

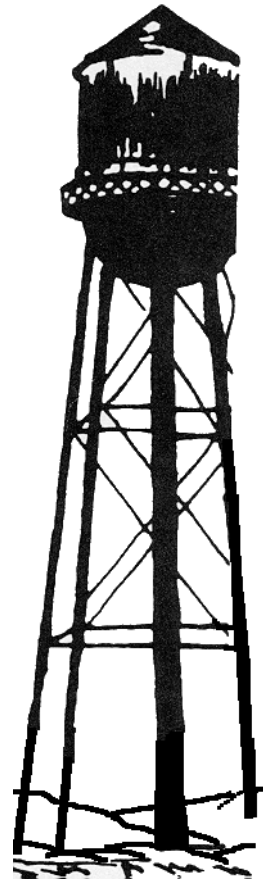
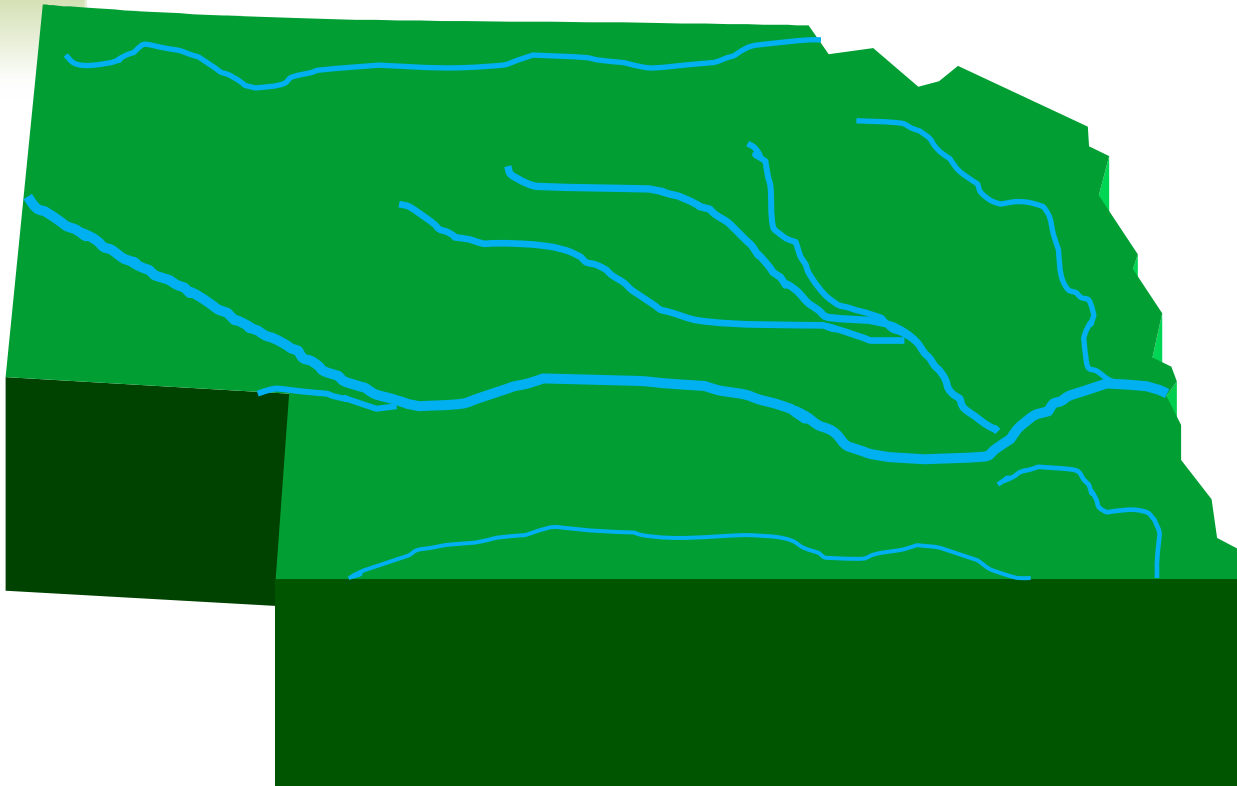
Impaired Waters in the State of Nebraska


