

Policy Committee Meeting Agenda

Clean Water Council

July 22, 2022

9:30 a.m. – 12:30 p.m.

WebEx Only

2022 Policy Committee: John Barten, Rich Biske (Chair), Kelly Gribauval-Hite, Raj Rajan, Victoria Reinhardt (Vice Chair), Peter Schwagerl, Phil Sterner, Jordan Vandal, and Marcie Weinandt

9:30 Regular Business

- Introductions
- Approve today's agenda
- Approve minutes of previous meeting
- Chair update
- Staff update

9:45 Walk-Through of Latest Policy Recommendation Spreadsheet

11:00 Break

11:15 Review of MDA's Surface Water Pesticides of Concern & Neonicotinoid Water Monitoring Data

- Dave Tollefson, MDA Pesticide and Fertilizer Management Division

12:00 Adjourn

Next Meeting: August 26th

- **Living Cover:** Review of existing policy recommendation
 - [CWC Leg Report 2016 Living Cover Recommendation.pdf](#)
 - [Working Lands Watershed Restoration Feasibility Study and Program Plan: Final Report](#)

Clean Water Council Policy Implementation Progress

Policy	Adopted In	Key Policy Recommendations	Progress	Future Actions Needed
Riparian Buffers	FY 13-14	Require buffers along Public waters and ditches and private ditches that drains into Public waterways	Minnesota Buffer Law was signed into law in June 2015 and requires 50 foot buffer along Public waters and 16.5 foot buffer along Public drainage systems	All the policy goals are achieved. The State Agencies and Local governmental units are responsible for ensuring the buffers are maintained.
		Fund local implementation & enforcement	CWF provides funding for technical support for local units of government	
		One State Agency oversee Local activities	Board of Soil & Water Resources (BWSR) has overall implementation responsibility with technical support from other Agencies.	
Water Retention, Storage and Infiltration	FY 13-14	Require all major (HUC 8) watersheds outside 7-county metro area develop comprehensive watershed management plans.	All non-metro water planning and implementaiton is based on major watersheds. Water retention/storage goals have been incorporated in 1W1P requirements via statute (103B.801) and agency plan content requirements.	BWSR currently working on white paper looking at the technical issues, policy considerations, and potential costs necessary to scale up adoption of water storage and treatment. [This is from FY18-19]
Living Cover for Drinking Water Protection	FY16-17	Require the establishment of living cover in vulnerable areas such as wellhead & upstream of surface water intakes	These areas are targeted, but voluntary, the progress is limited.	
		Property Transfers: Notify the buyers the potential existance of lead-pipes between the water main and taps, and provide informational material to mitigate risks.		Legislation may be necessary to ensure the seller discloses the existence of lead piping. [New Lead & Copper Rule requires water utility notify property owner about possibility of lead pipes]

Clean Water Council Policy Implementation Progress

Advancing Drinking Water Protection	FY 16-17	Renters: Notify the renters the potential existence of lead-pipes between the water main and taps and provide informational material to mitigate risks.		Legislation may be necessary to ensure the landlord discloses the existence of lead piping. [Note above for Lead & Copper Rule revision in 2021]
		Establish a panel of subject matter expert from around the country to advise MN lawmakers and Agencies ways to protect and improve drinking water quality.	MDH has a contract with U of MN's Water Resources Center and Humphrey School of Public Affairs to convene an expert panel and their report is now in the review phase.	Policy Committee review the report and recommend policy actions [done 2020]; CWF recommended in FY22-23 to support implementation of report.
		State mandate source water protection plans (SWPP) for surface water systems.	Minneapolis, St. Paul, and St. Cloud has them, but 21 others are yet to draft SWPPs. [This is from FY18-19]	CWC strategic plan: Complete revised source water assessments for all 23 surface water systems by 2025 & complete source water intake protection planning by 2027 .
De-icing Chloride Reduction	FY 18-19 [revised FY22-23]	Fully fund the Smart Salting applicator training and certification program, and MPCA chloride reduction program aimed at reducing salt use.	The MPCA's Strategic Plan includes chloride reduction efforts. The MPCA has requested and CWC has recommended CWF monies to provide the training program statewide.	The CWC has recommended funding for the Chloride Reduction Program for FY22-23.
		Request that the Legislature give MPCA the authority to charge a fee for chloride training.		New recommendation FY22-23
		Provide liability protection for the Smart Salting program certified private winter de-icing applicators to reduce salt use.	During 2018 and 2020 legislative sessions, bills were introduced in the both houses, but were not included in the Omnibus bills.	Re-introduce, pass and sign into law the liability protection Bill.
		Provide research funds to develop new technology, alternatives and best management practices		
		Encourage and support the adoption of the MPCA's Chloride Reduction Model Ordinance language by local government entities.		New recommendation FY22-23
		Have the MPCA convene and lead a stakeholder process to develop recommendations for new labelling requirements on bags of de-icing chemicals sold in Minnesota.		New recommendation FY22-23

Clean Water Council Policy Implementation Progress

Pharmaceutical Pollution Prevention	FY18-19 [revised for FY24-25]	Fund research on the pathways of pharmaceuticals into surface water and ground water, identify priority pharmaceuticals that pose the greatest risk to human health and aquatic life, identify and support practicable solutions to reduce their entry into Minnesota waters, and recoup reasonable costs through an industry-funded safe medication return program.		
		Require the words or symbols for “do not flush” be printed on all prescription pharmaceutical labels, and remove any existing instructions to flush unused portions.		
		Adopt a “Safe Medication Return Program” funded by the pharmaceutical producers.	Washington State and several other states have passed similar legislation and are going through rulemaking or are just starting their programs.	
		Require the words or symbols for “do not flush” be printed on all prescription pharmaceutical labels, and remove any existing instructions to flush unused portions.		
Increasing Continuous Productive Vegetative Cover	FY18-19	Establish a Minnesota Agricultural Diversification Steering Council	The Council recommended funding to establish the Minnesota Agricultural Diversification Steering Council at the University of Minnesota.	Legislature to approve the CWC's recommendation.
		Create a Minnesota Agricultural Diversification Network		
Chloride Reduction: Water Softening	FY22-23	Provide financial support and technical assistance to municipalities to reduce chloride discharges and allow flexibility for how municipalities achieve these reductions.		The CWC has recommended funding for the Chloride Reduction Program for FY22-23.
		Update the state plumbing code to effectively prohibit the installation of new water softeners in Minnesota that use timers rather than on-demand regeneration systems.		New recommendation for FY22-23

Clean Water Council Policy Implementation Progress

		Fund a program for activities, training, and grants that reduce chloride pollution. Grants should support upgrading, optimizing, or replacing water softener units.		The CWC has recommended funding for the Chloride Reduction Program for FY22-23.
Disclosure of Well Water Quality at Time of Sale	FY22-23	Require all sellers of real property to test drinking water from wells for bacteria, nitrate, arsenic, manganese, and lead		MDH suggests changing this to recommending a model county ordinance
		Inform buyers and renters of the test results		
		Direct buyers to mitigation guidance from the Minnesota Department of Health		
PFAS	FY24-25	The Clean Water Council recommends that the State of Minnesota implement the comprehensive PFAS Blueprint, which uses the following priorities to prevent, manage, and clean up PFAS pollution in Minnesota.	Approved by the Policy Committee but not yet by the full Council.	Any interest in calling out specific tasks from the Blueprint that require legislative approval?
Underground Utilities	FY24-25	To create an accurate inventory of Minnesota's underground utility infrastructure, the Clean Water Council (CWC) recommends that the State of Minnesota develop an accurate map of all underground utilities installed in the state and require Minnesota's public and private sectors to support sharing of necessary data in a secure and confidential manner.	Approved by the Policy Committee and the full Council.	
Soil Health	FY24-25	MN Office of Soil Health has a stakeholder process going. MDA got 2022 funding to develop a Healthy Soils Plan. Does the Council want to express support for these efforts, and specifically ask for certain topics to be included? For certain stakeholders to be consulted? For there to be targets like number of acres?		Still needed? Legislation just passed to create a state Healthy Soils Plan.

Clean Water Council Policy Implementation Progress

Carp	FY24-25	Possible options: 1) Remove carp from list of "rough fish" in Minn. Stat. 97A and list as regulated invasive species; 2) Remove prohibition on traps and nets for capturing carp in 97C.325 to allow for effective removal; 3) Remove prohibition on selling of carp by non-commercial fishing operations in 97C.391 to reduce cost of carp management; 4) Remove carp from definition of commercial fish and allow commercial fishing operation to take fish with tools over than seine nets, and allow commercial fish licensees to take carp year-round when using corn-baited box nets and electric barriers along common carp migratory routes in 97C.811	Based on presentation and follow-up from MAISRC and related stakeholders.	
Private wells	FY24-25	Possible options: 1) Use CWF to expand pilot private well testing/mitigation program to more counties using MPCA SSTS low-income assistance model; 2) promote county ordinances to require well testing at time of sale rather than using state statute; 3) add groundwater to intensive watershed monitoring approach on 10-year cycle	Based on MDH presentation	CWF appropriation for expansion of pilot is being proposed by MDH. Should policy promote a 10-year plan for offering private well testing statewide?
Water Storage & Drainage	FY24-25	Options: 1) Ensure compatability between required water storage feasibility studies and One Watershed One Plan; 2) develop model applications for drainage projects to show benefits of water storage; 3) support local staff capacity to carry out modeling, design, and construction; 4) provide incentives for storage when drainage is improved under 103E; 4) develop stronger partnerships with drainage authorities to identify potential storage opportunities	Based in part on BWSR presentations and background information	
Manure	FY24-25	Options: 1) View manure not as a waste but as a resource; 2) Increase capacity at University of Minnesota to research and promote more precision manure application; 3) Promote more trial manure application plots and precision application field days; 4) Develop more precise N crediting method; 5) Provide more education to small producers who are not subject to large feedlot permit	based on discussions with MPCA feedlot staff	CWF appropriation by MDA is being proposed for #4 on N crediting method.

Clean Water Council Policy Implementation Progress

Micro- and nano-plastics	FY24-25		2019 CWF appropriations used in 2022 for groundwater sampling by MPCA/UMD and in 2023 for surface waters by MPCA/USGS	We are likely to find microplastics wherever we look; what can Minnesota contribute to the global discussion that no one else is doing? Refine info on pathways into our water? Better identify resins to narrow down sources? Develop health-based guidance for drinking water? Develop aquatic toxicity values for fish?
Shoreland Management	FY24-25		DNR presentation in June 2022	Support funding for more "high touch" landowner engagement?
Neonicotinoids	FY24-25		MDA has identified several neonics as Surface Water Pesticide of Concern; awaiting presentation in 7/2022 from MDA	



Neonicotinoids in Minnesota Waters

Dave Tollefson | Hydrologist

July 22, 2022

Lead State Agency for Pesticides



- Lead State Agency for registration and regulation of pesticides
- Use pesticides “in a manner that will not cause unreasonable adverse effects on the environment . . .”

