

Policy Committee Meeting Agenda

Clean Water Council

January 27, 2023

9:30 a.m. – 12:00 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(s)
- Chair update
- Staff update
 - Governor's Budget

9:45 Groundwater Follow-up

- Jason Moeckel, Department of Natural Resources

10:45 Break

11:00 Groundwater Governance in the Great Lakes Region: A Descriptive Assessment

- Dr. Carrie Jennings, Freshwater Society

12:00 Adjourn

Policy Committee Meeting Summary
Clean Water Council (Council)
December 16, 2022, 9:30 a.m. to 12:00 p.m.

Committee Members present: John Barten, Rich Biske (Chair), Kelly Gribauval-Hite, Victoria Reinhardt (Vice Chair), Peter Schwagerl, Marcie Weinandt, and Phil Sterner.

Members absent: Raj Rajan and Jordan Vandal.

To watch the WebEx video recording of this meeting, please go to <https://www.pca.state.mn.us/clean-water-council/policy-ad-hoc-committee>, or contact [Brianna Frisch](#).

Regular Business

- Introductions
- Motion to approve the December 19 meeting agenda and October 28 meeting minutes, moved by Victoria Reinhardt and seconded by Marcie Weinandt. Motion approved by vote unanimously.
- Chair update
 - Rich Biske has been participating in the Minnesota Office of Soil Health (MOSH) soil health plan. This process is being led by MOSH and the Board of Water and Soil Resources (BWSR). The process they are doing has good coverage. It would be good to review that draft when it is open for public comment, as this Policy Committee has talked about this topic. Kudos to those staff.
- Staff update
 - Carp Removal Update: The committee felt it would make sense to keep the Minnesota Department of Natural Resources (DNR) and Minnesota Aquatic Invasive Species Research Center (MAISRC) working on breaking down those barriers of the permits for carp removal. There are two workshops the MAISRC folks are planning in 2023 to help get more stakeholders involved and potential solutions.
 - Regarding the budget forecast, back in February it was at \$337 million in available funds for FY24-25, but the November forecast came out and the Clean Water Funds (CWFs) has \$21.7 million less than expected, totaling \$315 million. Other sales tax revenue was in a surplus, so having less was a surprise. Connecting with Minnesota Management and Budget (MMB), they shared that it was due to less obligated spending and some adjustments from prior years. The Interagency Coordination Team (ICT) met twice to work on the revised budget for the Council, based on feedback from the Council.

Selecting Presentation/Discussion Topics for 2023 (WebEx 00:28:00)

The Policy Committee is typically the first stop for many issues that move forward to the Council. What are topics that the committee would like to hear in early 2023?

- Kelly Gribauval-Hite: I would like to see more discussion on the Mt. Simon-Hinkley aquifer. The drilling of new residential and community wells in this aquifer has many concerns about its resiliency. In addition, there was recently news about an Elko New Market bottling plant approval.
 - *Comment from Jason Moeckel, DNR:* The DNR could put a presentation together for it. Regarding, the Elko New Market plant, the city draws its water from the Prairie du Chien-Jordan aquifer and using the city water supply. They would need to update the city water plan, and the DNR reviews that before any work would happen. It would be a timely discussion. Perhaps the state of groundwater would be a better approach, rather than focusing on these two aquifers.
 - *Marcie Weinandt:* Bottled water is an attention-getter. However, it is really groundwater and maybe even wellhead protection. It would be good to look at the Soil and Water Conservation Districts (SWCDs) and county work for groundwater protection. What are the communities that are most impacted by that work (such as local manufacturing, or pocket communities)? What about the interaction with flooding (i.e., water storage and drainage)?
 - *Rick Biske:* Groundwater is a potential policy topic. Let's looking at the state climate action framework and how it relates to environmental justice. It could educate us and prepare new members who may ask pointed questions about the Council's work. To my understanding, we have not had these conversations.
 - *Phil Sterner:* The Metropolitan Council passed their climate action plan last week. It may be something the Council would like to review. There are some environmental justice pieces included.

- *Paul Gardner*: We could ask speakers to mention the actions they are taking impacting inclusion. Even if there is no update, it would be asked.
- *Rich Biske*: Additionally, each state agency has a representative on the Governor's Climate Advisory Council, so it would be good to hear their perspective of water resilience (i.e., water storage).

Suggesting Policy Ideas for Discussion in Strategic Plan Discussions in 2023 (*WebEx 01:26:00*)

The CWF recommendations process is done, and there is now time to review the strategic plan finished in the first quarter of 2020. Would the Council like to take a more deliberate dive into these areas? Are there other policy recommendations that need to be flushed out more?

- *Rich Biske*: Let's review the role of policy and how it complements the funding recommendations.
- *Rich Biske*: How do we define what outcomes are? Looking at the release of the agency's performance report, what should expectations be for what the next decade looks like?
- *Paul Gardner*: Are you interested in diving into drainage? *Response from Rich Biske*: Yes, setting some priorities about what is achievable. Also, being aware of the tradeoffs associated. There has been some good work done before that has been written into some of the guidance (i.e., non-point funding prioritization aware across the state for protection and restoration of waters, as well as the benefits).
- *Paul Gardner*: More money will come into the CWF over time. There are some things that need to be done because it is required, but others leverage funding, and some are high-risk with potential high reward, so looking at how to balance these things. It is looking at how the Council values certain benefits. Should the Council try to meet every need? Should they focus on certain areas?
 - *Rick Biske*: I like to have these kinds of conversations. Are we looking at addressing symptoms or looking at the root cause? All good questions to consider.
 - *Victoria Reinhardt*: There is so much that could potentially go into this discussion. The Council is at a point where we know what needs to be done. It is about prioritization now. The Council is able to show legislators and Minnesotans the outcomes so far. Perhaps we can do a roadmap, of what is going to happen beyond the ten years after 2034, and what could happen if the funds disappear. The public needs to understand what is happening with the funds.
 - *Glenn Skuta, Minnesota Pollution Control Agency (MPCA)*: It is important to note all the accumulated work done by the CWFs since 2008, especially considering population growth, agricultural growth, and additional pollutants. Holding the line and making any amount of incremental improvement is a win. It is part of the context that is important. There is a lot of celebrate here.
 - *Paul Gardner*: Note that Paul Gardner and Jen Kader will be meeting with the MPCA's Organization Improvement Unit, the same people that helped with the Strategic Plan, to go over how to have a facilitated discussion with this next round of updates. Also, when revising the plan, we can have an update of all the reports that have stemmed from the CWFs over the last decade.
 - *Justin Hanson, BWSR*: When talking about how much has changed since the start of the CWFs, I would love to have local government units at the table as well. They can discuss expectations over the next ten years. It is an exciting topic to cover.
 - *Paul Gardner*: The meet people where they are strategy, versus pushing the regulatory button, would be a good discussion to revisit. The Council also brought up the topic of human resources and the labor shortage, since CWFs are used to train people, so it may be another good discussion topic.
 - *Rich Biske*: Another climate action framework item to consider is looking at the role of release to water for peatland and wetlands in the state. How they serve dual purpose as it relates to water quality, water storage, and carbon sequestration.
 - *Paul Gardner* will work on these topics for future meeting discussions. This list can continue to grow, as topics come up in discussions. It is a running list.

Adjournment (*WebEx 01:57:28*)

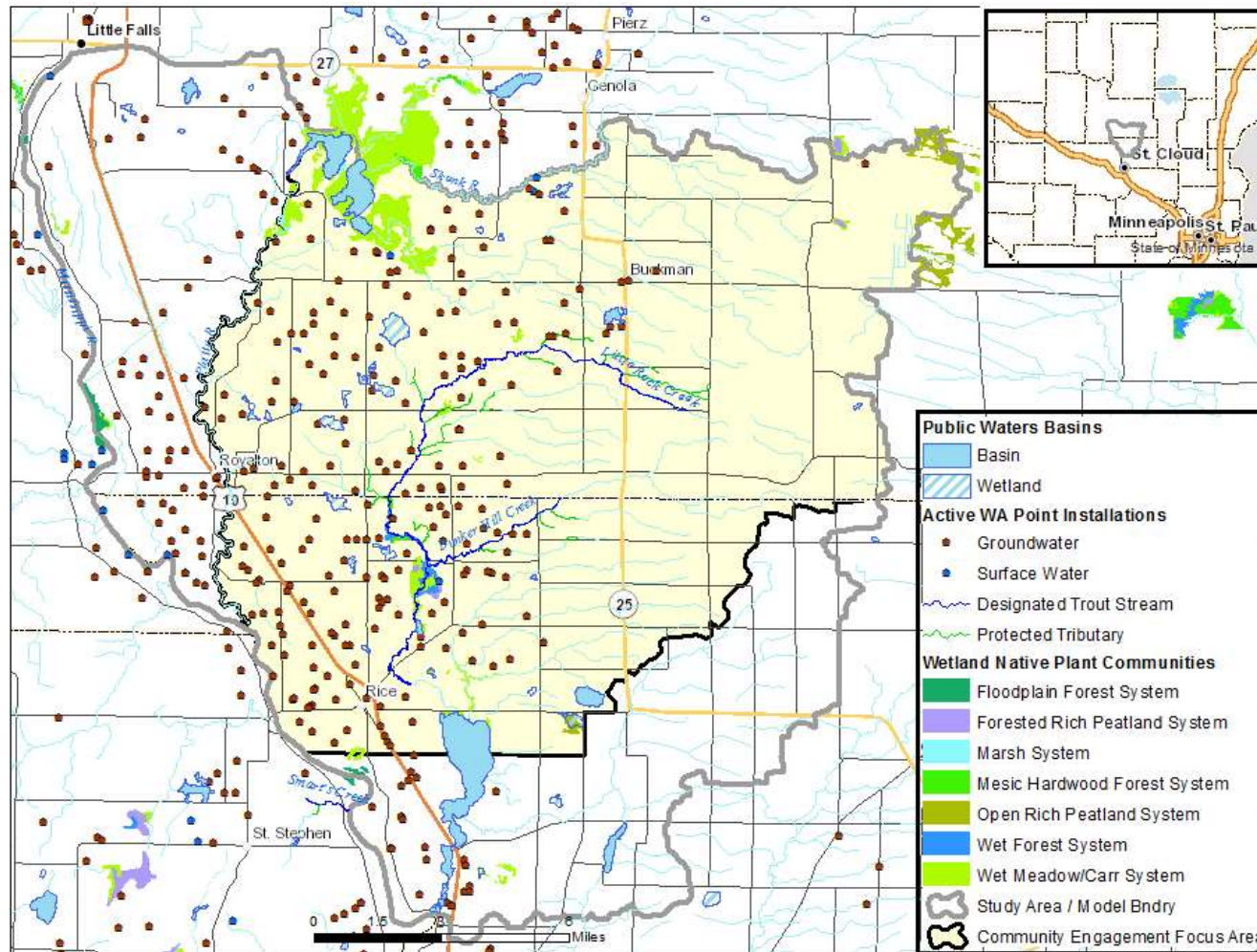


Little Rock Creek Case Study in Minnesota Groundwater Management
27 January 2023

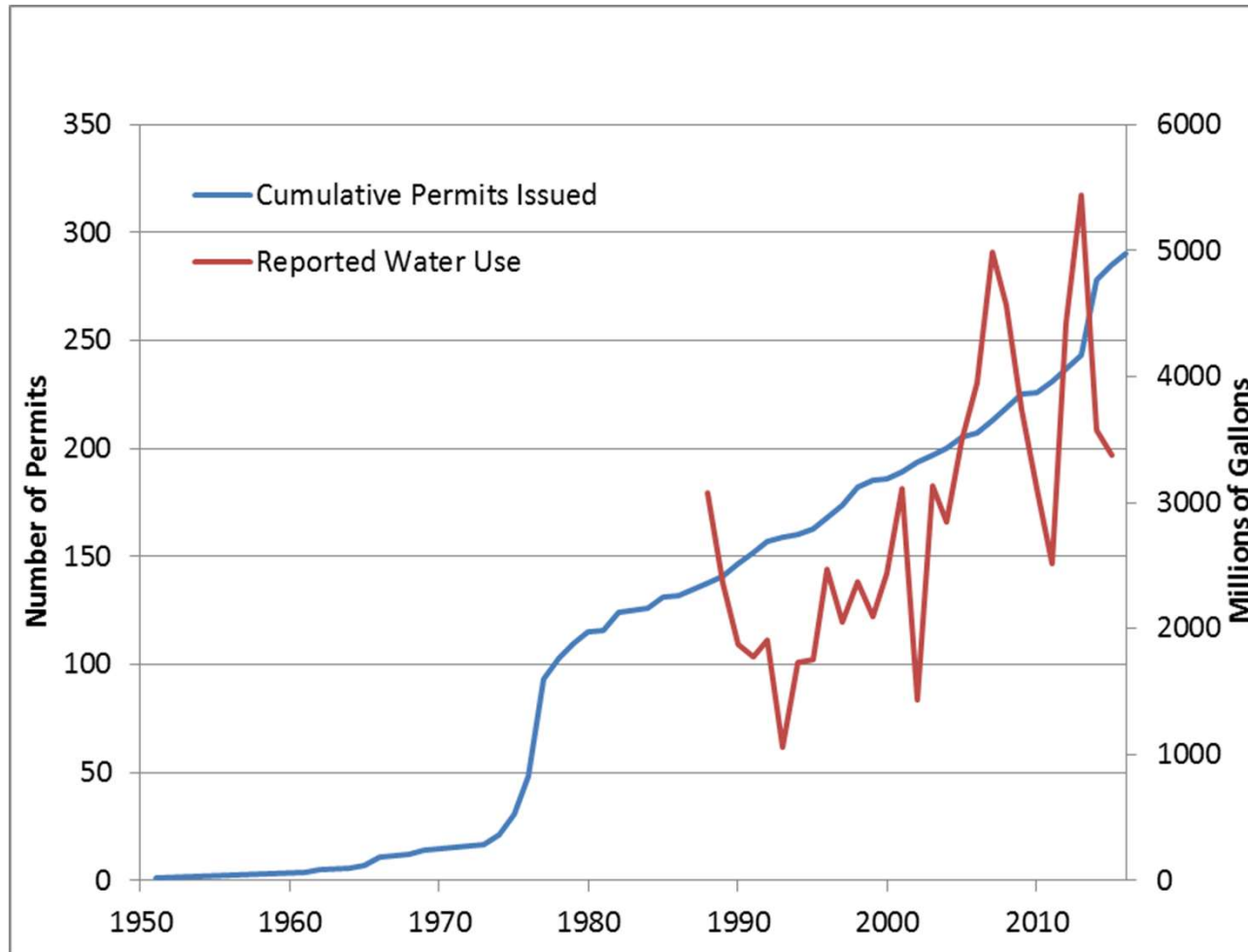
Presented to Policy Workgroup of the Clean Water Council

