides. Two of the delisted waterbodies had been designated as impaired for acetochlor and six had been designated as impaired for chlorpyrifos. An additional five waterbodies were proposed for removal from the list in 2026, all of which were designated as impaired for chlorpyrifos. Removal from the EPA 303(d) Impaired Waters List followed several years of water quality monitoring without pesticide detections above the applicable standard.

Regulation

The PMP's approach to mitigation begins with voluntary efforts prior to considering regulatory actions. Options for regulatory actions in groundwater and/or surface water are outlined below. In the 2025-2026 biennium, the MDA continued implanting state-specific restrictions for isoxaflutole, chlorpyrifos, and dicamba.

Registration and Authority to Prevent Unreasonable Adverse Effects

The MDA has the authority to protect the quality of groundwater and surface water by restricting the registration of pesticides in Minnesota. Under the Pesticide Control Law (MINN. STAT. 18B.26), the commissioner of agriculture may deny or cancel the registration of any pesticide and may impose state use or distribution restrictions on a pesticide as part of the registration to prevent unreasonable adverse effects on the environment.

Special Registration Reviews (discussed in both "Prevention Activities" and "Evaluation Activities" sections) focus on preventing unreasonable adverse effects on the environment and can result in mitigation actions implemented through restrictions to registration.

Groundwater Regulatory Options

In addition to its authority under the Pesticide Control Law, the MDA can adopt Water Resource Protection Requirements (WRPRs) for pesticides in groundwater under the Groundwater Protection Act (MINN. STAT. 103H) if voluntary BMPs are proven to be ineffective. WRPRs are requirements adopted by rule for one or more pollutants intended to prevent and minimize pollution of groundwater. WRPRs include design criteria, standards, operation and maintenance procedures, practices to prevent releases, spills, leaks, and incidents, restrictions on use and practices, and treatment requirements. The MDA does not currently have any WRPRs for pesticides.

Surface Water Regulatory Options

The MPCA is the lead agency responsible for regulation to protect surface waters, and its primary mechanism to address non-point source contamination is declaring waters impaired under section 303(d) of the federal Clean Water Act. To mitigate or regulate pesticides in surface water, the MDA cooperates with the MPCA in its implementation of the federal Clean Water Act. However, the MDA also has authority under the state Pesticide Control Law to take independent action to prevent unreasonable adverse effects on the environment.

The MNDNR is responsible for the implementation of [Minn. Rules Chapter 6280](#) relating to management of aquatic plants growing in public waters and aquatic animals that cause nuisance or health concerns. The use of pesticides in protected lakes, rivers or wetlands requires an MNDNR permit. Regulatory actions by the MNDNR could include limiting or refusing issuance of permits, modifications to aquatic pesticide use labels, or referral of waterbodies to the MPCA to address impairments under the Clean Water Act.

Enforcement

The MDA has administrative, civil, and criminal authority to enforce program regulations within the Pesticide and Fertilizer Management Division. Violations are addressed using non-penalty or penalty enforcement documents and may include additional remedies applicable to case circumstances.

With respect to aquatic pesticide use, the MNDNR's Aquatic Plant Management Program also includes enforcement efforts, with aquatic pesticide enforcement specialists supervising herbicide treatments and investigating reports of the misuse of pesticides in lakes or the unlawful destruction of aquatic vegetation.

Other Pesticide-Related Environmental Activities

Additional MDA Pesticide Programs

The MDA has an array of pesticide-related programs designed to ensure the safe and proper use of pesticides and to reduce the risk from pesticides to human health and the environment. These programs address virtually every aspect of pesticide use and management in Minnesota. MDA pesticide programs include the following (in addition to those previously mentioned in this report):

- Waste pesticide collection and empty pesticide container collection
- Pesticide applicator licensing and certification
- Permitting and inspection of pesticide storage and chemigation activities
- 24-hour emergency response to pesticide spills
- Environmental cleanup of contaminated pesticide sites and facilities
- Rapid cleanups to facilitate property transfers and development of rural brownfields through the Agricultural Voluntary Investigation and Cleanup (AgVIC) program
- Partial reimbursement of costs for environmental cleanup of pesticide releases through the Agricultural Chemical Response and Reimbursement Account (ACRRA)
- Pesticide use inspection to ensure compliance with pesticide labeling
- Pesticide misuse investigations
- Pesticide use data collection
- Enforcement of violations of pesticide law
- Pesticide-related bee kill investigations
- Minnesota Agricultural Water Quality Certification Program to promote conservation practices that protect water quality
- Minnesota Agricultural Weather Network

Activities Coordinated with Other State Agencies

Other state agencies have statutory responsibilities related to the protection of Minnesota's water resources. Interagency activities provide a forum for the discussion and coordination of many PMP-related issues. Below is a summary of coordinated activities from the 2025-2026 biennium. Several of the activities included in the summary are mentioned elsewhere in this report.

