

State Specific Training Module for Minnesota

Purpose of this Module

This module will provide some general information that TSPs need to conduct conservation planning in our state. This information is general in nature so the TSP may need to follow up with additional reading or training to make sure they have the knowledge, skill, licenses and certifications to conduct conservation planning in this state.

Review of State Laws

The state of Minnesota (MN) requires individuals to have a Professional Engineering (PE) license to plan and design engineering practices. Contact the state Engineer for more details.

Review of State Laws

All nutrient management plans must follow University of Minnesota recommendations for fertilizer application.

The Minnesota Department of Agriculture is the contact for chemical licenses and laws for Minnesota.

<https://www.mda.state.mn.us/pesticide-fertilizer/regulation-inspection-enforcement>

Review of State Laws

MN Wetlands Law for the US Army Corps of Engineers and the MN State Wetland Conservation Act (WCA) can be found on the MN Board of Soil and Water Resources wetland website:

<https://bwsr.state.mn.us/wetlands-regulation-minnesota>

Minnesota Water Laws Questions and Answers:

https://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/waterlaws.html

Review of State Laws

Minnesota's Private Cemeteries Act protects all human burial grounds and remains older than 50 years from unauthorized disturbance. This applies to burials on public or private lands.

<https://www.revisor.mn.gov/statutes/cite/307.08>

For questions regarding the MN Cultural Resource laws, contact the state Archeologist for more information.

Review of State Laws









In the event that a burial is either known or suspected to be associated with American Indian peoples, the Office of the State Archaeologist (OSA) works in concert with representatives of Minnesota's tribal communities to ensure the integrity of such burial sites.

If such burials are accidentally uncovered in the course of construction or other activities,

- Excavation should cease
- Secure the area
- Contact OSA as soon as possible
- Notify law enforcement immediately if there is any reason to suspect the remains may be part of a crime scene.

Review of State Field Office Technical Guide (FOTG) Requirements

Section 1 contains information for engineering resources, erosion predictions, state laws, maps, reference lists (technical notes), and payment rates.

Section 1 - General Resource References 	
Conservation Planning Practice Costs	
Engineering Resources	
Erosion prediction	
Laws	
Maps	
Reference Lists	
State Guidance for Wetland Determinations	
State Payment Rates and Methods	
Transmittal Notices	
Water Quality Monitoring Activities	
Archived Payment Schedules	

Review of State FOTG Requirements

Section 2 contains information for climatic data, cultural resources, job approval authority, ecological site descriptions, environmental evaluations (NRCS-CPA-52), soils, and threatened and endangered species.

Section 2 - Natural and Cultural Resources Information	^
Climatic Data	∨
Cultural Resources	∨
Ecological Sciences Job Approval Authority	∨
Ecological Site Descriptions	∨
NRCS-CPA-52	
Soils - Statewide Official Data & County Reports	∨
Threatened and Endangered Species	∨

Review of State FOTG Requirements

The soils folder in Section 2 contains the API list, Conservation Tree and Shrub Groups, County Reports, Farmland Protection and Policy Act (FPPA), Forage Suitability Groups by County, Highly Erodible Lands (HEL) Frozen List, Hydric Soils, RUSLE2 Slope Percent and Length, and State Crop Productivity Index (CPI) Lists.

Soils - Statewide Official Data & County Reports	^
Aspen Productivity Index (API) List	∨
Conservation Tree and Shrub Groups	
County Reports	
Farmland Protection and Policy Act (FPPA)	
Forage Suitability Groups by County	∨
HEL Frozen List by County	∨
Hydric Soils	
RUSLEII Slope Percent and Slope Length	
State Crop Productivity Index (CPI) List	

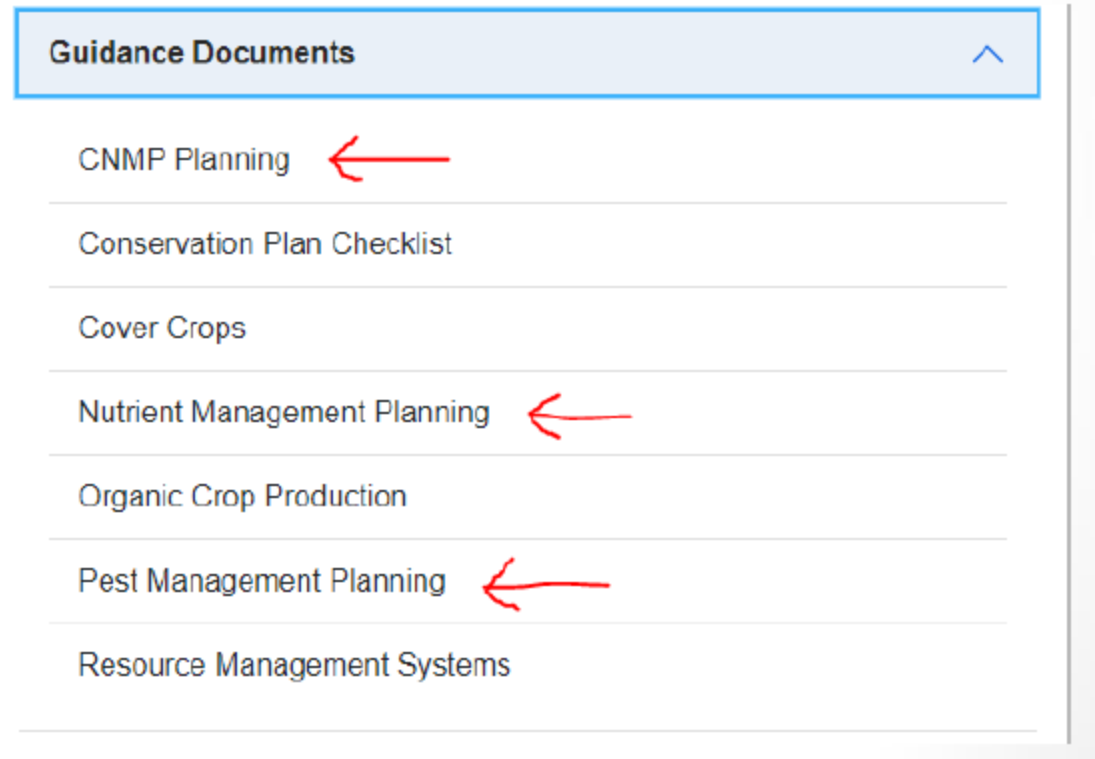
Review of State FOTG Requirements

Section 3 contains Conservation Planning Activities (CPA), Design and Implementation Activities (DIA), and Conservation Evaluation and Monitoring Activities (CEMA) criteria, Conservation Reserve Program (CRP) information, Guidance Documents, Programs, Resource Concerns and Planning Criteria, Stream Visual Assessment Protocol (SVAP2), Wildlife Habitat Evaluation Guides, and archived Conservation Activity Plan (CAP) criteria.