Jason Moeckel | DNR EWR

Little Rock Creek Area



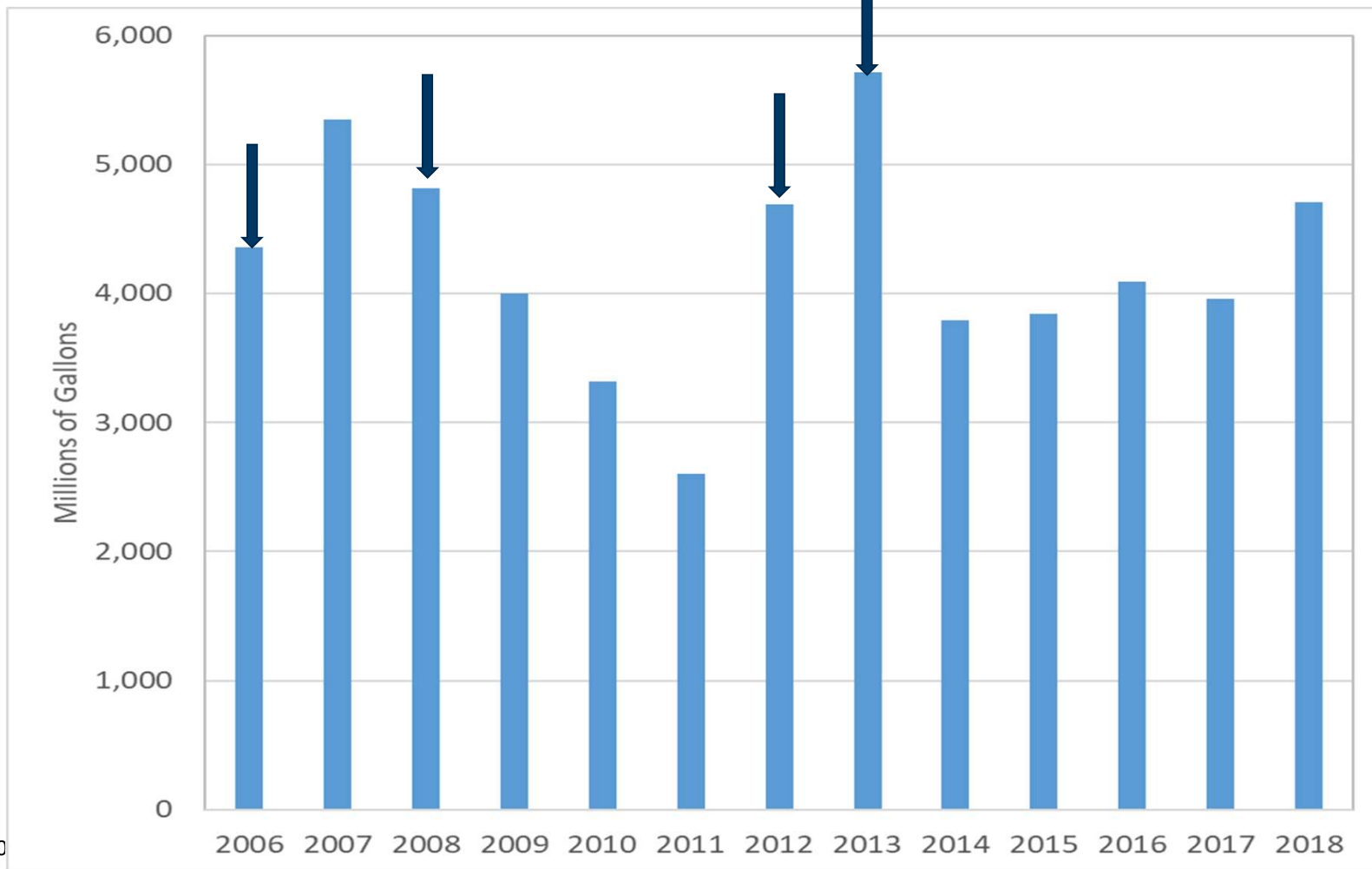
LRC Study Area – Water Use



Little Rock Creek - Technical Summary

- Under normal to above normal rainfall, groundwater pumping is affecting low flows
 - 4 years out of 12 experienced lower, low flows attributed to groundwater use
 - Maximum August diversion is 1.9 cubic feet per second (25% of the baseflow) at the long-term gage
- Fish habitats are negatively affected by this amount of streamflow depletion
- Stream temperatures may be affected to some degree by streamflow depletion
- Stream temperatures are clearly affected by the Sartell impoundment by about 2 degrees C.

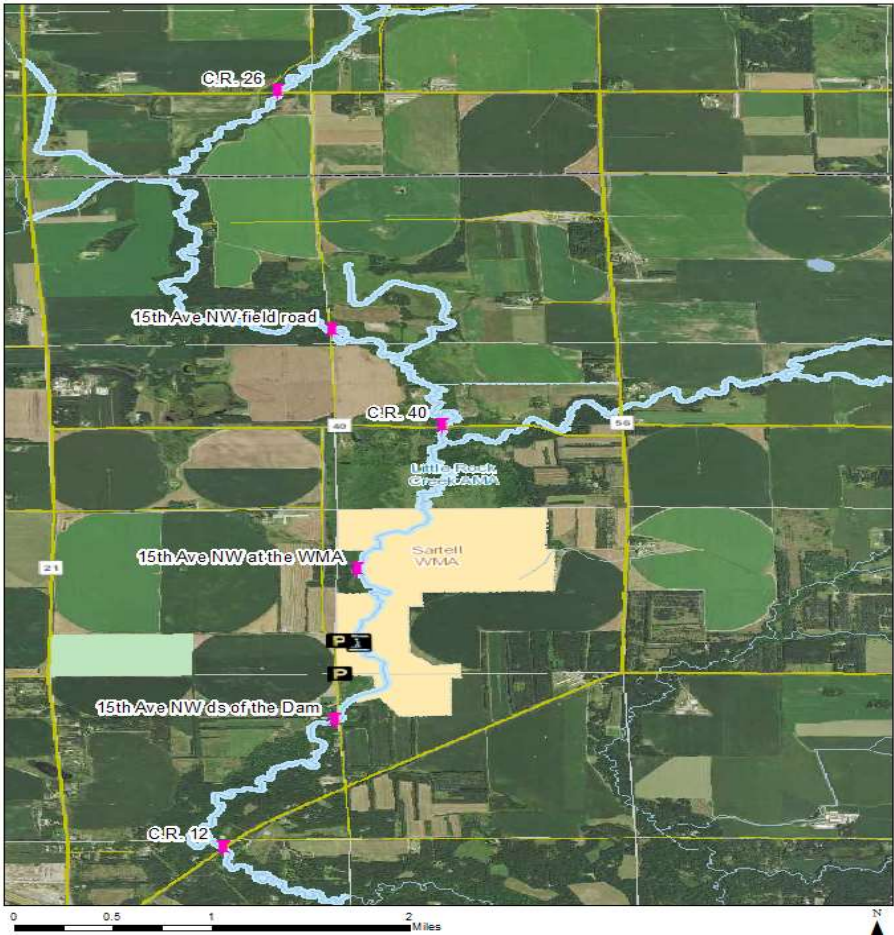
Annual (calendar year) groundwater withdrawals from permitted wells and dug pits included in the model in million gallons per year (MGY).



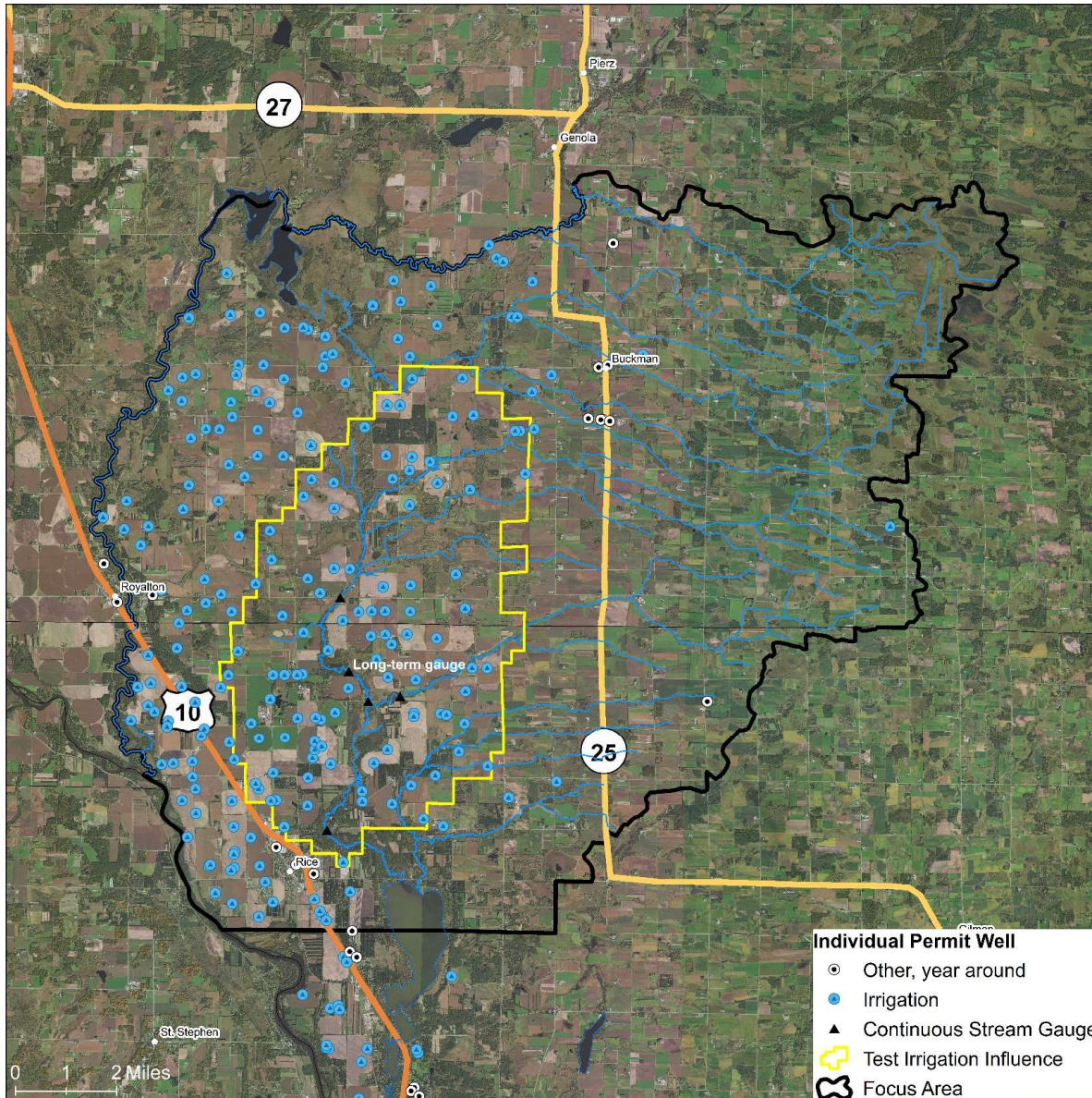
Analyses of Potential Options to Address the Issues

- Options for managing water levels differently in Sartell WMA (Temperature)
- Opportunities to increase groundwater recharge (low flow)
- Distribute water differently (low flow)
- Modify water appropriation permits (flexibility, low flows)
- Water Conservation (low flow)
- Potential of augmenting stream flow (low flow)