Marty Link
Assoc. Dir, Water Quality Div.
NDEQ
May 3, 2011



Nebraska
DEQ

Surface and Ground Water

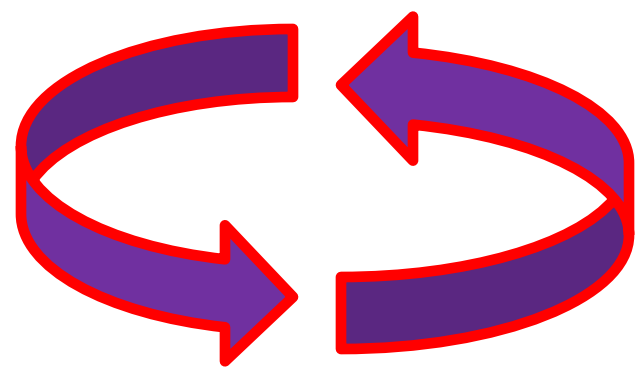




Impaired Waters

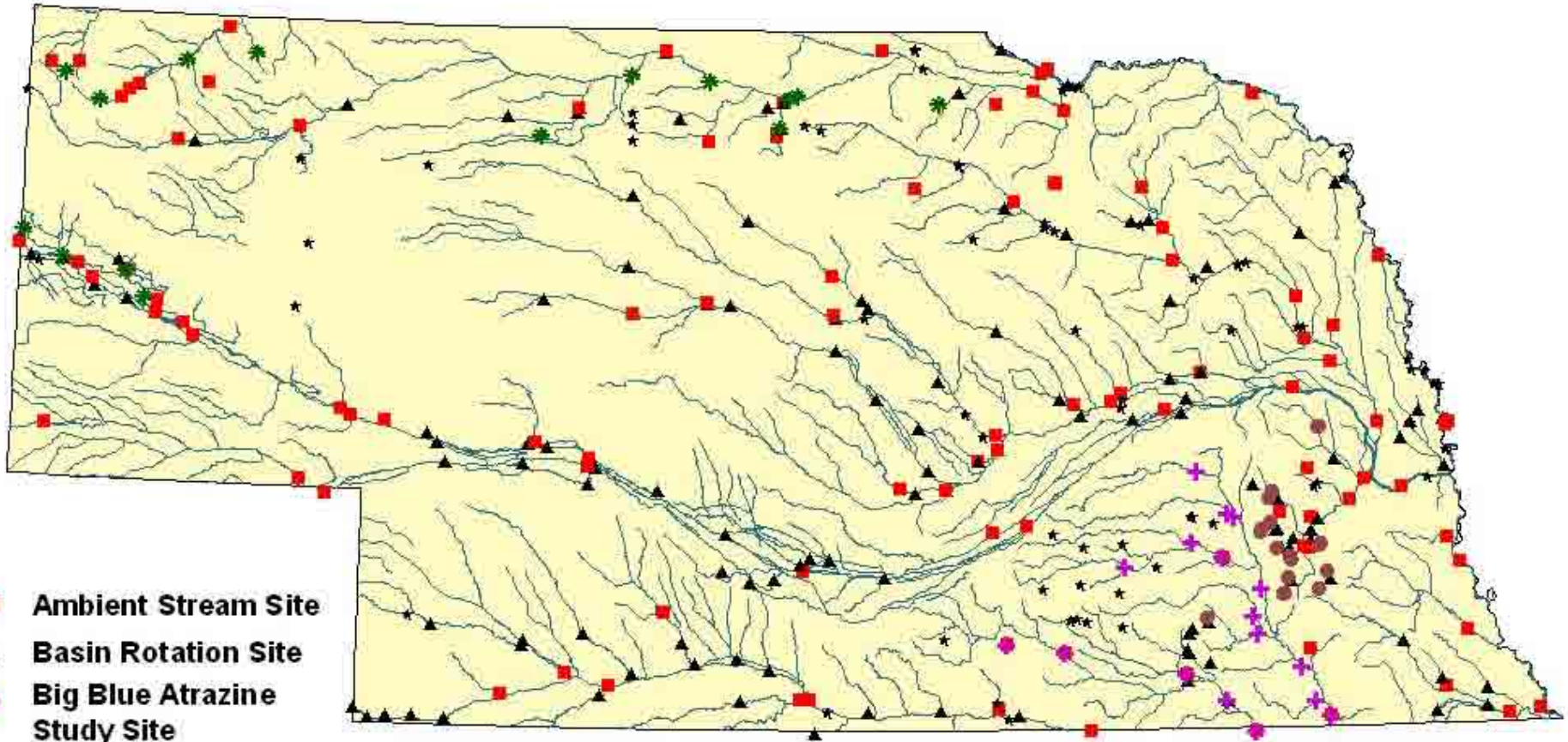
- How do we find them?
- What do we do with them?