Section 3 - Resource Concerns and Planning Criteria	^
Conservation Activities (CPA, DIA, & CEMA)	
Conservation Reserve Program (CRP)	∨
Guidance Documents	∨
Legislated Programs	
Resource Concerns and Planning Criteria	∨
Stream Visual Assessment Protocol (SVAP2)	
Wildlife Habitat Evaluation Guides	
Conservation Activity Plans Technical Criteria (Archived)	∨

Review of State FOTG Requirements

Guidance documents includes folders for Conservation Nutrient Management Plan (CNMP) planning, Conservation Plans, Cover Crops, Nutrient Management, Organic Crop Production, Pest Management, and Resource Management Systems. **Note: the CNMP, Nutrient Management, and Pest Management folders include templates for baseline plans that are required for certification.**



Review of State FOTG Requirements

Section 4 contains practice standards and support documents for all practices approved in Minnesota. Implementation Requirement (IR) sheets, Practice Overview (PO) sheets, and Network Effect Diagrams (NEDs) can be found here for each practice.

Keyboard Navigation Instructions

- Land Clearing (460)
- Lined Waterway or Outlet (468)
- Livestock Pipeline (516)
- Livestock Shelter Structure (576)
- Mulching (484)
- Nutrient Management (590)**
- Obstruction Removal (500)
- On-Farm Secondary Containment Facility (319)
- Open Channel (582)
- Pasture and Hay Planting (512)
- Pest Management Conservation System (595)
- Pond (378)
- Pond Sealing or Lining – Geomembrane or Geosynthetic Clay Liner (521)
- Pond Sealing or Lining, Compacted Soil Treatment (520)
- Pond Sealing or Lining, Concrete (522)
- Precision Land Forming and Smoothing (462)





Nutrient Management (590)

Export Grid Highlights Only

Document Title	Type	Pub Date	End Date	Subject	Keywords	Abstract	Size (kb)	Info
590.MN.CPS.Nutrient Management 2021	📄	2022-01-15	--	--	nutrient management, water quality, air quality, emissions, manure, nutrient	--	895	🔍 ⬆
590.MN.SQW.Nutrient Management 2021	📄	2022-01-15	--	--	--	--	115	🔍 ⬆
590.MN.IR.Nutrient Management 2022	📄	2023-01-24	--	--	--	--	1130	🔍 ⬆
590.MN.PO.Nutrient Management 2021	📄	2022-01-15	--	--	--	--	385	🔍 ⬆
590.MN.GD.NM.Agronomy Technical Note 32 May 2022	📄	2022-05-23	--	--	Nutrient Risk Assessment	--	1621	🔍 ⬆
590.MN.NED.Nutrient Management 2021	📄	2022-01-14	--	--	--	--	168	🔍 ⬆
590.MN.OTH.Baseline NM Template Jan 2022	📄	2022-01-14	--	--	--	--	102	🔍 ⬆

Review of State FOTG Requirements

Section 4 also has NRCS ecological sciences and engineering tools.

Section 4 - Practice Standards and Supporting Documents 	
Index	
Conservation Practice Standards & Support Documents	
Ecological Sciences Tools	
Engineering Tools	

Review of State FOTG Requirements

Section 5 contains the Conservation Practice Physical Effects (CPPE) spreadsheet.

Effects of NRCS Conservation Practices - National		
Nutrient Management		Code: 590 Units: ac.
<u>Resource Concern</u>	<u>Effect</u>	<u>Rationale</u>
Sheet and Kill Erosion	0	Soil disturbance to incorporate fertilizer loosens the soil and buries surface residue which can increase erosion. Other application methods do not contribute to erosion.
Wind Erosion	0	Soil disturbance to incorporate fertilizer loosens the soil and buries surface residue which can increase erosion. Other application methods do not contribute to erosion.
Ephemeral Gully Erosion	0	Soil disturbance to incorporate fertilizer loosens the soil and buries surface residue which can increase erosion. Other application methods do not contribute to erosion.
Classic Gully Erosion	0	Not Applicable
Bank Erosion from Streams, Shorelines or Water Conveyance Channels	0	Not Applicable
Subsidence	0	Not Applicable
Compaction	0	Not Applicable
Organic Matter Depletion	2	Management of pH and applying sufficient nutrients will maintain or enhance biomass production
Concentration of Salts or other Chemicals	2	Matching plant requirements with nutrient applications decreases excess nutrient conditions and reduces salts and other contaminants
Soil Organism Habitat Loss or Degradation	0	Not Applicable
Aggregate Instability	0	Not Applicable
Ponding and Flooding	0	Not Applicable

Important MN Resource Concerns

Soil Erosion

Soil erosion is common in parts of Minnesota. Windbreaks, filter strips, and field borders are examples of practices that can reduce soil particles from moving off site.



Important MN Resource Concerns

Soil Erosion

Excessive sediment moving off cropland due to management choices.



Excessive sediment moving off of pastureland due to overstocking.



Important MN Resource Concerns

Soil Quality Degradation

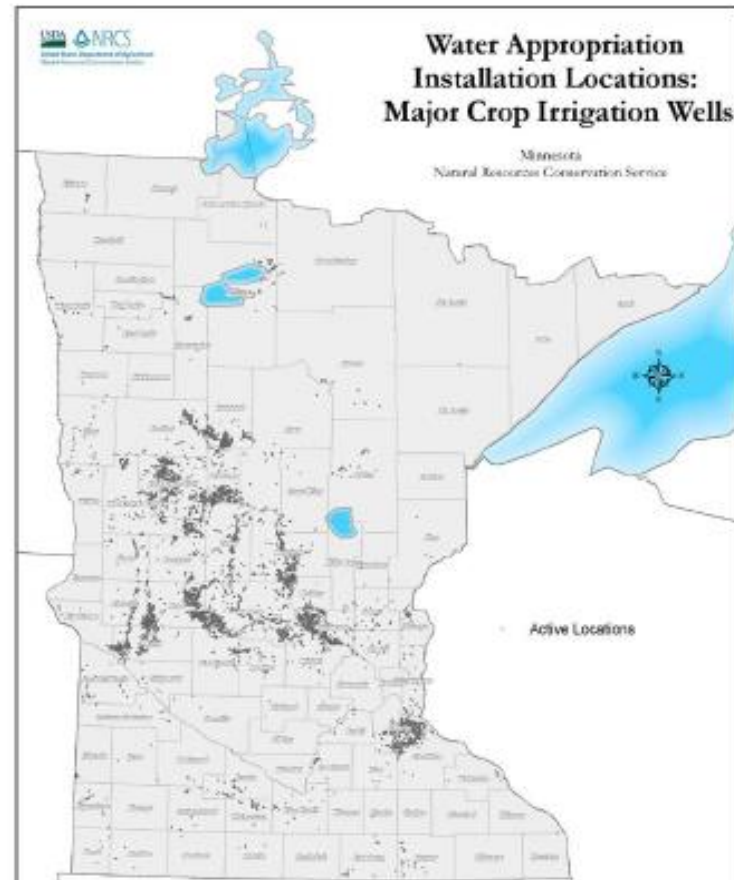
Soil Quality
Degradation includes
compaction, organic
matter depletion, and
sheet and rill erosion.



Important MN Resource Concerns

Excess/Insufficient Water

Reducing levels of contaminants in MN aquifers has been an increasing concern. The MN Department of Agriculture and the US Geological Service (USGS) are the primary agencies working on this topic in MN.