Sartell WMA Water Management



Goes Here | mn.gov/websiteurl

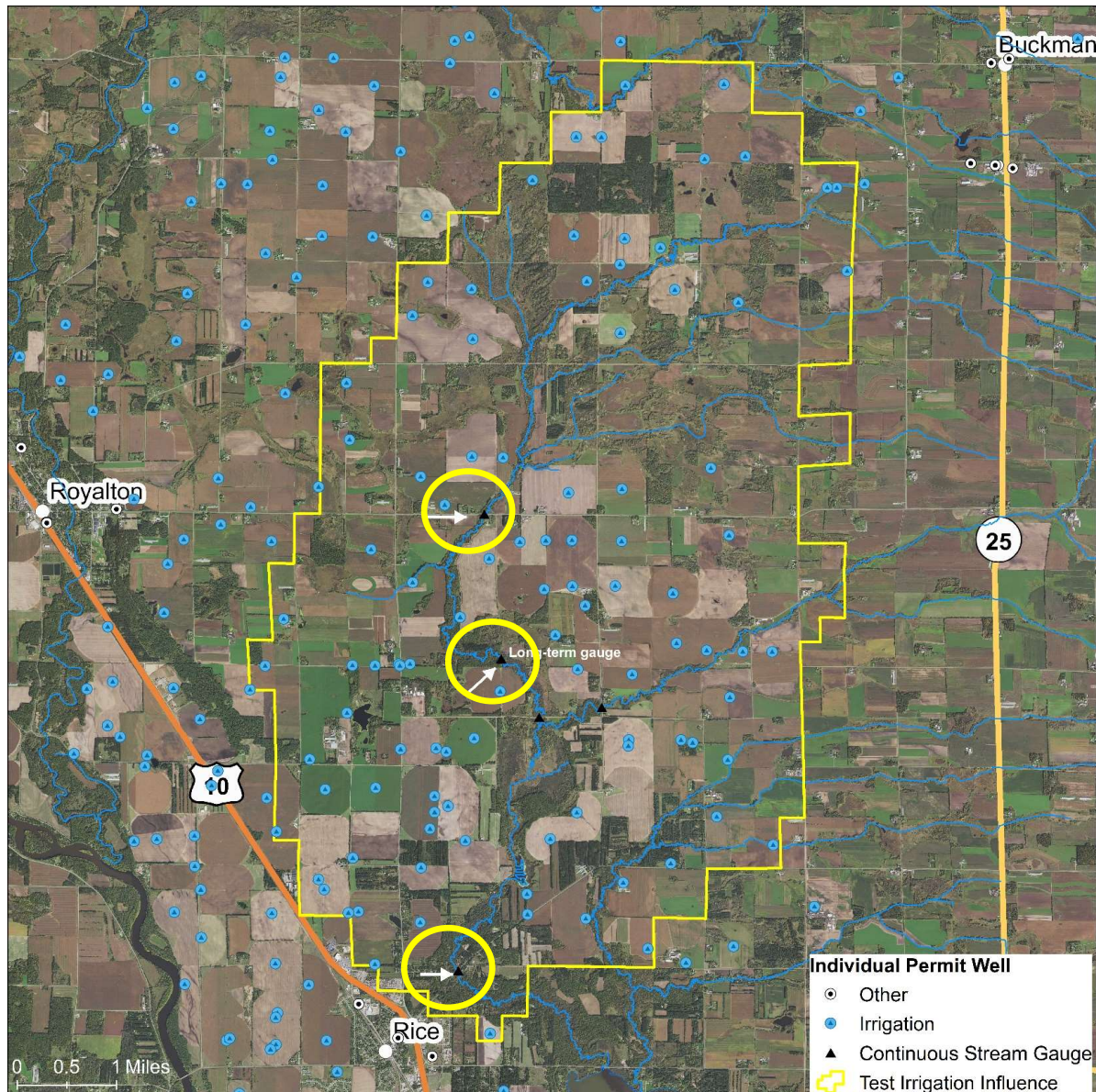


Zone of Irrigation Influence

Assuming alfalfa and no irrigation, negligible base flow diversion

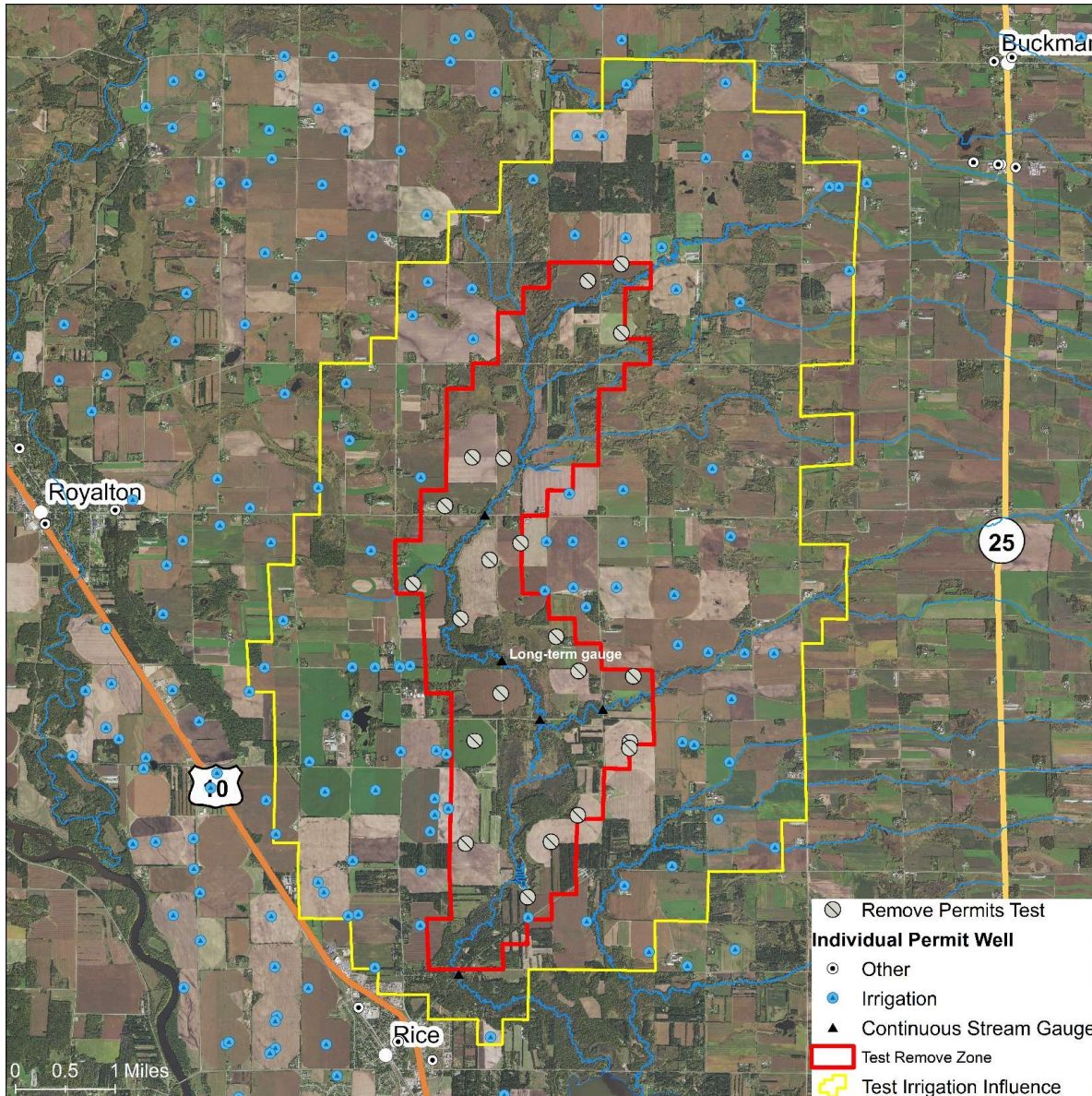
zone includes 97 wells and 86 permits

And includes the City of Rice



Evaluation Points

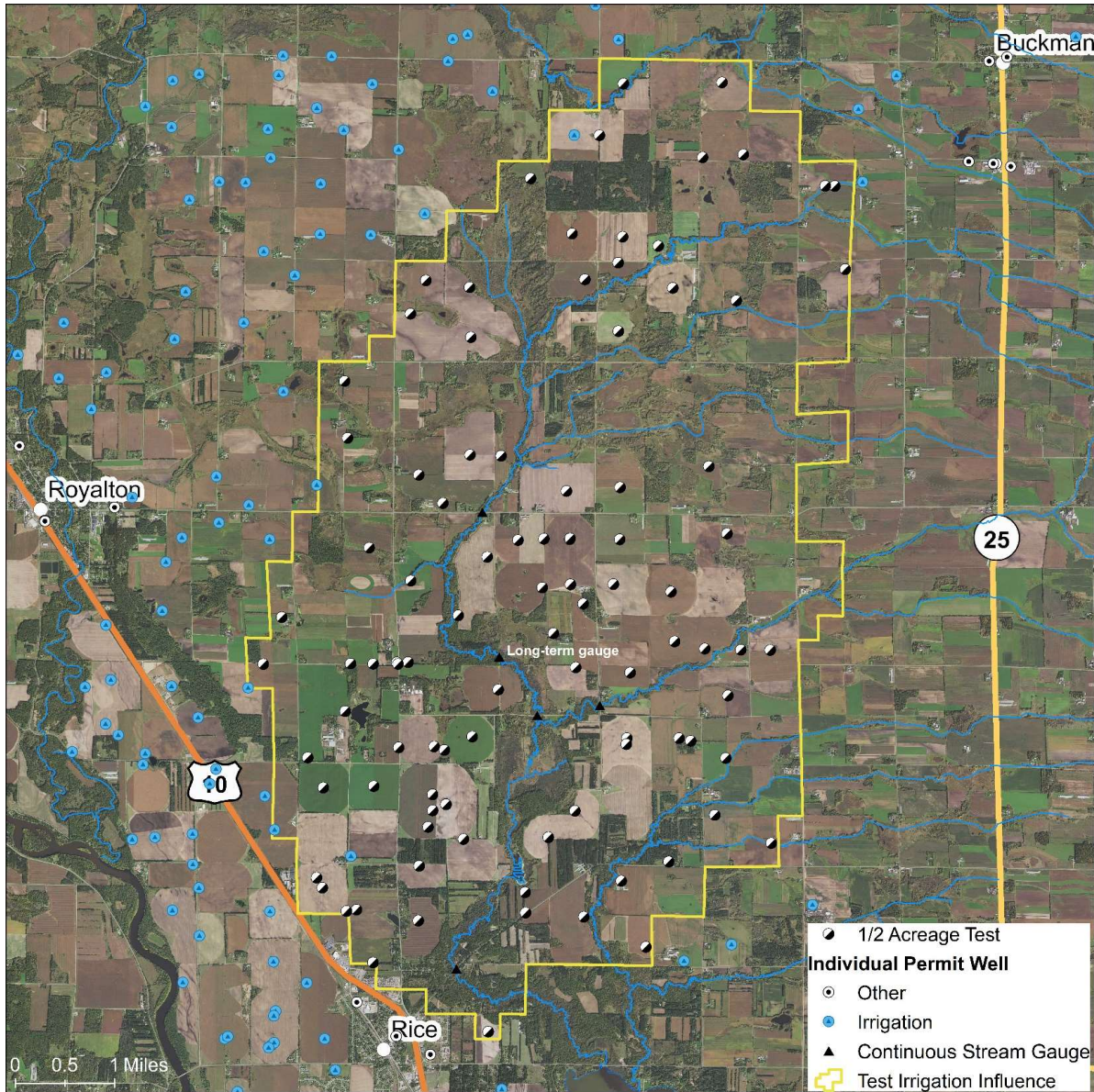
Goal keep diversion from exceeding 15% August median base flow at each location



Experiment 1

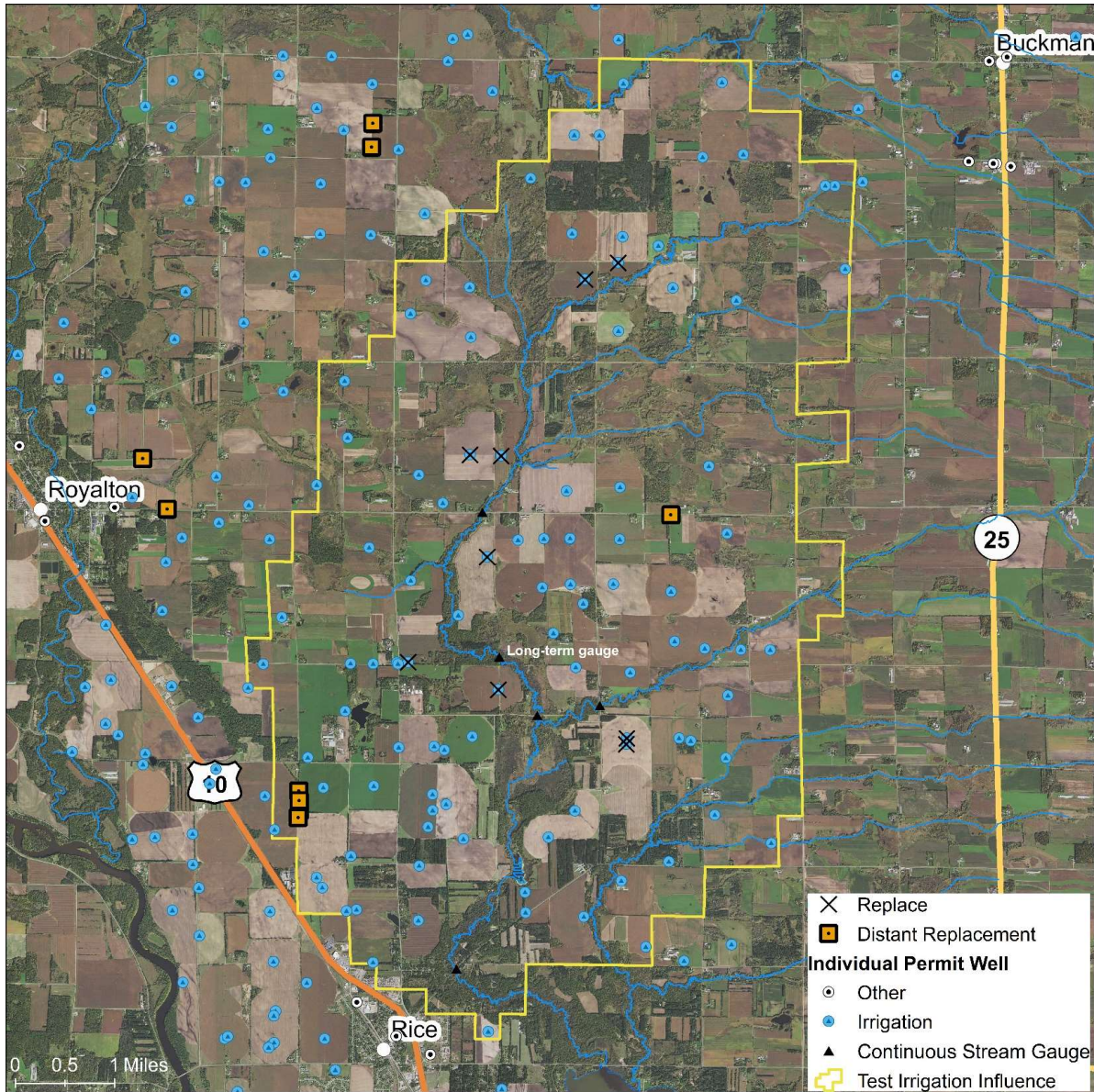
Removed
21 permits to
stay above 15%
of August
median base
flow.

Distance effect



Experiment 2

Reduce acreage
and use by $\frac{1}{2}$
for 84 permits



Conceptual Solution

Import water from hypothetical locations and replacing 9 selected wells with more distant wells

Path to Solutions

- Potential for a combination of actions
 - Reduced use and/or replacing wells most effective close to the creeks (~ ½ mile).
 - More wide-spread adoption of available conservation practices can contribute but minimal effect during critical, dry summers.
 - Augmentation could likely achieve base-flow diversions targets at evaluation points, but there are several concerns and remaining questions.
- **Next Steps: Engineering feasibility and cost estimates; develop a plan for implementation**

DNR's Responsibility... (MN Statute 103G.287)

Subd. 2. Relationship to surface water resources.

Groundwater appropriations that will have negative impacts to surface waters are subject to applicable provisions in section [103G.285](#).

Subd. 3. Protecting groundwater supplies.

The commissioner may establish water appropriation limits to protect groundwater resources. When establishing water appropriation limits to protect groundwater resources, the commissioner must consider the sustainability of the groundwater resource, including the current and projected water levels, water quality, whether the use protects ecosystems, and the ability of future generations to meet their own needs.

- Water permitting fee and general fund proposal
 - Protected waters permit fees
 - Summer surcharge fee increase
- Statutory revisions
 - Definition for negative impact
 - Definition protection of ecosystems
 - Provision for a sustainable diversion limit

Groundwater Governance, Well Cobbled?

A descriptive assessment of hydrogeology and institutional networks in six Great Lakes states and the Tribes that share that geography

Carrie Jennings, Freshwater

Terin V Mayer, University of Minnesota

A research collaborative



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UNIVERSITY OF MINNESOTA
Driven to Discover®



Goals

- 1. Describe the system** of groundwater governance within the EPA Region 5 portion of the Great Lakes Region.
- 2. Assess its adequacy** to support sustainable use, mindful of existing and future challenges.
- 3. Establish a baseline** against which policy diffusion and change in the region can be tracked.

Methods

- **Scope:** Minnesota, Wisconsin, Michigan, Illinois, Indiana, Ohio; 35 Sovereign Tribes
- **67 stakeholder interviews:** 25 with Native Tribes
- **Legal review:** common law, statute, and administrative sources by state and for Tribes
- **Curation and analysis:** datasets from U.S. Census, USGS, prior researchers, etc.
- **Systematic Literature Review:** 45 policy and science reports and plans
- **Relational Database:** 251 organizational actors linked to 280 policy institutions via 1,120 unique relationships.