Minnesota Pesticide Control Law- Statute 18B.07

Pesticides & Water Quality



Pesticide Management Plan

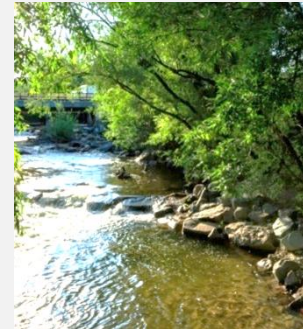
Guidance document to coordinate the protection of Minnesota's groundwater and surface water resources from pesticide contamination

Approach includes the potential designation of pesticides into two formal categories:



"Common Detection Status"

Groundwater



"Surface Water Pesticide of Concern"

Surface Water

Common Detection Status

Groundwater

*“Common detection is the detection of a pollutant that is not due to misuse or unusual or unique circumstances but is **likely the result of normal use of a product or practice**”*

(Minn. Stat. § 103H.005, subd. 5)



Atrazine

2002
Herbicide
Corn, lawn & turf, etc.

Metolachlor

2002
Herbicide
Corn, soybean,
potatoes, turf, etc.

Acetochlor

2003
Herbicide
Corn, soybean, sugar
beet, etc.

Metribuzin

2002
Herbicide
Soybean, potatoes,
corn, lawn & turf, etc.

Plan to remove alachlor from common detection status

Surface Water Pesticide of Concern

Surface Water

*“...pesticide in surface water at **concentrations of concern** relative to a water quality standard, water quality criterion or water quality advisory value (i.e., a “reference value”), not due to misuse or unusual or unique circumstances, but likely to be the result of normal use of product or practice”*

(p 65, Pesticide Management Plan)



Atrazine

2002
Herbicide
Corn, lawn &
turf, etc.

Acetochlor

2002
Herbicide
Corn, soybean,
sugar beet, etc.

Chlorpyrifos

2012
Insecticide
Turf, baits, etc.
(no food/feed)

Clothianidin

2020
Insecticide
Corn, soybean,
turf & ornamentals

Imidacloprid

2020
Insecticide
Corn, soybean,
turf & ornamentals

Designation

Process



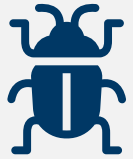
Outcomes

Designation triggers actions but NOT regulation

- Monitoring results receive heightened scrutiny
- Pesticide-specific Best Management Practices (BMP's) developed & promoted

See the Pesticide Management Plan for further details

Neonicotinoid Background



USES

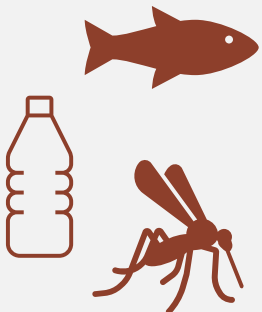
- Urban (turf, ornamentals) & Ag (corn, soybean, sugar beet)
- Multiple application methods (foliar, soil, seed treatment)
- Rapid increase in use since 2000

Estimated 90% of corn & >40% of soybeans acres planted with treated seeds



ENVIRONMENTAL FATE

- Highly soluble
- Mobile (low adsorption to soil)
- Persistent (half-life: 14 to 280 days)



REFERENCE VALUES

	MDH HRL (ng/L)	EPA Chronic Invertebrate Benchmark (ng/L)	EPA Chronic Fish Benchmark (ng/L)
Clothianidin	200,000	50	9,700,000
Imidacloprid	2,000	10	9,000,000
Thiamethoxam	200,000	740	20,000,000

Minnesota's Neonicotinoid Timeline

- 1994 – Imidacloprid was first registered for use in the U.S
- Early 2000's: neonicotinoid seed treatment rapidly increased
- 2010: MDA begins to monitor for neonics in water
- 2016/2017: EPA revised aquatic life benchmarks based on newly available toxicity data

	Previous EPA Chronic Invertebrate Benchmark (ng/L)	Update Year	Current EPA Chronic Invertebrate Benchmark (ng/L)
Clothianidin	1,100	2016	50
Imidacloprid	1,050	2017	10
Thiamethoxam	17,500	2017	740

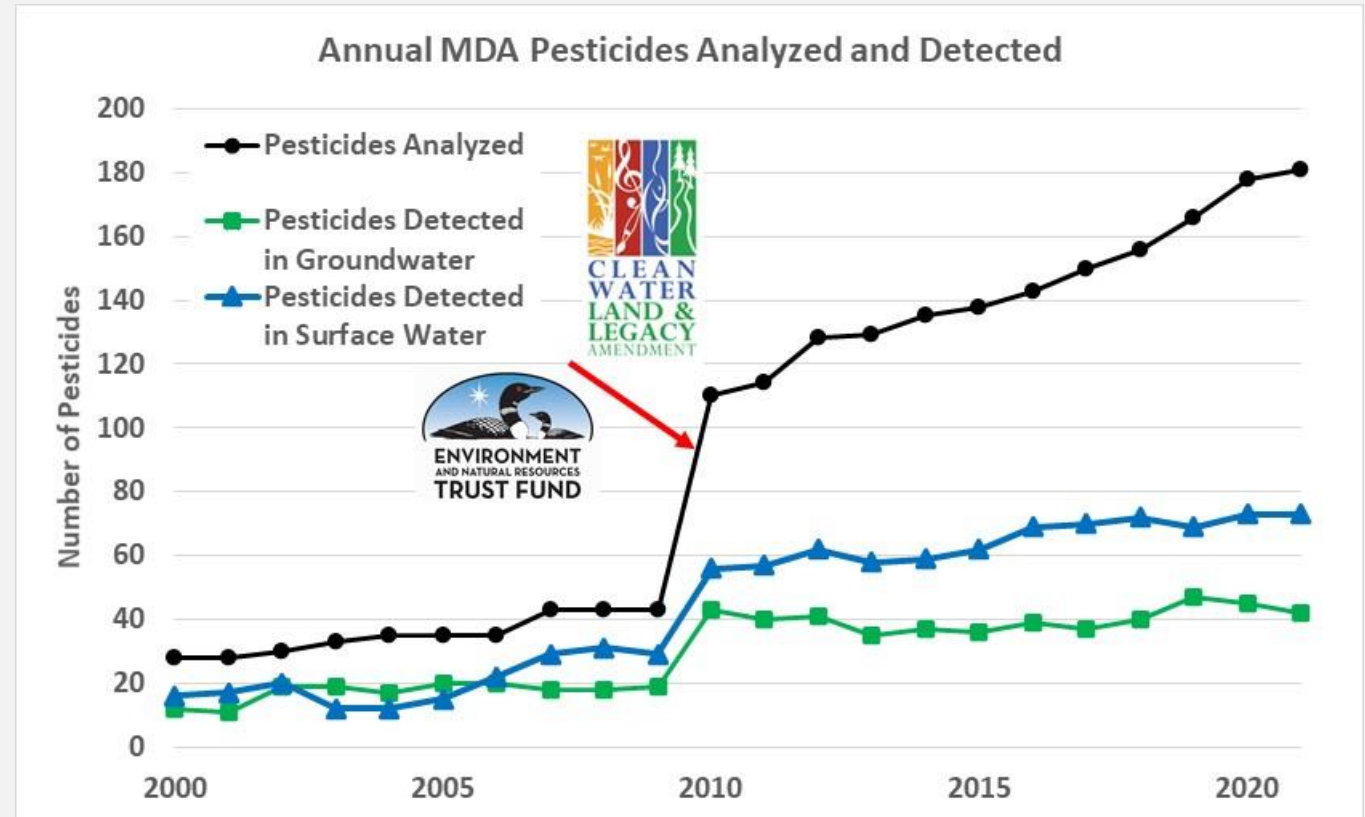
- 2020: MDA designates clothianidin and imidacloprid as “Surface Water Pesticides of Concern”

MDA is a Leader in Neonicotinoid Water Quality Monitoring



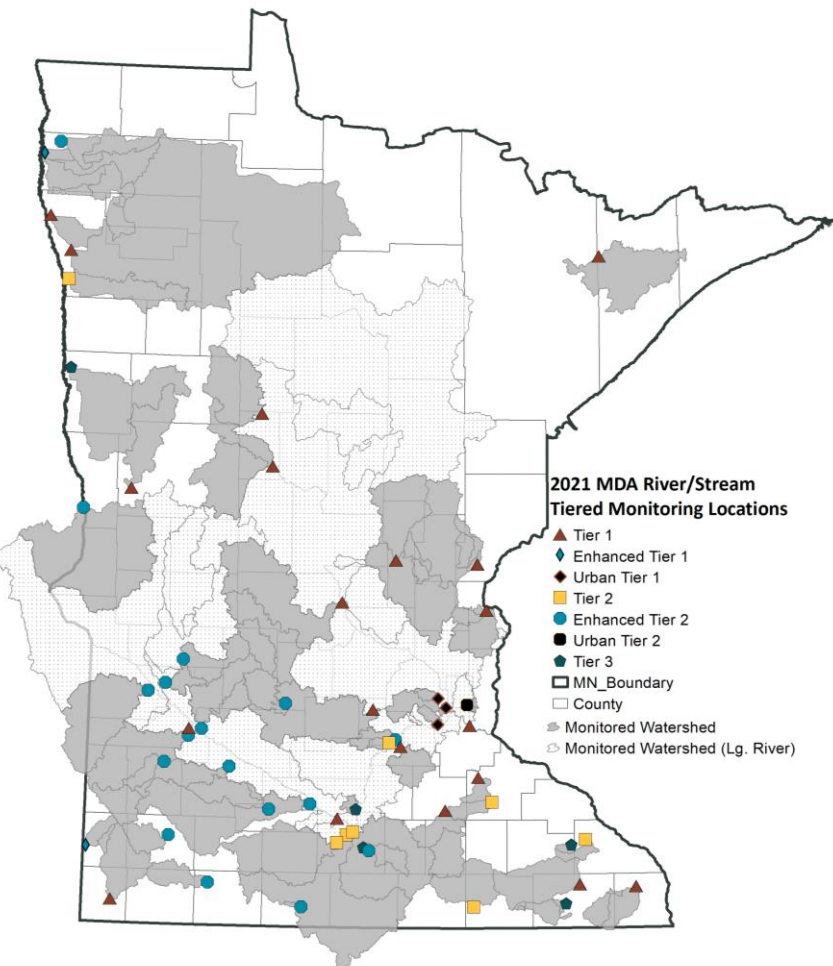
ACTIVE INGREDIENTS MONITORED

Acetamiprid	Imidacloprid
Clothianidin	Imidacloprid-urea
Dinotefuran	Imidacloprid-olefin
Thiacloprid	Thiamethoxam