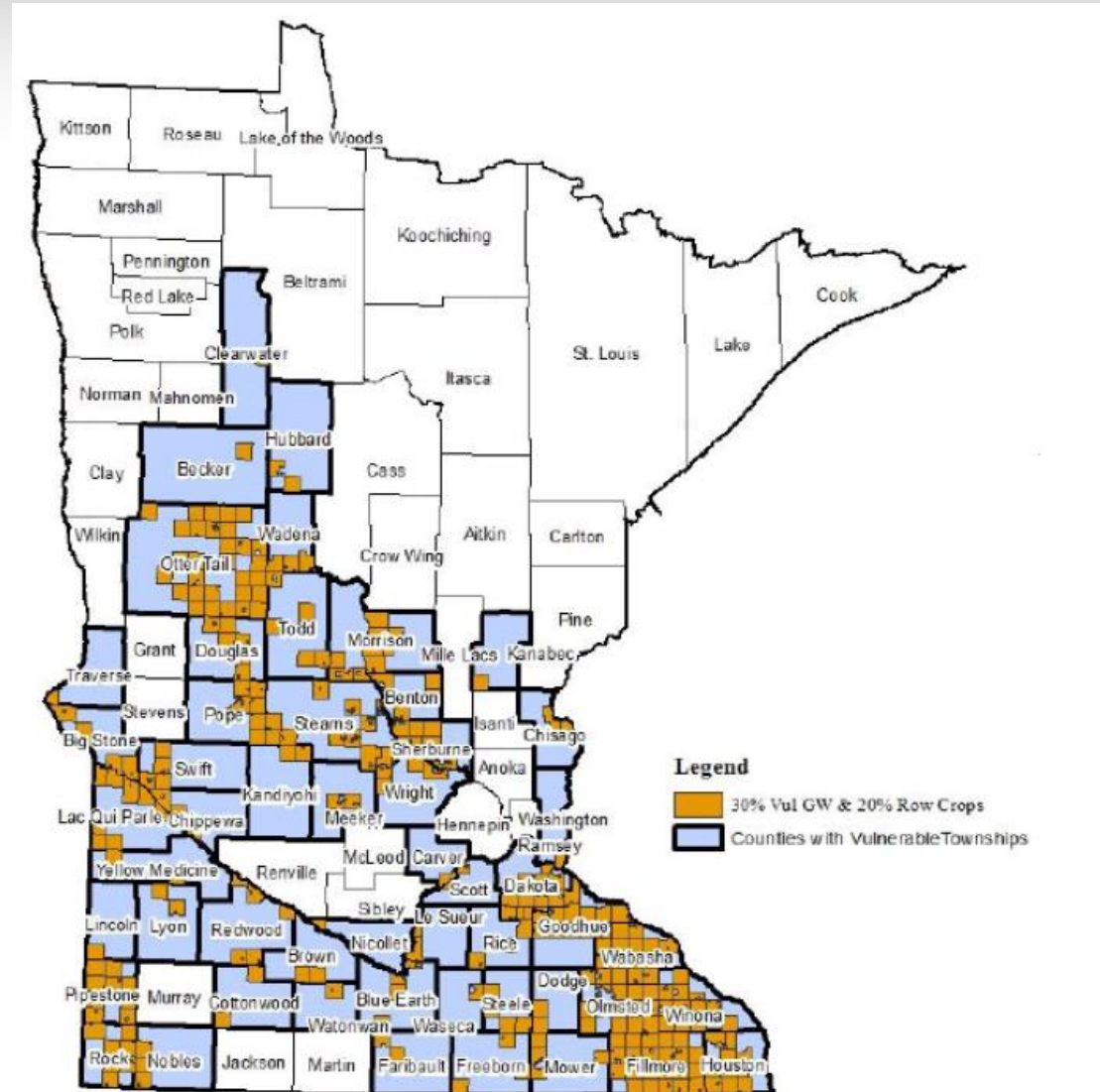


Important MN Resource Concerns

Water Quality Degradation

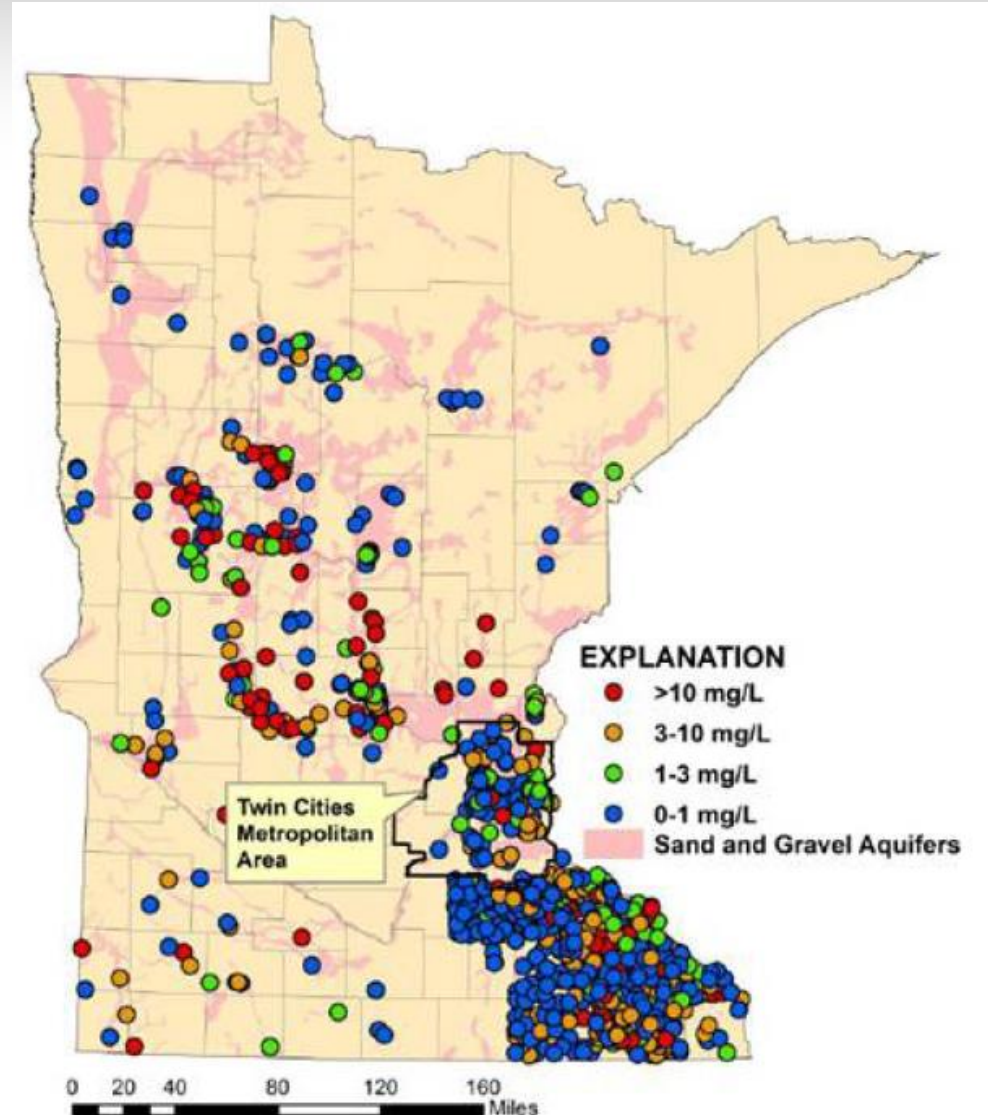
The following slides illustrate the evidence of water quality degradation in Minnesota. All maps were created by the MN Nutrient Reduction Strategy.