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Explore the Report



Read by Chapter

Chapter 1: Executive Summary



Read by State

Report
Materials –
available
online

Illinois



Illinois Groundwater: The Basics

Illinois Technical Management and
Knowledge Production Summary

Illinois Legal Appendix

Indiana



Indiana Groundwater: The Basics

Indiana Technical Management and
Knowledge Production Summary

Indiana Legal Appendix

Michigan



Michigan Groundwater: The Basics

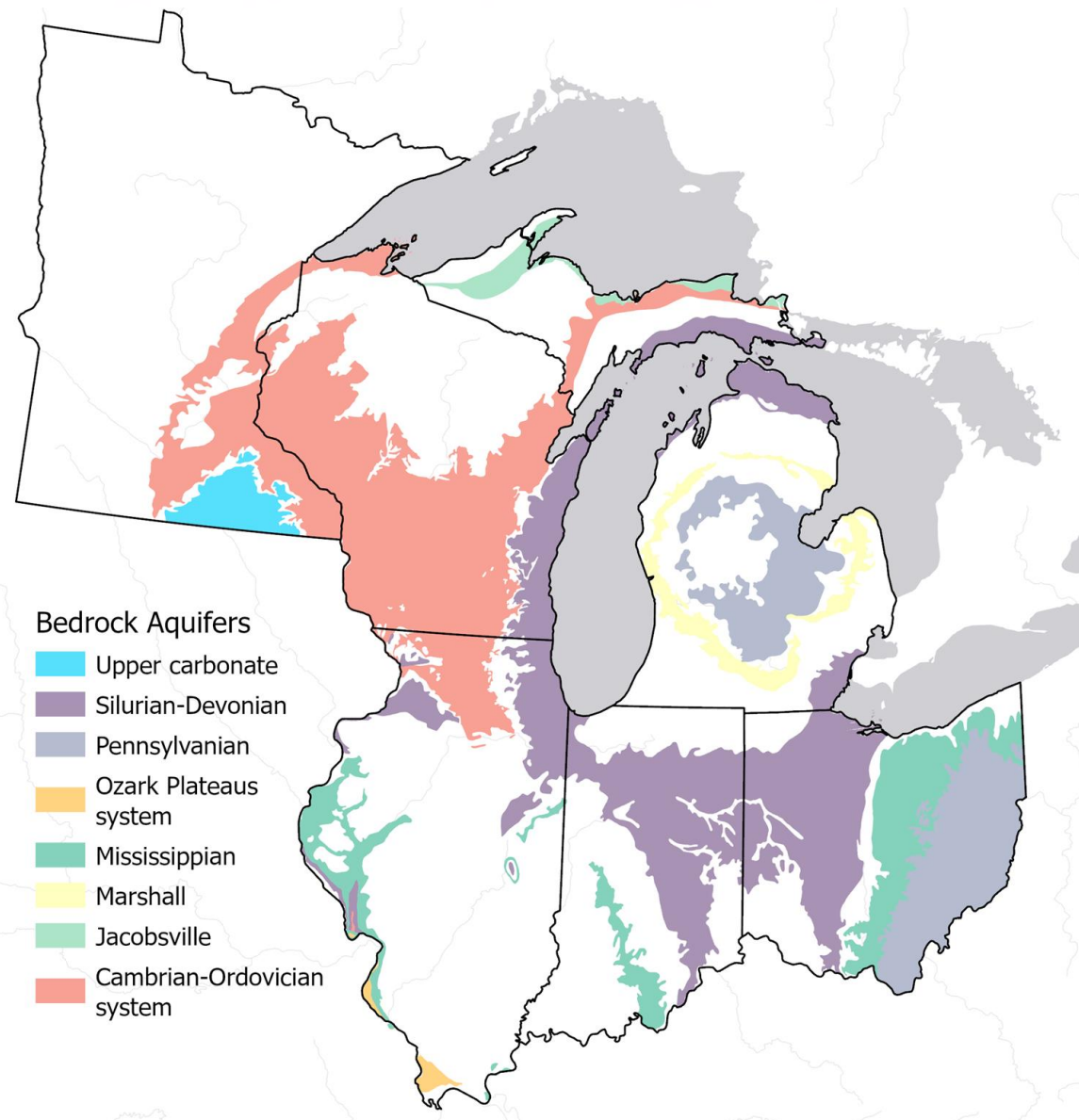
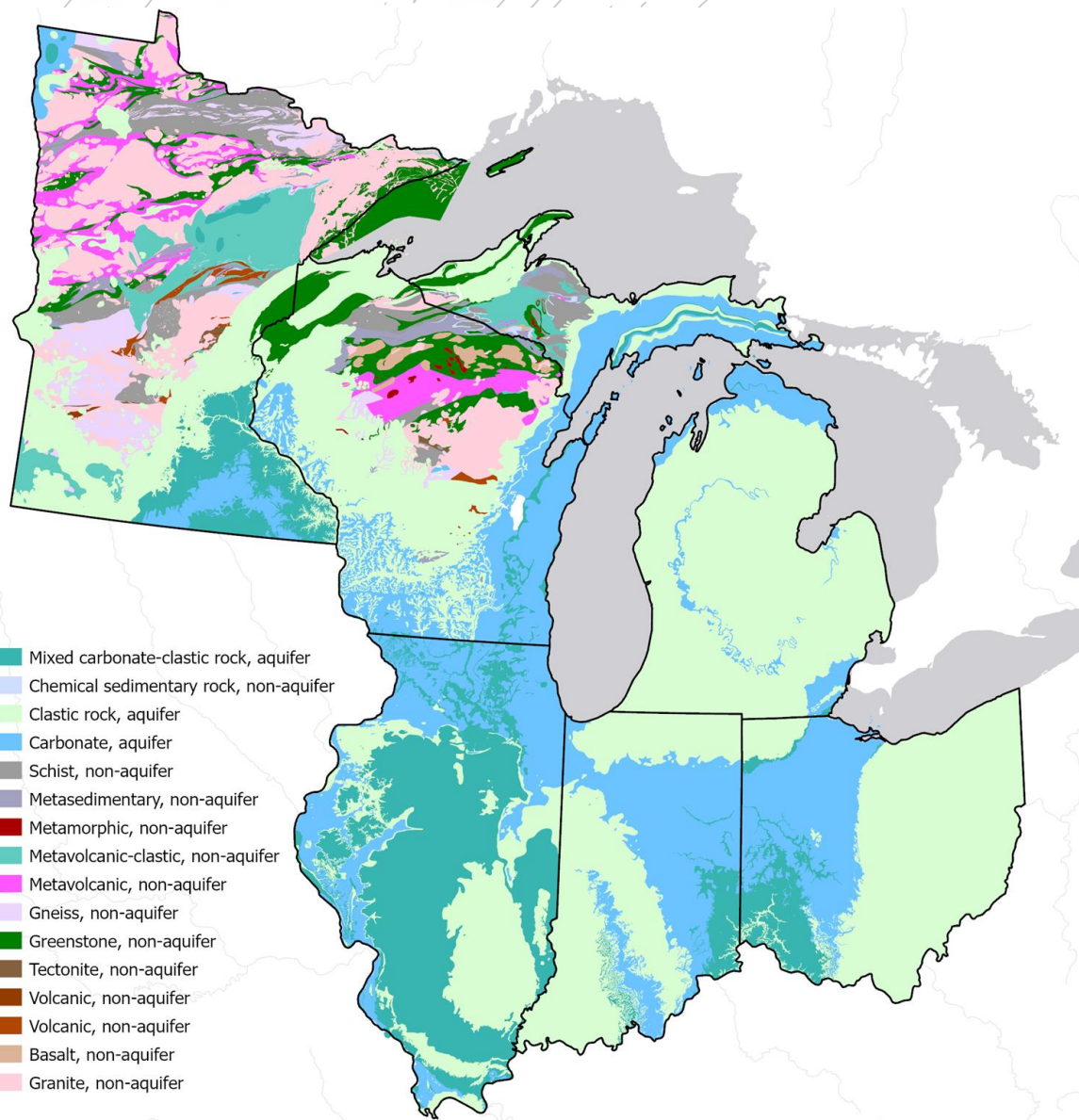
Michigan Technical Management and
Knowledge Production Summary

Michigan Legal Appendix

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Findings & Recommendations

Work to do at various scales

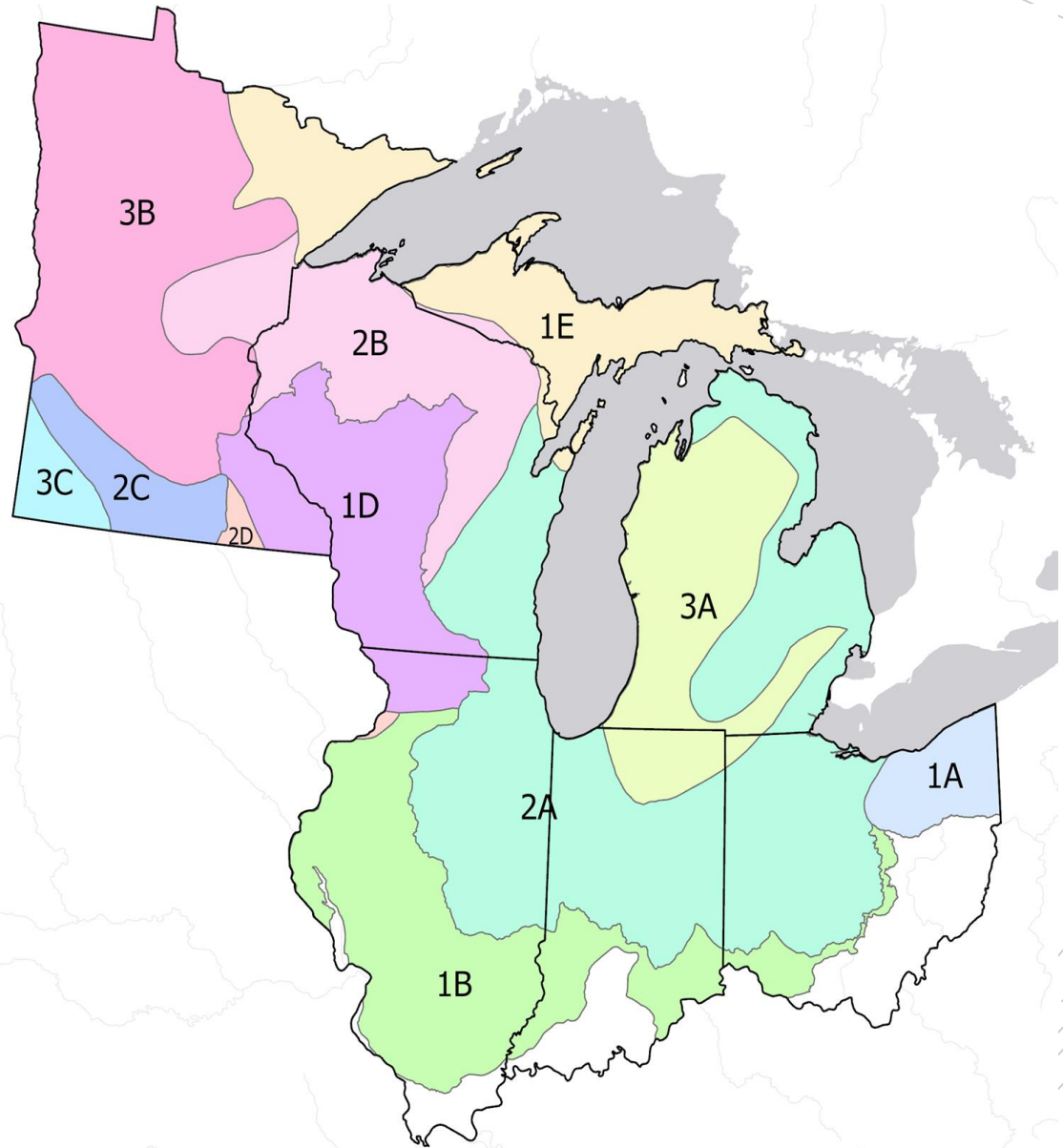
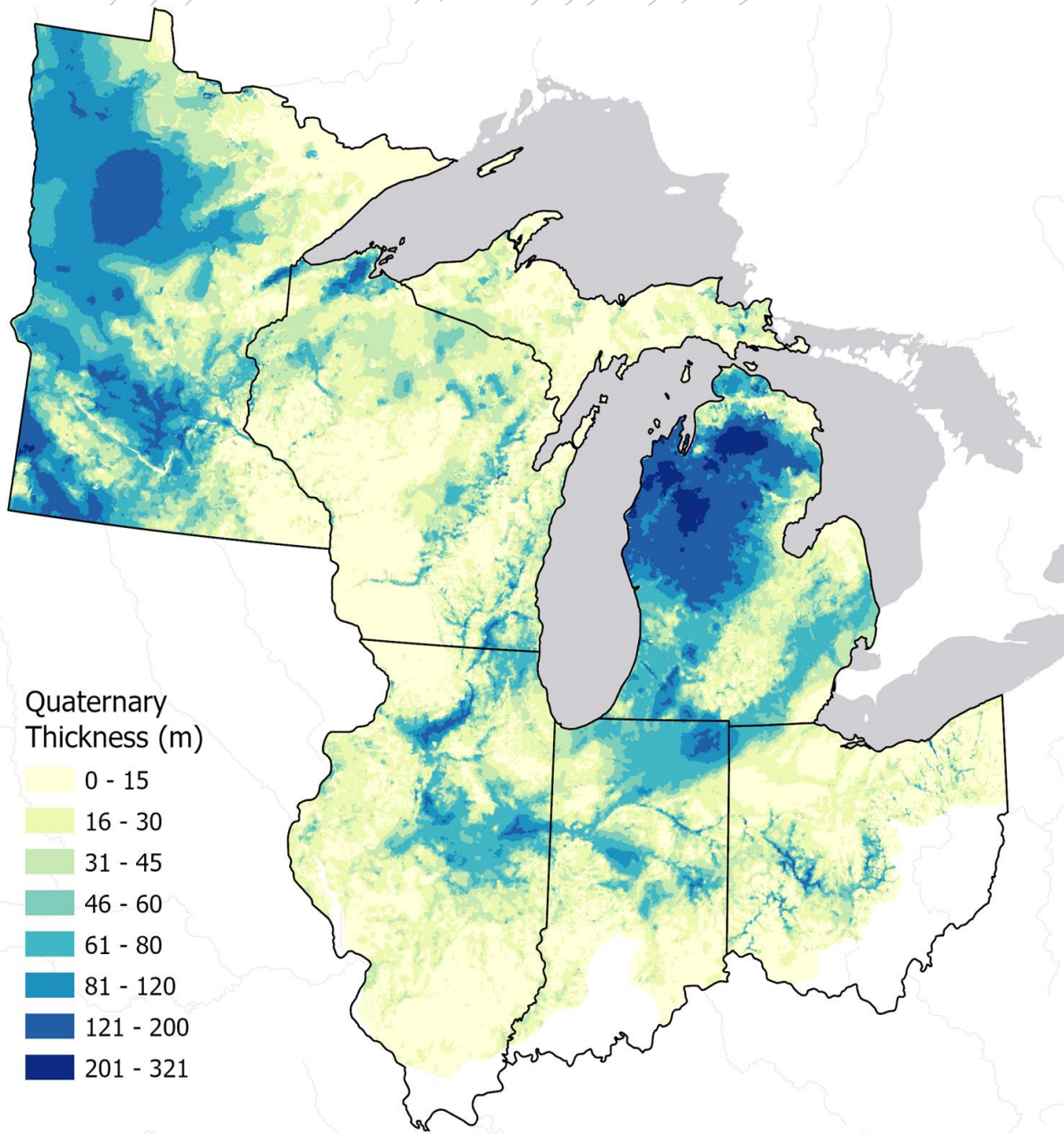


Not all bedrock hosts available, clean water (aquifers)