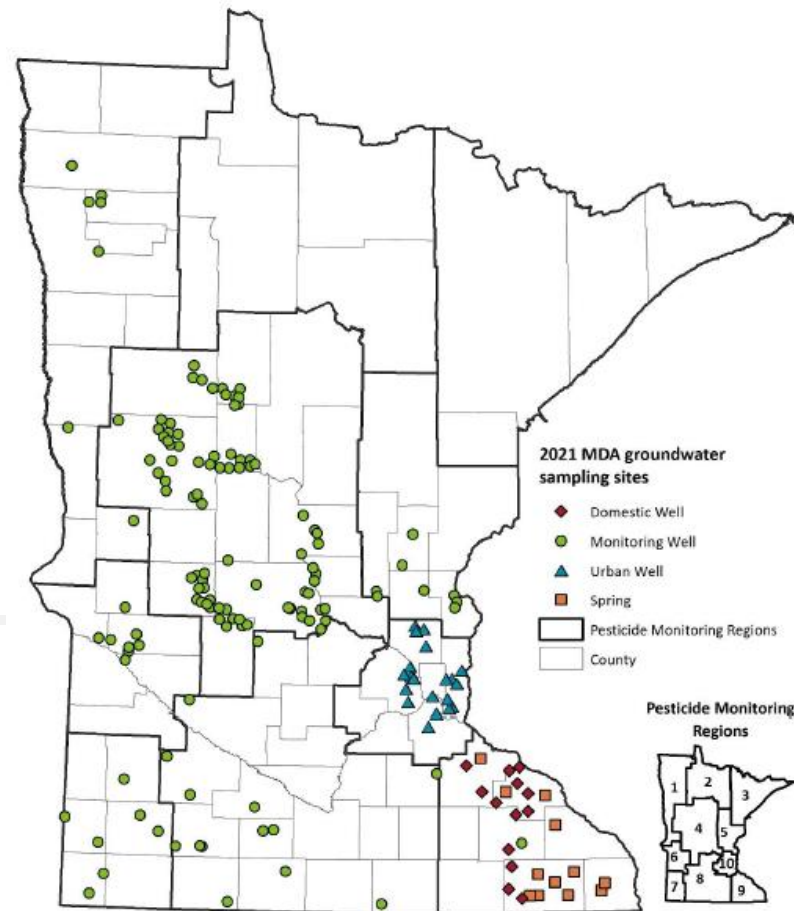


MDA is a Leader in Neonicotinoid Water Quality Monitoring

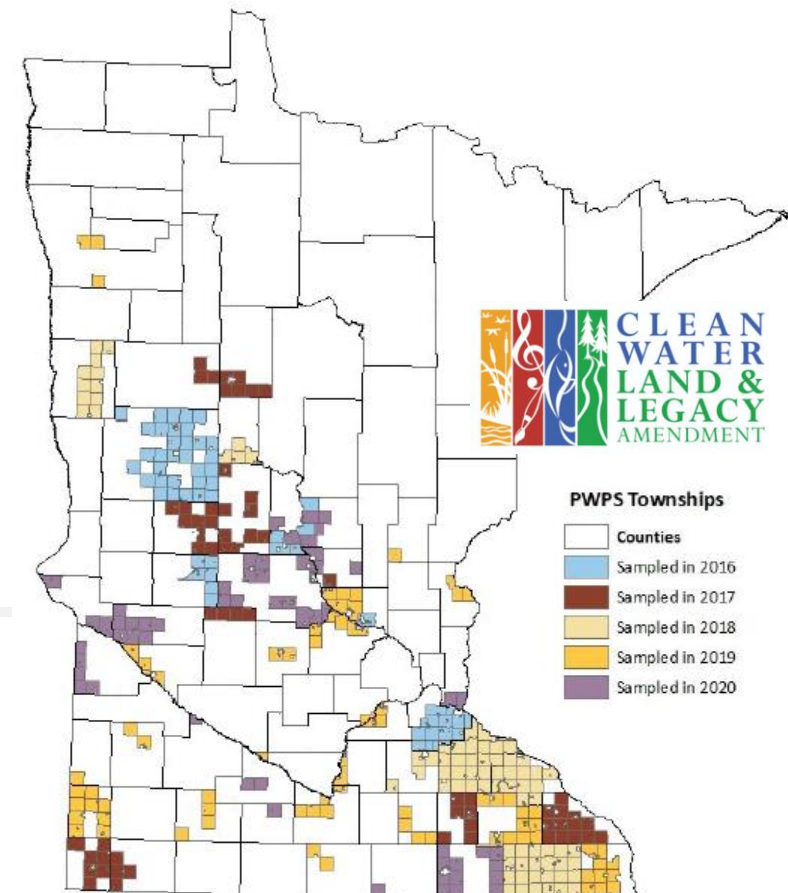
Surface Water: 3,368 samples
(since 2010)



Groundwater: 3,054 samples
(since 2010)

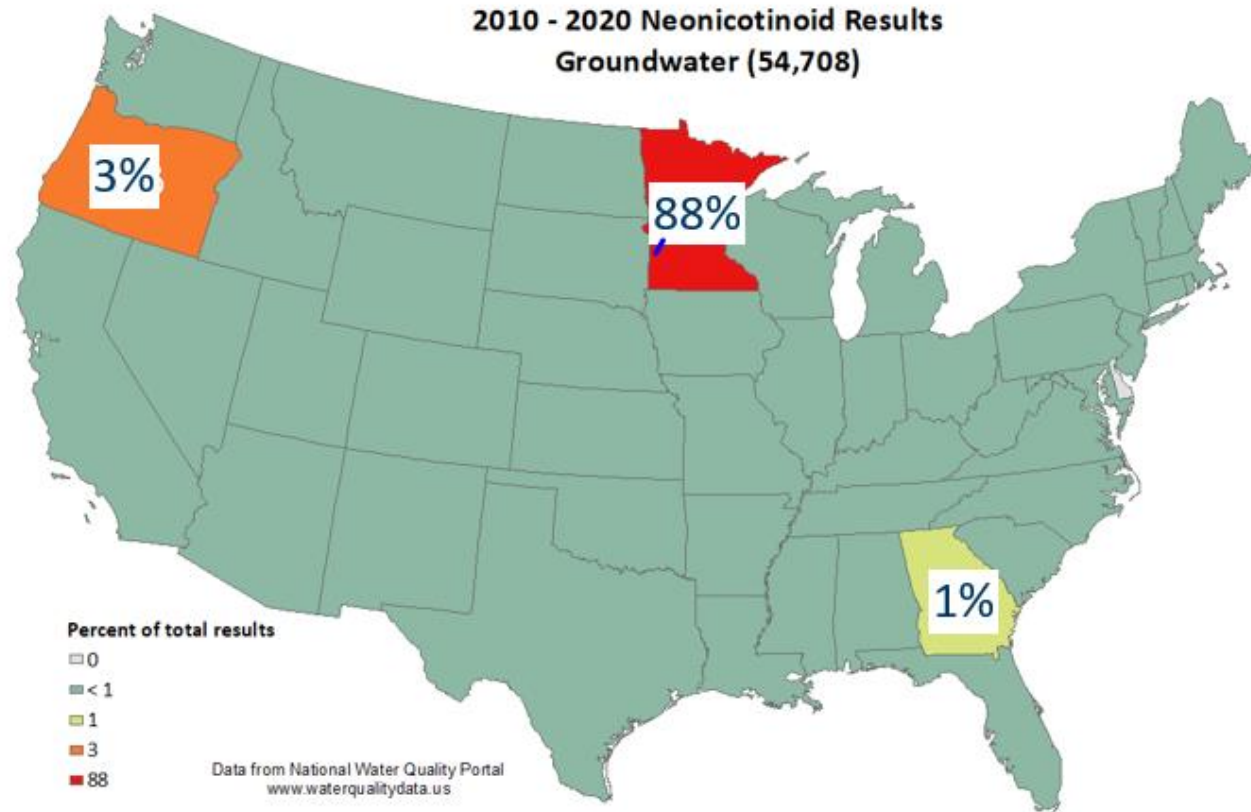
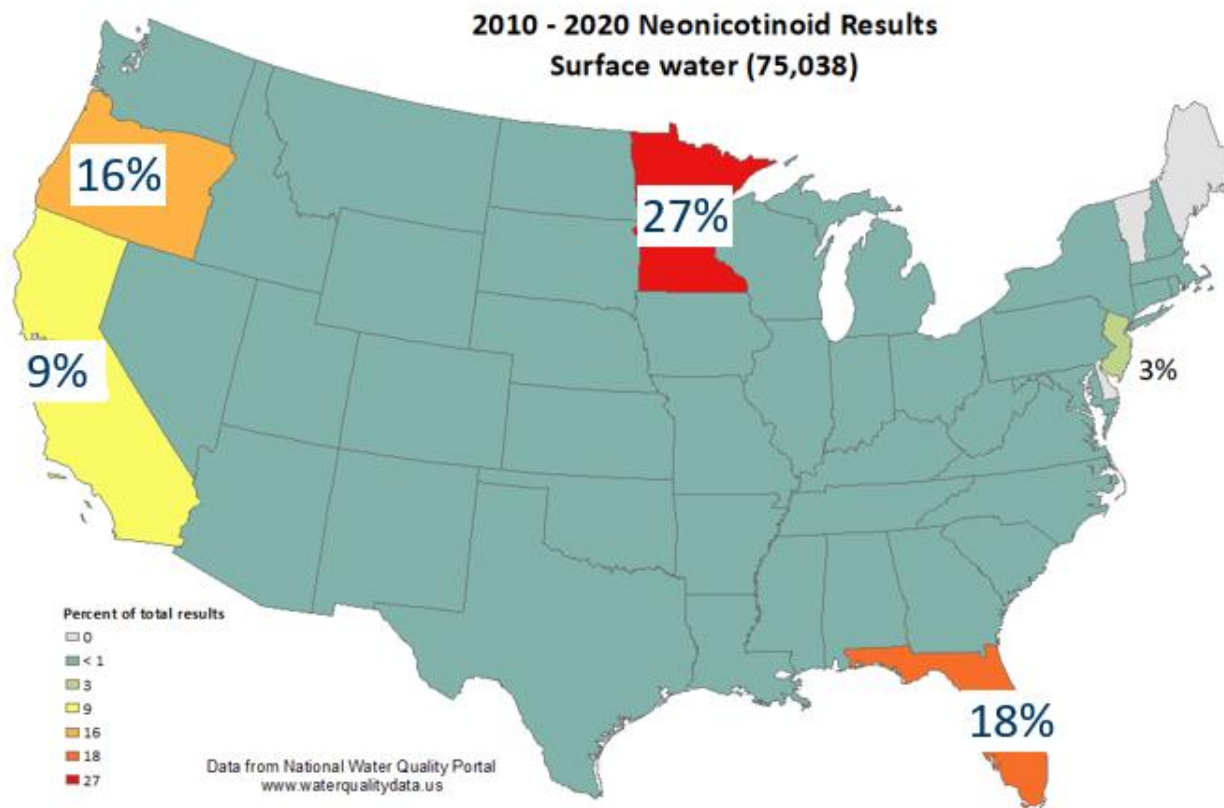


Private Wells: 5,700 samples
(2016-2021)

