

Promoting Water Quality Stewardship in Agriculture

Darren Newville
District Manager
East Otter Tail SWCD
& Wadena SWCD

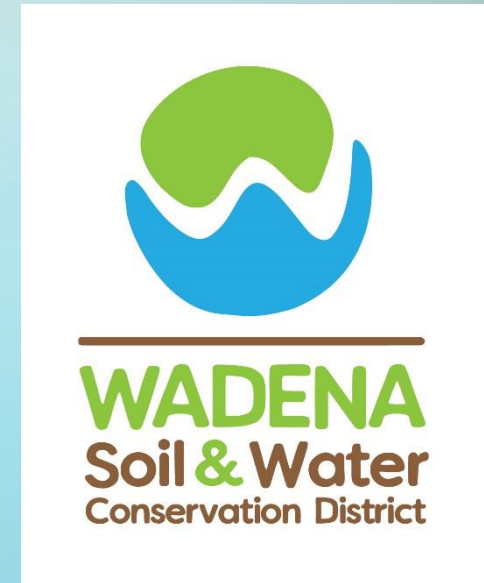


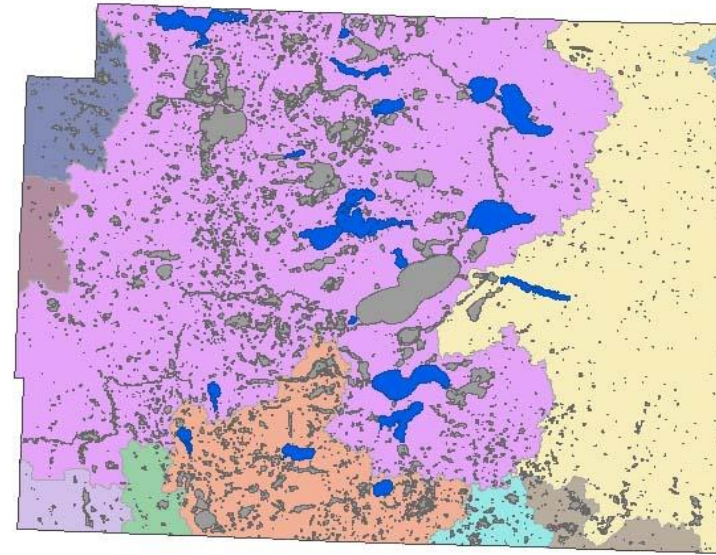
Soil and Water Conservation District

East Otter Tail (EOT) and Wadena Soil and Water Conservation District (SWCD)