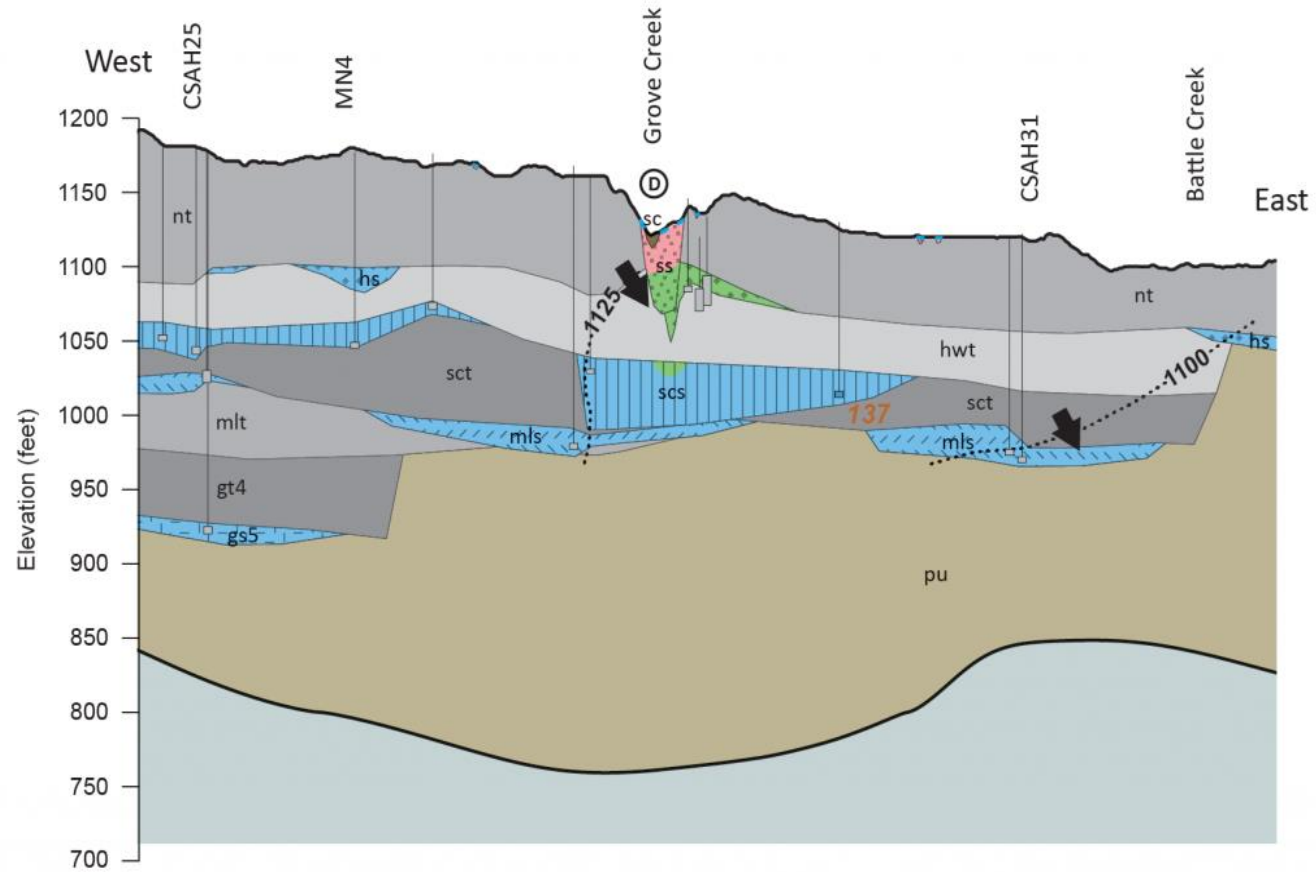
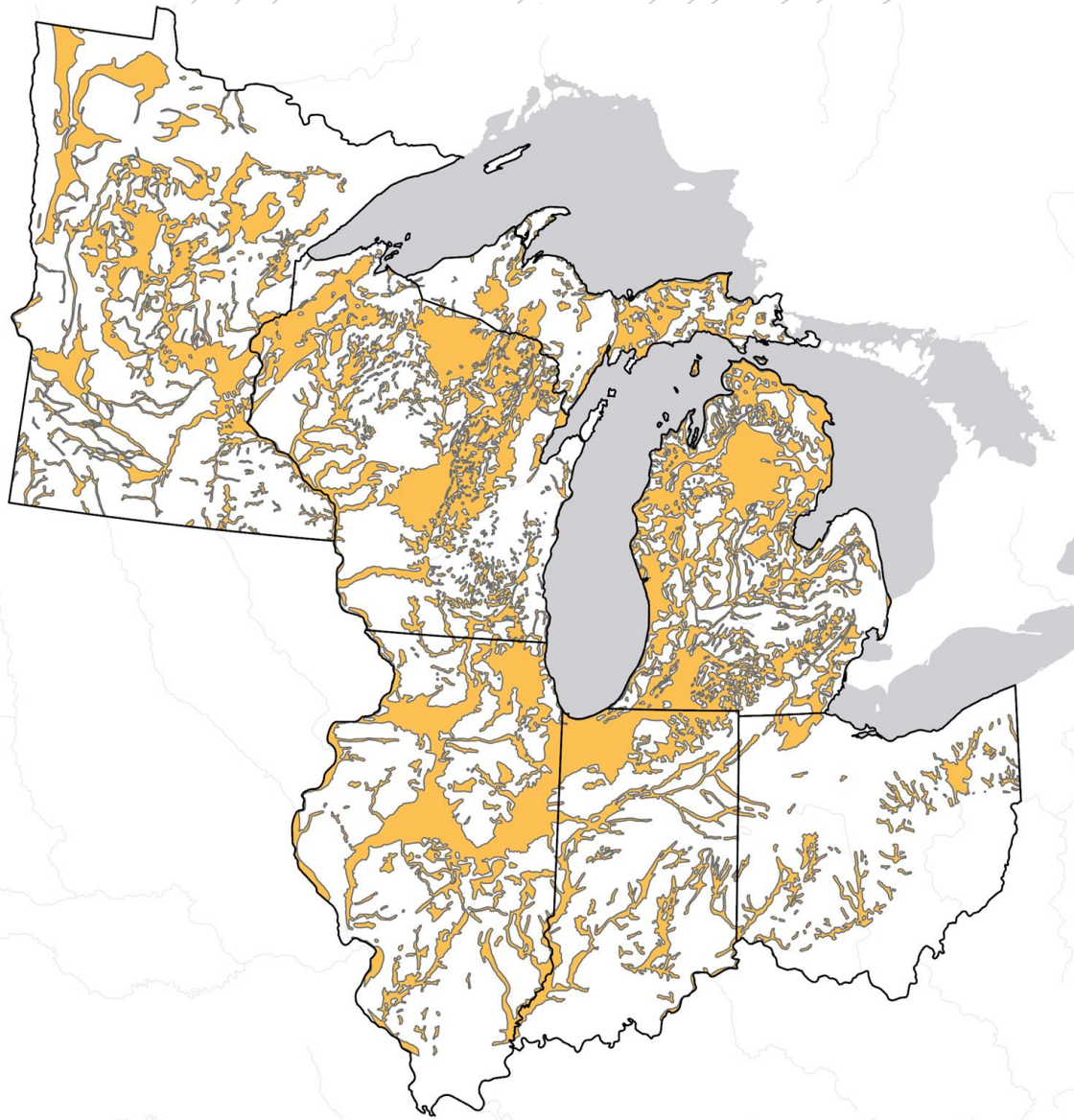
Bedrock buried
by glacial
sediment



Bedrock is typically not at the surface



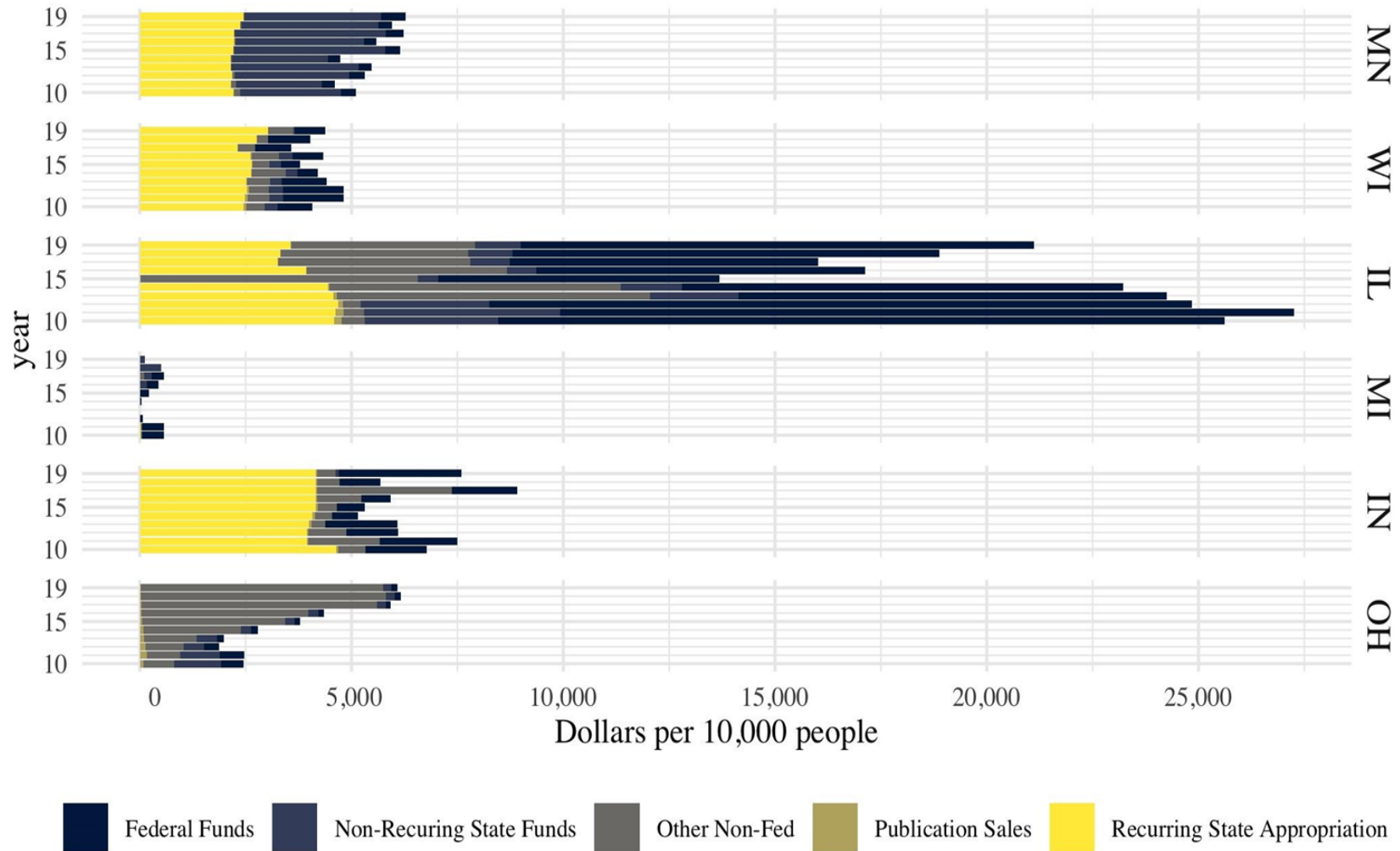
Glacial sediment thickness varies across the region and is unexplored in some areas.