Priority Groundwater Areas

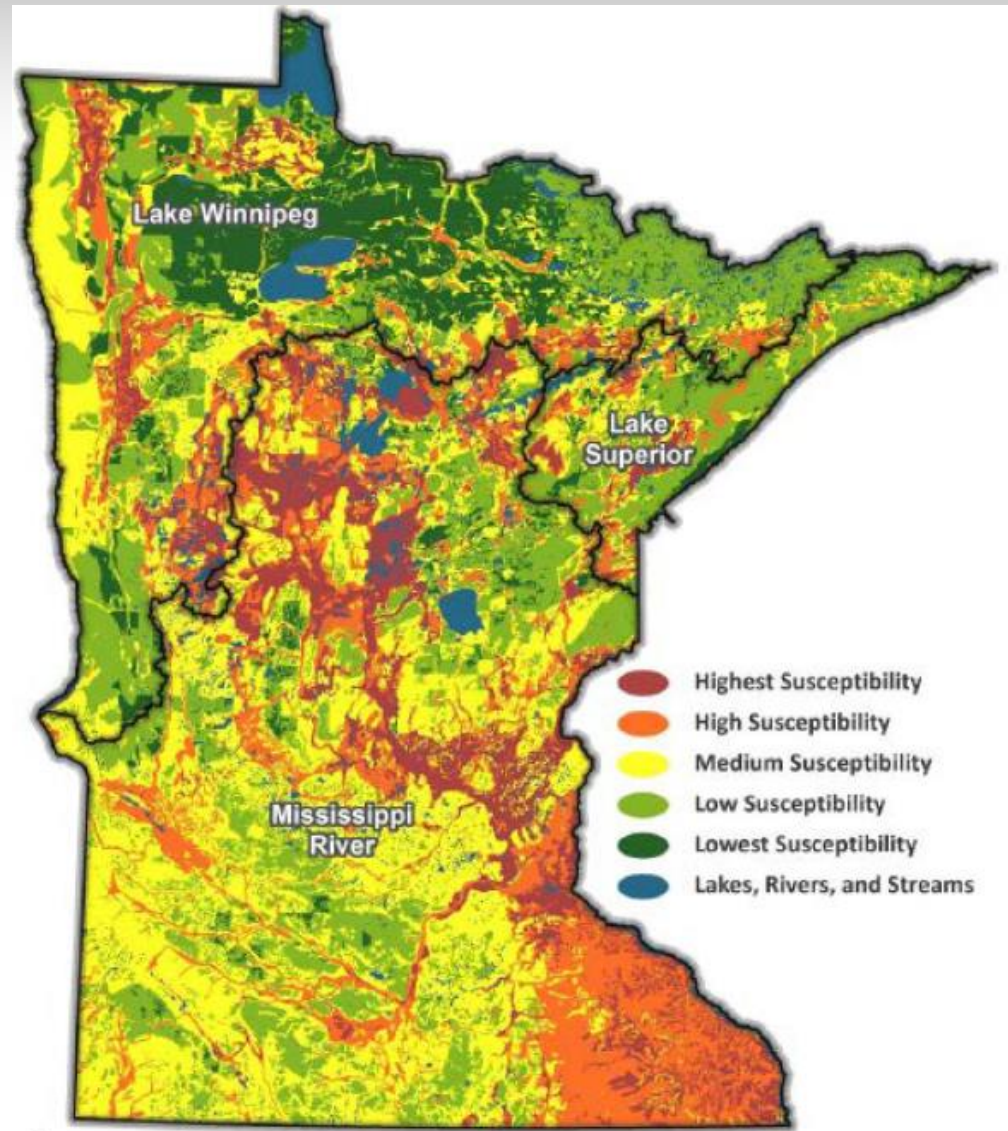


Wells with high nitrates

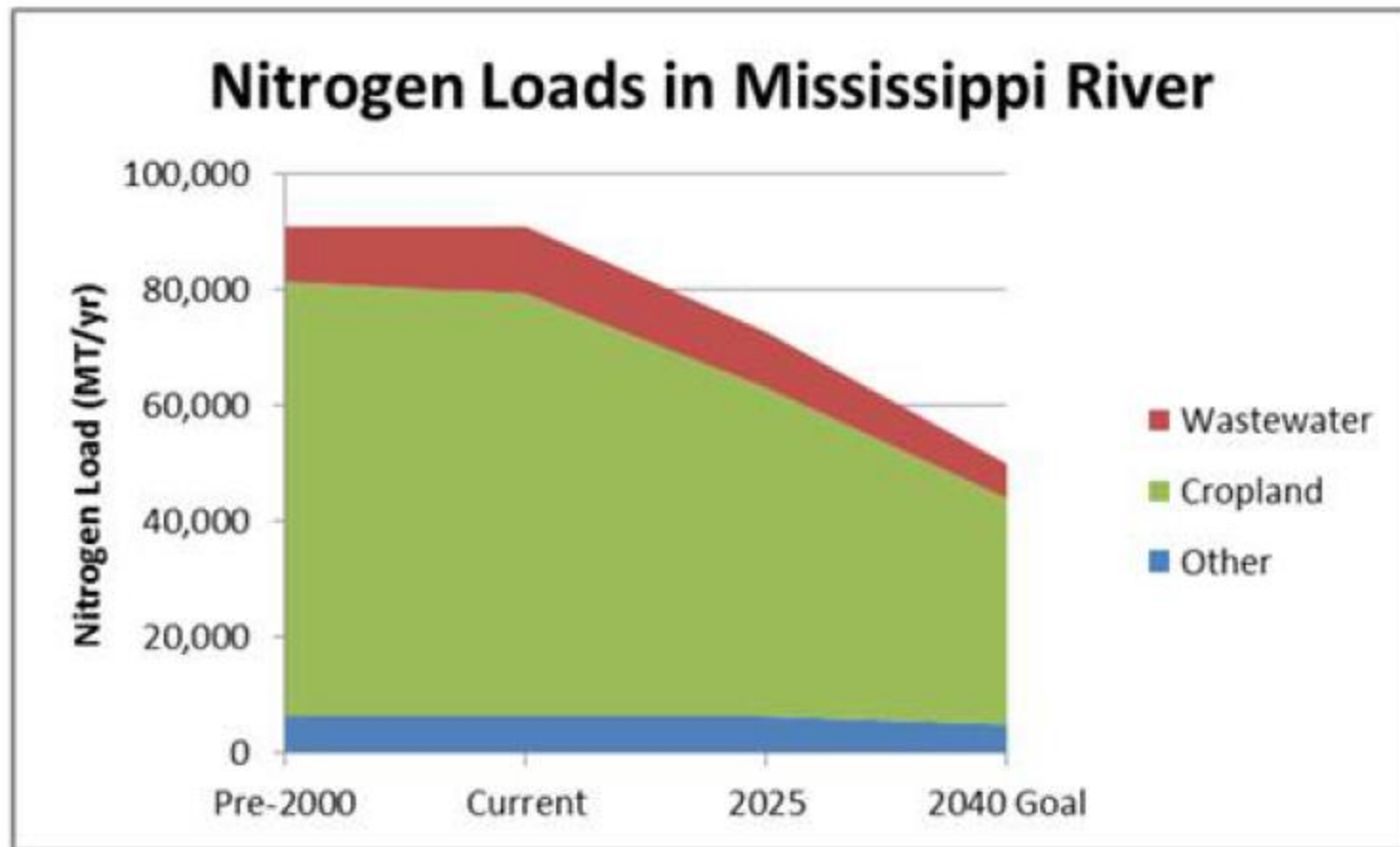
*Note: locations with nitrate levels greater than 10 mg/L (red dots) is considered **NOT DRINKABLE**.