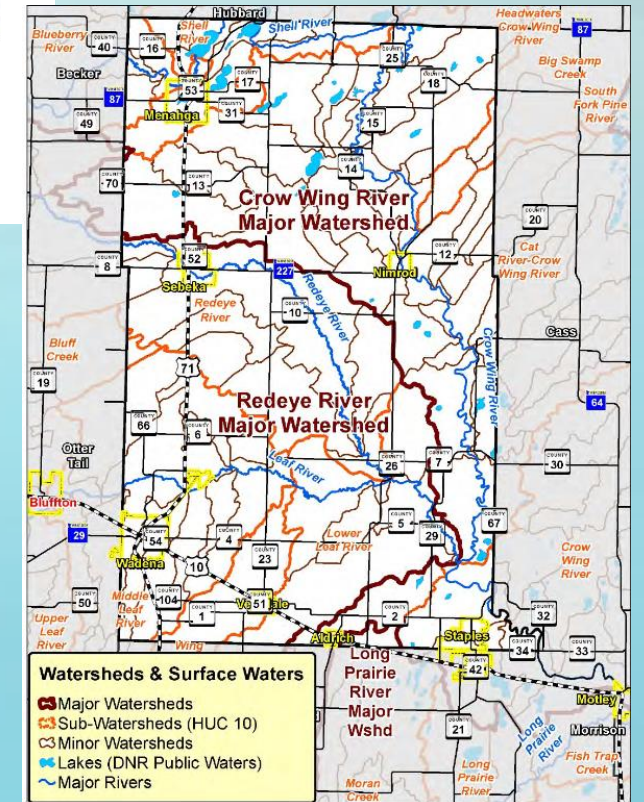


- Description of the issues in Otter Tail County region
- Outreach efforts of the EOT SWCD
- Agriculture and Groundwater meetings
 - Results of Ag industry input meetings
- Methods of conservation program delivery
- Intro to Minnesota Ag Water Quality Certification Program – Why I like the program.



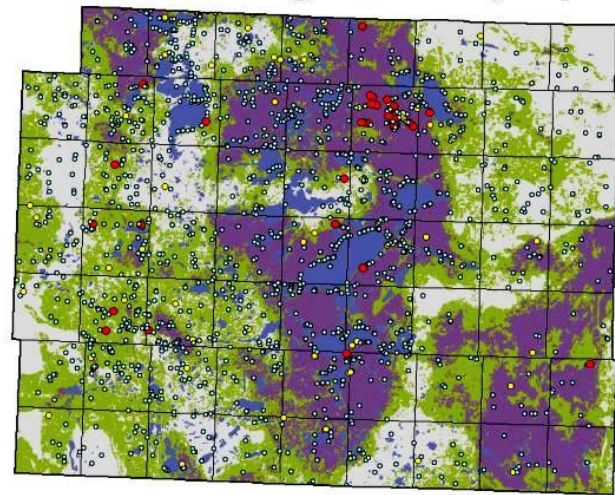


- | | |
|------------------|----------------------|
| Upper Red River | Bois de Sioux River |
| Buffalo River | Mustinka River |
| Otter Tail River | Pomme de Terre River |
| Redeye River | Chippewa River |
| Crow Wing River | Long Prairie River |