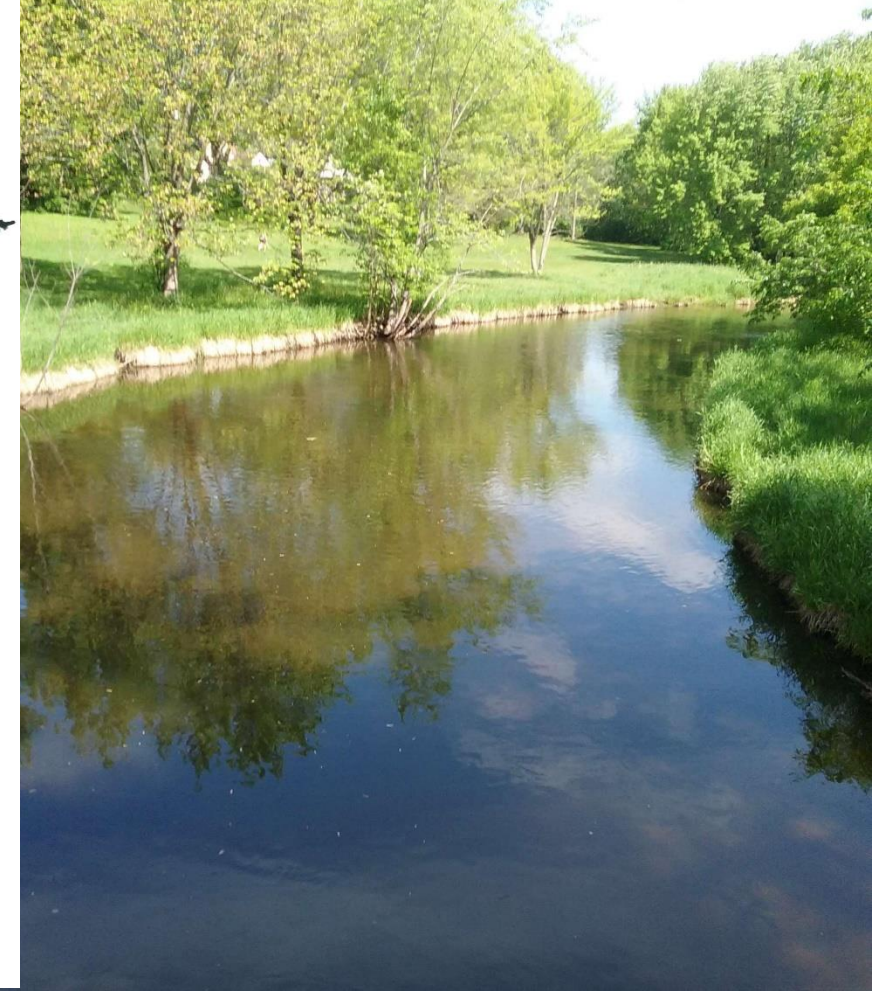
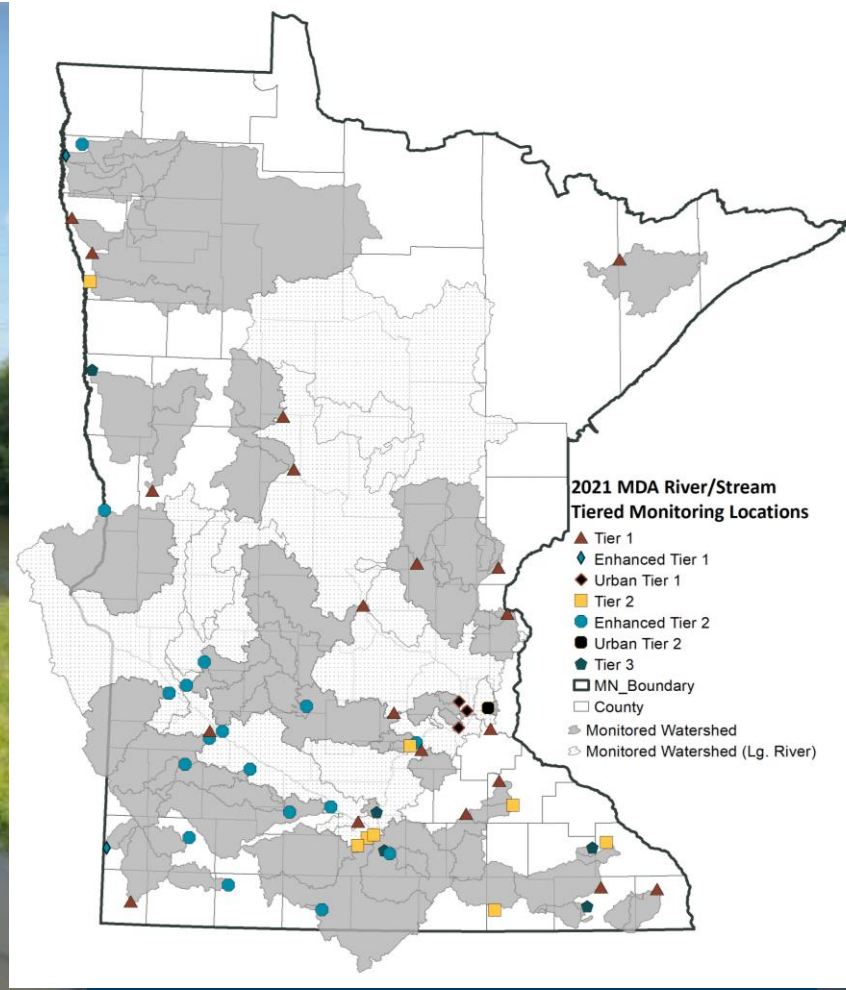


MDA is a Leader in Neonicotinoid Water Quality Monitoring

Review of 2010-2020 data in the Water Quality Portal Database and PWPS

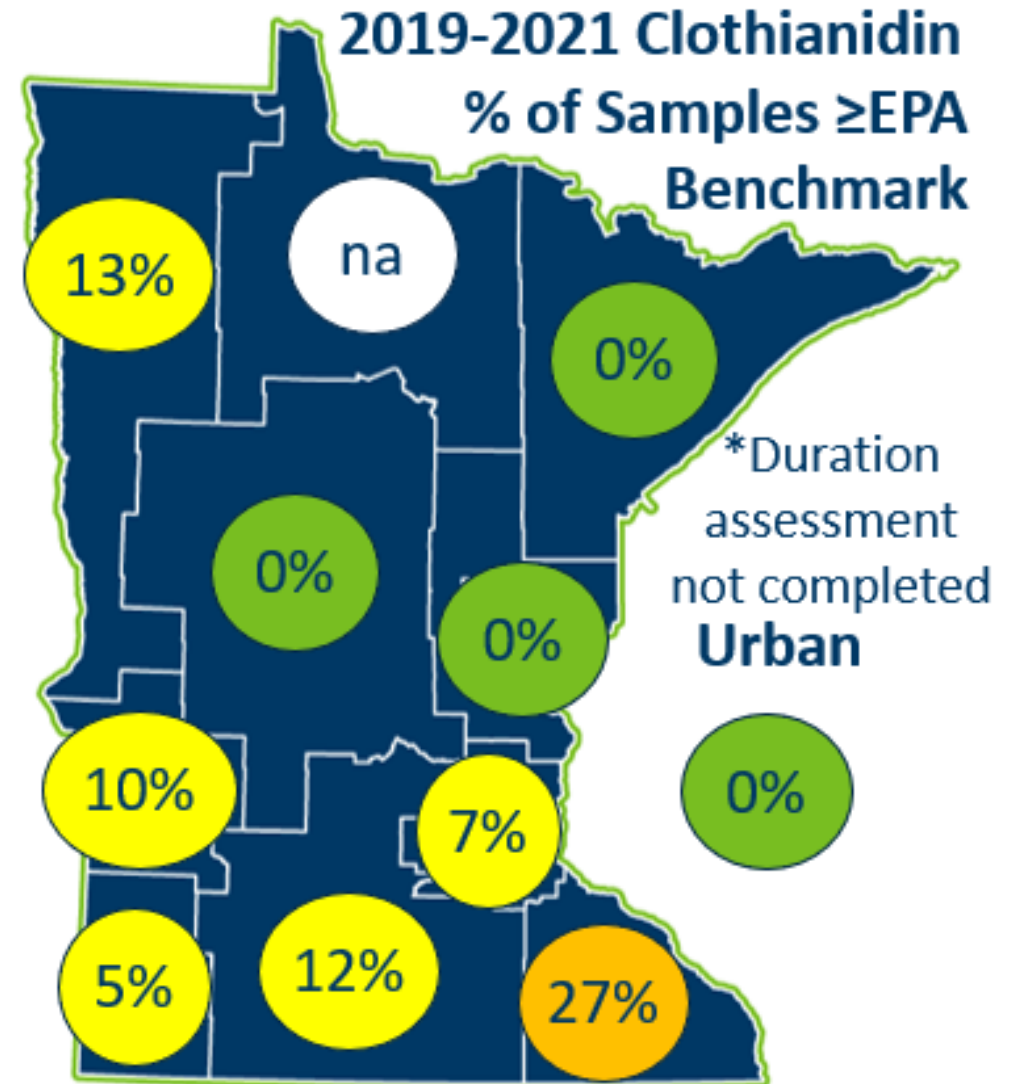
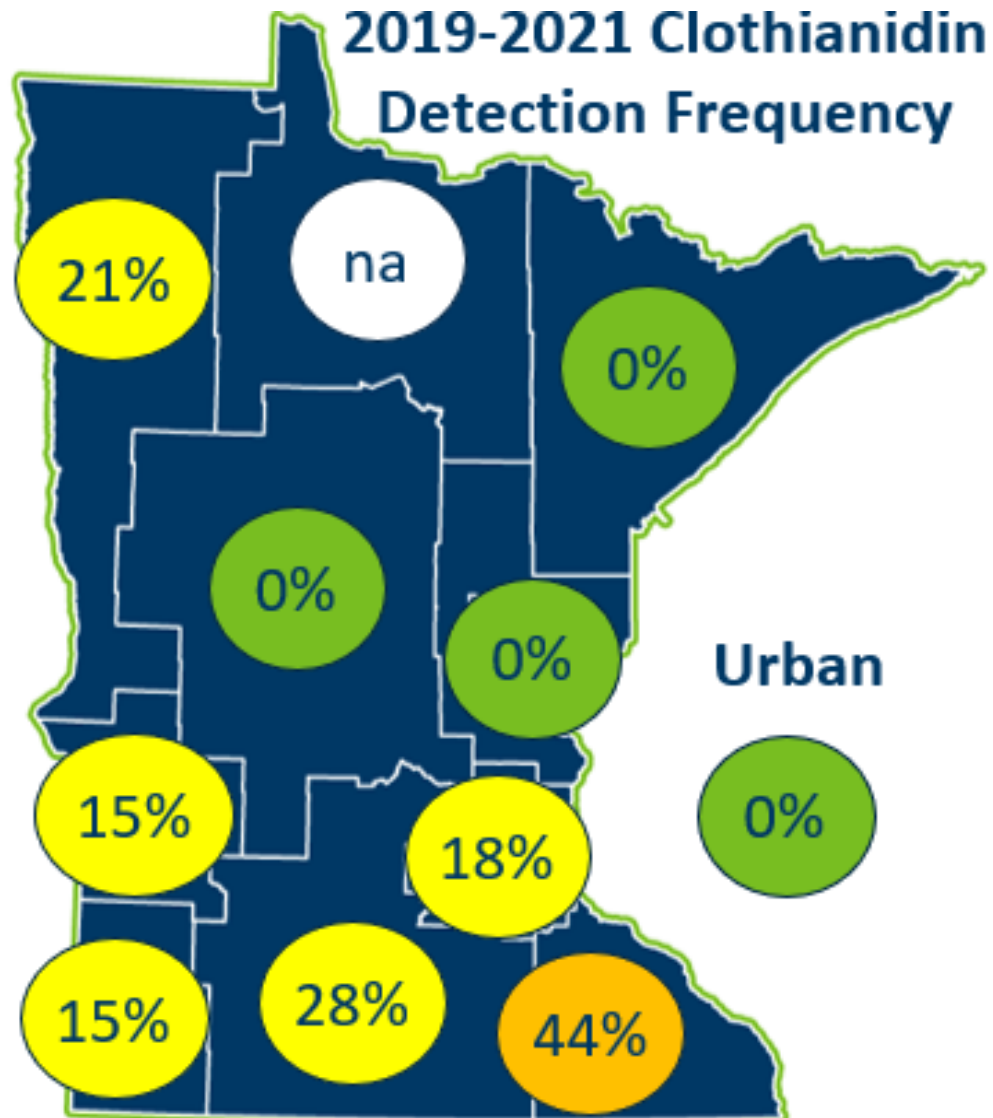