Monitor
Assess/Statistics
Report/Assign Problem to Program
“Solve” Problem
Monitor
Etc.



A wide, shallow body of water, possibly a reservoir or a large pond, under a cloudy sky. The water is dark blue-grey with gentle ripples. On the left side, there is a wooden structure, likely a dam or a bridge, supported by a concrete pier. The background shows a flat, grassy landscape with some trees and a distant horizon line. The sky is filled with soft, white clouds, and a single white contrail is visible in the upper left quadrant.

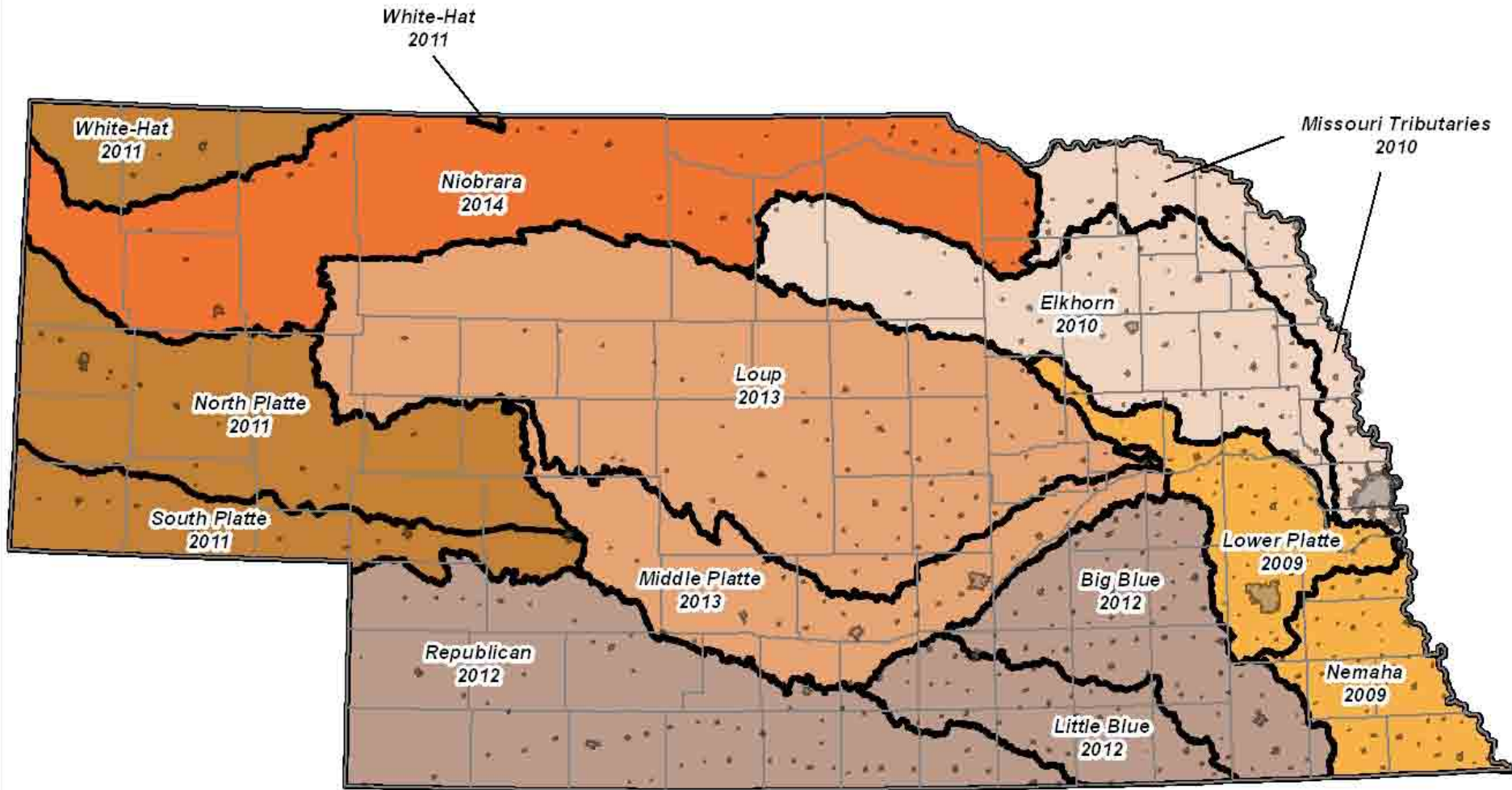
Surface Water



- Ambient Stream Site
- ▲ Basin Rotation Site
- ✚ Big Blue Atrazine Study Site
