

Nutrient Management Planning - Identifying Sensitive Areas

Nutrient management is an important component of the Resource Management System (RMS) planning process. NRCS' policies and roles in nutrient management are listed in 190-GM, Part 402.01. Evaluating environmental risks associated with nutrient management recommendations is a key step in resource planning. Specific requirements of a nutrient management plan are listed in Section 402.04. Item 3, component 9 in this section states "*Location of designated sensitive areas or resources (if present on the conservation management unit).*"

The primary screening tool to determine environmental risk is the **ND Nutrient Management Planner**. This tool qualitatively evaluates the potential for nutrients to be transported by water from the area of application and adversely affect non-target organisms and water quality. The Nutrient Risk Assessment Worksheet located in the Planner, along with **North Dakota Soil Nutrient Loss Potential Management Considerations** and **North Dakota Phosphorus Risk Assessment** are the planning tools to evaluate and identify environmental risk information that a planner will use to formulate appropriate management techniques to meet RMS water quality criteria. The planning tools are located in eFOTG - Section I - Reference Subject – Agronomy - Nutrient Management subfolder.

While the ND Nutrient Planner tool addresses soil, water and nutrient interactions and the probability of nutrients leaving the target area via water runoff, leaching, or adsorption to soil or organic particles, it does not identify sensitive geographic or man-made features that may be impacted negatively by off-target nutrients. This document is intended to give the resource conservation planner additional guidance on identifying potential resource issues beyond what is identified with ND Nutrient Management Planner.

Planning Considerations

- Nutrient Management Planner is used to identify crop nutrient needs and potential environmental risks
- Soil nutrient testing needs to be done on a regular basis
- Agricultural wastes, when applied, need to be tested for nutrient content
- Sensitive areas may be found on **all land uses**
- All nutrient management activities and strategies must be in compliance with NEPA
- NRCS conservation practices in eFOTG - Section IV should be used to avoid or minimize impacts to sensitive areas (e.g. vegetative buffers and or setbacks)

Primary sensitive areas to be considered when planning and designing practice 590 Nutrient Management.

- **Wellhead Protection Areas**
 - designated by ND Department of Health
 - www.health.state.nd.us/wq/gw/sourcewater.htm#Maps
- **Natural and man-made lakes**
 - reference USGS 7.5 minute quads or county highway map
- **Streams and rivers**
 - blue line on USGS 7.5 minute quads

- **Type IV (semi-permanent) wetlands**
Type V (permanent) wetlands
-reference NWI maps
- **North Dakota Department of Health (NDDH) priority aquifers**
-reference ND Groundwater Monitoring Program 1997 to 2001 Summary Report
(Table 1 and Figure 1)

Other potentially sensitive areas

These areas need to be considered as sensitive or at risk areas when developing a nutrient management plan. Nutrient transport via leaching, surface runoff, or sediment into any of these at risk areas can have an adverse effect on ground and/or surface water quality.

- Ephemeral streams/gullies
-reference aerial photography or complete a site visit
- Livestock and wildlife dams and ponds
-reference aerial photography or complete a site visit
- Known ground water to surface water interfaces (recharge and discharge wetlands).
-local knowledge, on-site visit or client interview
- Soils with high a water table
-reference county soil survey data or complete a site visit
- Saline soil areas
-site visit and/or client interview, sites are sometimes used as wasting areas for livestock manure
- Private wells that supply water for humans or livestock
-site visit and/or client interview
- Fields being irrigated
-site visit and/or client interview
- Man-made features (e.g. roads, ditches, and legal drains)

There may be additional unique or man-made landscape features in which the resource conservation planner may need to address when developing a nutrient management plan.