*Not all states submit results to the Water Quality Portal Database

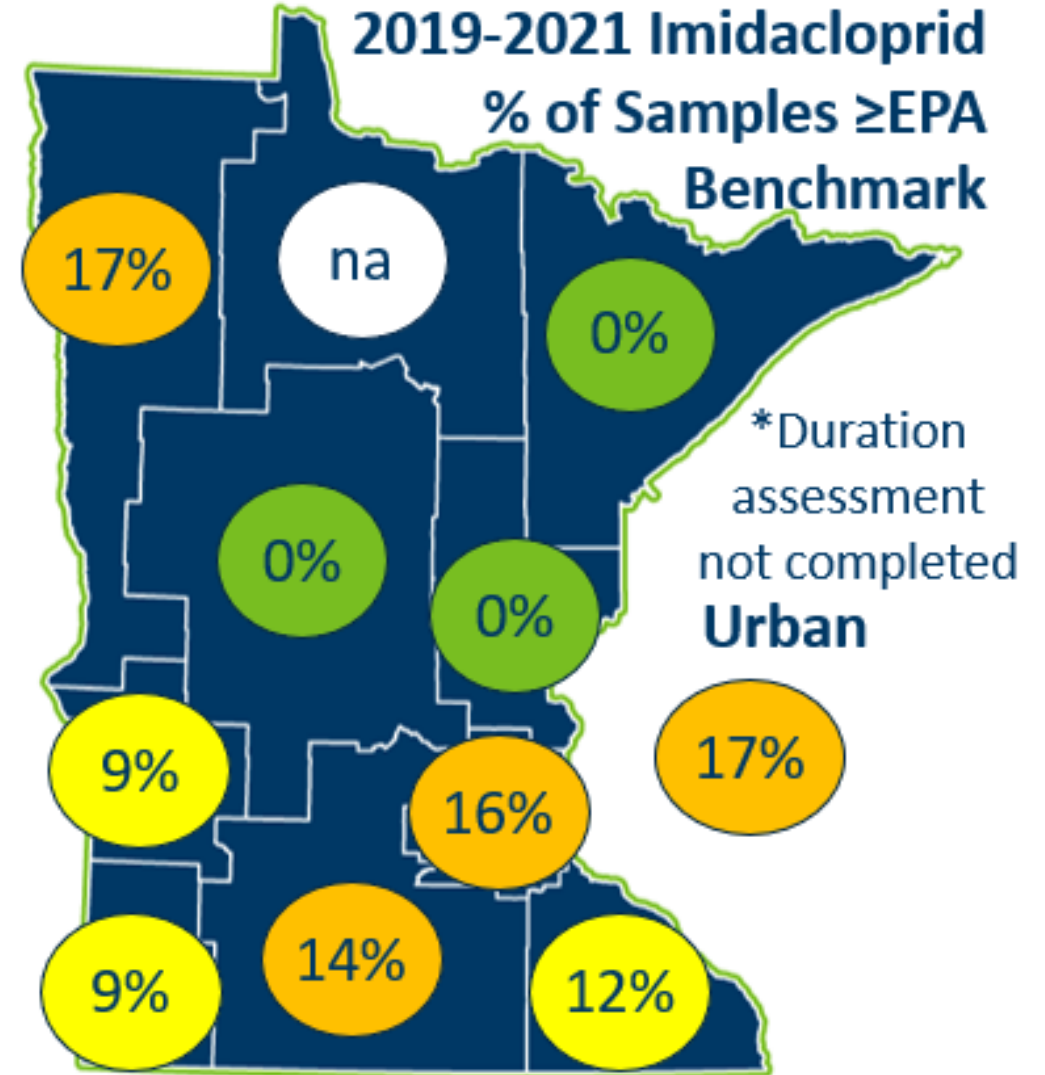
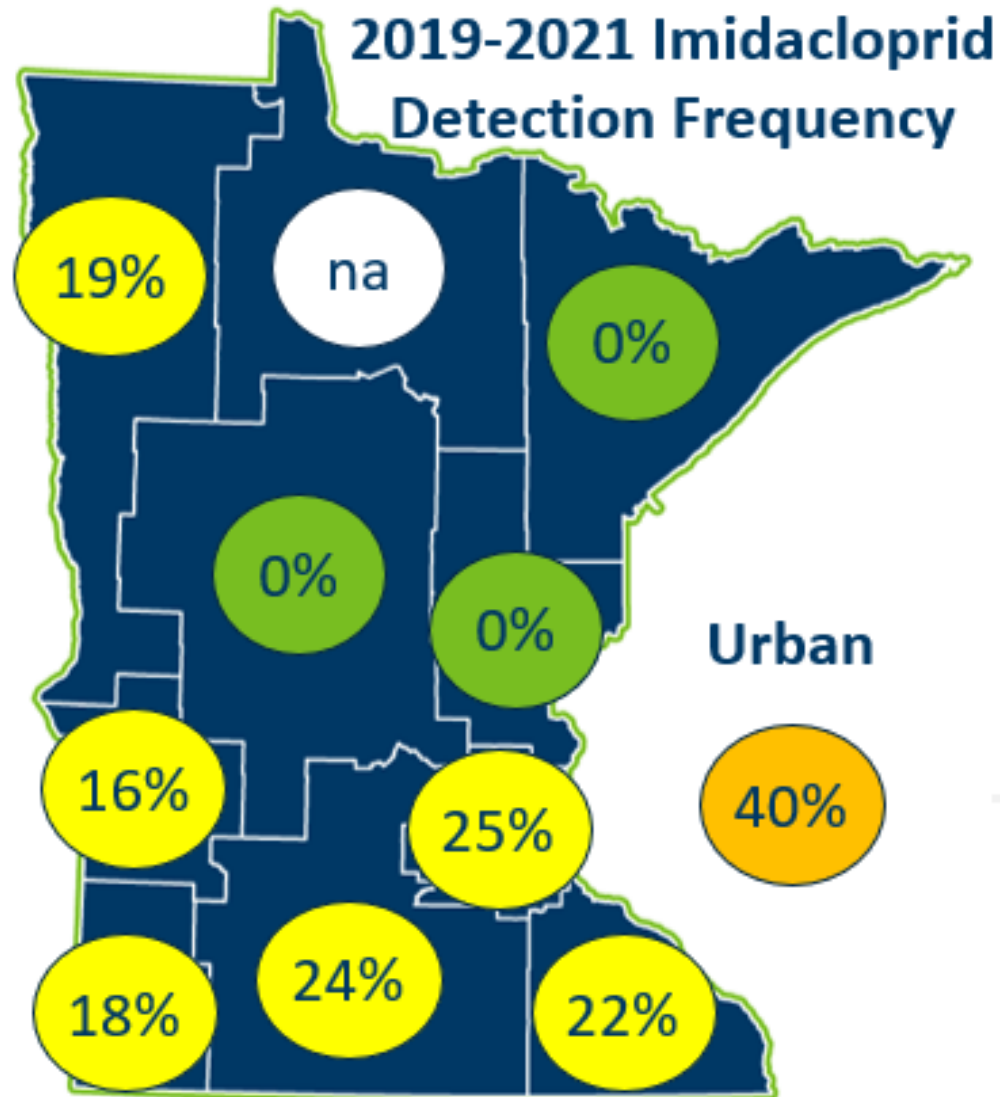