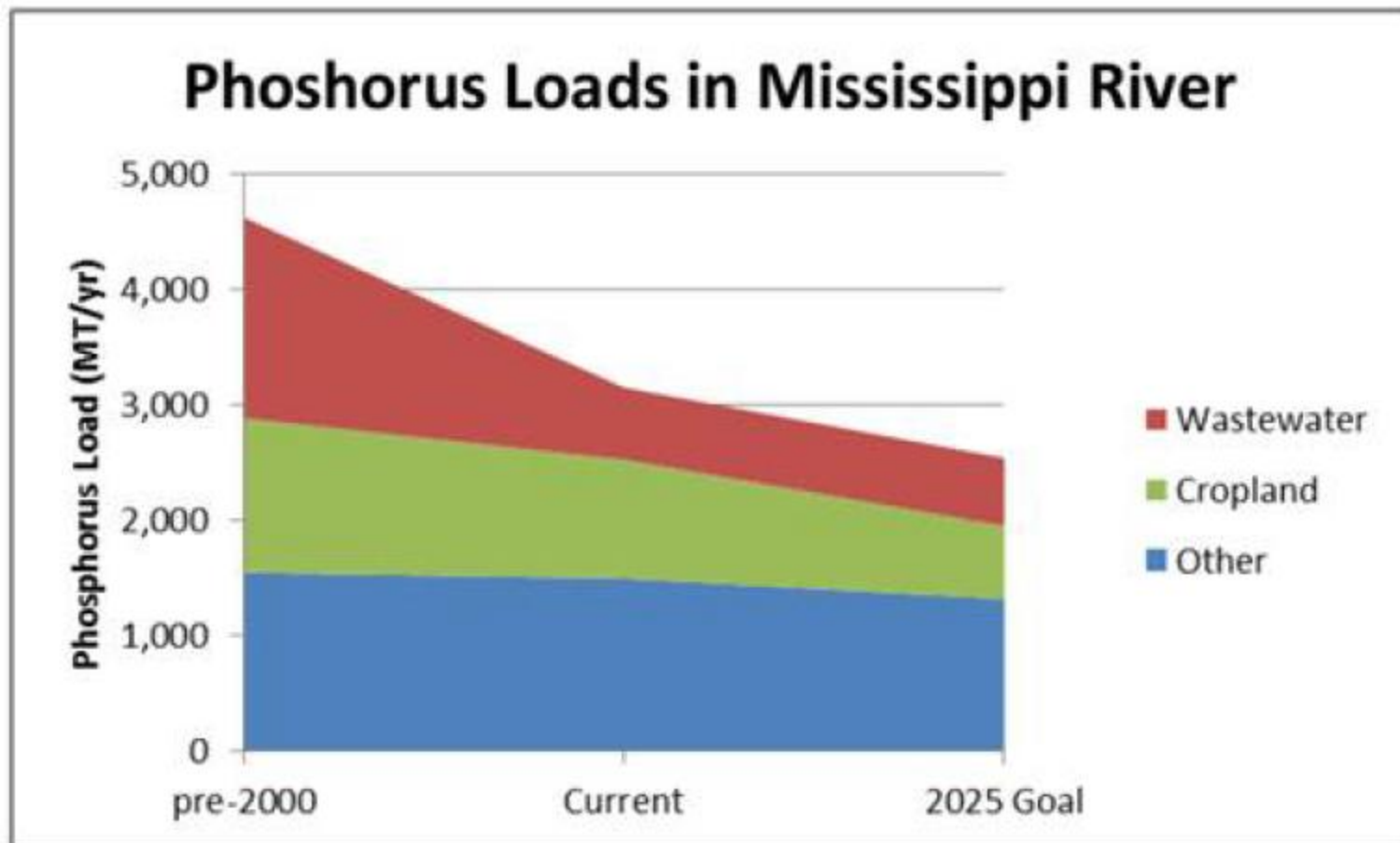
Groundwater susceptibility to contamination