- The MDA worked closely with other state commissioners and their staff through the Clean Water Council and other interagency workgroups on the quality and monitoring of groundwater and surface water.
- The MDA, MPCA, and MDH continued to cooperate on the implementation of agreements on groundwater and surface water monitoring. These agreements were published as the "Integrated Ground Water Quality Monitoring Strategy" and the "Cooperative Surface Water Quality Monitoring System" signed by the commissioners of applicable agencies. The agreements represent the agencies' joint plan for conducting water quality monitoring on a statewide basis in Minnesota.
- The MDA continued to facilitate communications between the EPA's Office of Pesticide Programs and MDH toxicologists to obtain necessary data to assess pesticide impacts.
- The MDA continued to work with the MPCA on issues related to the development of surface water standards, and on improving coordination between surface water monitoring methods and MPCA's data needs for making surface water impairment decisions and implementation of its Watershed Restoration and Protection Strategies.
- The MDA participated in technical work groups and science advisory panels convened by the MDH to address Environmental Public Health Tracking (EPHT) Program and related biomonitoring concerns. The biomonitoring component of the EPHT seeks to evaluate the feasibility of measuring contaminants, including pesticides, in human body fluids and tissues as an indicator of potential health impacts. The health tracking component explores the feasibility of establishing indicators of health outcomes by linking the presence of environmental chemicals, including pesticides, with chronic or acute health issues. The MDA also provides input on groundwater pesticide detections for MDH developed Groundwater Restoration and Protection Strategy Reports developed for specific watersheds.
- The MDA participated in the Interagency Pollinator Protection Team, which advises the governor and other agencies on pollinator policy and programs.

EPA Office of Pesticide Programs

In the 2025-2026 biennium, MDA staff held membership on the State-FIFRA Issues Research and Evaluation Group, the Pesticide Operations and Management Working Committee and the Environmental Quality Issues Working Committee (chairperson role) of Association of American Pesticide Control Officials. These groups address issues concerning pesticide regulations, registration, and label language.

Regulating PFAS in Pesticides

In 2023, laws regulating intentionally added perfluoroalkyl and polyfluoroalkyl substances (PFAS) in pesticide products were passed in Minnesota (MINN. STAT. 18B.26). Under these laws, pesticide registrants are required to report whether pesticide products contain intentionally added PFAS and submit additional information for those that do. Additionally, pesticide products containing intentionally added PFAS may not be registered in

Minnesota beginning Jan. 1, 2026, for select products and Jan. 1, 2032, for all other pesticide products, unless a “currently unavoidable use” exemption is granted. Additional information about the regulation of PFAS in pesticide products is available on the MDA’s PFAS webpages.

In the 2025-2026 biennium, the MDA took several actions related to PFAS in pesticides, including:

- Submitted [final report on PFAS in pesticides \(PDF\)](#) to the Minnesota Legislature in February 2025
- Hosted a [webinar on the regulation of pesticide products containing intentionally added PFAS](#)
- Developed a reporting portal through which registrants can securely submit information on PFAS ingredients

Pesticide Treated Seed Regulation

Pesticides from treated seed can enter water resources through leaching, surface runoff, and drift of dust from planting equipment. Regulations addressing the proper use, handling, and disposal of pesticide-treated seed in Minnesota were passed in 2023 (MINN. STAT. 18B.075). These are in addition to other label requirements for pesticide-treated seeds (MINN. STAT. 21.82 subd. 3). The MPCA regulates the disposal of waste treated seed and has published this [guidance for disposal of treated seed \(PDF\)](#).

In February 2024, the MDA responded to a request by the EPA for comments and suggestions about pesticide-treated seeds. The MDA presented data and information from the Minnesota Seed Regulatory Program, Surface Water Monitoring Program, and bee kill investigations to answer questions related to treated seed use and whether further regulatory or administrative measures are appropriate. Recommendations were included, covering the benefits of treated seed registration and reporting requirements, treated seed label consistency and enforcement, and the need for strengthening treated seed label language to protect surface water and pollinators.

On Jan. 16, 2026, the Ramsey County Second Judicial District Court ordered the MDA to initiate the “appropriate administrative proceedings to consider and make findings and an order concerning the adequacy of its rules to protect natural resources from contamination allegedly resulting from the use of neonicotinoid-treated crop seeds. The MDA sought public comments from May 18 to July 31, 2026, on whether Minnesota Rules Chapter 1505 adequately protects Minnesota’s natural resources from pollution, impairment, or destruction allegedly resulting from the use of neonicotinoid-treated crop seeds.

Conclusion

The MDA took numerous actions throughout the 2025-2026 biennium that fully support the PMP’s goals and approach to protecting the quality of Minnesota’s water resources. The MDA coordinated prevention, evaluation, and mitigation efforts within the agency and in cooperation with Tribes, other state agencies, the University of Minnesota, industry groups, and other stakeholders.

- To prevent the potential contamination of groundwater and surface water from pesticides, the MDA developed and promoted BMPs and a variety of other education and outreach resources. The MDA continued to coordinate outreach through its EPT, worked with UMN Extension to reach pesticide

applicators through certification and training materials and workshops, and engaged with a diverse set of stakeholders.