Neonicotinoids in Minnesota Rivers and Streams

River and Stream Clothianidin Results

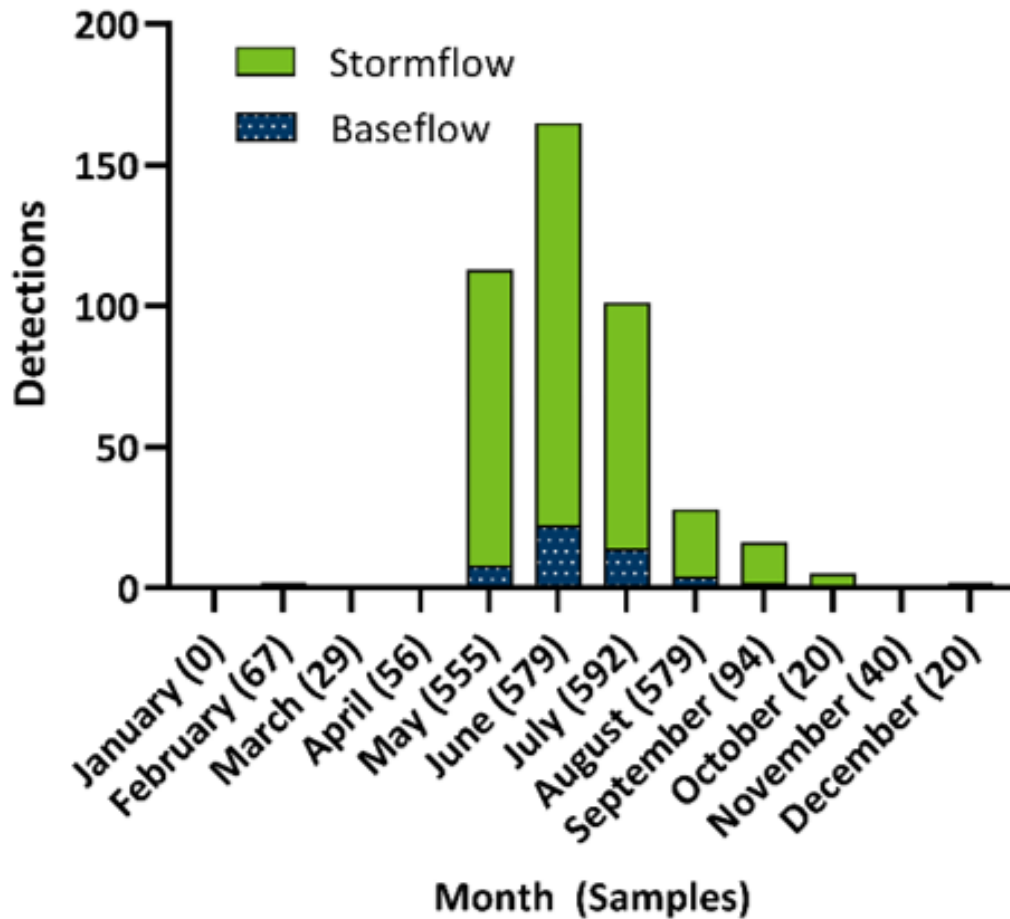


River and Stream Imidacloprid Results

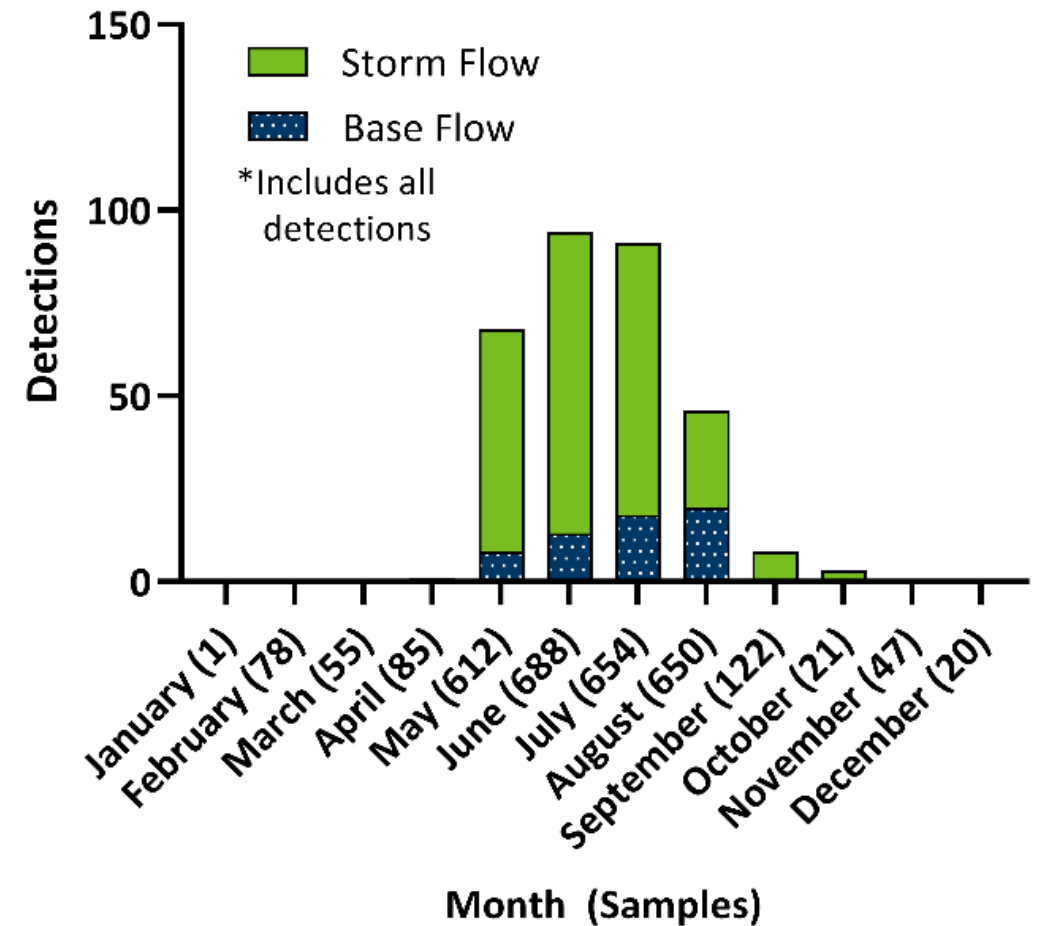


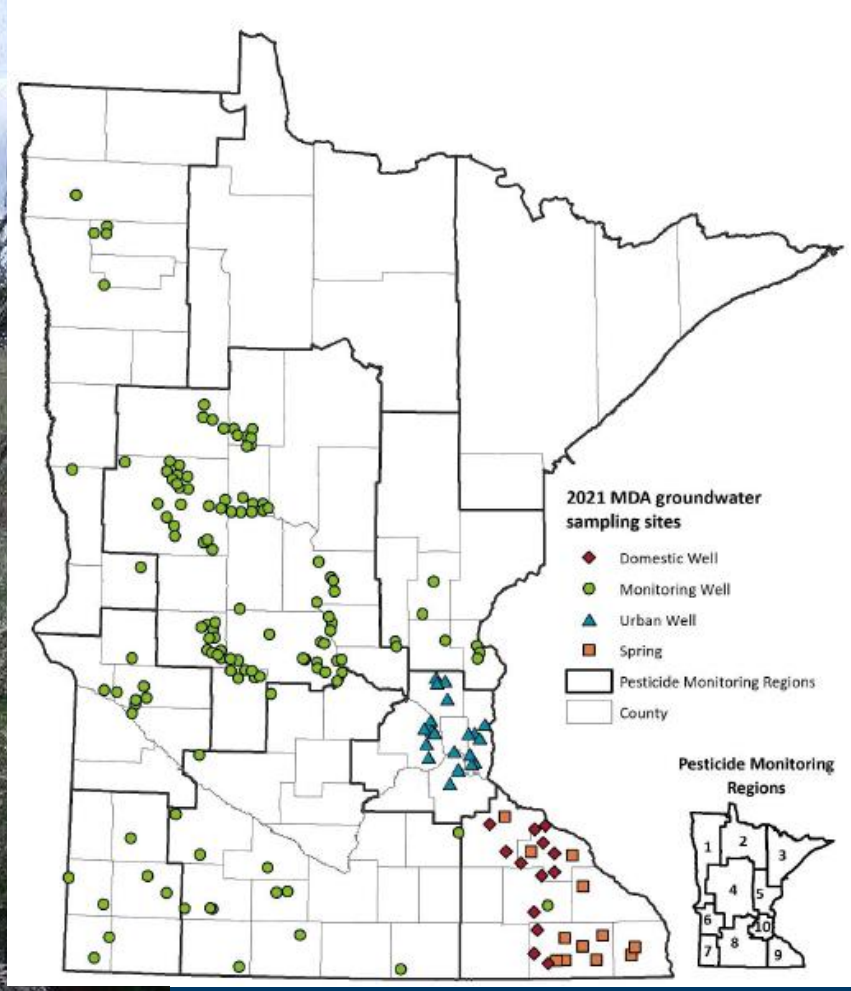
River and Stream Clothianidin and Imidacloprid Detections

Monthly 2011-2021 MDA Clothianidin
Detections in Rivers and Streams



Monthly 2010-2021 MDA Imidacloprid
Detections in Rivers and Streams

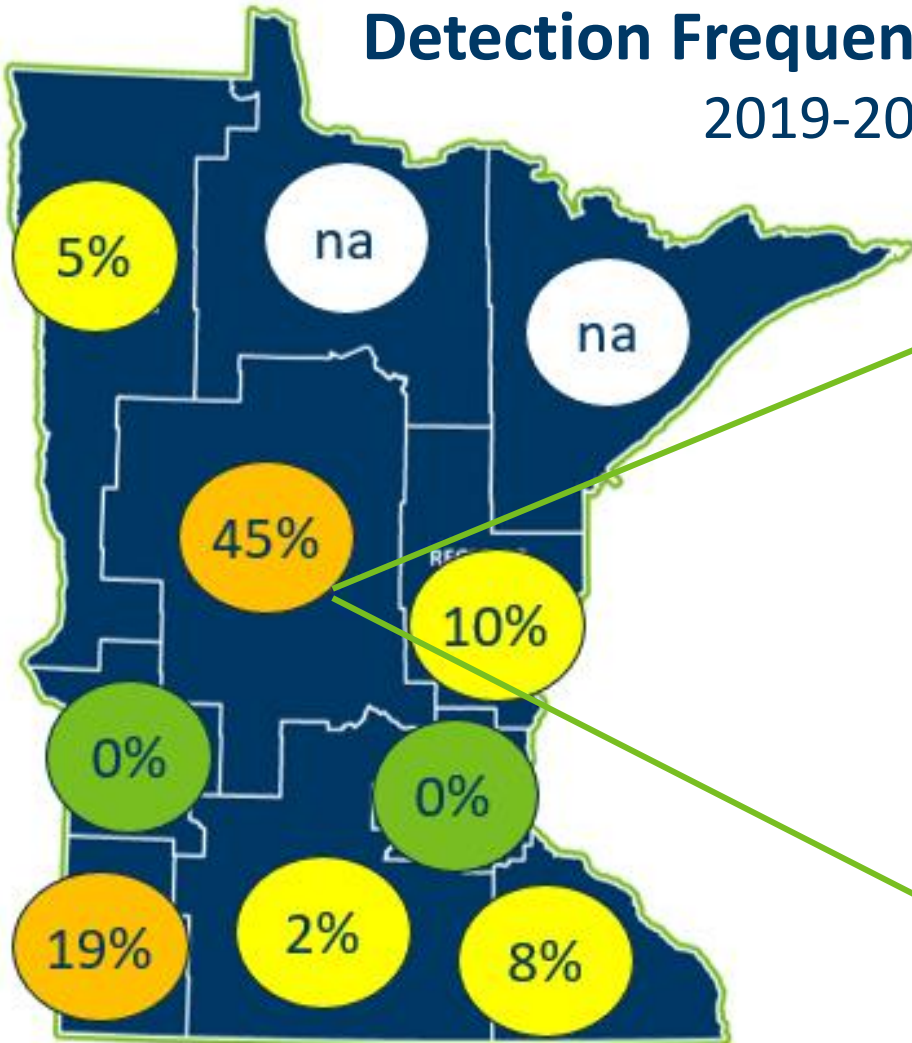




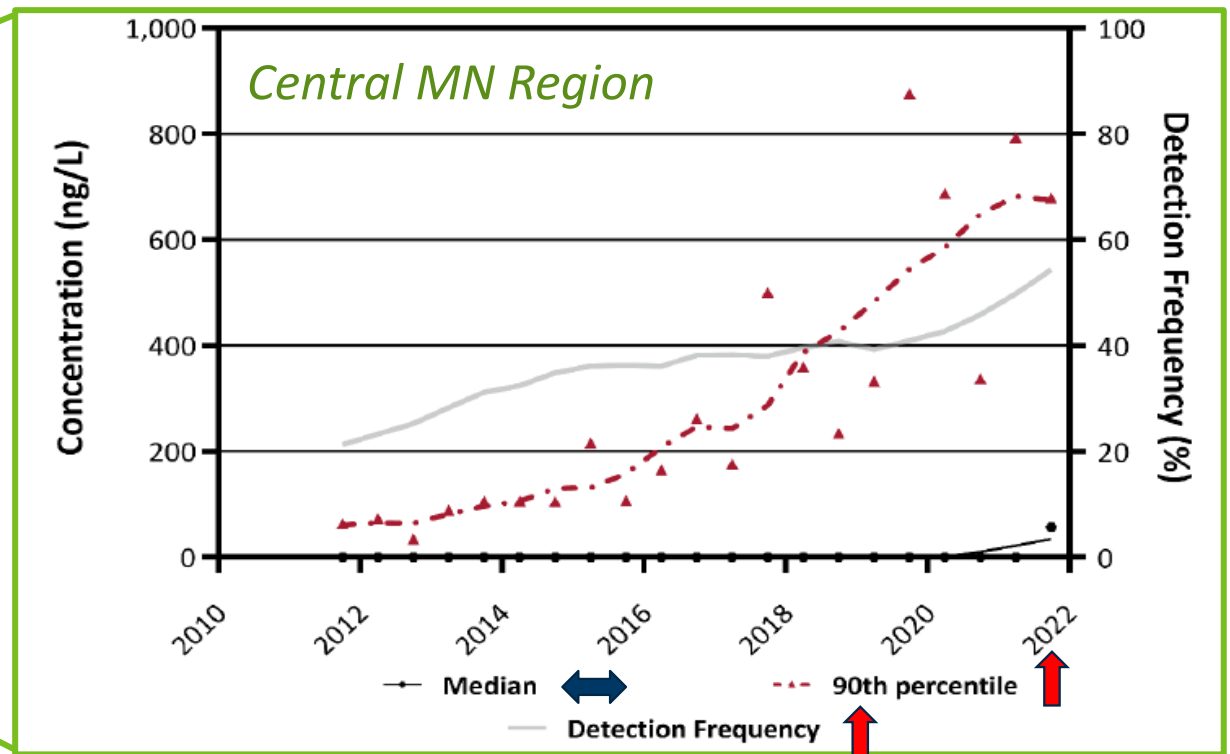
Neonicotinoids in Minnesota Shallow Groundwater