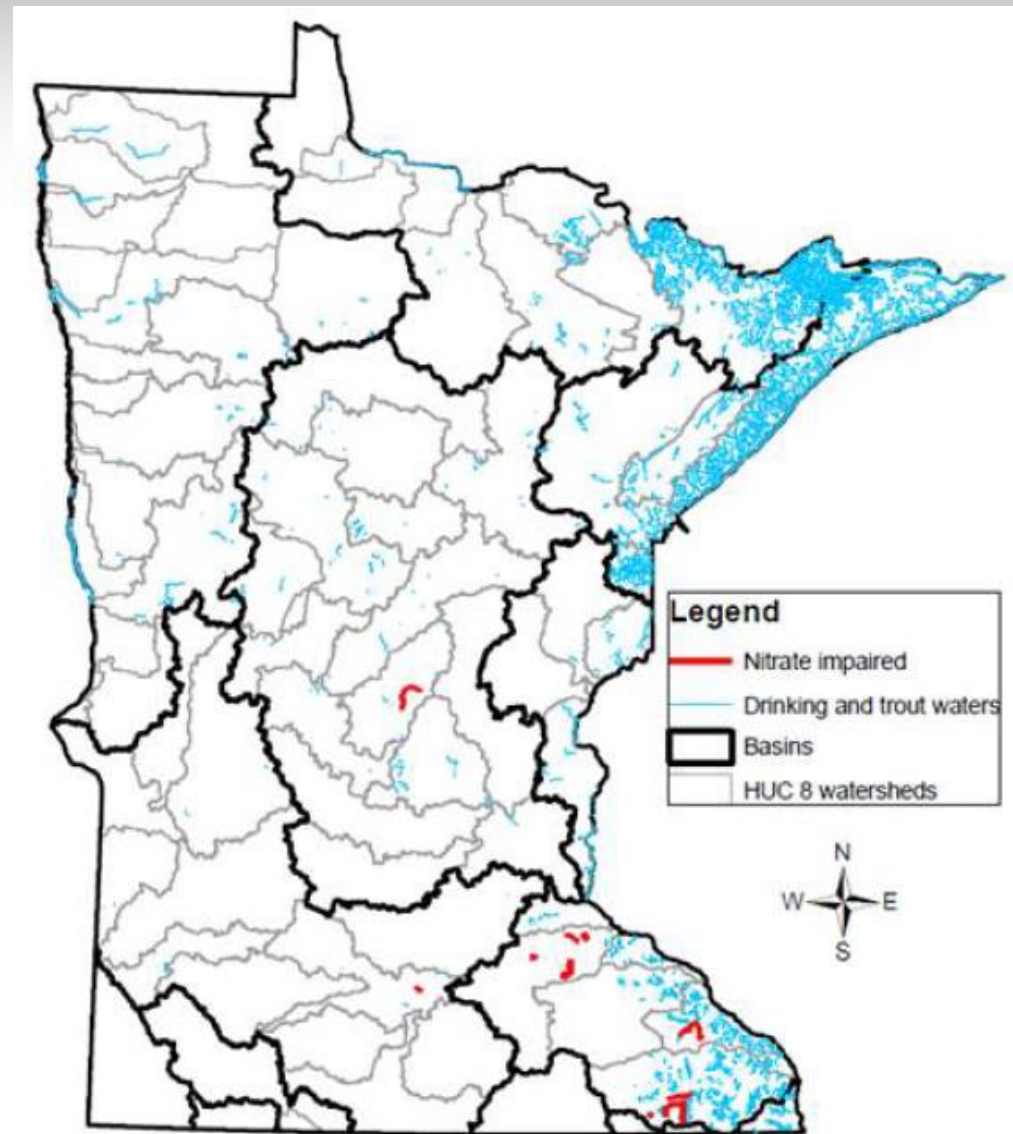
Nitrogen Loads in Mississippi River



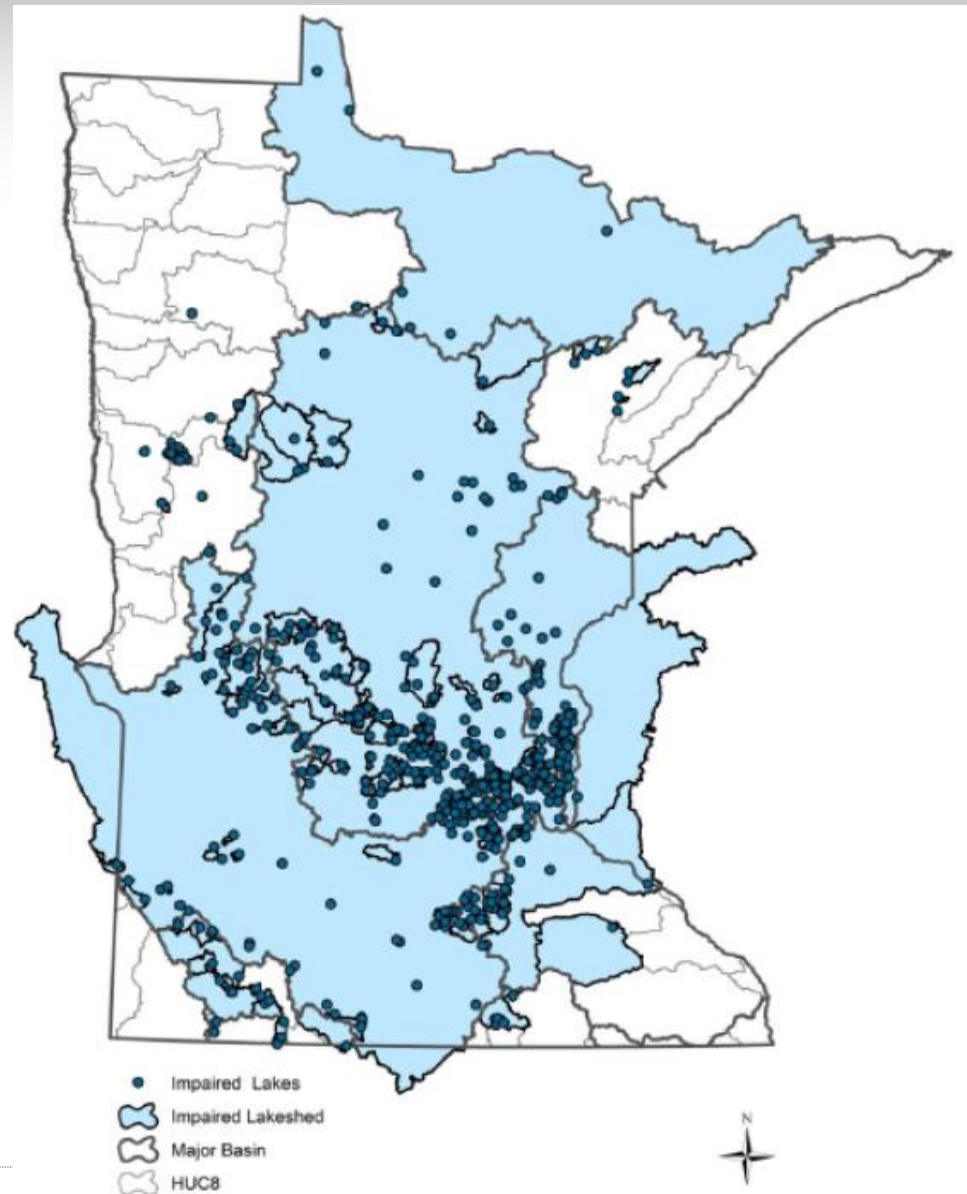
Phosphorus Loads in Mississippi River



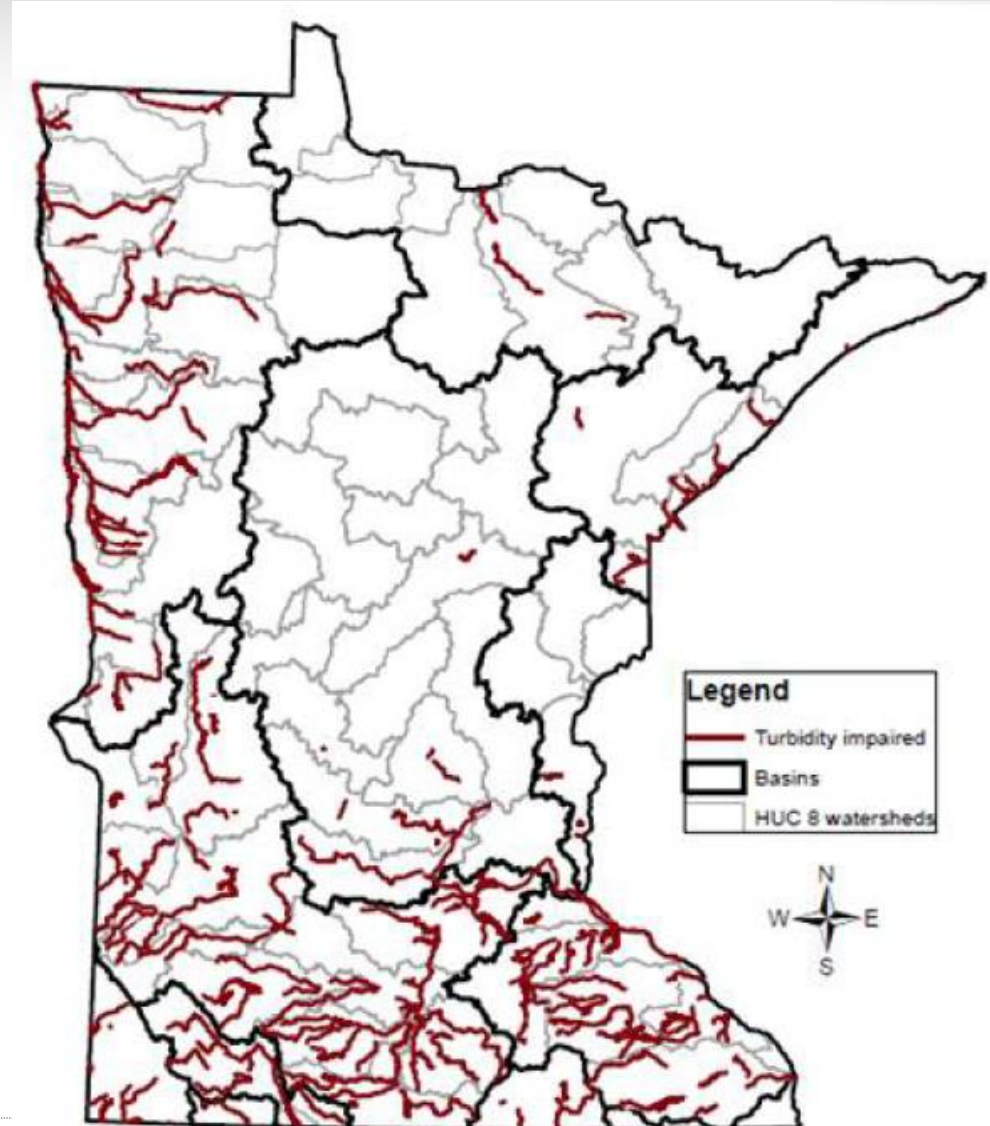
Nitrogen impaired surface waters



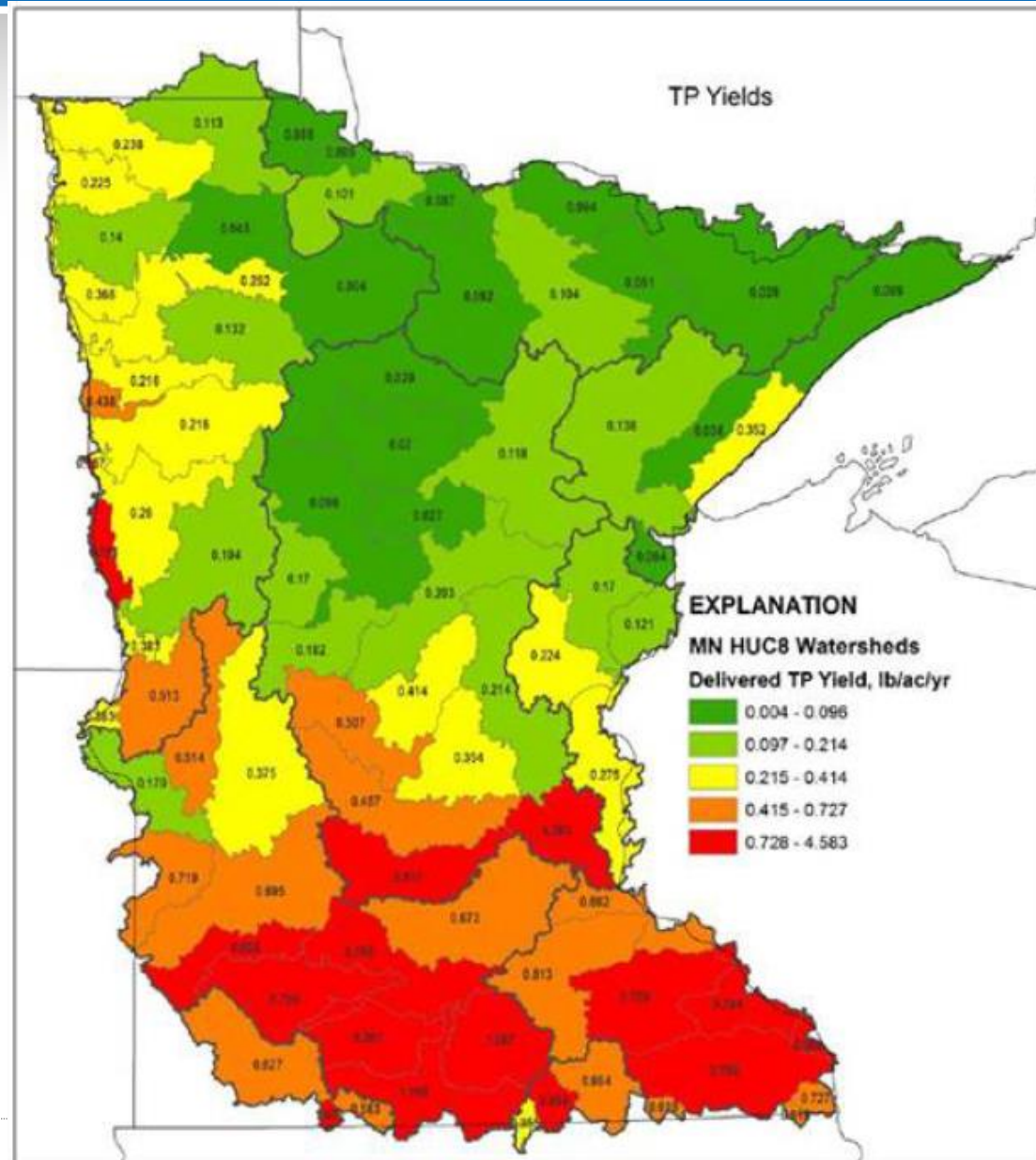
Nitrogen impaired lakes and lakesheds



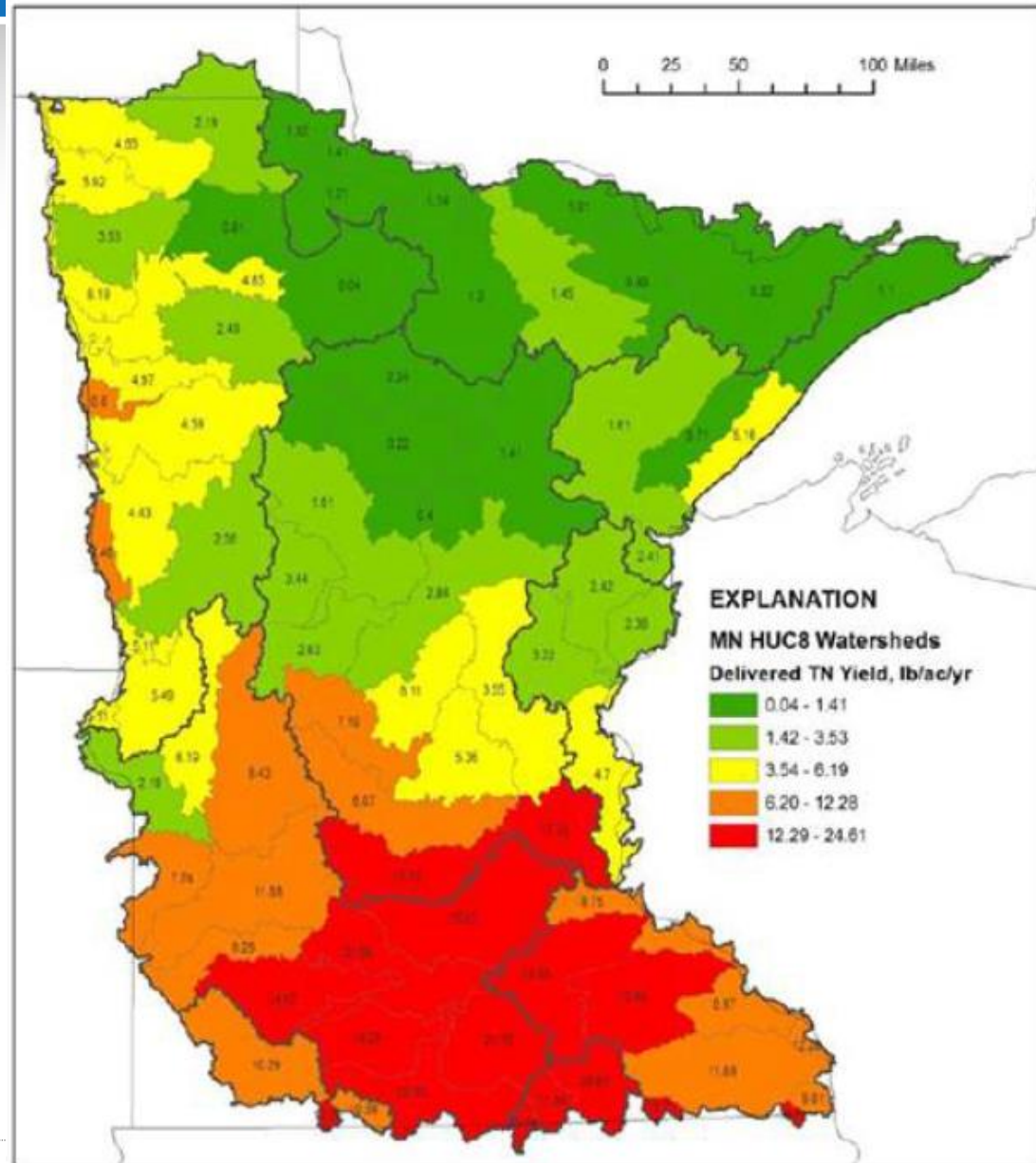
Turbidity impaired waters



Annual phosphorus loading to major watersheds



Annual nitrogen loading to major watersheds



Watersheds in Minnesota

Water flows in three different directions in Minnesota as a result of the Glaciers.

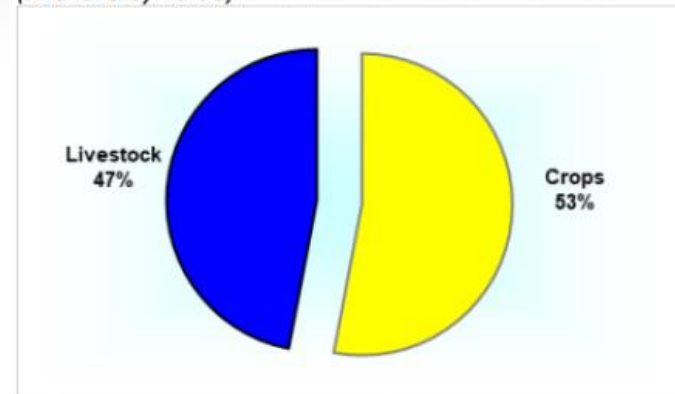


Major Agronomic Practices

Minnesota has roughly 26 million acres devoted to agriculture (21% of the total land area). The average farm size is 375 acres. In 2019, agriculture grossed \$16.7 billion. Crops contributed \$8.85 billion, and livestock contributed \$7.85 billion.

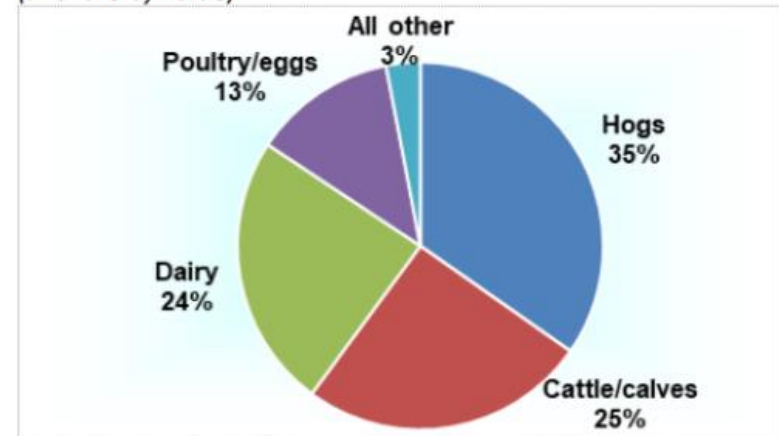
Minnesota Crop & Livestock Production

(%-share by value)



Minnesota Livestock Production

(%-share by value)



Source: USDA-NASS

Native Forests of Minnesota

About 56% (9 million acres) of Minnesota's forests are in public ownership, with the state owning 3.4 million acres. Of the remaining forestland in private ownership, 37% is in family-owned forests, 7% is in industrial forest industry or corporation ownership, and 1% is in tribal ownership.