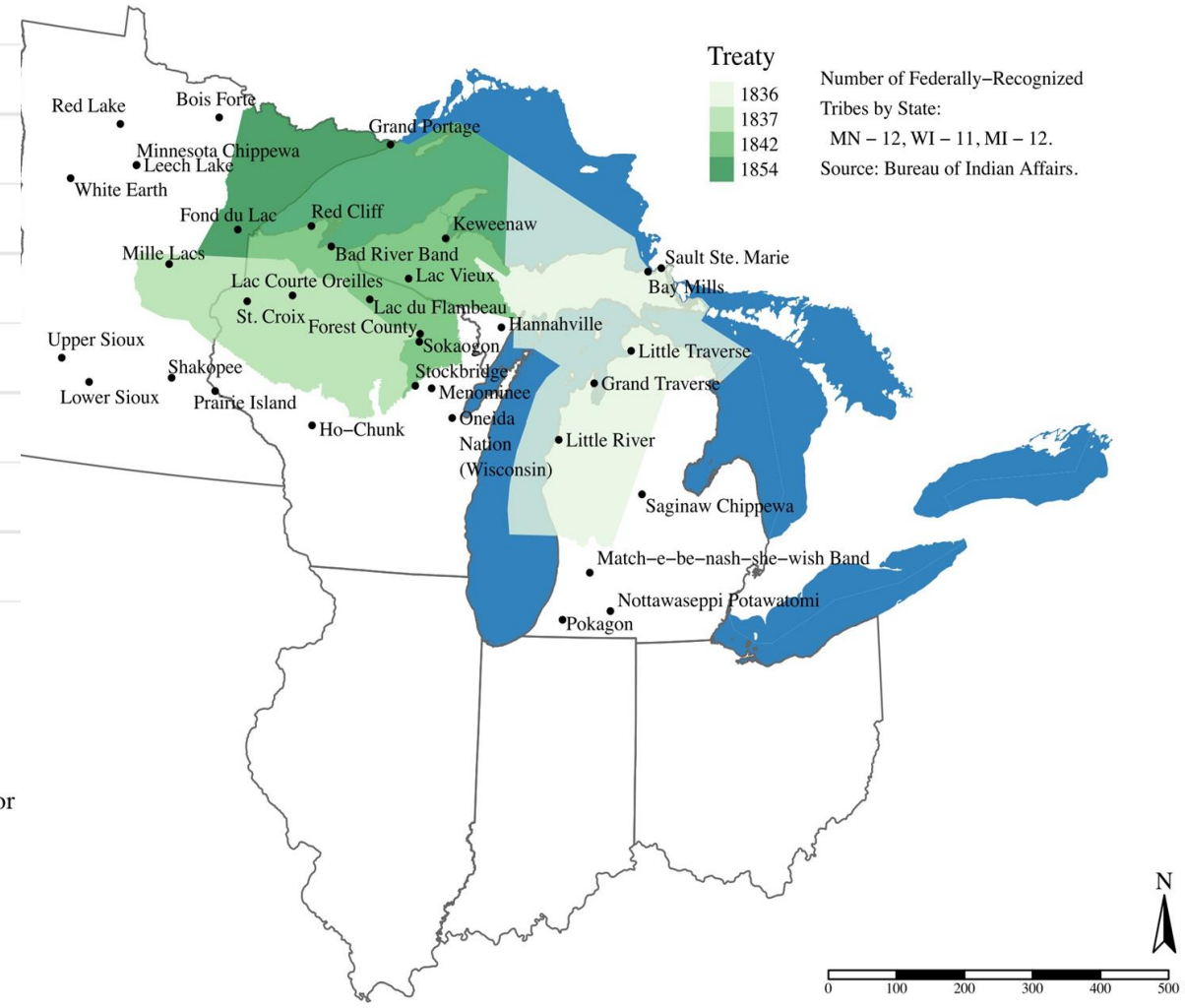
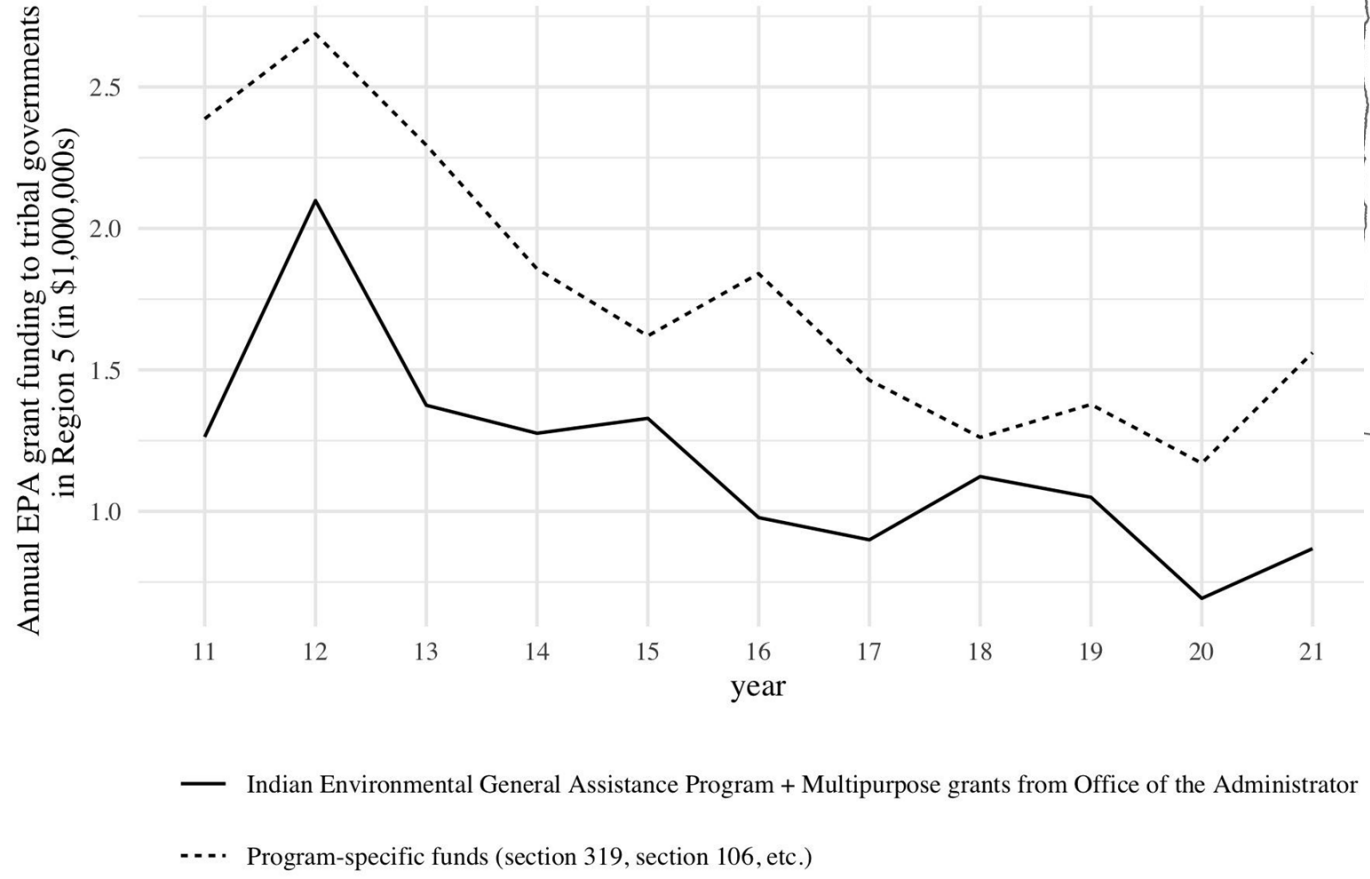


<https://www.mgwa.org/newsletter/new-dnr-groundwater-atlas-meeker-county/>

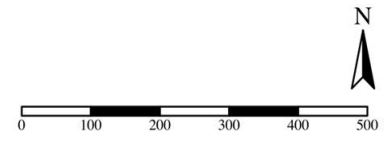
Sand and gravel may be at the surface or buried by layers of less sandy sediment

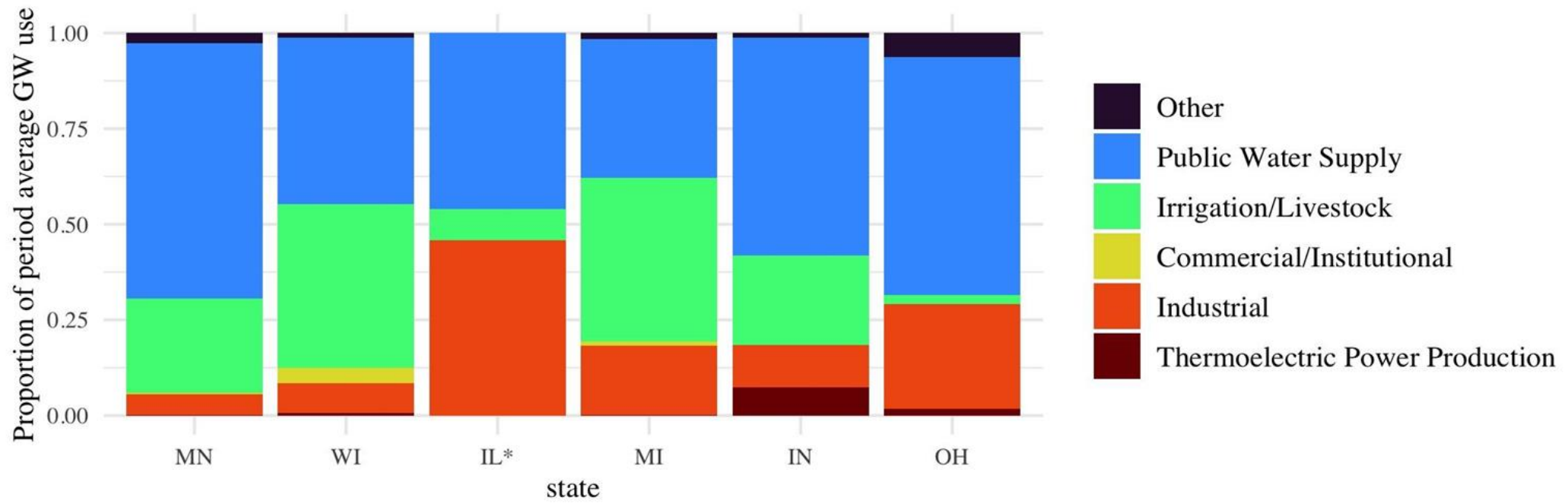
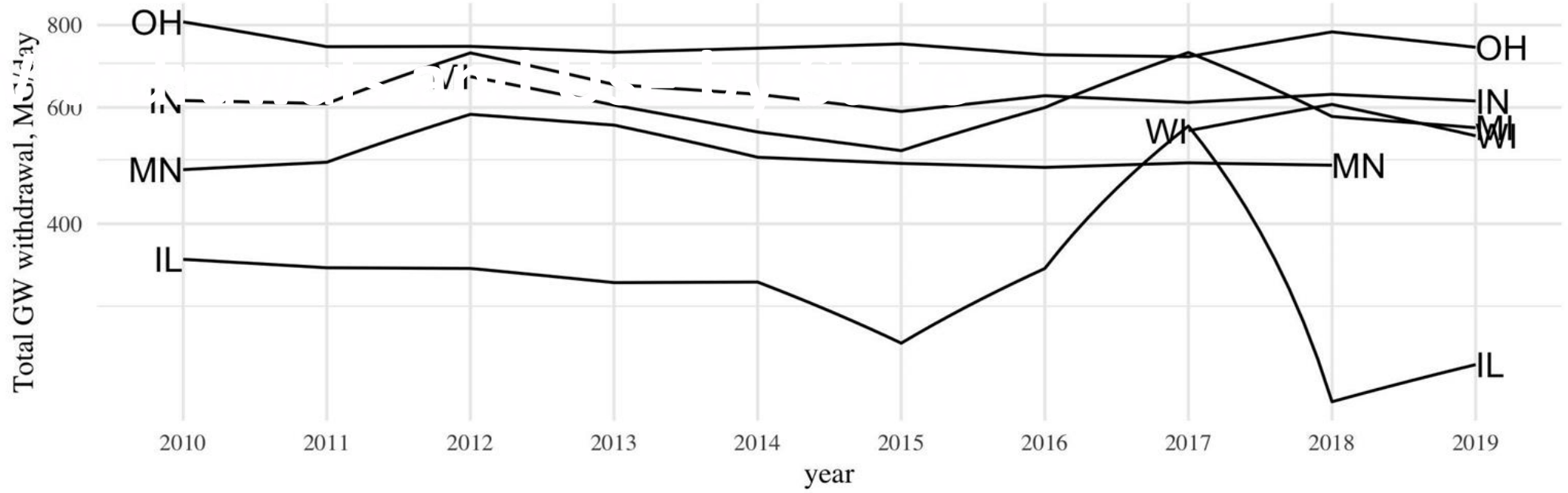
Groundwater Knowledge Production



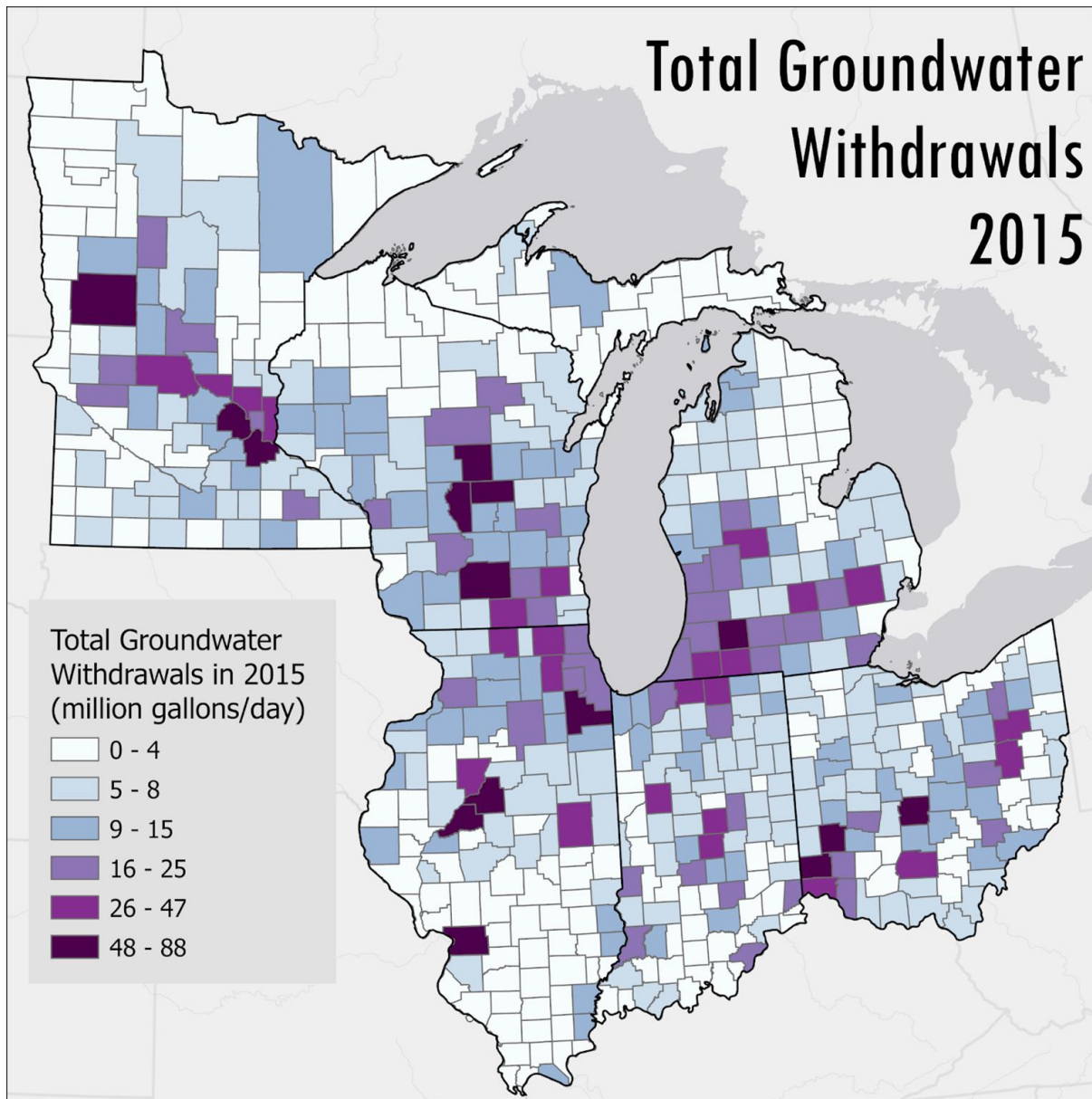


Tribal Groundwater Science Funding





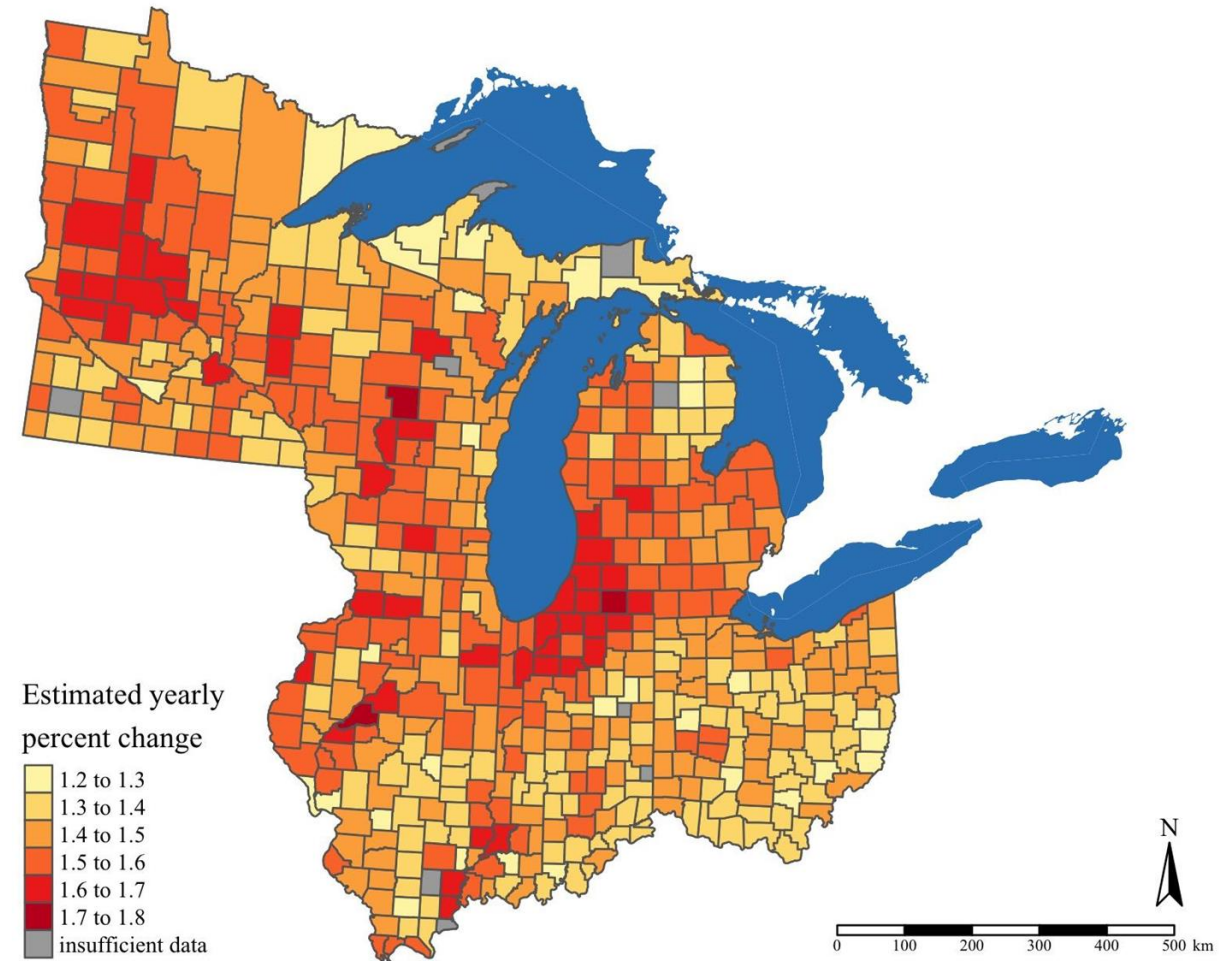
Groundwater Use by Category Across the Region



Dieter, C.A., Linsey, K.S., Caldwell, R.R., Harris, M.A., Ivahnenko, T.I., Lovelace, J.K., Maupin, M.A., and Barber, N.L. (2018) *Estimated Use of Water in the United States County-Level Data for 2015*. <https://doi.org/10.5066/F7TB15V5>.