Otter Tail County Nitrate-Nitrogen Probability Map

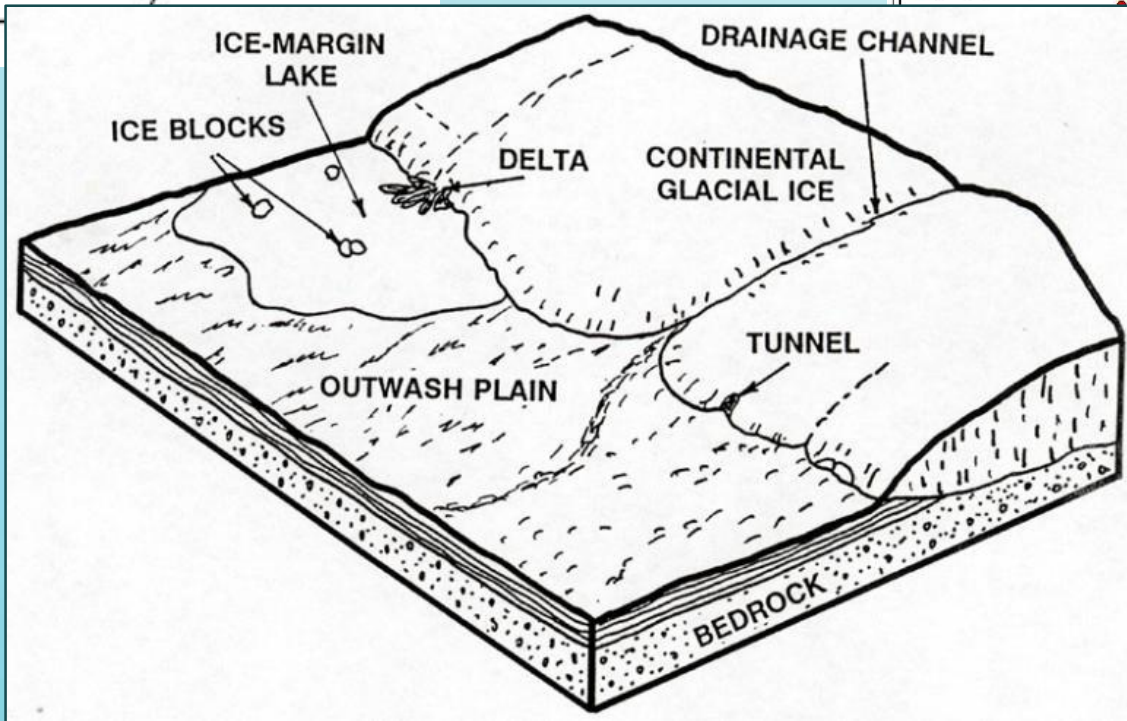


Nitrate Probability Ranking
 Low (3 - 9)
 Medium (9.1 - 12)
 High (12.1 - 17)

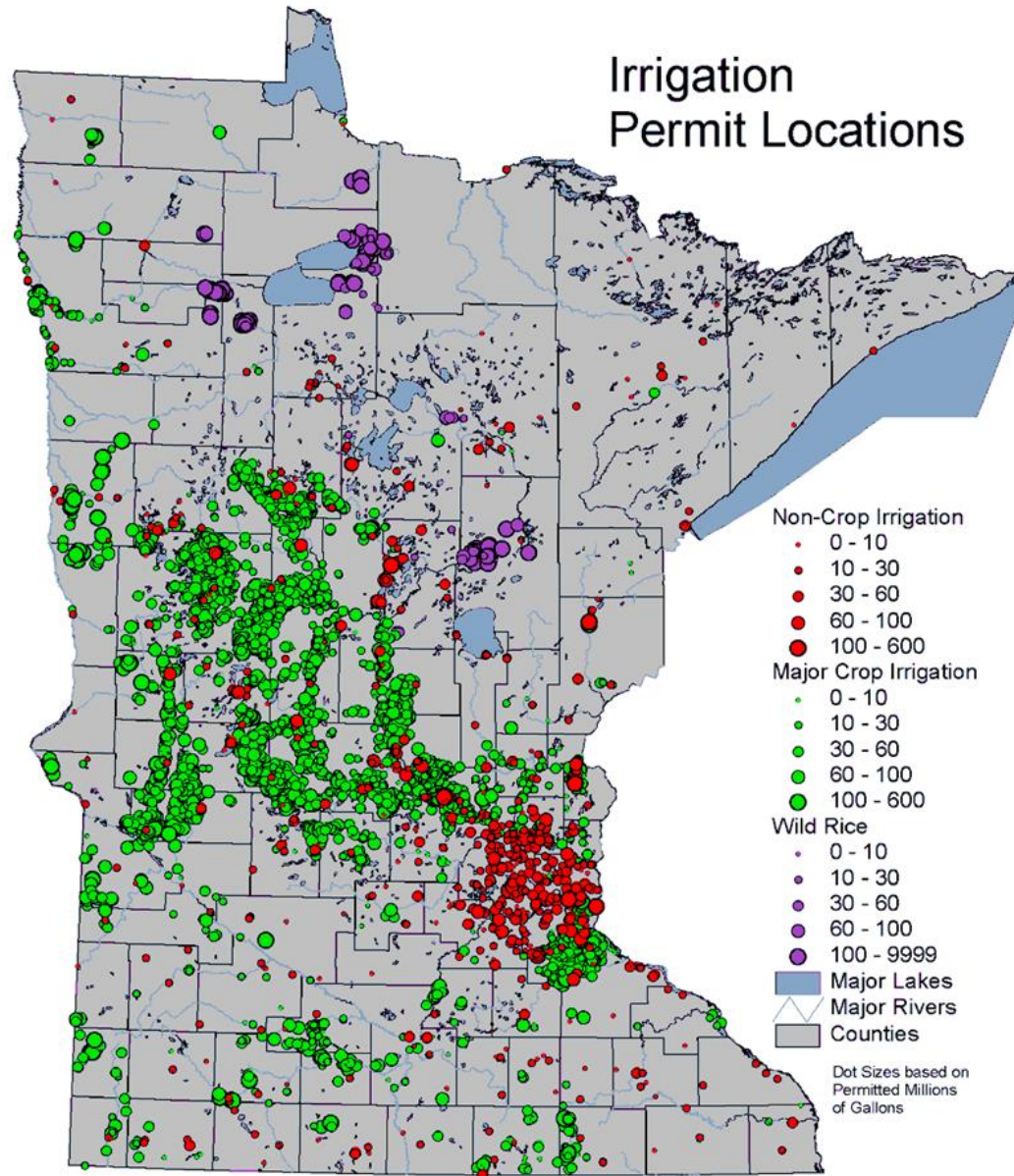
Nitrate-nitrogen concentrations
 in parts per million (ppm)
 for approximately 1640 wells
 less than 3 ppm
 3 - 10 ppm
 10 ppm or more