Expected TSP Workflow

- The State (SRC) will be responsible for reviewing TSP conservation planning for the National Planner Designation.
- Subsequent conservation plans will be reviewed by the District Conservationist (DC) at the local USDA Service Center.
- The State TSP Coordinator will conduct plan reviews for TSP planner designation renewals.
- TSPs will work with the local District Conservationist to make sure the proper environmental evaluations (NRCS.CPA.52) are completed.

Additional References

- <http://www.dnr.state.mn.us/snas/naturalhistory.html>
- <http://www.mngs.umn.edu/mnglance.html>
- http://fargo.nserl.purdue.edu/rusle2_dataweb/CMZ_Maps/npcmzmap2.jpg
- https://www.mda.state.mn.us/sites/default/files/2019-08/nfmp2015addendedada_0.pdf
- <http://www.extension.umn.edu/agriculture/nutrient-management/nitrogen/>
- <https://www.mda.state.mn.us/pesticide-fertilizer/nitrogen-fertilizer-bmps-agricultural-lands>
- <https://www.mda.state.mn.us/pesticide-fertilizer/pesticide-best-management-practices>
- <https://www.mda.state.mn.us/pesticide-fertilizer/pesticide-overview>
- <https://www.pca.state.mn.us/air-water-land-climate/minnesotas-impaired-waters-list>
- <https://www.pca.state.mn.us/sites/default/files/wq-s6-26a.pdf>

Additional References

- <https://www.pca.state.mn.us/air-water-land-climate/reducing-nutrients-in-waters>