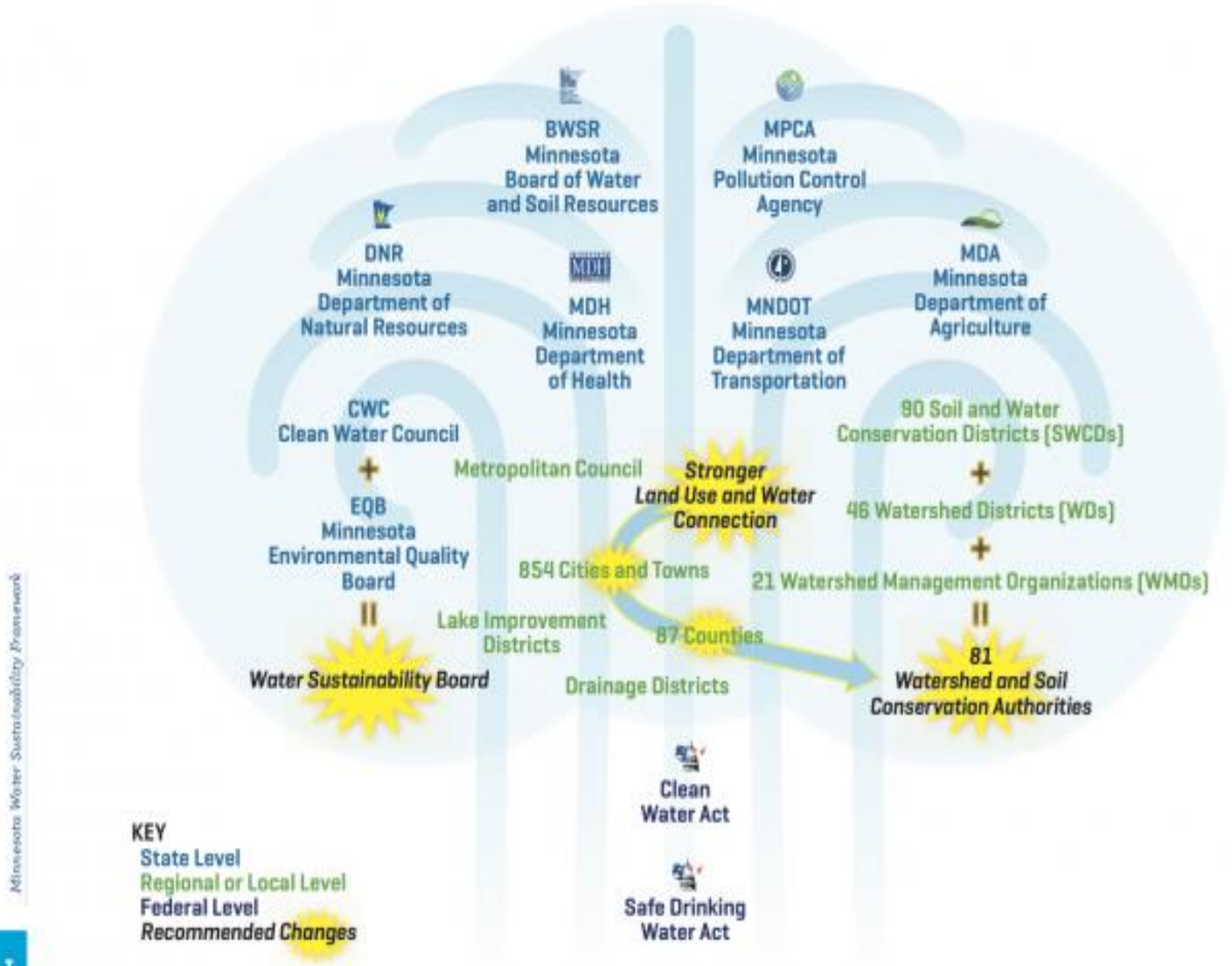
Hot spots in expansion of irrigated agriculture

relative strength of 1997-2017 time trend



Estimates of irrigated acres growth are the coefficients on a log-linear regression equation with county-specific time trends, authors' calculations. Data source: USDA/NASS Quickstat portal providing data from 1997, 2002, 2007, 2012 and 2017 Census of Agriculture.

Groundwater Institutions
 Not exactly a lack of institutions

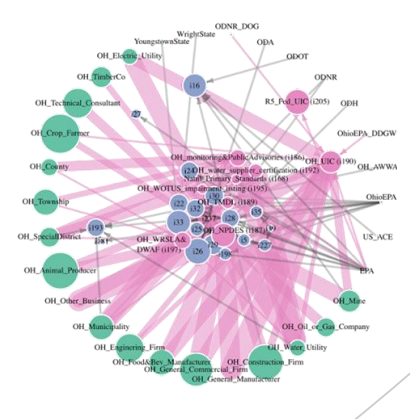
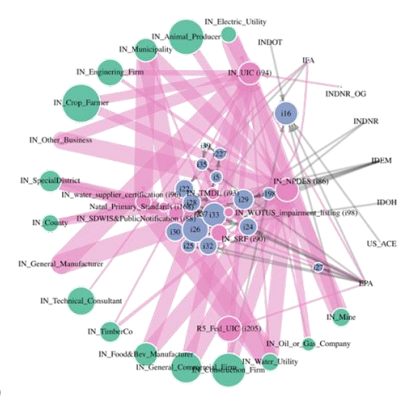
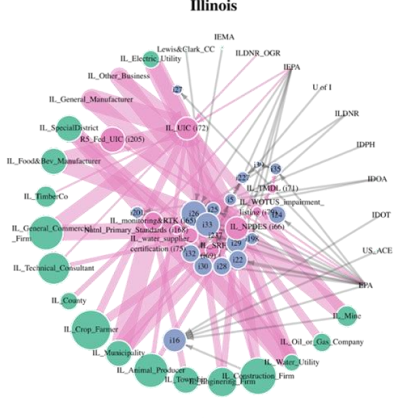
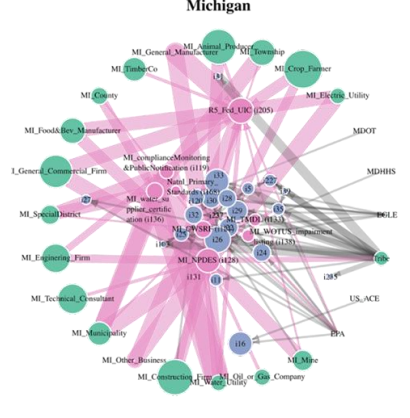
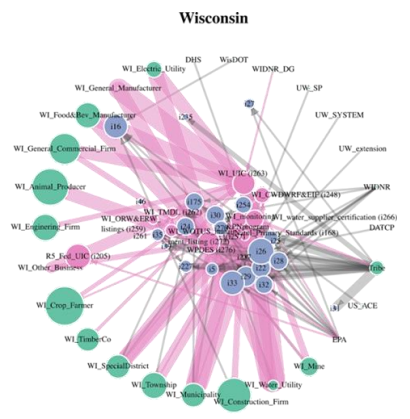
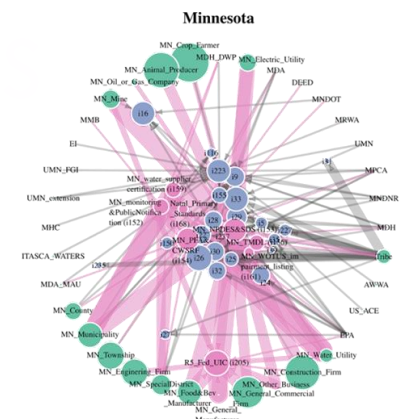
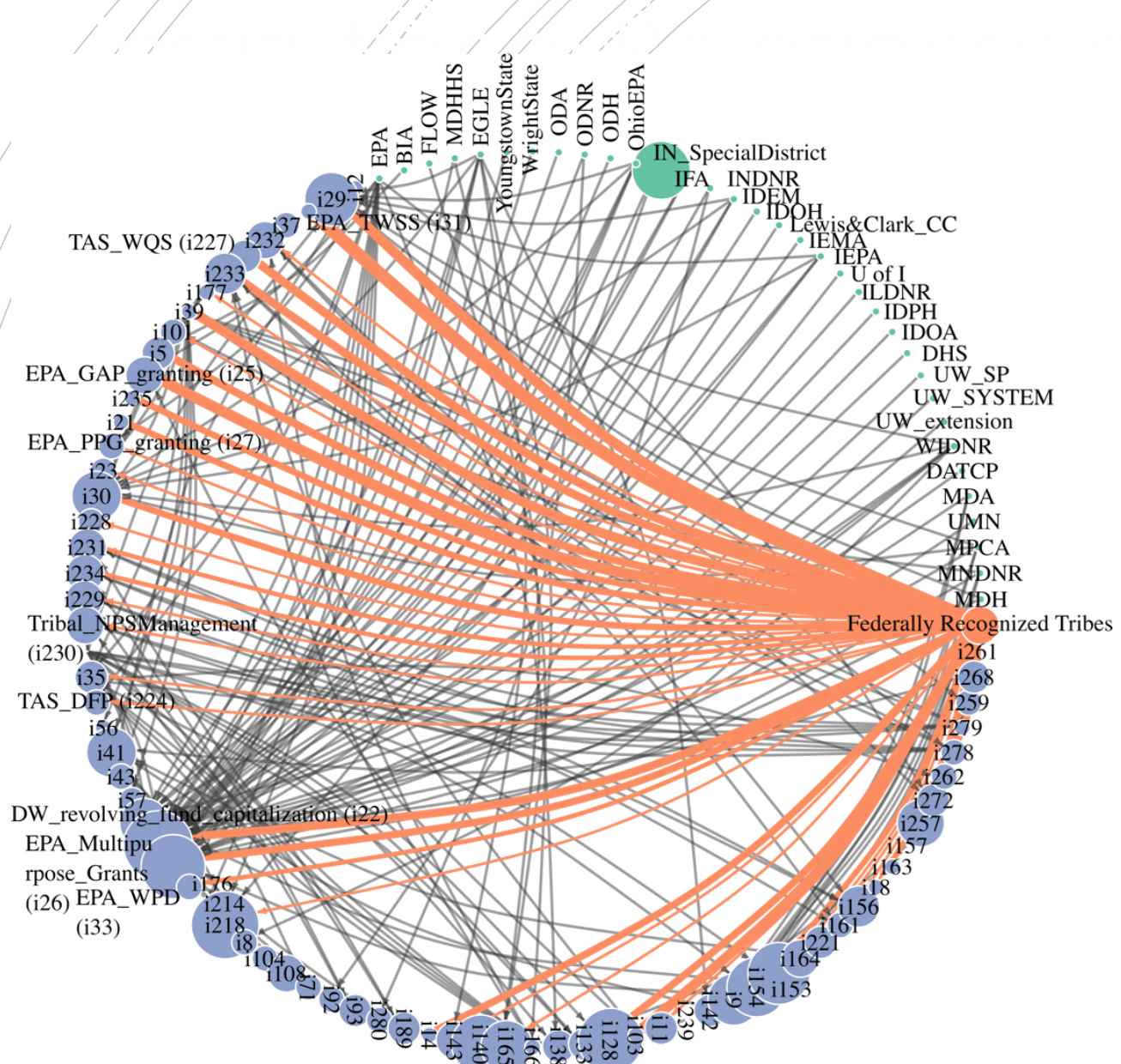


Minnesota Water Sustainability Framework

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Figure 3-39: Minnesota Governance and Recommended Changes

<https://www.minnpost.com/minnesota-blog-cabin/2014/07/does-minnesota-need-water-czar/>



Chaos or Order?