Wells with elevated nitrate-nitrogen
 concentrations probably will be located in areas
 ranked as high or medium probability,
 however, wells in these areas also may
 provide drinking water without nitrates

0 6 12 Miles
 Municipality boundary
 Township boundary
 Water



Irrigation Permit Locations



50 0 50 100 Miles

Minnesota DNR Waters
Water Appropriation Permit Program

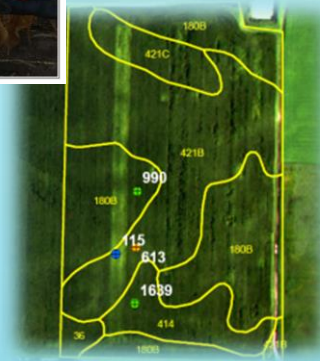
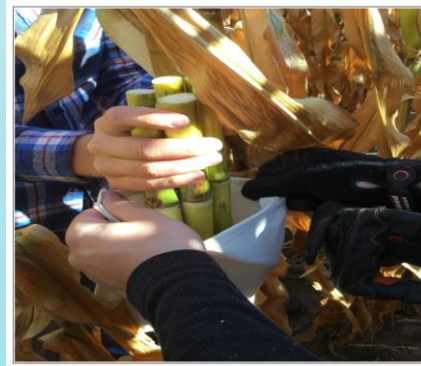