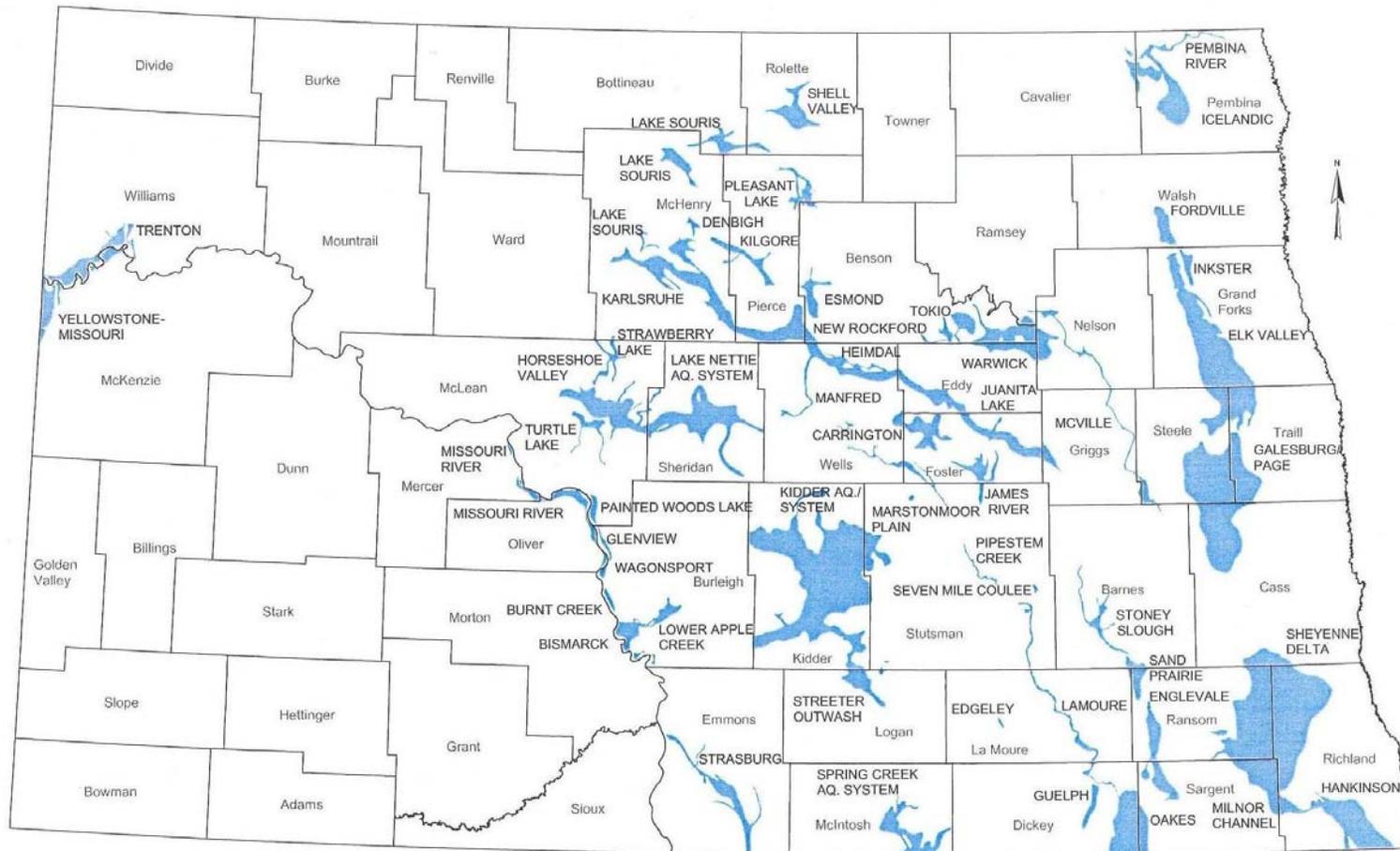


Figure 1. Location of aquifers monitored during 1997 to 2001 period

TABLE 1

Aquifers Sampled, Year of Sampling and Reference for Report Describing Monitoring Results for the Years 1997 to 2001

Aquifer	Year Sampled	Reference	Aquifer	Year Sampled	Reference
Bismarck	2000	Bartleson and Goven, 2000	Manfred	2000	Bartelson and Goven, 2000
Burnt Creek	2000	Bartleson and Goven, 2000	McVille	1998	Bartelson and Goven, 1998
Carrington	2000	Bartleson and Goven, 2000	Milnor Channel	1999	Bartelson and Goven, 1999
Denbigh	1998	Bartleson and Goven, 1998	Missouri River	2000	Bartelson and Goven, 2000
Edgeley	2000	Bartleson and Goven, 2000	New Rockford	1998	Bartelson and Goven, 1998
Elk Valley	1998	Bartleson and Goven, 1998	Oakes	1997	Bartelson and Gunnerson, 1997
Englevale	2000	Bartleson and Goven, 2000	Painted Woods Lake	2000	Bartelson and Goven, 2000
Esmond	2001	Bartleson and Goven, 2001	Pembina River	2001	Bartelson and Goven, 2001
Fordville	1998	Bartleson and Goven, 1998	Pipestem Creek	2001	Bartelson and Goven, 2001
Galesburg/Page	1999	Bartleson and Goven, 1999	Pleasant Lake	2001	Bartelson and Goven, 2001
Glenview	2000	Bartleson and Goven, 2000	Sand Prairie	2000	Bartelson and Goven, 2000
Guelph	2000	Bartleson and Goven, 2000	Seven Mile Coulee	2001	Bartelson and Goven, 2001
Hankinson	1999	Bartleson and Goven, 1999	Shell Valley	1998	Bartelson and Goven, 1998
Heimdal	2001	Bartleson and Goven, 2001	Sheyenne Delta	1999	Bartelson and Goven, 1999
Horseshoe Valley	2001	Bartleson and Goven, 2001	Spring Creek Aq. System	1997	Bartelson and Gunnerson, 1997
Icelandic	1997	Bartleson And Gunnerson, 1997	Stoney Slough	2001	Bartelson and Goven, 2001
Inkster	1998	Bartleson and Goven, 1998	Strasburg	2000	Bartelson and Goven, 2000
James River	2001	Bartleson and Goven, 2001	Strawberry Lake	1998	Bartelson and Goven, 1998
Juanita Lake	2000	Bartleson and Goven, 2000	Streeter	1997	Bartelson and Gunnerson, 1997
Karlsruhe	1998	Bartleson and Goven, 1998	Tokio	2001	Bartelson and Goven, 2001
Kidder/Marston-moor Plain	1999	Bartleson and Goven, 1999	Trenton	2001	Bartelson and Goven, 2001
Kilgore	2001	Bartleson and Goven, 2001	Turtle Lake	1998	Bartelson and Goven, 1998
Lake Nettie	2000	Bartleson and Goven, 2000	Wagonsport	2000	Bartelson and Goven, 2000
Lake Souris	1998	Bartleson and Goven, 1998	Warwick	1997	Bartelson and Gunnerson, 1997
LaMoure	2000	Bartleson and Goven, 2000	Yellowstone - Missouri	20001	Bartelson and Goven, 2001
Lower Apple Creek	2001	Bartleson and Goven, 2001			