Planning Processes

- Needed within and across cities, counties, states, and sovereign nations
- To recognize groundwater's contributions to prosperity and wellbeing
- With meaningful sustainability goals



Sustainability Goals

- Where they exist, goals must be made more:
 - specific
 - measurable
 - actionable
 - time-delimited

Climate Change in the Great Lakes Region

GLISA
A NOAA RISA TEAM

Average
Temperature



2.3°F

1951-2017

Frost-free
Season



16 Days

1951-2017

Total
Precipitation



14%

1951-2017

Heavy Precipitation
Events



35%

1951-2017

Drought Conditions, Aug. 28, 2012

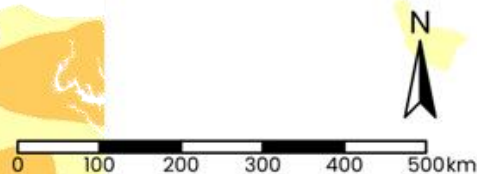
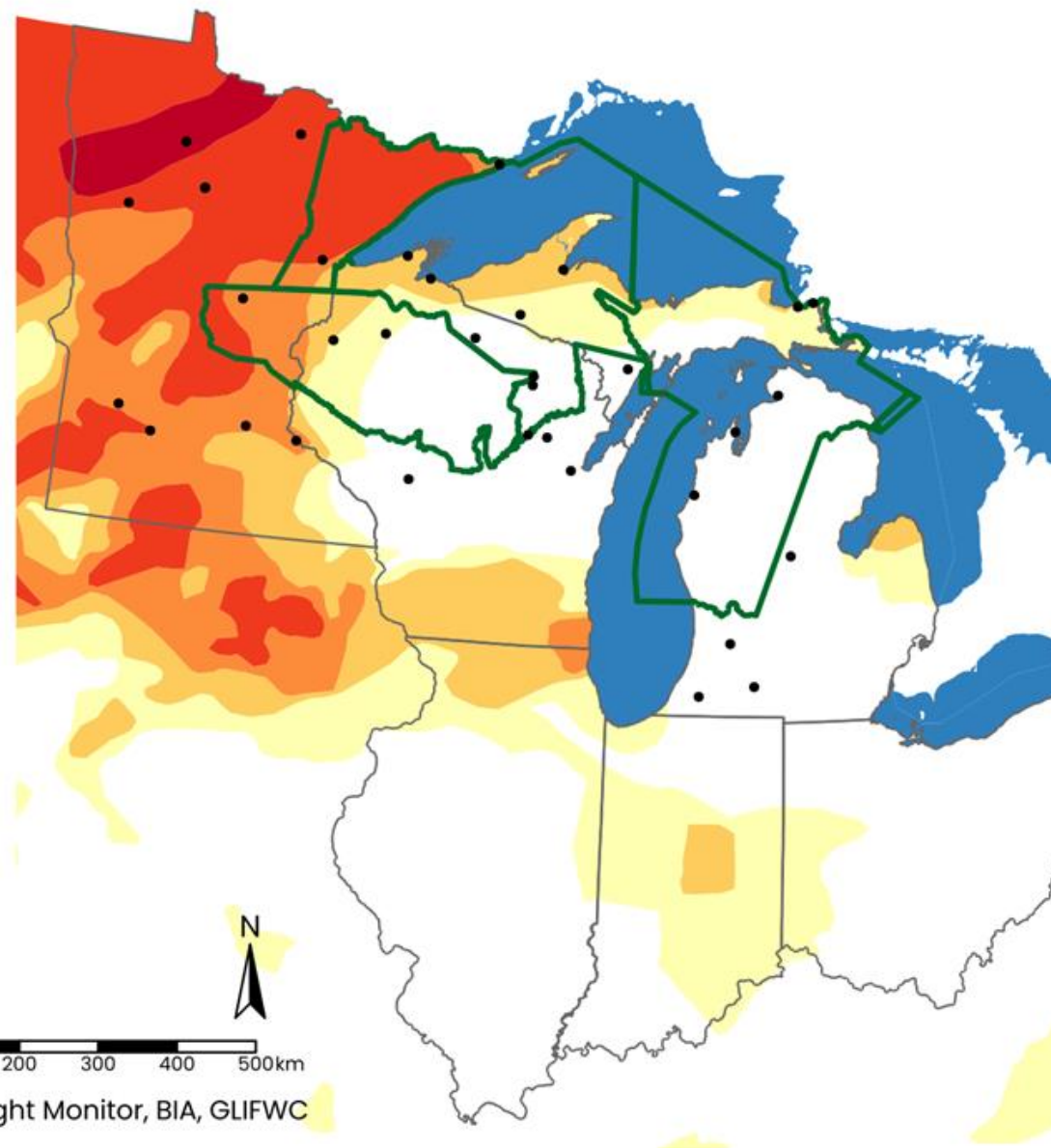
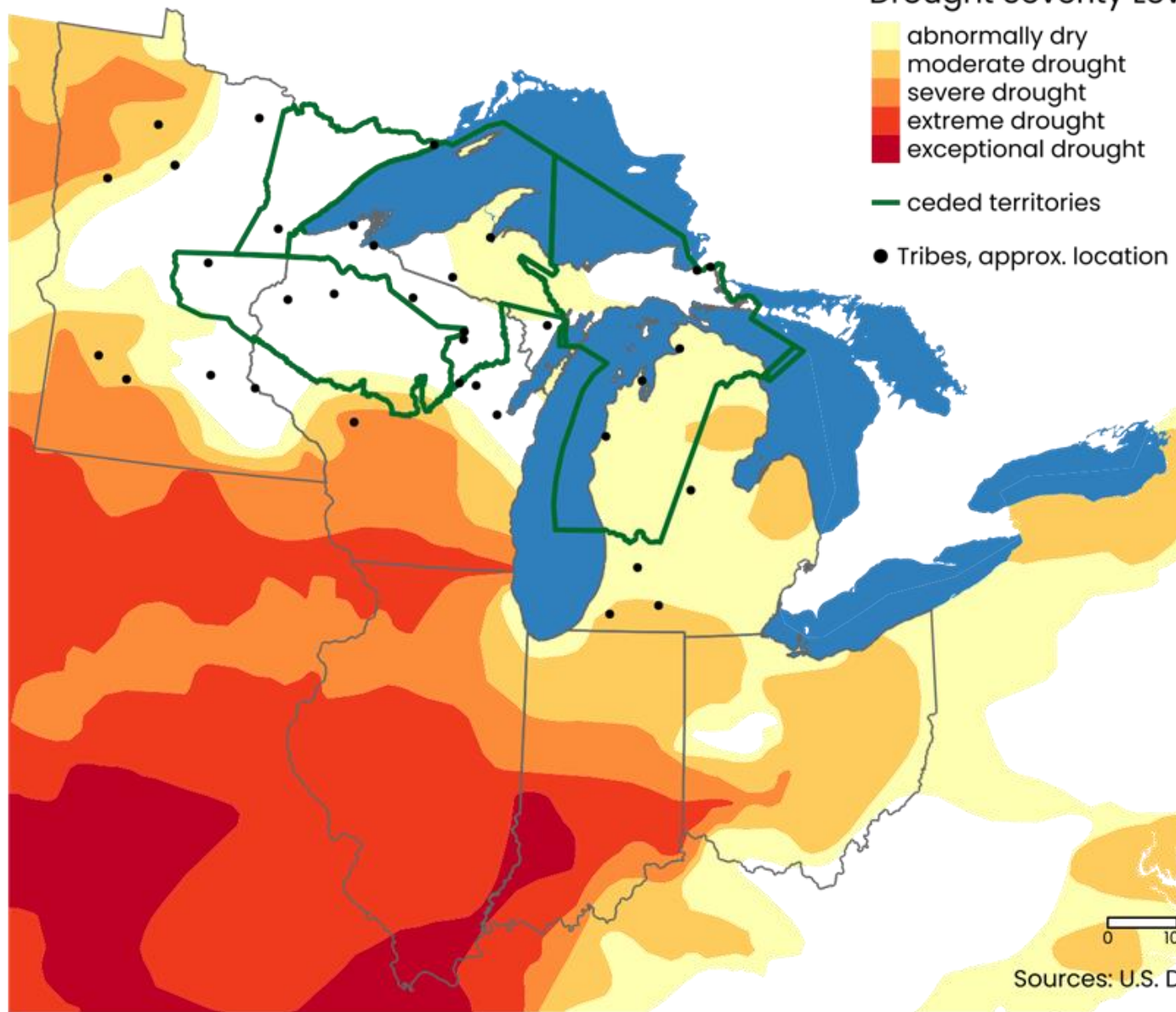
Aug. 24, 2021

Drought Severity Level

- abnormally dry
- moderate drought
- severe drought
- extreme drought
- exceptional drought

ceded territories

Tribes, approx. location



Sources: U.S. Drought Monitor, BIA, GLIFWC

Operational at the aquifer scale

- Ecological Factors
 - Stream flow
 - Habitat requirements
 - Groundwater-surface water exchange
- Land Use Factors
 - Land Cover
 - Population Density
 - Growth Projections
- Climate Change Factors
 - Seasonality and intensity of precipitation
 - Temperature increases
 - Wind

Look beyond groundwater appropriation

Reuse

- Uses of “fossil water” are not proportionate to its value
- Reuse water before it is discharged to surface water

Recharge

- Flux into aquifers not systematically considered
- Explore diverse suite of policies and develop a coherent strategy for clean and safe replenishment

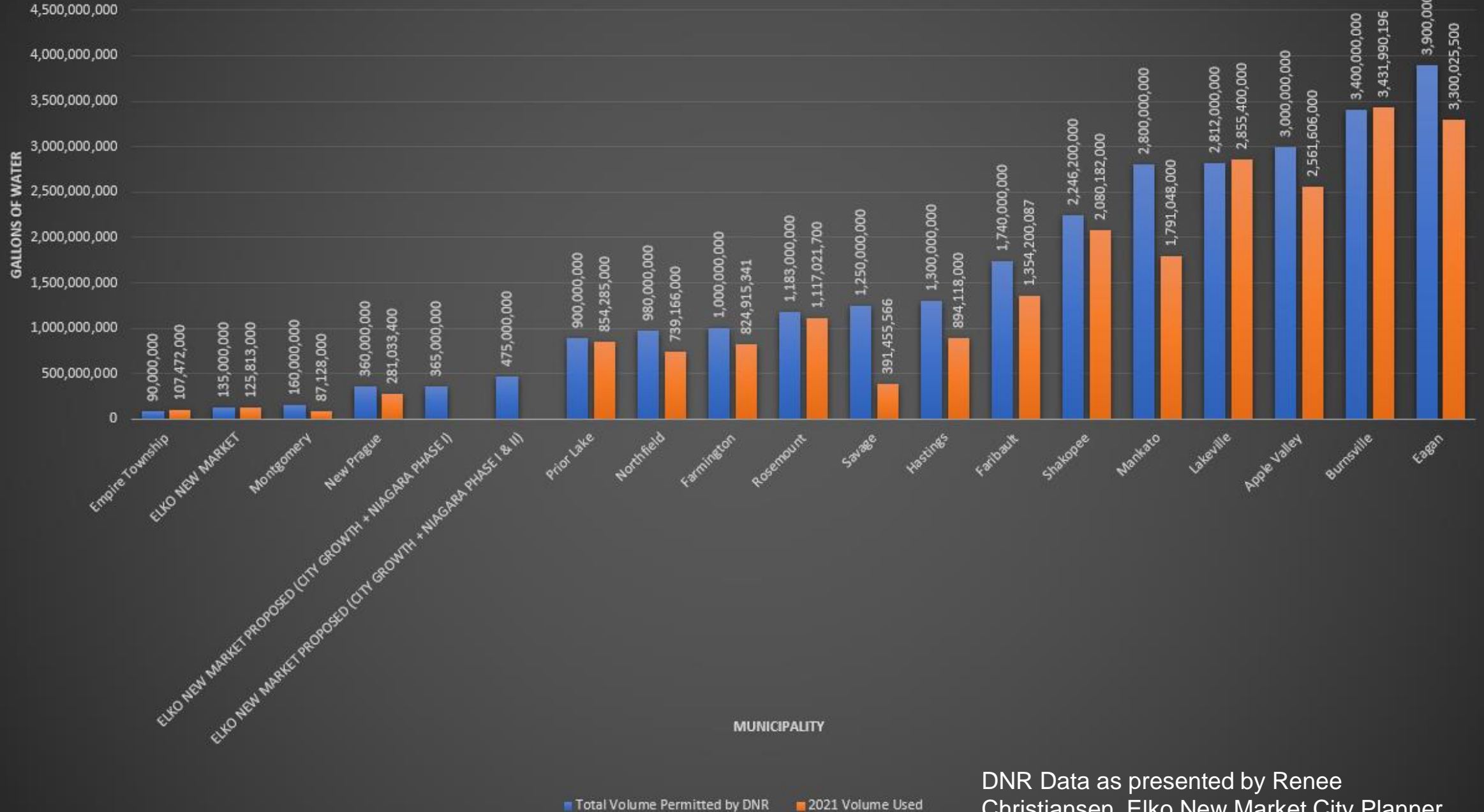
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Minnesota has the statutory language

The DNR created a definition of groundwater sustainability that was adopted into statute (103G.287, Subd. 5):

“Sustainability Standard. The commissioner (Commissioner of the Department of Natural Resources) may issue water-use permits for appropriation from groundwater only if the commissioner determines that the groundwater use is sustainable to supply the needs of future generations and the proposed use will not harm ecosystems, degrade water, or reduce water levels beyond the reach of public water supply and private domestic wells constructed according to Minnesota Rules, chapter 4725”.

2021 Water Appropriations by MnDNR & 2021 Reported Water Usage (Municipal / Public Water Supply Wells Only)



DNR Data as presented by Renee Christiansen, Elko New Market City Planner

If this is your
goal

Let's use the self-
assessment tool

Groundwater governance
should sustainably support
inclusive prosperity and
ecological health for all
residents of the region.

Efficiency

- Clearly defined roles of agencies with management, programming, and policy-making, authority for private and public water systems ?
- Groundwater managed at appropriate scale, using integrated watershed approach emphasizing coordination between management at different scales ?
- Policy coordinated horizontally and vertically across sectors and jurisdictions, including health, environment, energy, agriculture, and industry ?
- Entities have adequate professional capacity and training ?

Effectiveness

- Scientifically robust data about groundwater supply that is timely, relevant, accessible and suitable to guide policy ?
- Financial sources are adequate, appropriately structured, and allocated for groundwater management ?
- Sound regulatory framework implemented and enforced ?

Engagement and Evaluation

- Management has systems to maintain integrity and transparency
- Stakeholders have been identified and are engaged in interpreting needs and designing solutions at a level appropriate to their authority
- There are ways to identify trade-offs and prioritize choices across sectors and non-human and human users
- Programs and institutions are regularly evaluated for effectiveness and fairness

Risk of the Status Quo

“When you add up enough kludges, you get a very complicated program that has no clear organizing principle, is exceedingly difficult to understand, and is subject to crashes.”

Steven M. Teles,
“Kludgeocracy in America”

Kludge: an ill-assorted collection of parts assembled to fulfill a particular purpose

Thank you!

Authors:

- Terin V Mayer, University of Minnesota
- Eileen Kirby, Freshwater Society
- Benjamin Edelstein, Water365
- Lila Franklin, Freshwater Society
- Carrie E Jennings, Freshwater Society
- Ann McCammon-Soltis, Great Lakes Indian Fish and Wildlife Commission
- Linda Reid, Water365
- Jen Venator, Great Lakes Indian Fish & Wildlife Commission

Additional Contributors:

- Craig Butler, Muskingum Watershed Conservancy District
- Josh Clement, University of Minnesota
- Amanda Gorton, University of Minnesota
- Lydia Host, Great Lakes Indian Fish and Wildlife Commission
- Meleah Houseknecht, Freshwater Society
- Jen Kader, Freshwater Society
- Bonnie Keeler, University of Minnesota
- Jocelyn Leung, Freshwater Society
- Madeline Lydon, University of Minnesota
- Mary Manydeeds, Bureau of Indian Affairs
- Ryan Noe, University of Minnesota
- John Linc Stine, Freshwater Society

<https://freshwater.org/reports/white-papers-groundwater-governance/>

Groundwater Governance, Well Cobbled?

A descriptive assessment of hydrogeology and institutional networks in six Great Lakes states and the Tribes that share that geography

Carrie Jennings, Freshwater

Terin V Mayer, University of Minnesota