Central MN Outreach and Education

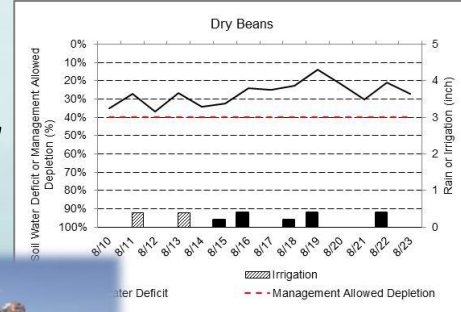
Irrigation Workshops



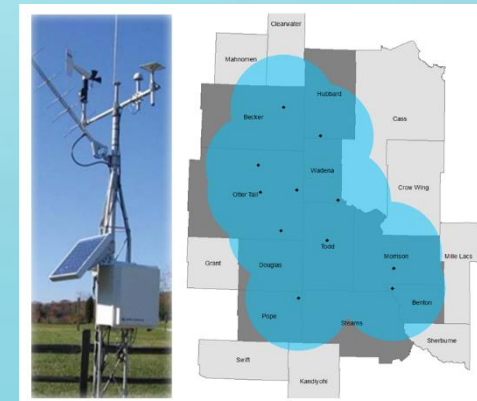
On-Farm Adaptive Nitrogen Management



Irrigation Scheduling



Central MN Ag Weather Network



Agriculture & Groundwater

Identifying Local Solutions to Protect Both



FRESHWATER



East Otter Tail
Soil & Water Conservation District

Series of 3 Identical Meeting

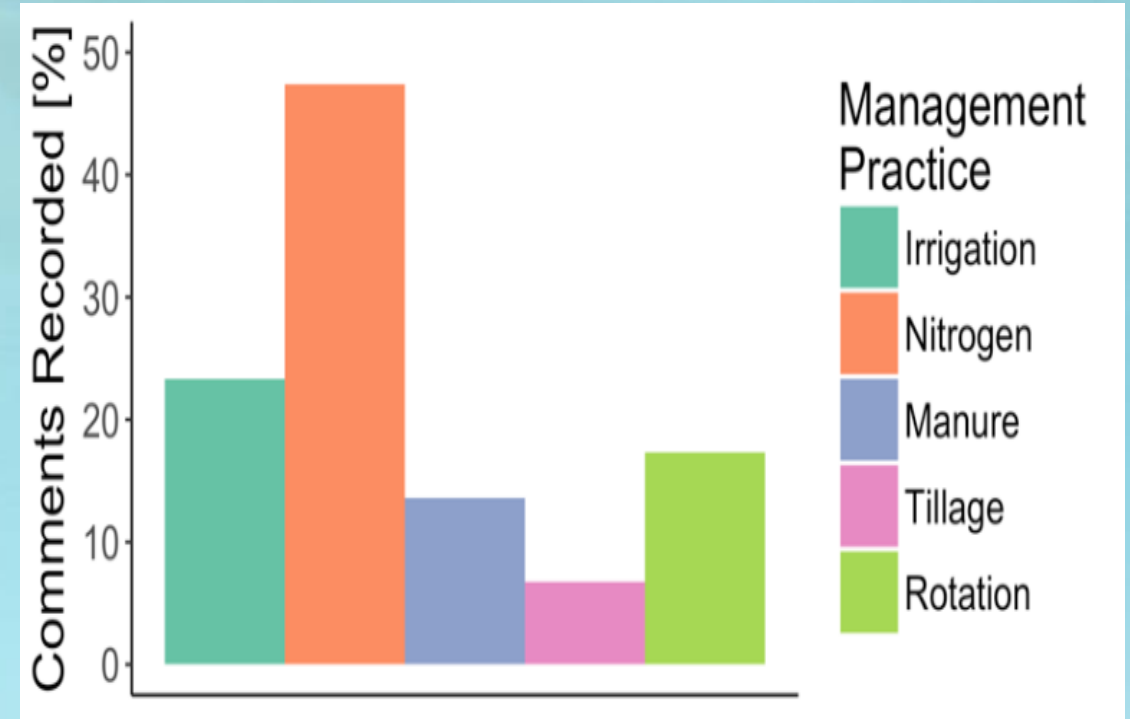
Questions participants were asked.

- List practices currently being used to protect groundwater
- Discuss practices local farmers are interested in trying and what they'd like their operations to look like in five years
- Identify the barriers in the way of making those changes
- Develop strategies to overcome those barriers and protect agricultural economies and groundwater supply at the same time