Shallow Groundwater: Clothianidin Results

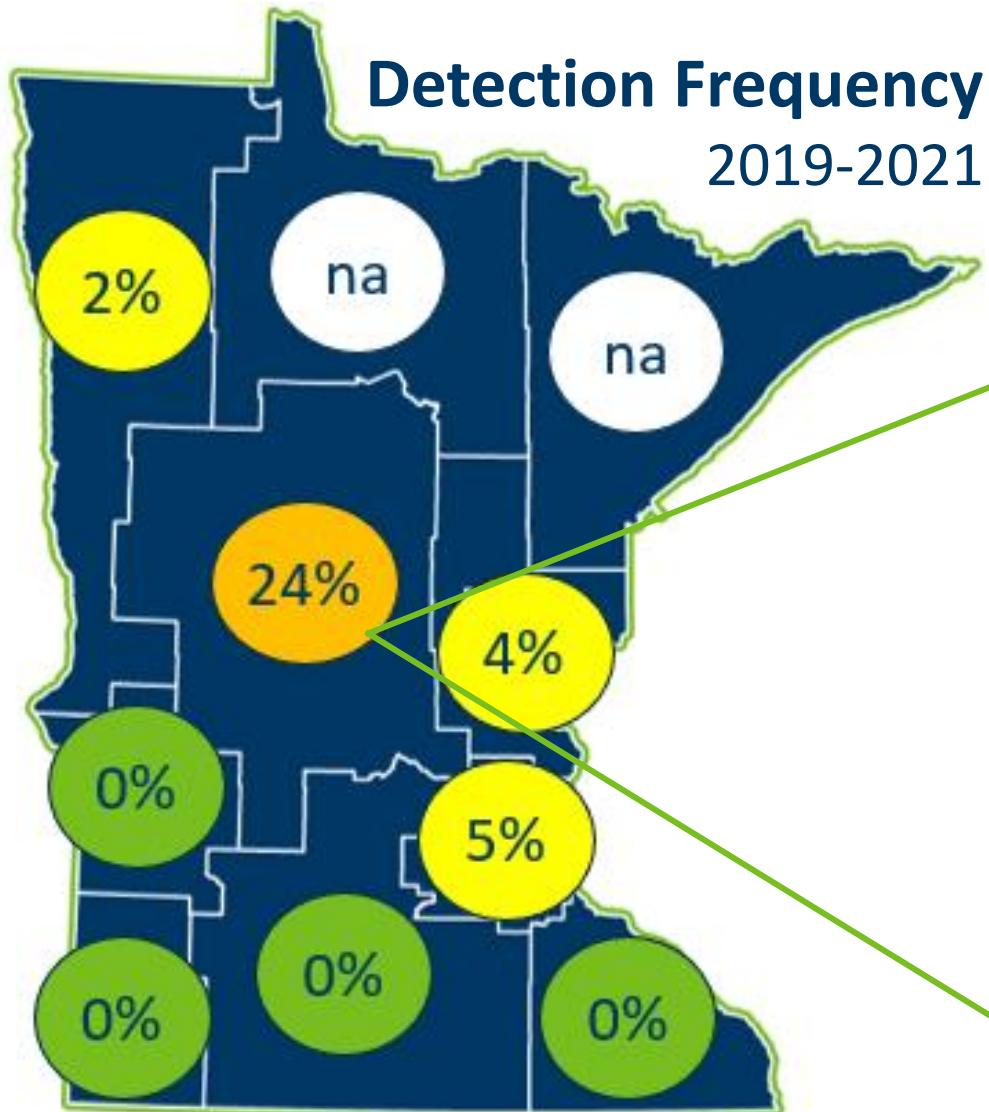
Detection Frequency
2019-2021



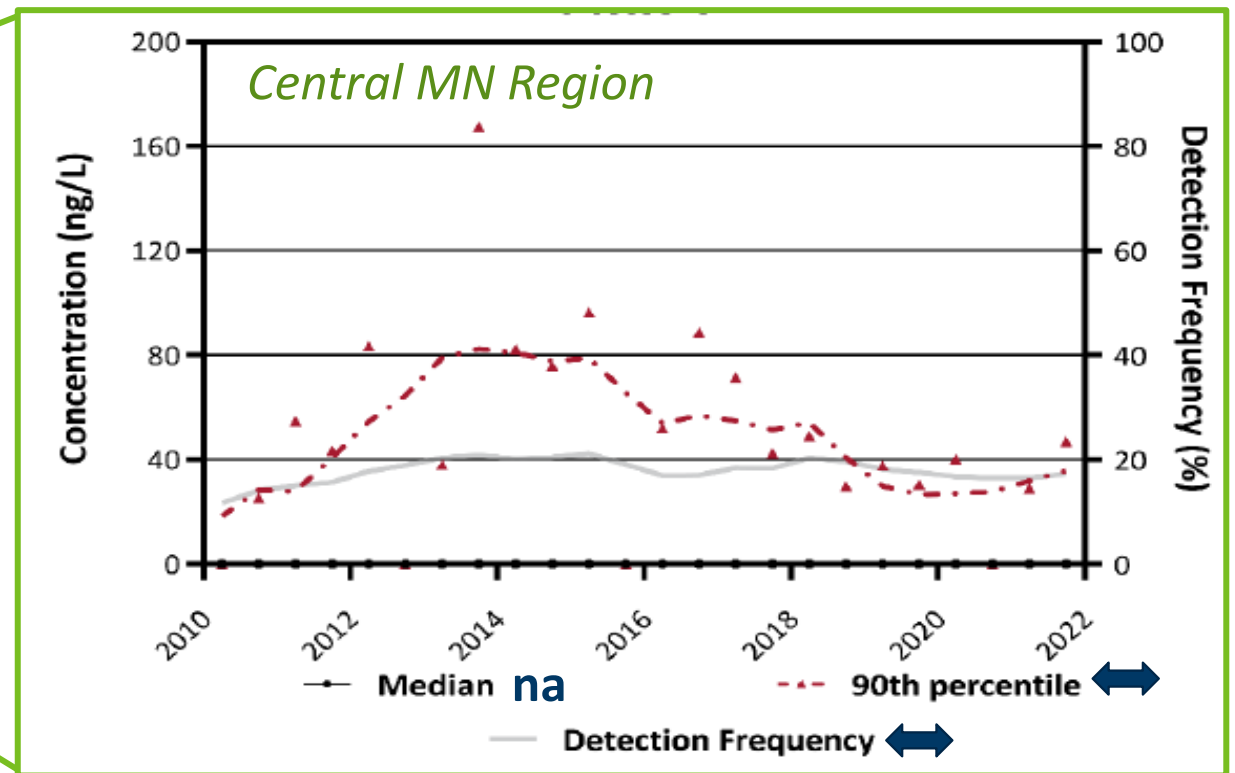
- Most frequently detected parent pesticide in 2021 (statewide, 22%)
- 2021 maximum concentration was 7% of 200,000 ng/L Health Risk Limit

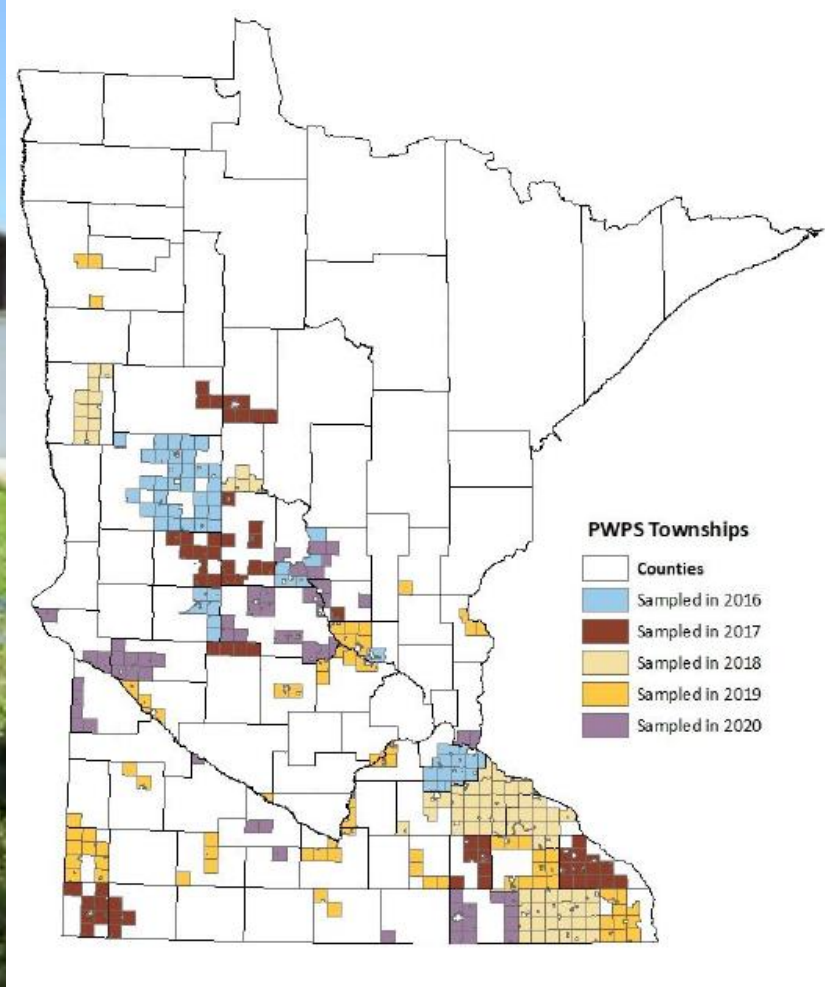


Shallow Groundwater: Imidacloprid Results



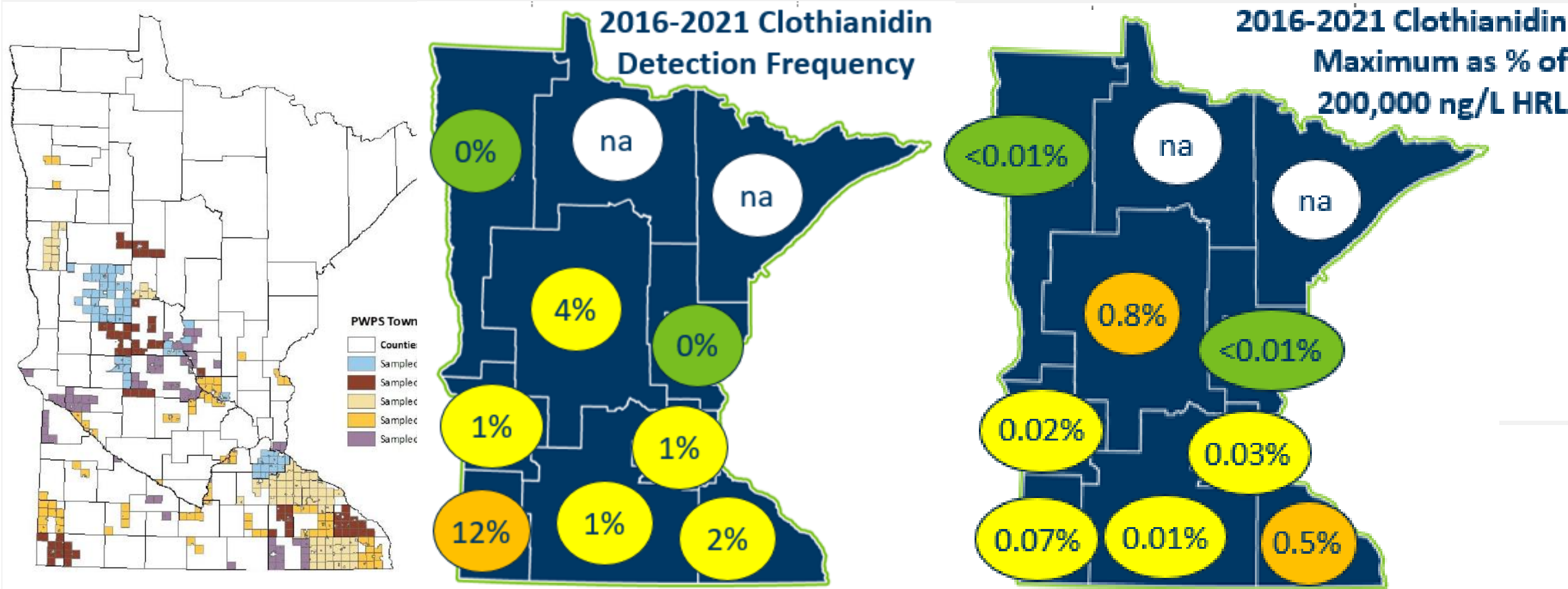
- 5th most frequently detected parent pesticide in 2021 (statewide, 10%)
- 2021 maximum concentration was 7% of 2,000 ng/L Health Risk Limit