- <http://files.dnr.state.mn.us/forestry/subsection/mnForestResourceAssessment.pdf>
- <http://www.dnr.state.mn.us/forestry/um/index.html>
- <https://bwsr.state.mn.us/forest-land>
- <http://www.dnr.state.mn.us/forestry/fire/questions.html>
- <https://www.nrcs.usda.gov/conservation-basics/conservation-by-state/minnesota/pasture-minnesota>
- <https://www.revisor.mn.gov/rules/?id=7020>
- <https://www.pca.state.mn.us/business-with-us/feedlots>
- <https://www.health.state.mn.us/communities/environment/water/swp/index.htm>
- <https://www.health.state.mn.us/communities/environment/water/swp/mapviewer.html>

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Certificate of Completion

After viewing the State Specific Training module, please print and sign the completion certificate on the following slide.

The certificate is your acknowledgement that based on the information provided in this module, you have the proper knowledge, skills and ability to conduct planning in this State.

Within your NRCS Registry profile, enter the training and upload the signed certificate to verify completion.

STATE SPECIFIC TRAINING MODULE COMPLETION CERTIFICATE

I, _____ hereby verify I have viewed and understand the content of the Minnesota State
TSP Name
Specific Training Module and affirm I have the knowledge, skills, and ability to conduct conservation planning
services in this state.

TSP Signature

Date