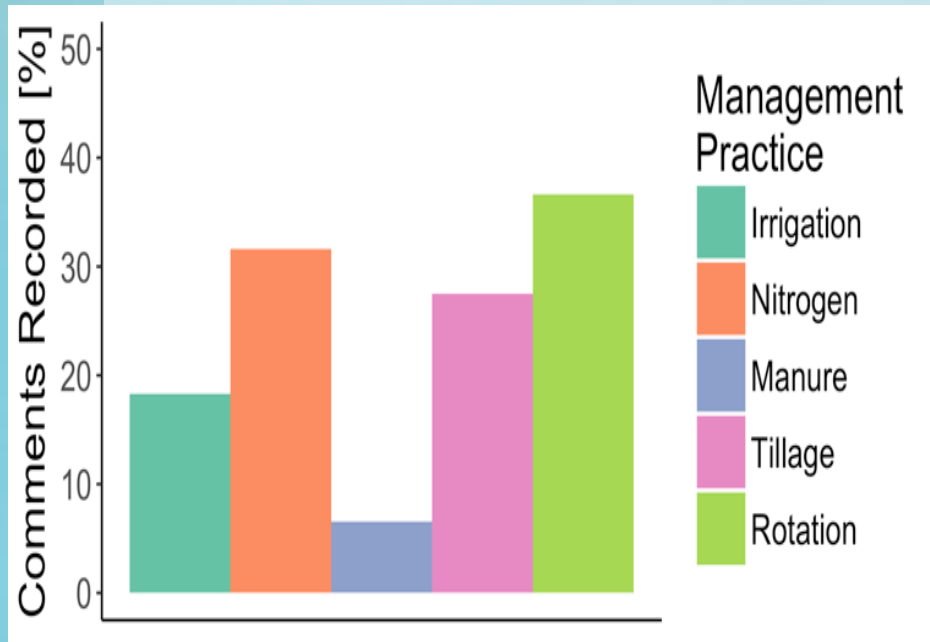
WHAT'S CURRENTLY WORKING, AND WHY?

- They understand they have a responsibility to protect groundwater.
- While economics constrain which practices are feasible in their fields, farmers are already making sacrifices of time, resources, and money to implement practices that are environmentally beneficial.
- We heard from participants that both economics and environmental considerations were important components of the decisions farmers are making to manage their fields.



WHAT FUTURE PRACTICES *COULD* LOOK LIKE?

- if time or money were not limiting factors.



- There is more work to be done to improve financial sustainability and to protect groundwater
- Participants want to shift their management practices towards those with a long-term perspective in mind: reducing tillage, incorporating cover crops, and adding alternative cropping systems into their rotations.
- Participants want to adopt precision irrigation and nitrogen management practices that could drastically improve the efficiency of the inputs they use.

BARRIERS TO PROGRESS

- Negative public perception
- Locally appropriate knowledge
- Long return on investment period for new practices



- Lack of technical expertise and actionable information
- Absence of markets for alternative crops and improved inputs
- Unpredictable and variable environmental conditions
- Restrictions from landowners, bankers, and government

STRATEGIES FOR SUCCESS

Shift the narrative	Collect success stories and case studies from local farmers, and share those with local media, community groups, and others to begin shifting the narrative.
Promote improved regulations	Help regulators better understand agricultural contexts and the impacts of proposed regulations. Additionally, as the SWCD works with other government agencies, such as in One Watershed One Plan, highlight the need for common sense and flexibility
Facilitate local information exchange	Coordinate field days with area farmers, and host networking opportunities and conversations like those that led to this report. Additionally, contact local colleges and schools to both promote new local research and collect relevant research already done that could be of interest to area farmers.
Develop assistance programs	Provide or coordinate training opportunities, including field-specific opportunities, and assist with application requirements for conservation programs. Additionally, consider developing an in-season nitrogen management program like the irrigation scheduling program.
Foster financial support	Raise money to support locally-specific incentive and cost share programs, and work with others in the agriculture industry to develop a program that would allow farmers to try out equipment and technology before making significant investments.
Encourage development of local markets	Work with providers to increase access to improved inputs, and highlight the need to invest in local mills and other end producers to support alternative cropping systems.

Darren's Key Points

- The ag industry cares about our soil and water resources. They understand they need to be part of the equation to conserve our soil and water resources.
- Each farm is an individual business and in a different situation. One size solutions don't fit everyone.
- Farming is not what it was 25 to 30 years ago. Precision agriculture is making farmers more efficient and helping to protect our environment. It will continue to evolve.
- Farmers are facing structural and systematic barriers that will prevent them from doing more good work
- Both economics and environmental considerations are important components of the decisions farmers are making to manage their fields.

Thank you!

Darren Newville

Darren.newvill@eot.mnswcd.org

www.eotswcd.org

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