- To evaluate the impacts of pesticides on water, the MDA continued to rely on its top-tier water quality monitoring program. The PMPC was consulted on major evaluation activities and decisions related to pesticides and water quality, and the MDA continued to collaborate with the MDH, MPCA, and MNDNR for water sampling, data sharing, and the development of water quality standards and guidance. BMP adoption and effectiveness were evaluated through pesticide use surveys, trend analysis of monitoring data, and field studies.
- To mitigate the impacts of pesticides on water quality, the MDA targeted education and outreach efforts, developed and evaluated BMPs, and considered the need for additional pesticide use restrictions or other enforceable actions. The MDA coordinated mitigation activities with other agencies and stakeholders and through the EPT, primarily focusing on pesticides in common detection status in groundwater, surface water pesticides of concern, and impaired waterbodies.

The MDA's PMP-related activities and coordinated approach continue to support the quality of both groundwater and surface water resources in Minnesota. This report fulfills the MDA's statutory requirement to provide a PMP biennial status report for the 2025-2026 biennium.

Appendix A. Pesticide Monitoring Regions

Table A 1. Description of the MDA's Pesticide Monitoring Regions (PMRs)

PMR Number	Region Name	Counties Included	Physical Characteristics
1	Northwest Red River	Kittson, Roseau, Marshall, Pennington, Red Lake, Polk, Norman, Mahnomon, Clay, Wilkin, Traverse, Grant	Glacial lakebed with high clay content soils 150 to 250 ft thick; gravel aquifers buried under clay; beach ridge deposits of sand and gravel; high-value agriculture of sugar beets and small grains
2	North Central	Lake of the Woods, Koochiching, Beltrami, Clearwater, Itasca	Mostly forested and bog; little agriculture in discontinuous areas; groundwater resources quite variable
3	Northeast	St. Louis, Lake, Cook, Carlton	Forested with shallow bedrock; agriculture is nearly non-existent
4	Central Sands	Becker, Hubbard, Cass, Crow Wing, Morrison, Wadena, Otter Tail, Todd, Douglas, Pope, Stearns, Benton, Sherburne, Kandiyohi	Large glacial outwash sand plains that are highly sensitive to surface activities; high-value potatoes and other crops; irrigated fields are common
5	East Central	Aitkin, Pine, Mille Lacs, Kanabec, Chisago, Isanti	Glacial outwash and lacustrine sands; low pH soils; generally poor cropping conditions; some irrigation; some potato production
6	West Central	Stevens, Big Stone, Swift, Chippewa, Lac Qui Parle, Yellow Medicine	Some areas of glacial outwash sand; thin and narrow alluvial aquifers; many buried sand aquifers; mix of corn and soybeans; thick glacial tills in some areas
7	Southwest	Lincoln, Lyon, Pipestone, Murray, Rock, Nobles	Aquifers consist of highly sensitive alluvial river valley deposits; fractured quartzite formations and well-protected deep cretaceous sediments; sufficient water supply is hard to come by; rural water systems are large and growing
8	South Central	Wright, Meeker, Renville, McLeod, Sibley, Nicollet, Le Sueur, Rice, Steele, Waseca, Blue Earth, Brown, Redwood, Cottonwood, Watonwan, Jackson, Martin, Faribault, Freeborn	A mix of glacial outwash sands; deep glacial tills, glacial lacustrine deposits; windblown silts, river valley deposits; and deep bedrock aquifers; sensitivity varies; accordingly, corn and soybeans; intensive agricultural production; most productive land in the state
9	Southeast Karst	Goodhue, Wabasha, Winona, Olmsted, Dodge, Mower, Fillmore, Houston	Karst geology that is highly sensitive to surface activities; shallow windblown silt and glacial till soils; springs, sinkholes, and disappearing streams; high-value trout streams; extremely shallow to very deep bedrock aquifers; some river valley alluvial deposits
10	Metro	Anoka, Ramsey, Washington, Dakota, Scott, Carver, Hennepin	Urban, suburban, and transitional areas; some irrigated farming; hobby farms; much farming conducted on leased land by relatively large farm operations; outwash sand and gravel to deep bedrock aquifers

Appendix B. Number of Pesticide Chemicals Analyzed and Detected

Table B 1. Number of pesticides/pesticide breakdown products analyzed and detected by the MDA in groundwater and surface water from 2000 through 2025 (Tabular data for Figure 2)

Year	Number of pesticide chemicals analyzed	Number of pesticide chemicals detected in groundwater	Number of pesticide chemicals detected in surface water
2000	28	12	16
2001	28	11	17
2002	30	19	20
2003	33	19	12
2004	35	17	12
2005	35	20	15
2006	35	20	22
2007	43	18	29
2008	43	18	31
2009	43	19	29
2010	110	43	56
2011	114	40	57
2012	128	41	62
2013	129	35	58
2014	135	37	59
2015	138	36	62
2016	143	39	69
2017	150	37	70
2018	156	40	72
2019	166	47	69
2020	178	45	73
2021	181	42	73
2022	185	49	77
2023	186	49	70
2024	185	55	81
2025	185	57	77