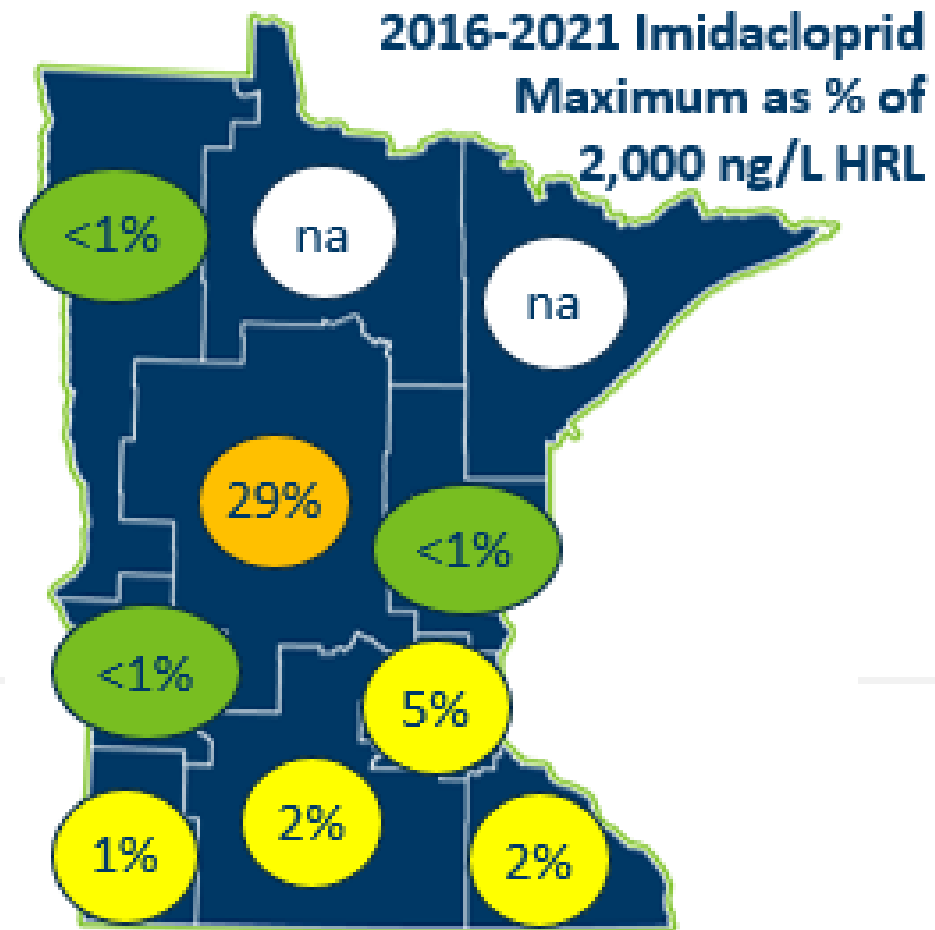
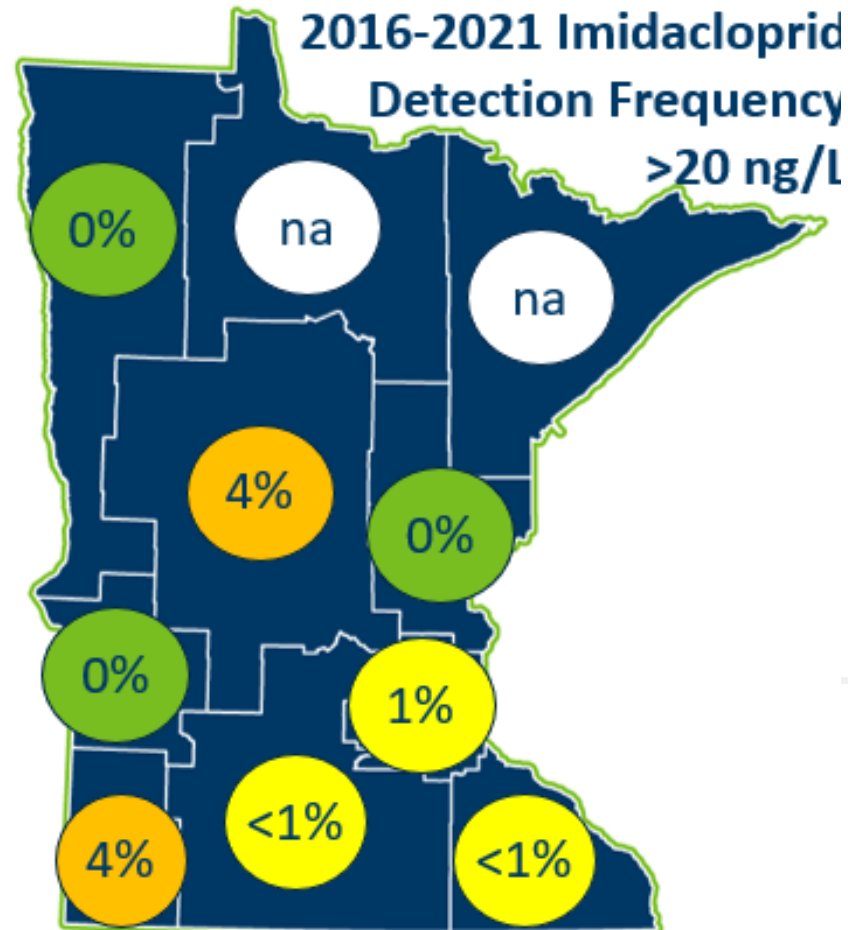
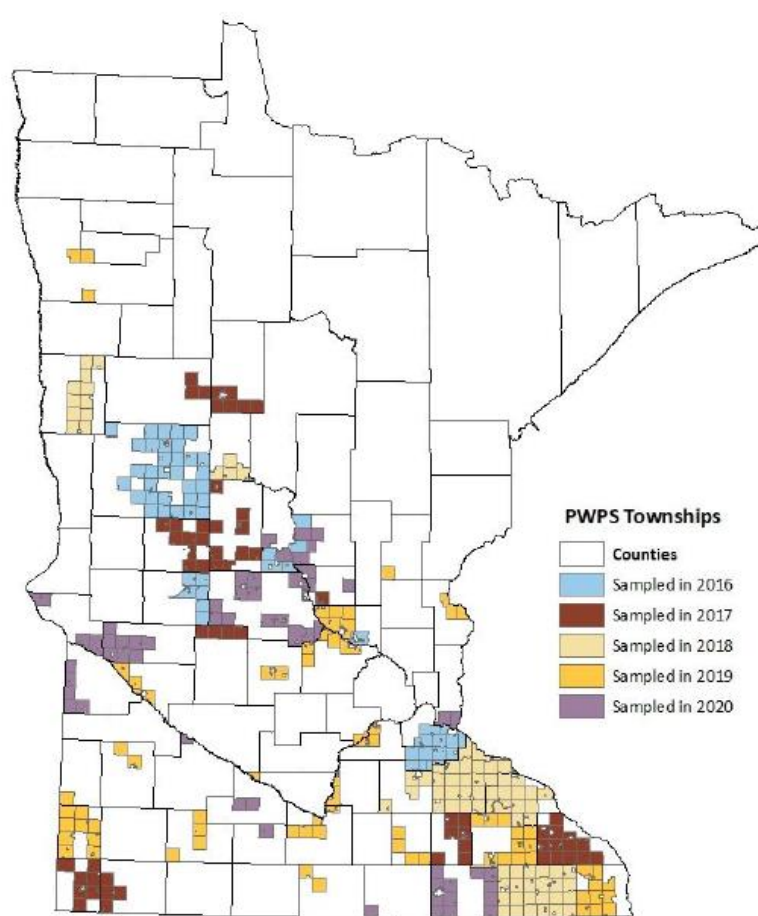


Neonicotinoids in Minnesota Private Wells

Private Well Clothianidin Results



Private Well Imidacloprid Results



2022 POCIS Pilot Study

POCIS

- Polar Organic Chemical Integrated Sampler

Who?

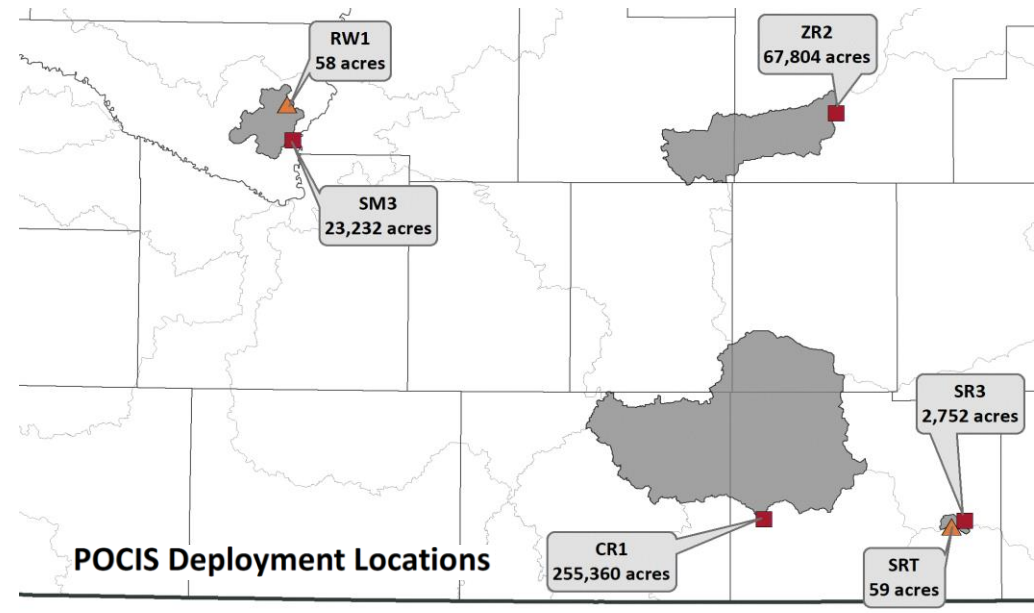
- Field work – MDA Mankato and Rochester staff
- Analysis
 - POCIS – USGS California Water Science Center; Dr. Michelle Hladik Lab
 - Grab samples – MDA Laboratory

Where?

- 4 river sites
- 2 drain tile sites – nested

When?

- 5/3/2022 – 9/6/2022
 - Retrieval / deployment every 21 days at each site



2022 MDA Proposed POCIS Deployment Locations

- River/Stream Location
- ▲ Subsurface Drainage Tile Location
- Monitored Watershed



MDA Neonic BMPs

- In the process of developing water quality BMPs for clothianidin and imidacloprid
- Currently have BMPs for neonics intended to protect pollinators
 - Developed in response to the 2016 neonic special registration review
 - Many promoted practices also benefit water quality



MDA's Partners

- The MDA is the lead state agency for registration and regulation of pesticides
 - Several multi-agency work groups where pesticide data is shared and reviewed (Analyte Selection, CEC, Cyanazine, Public Well Ag. Chemical Prioritization)
 - Agency representatives on Pesticide Management Plan Committee
 - Annual review of groundwater data with MDH
 - Request drinking water reference values
 - Annual review of surface water data with MPCA for the determination of impaired waters and discuss need for additional water quality standards
 - MN DNR river flow gauging critical for sample collection and interpretation
 - Partner with multiple state agencies and local organizations for sample collection

Summary

- Neonics are widely used in Minnesota, particularly as seed treatments
- Chemical properties allow offsite movement to surface water and groundwater
- Minnesota is a leader in neonic water quality monitoring
- MDA has found re-occurring, widespread detections of clothianidin and imidacloprid in southern and western Minnesota rivers and streams at concentrations greater than the EPA chronic benchmarks
- Clothianidin and imidacloprid are also detected in groundwater in central and southwest Minnesota; however, all detections are low compared to human health reference values
- MDA is taking actions to protect water quality

Thank you!

Dave Tollefson

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