- * Cold Water Class A Site
- Stormwater Runoff Assessment Site
- ★ Wetland Survey

Surface Water Monitoring

6 Year Basin Rotation



Surface Water Monitoring



2010 Surface Water Monitoring (~6200 samples)

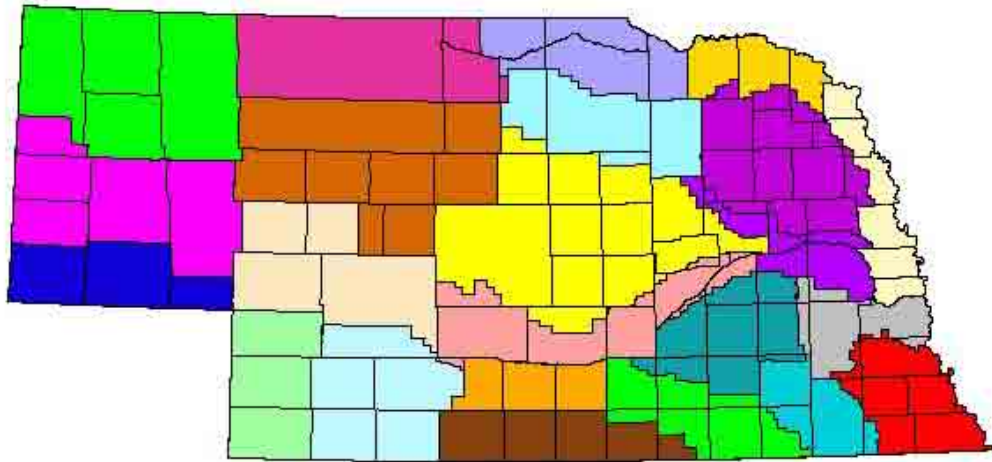
Analyses performed include:

- Nutrients (phosphorus and nitrogen)
- Bacteria & Microcystin (48 swimming beaches)
- Pesticides (atrazine, acetochlor, metolachlor)
- Other (TSS, chloride, ammonia, field parameters)
- Biological (34 stream sites: bugs, habitat)
- Fish Tissue (50 from 25 streams & 25 lakes)



Surface Water Monitoring

Who is doing the monitoring?



Nebraska
DEQ





Monitor



Assess/Statistics

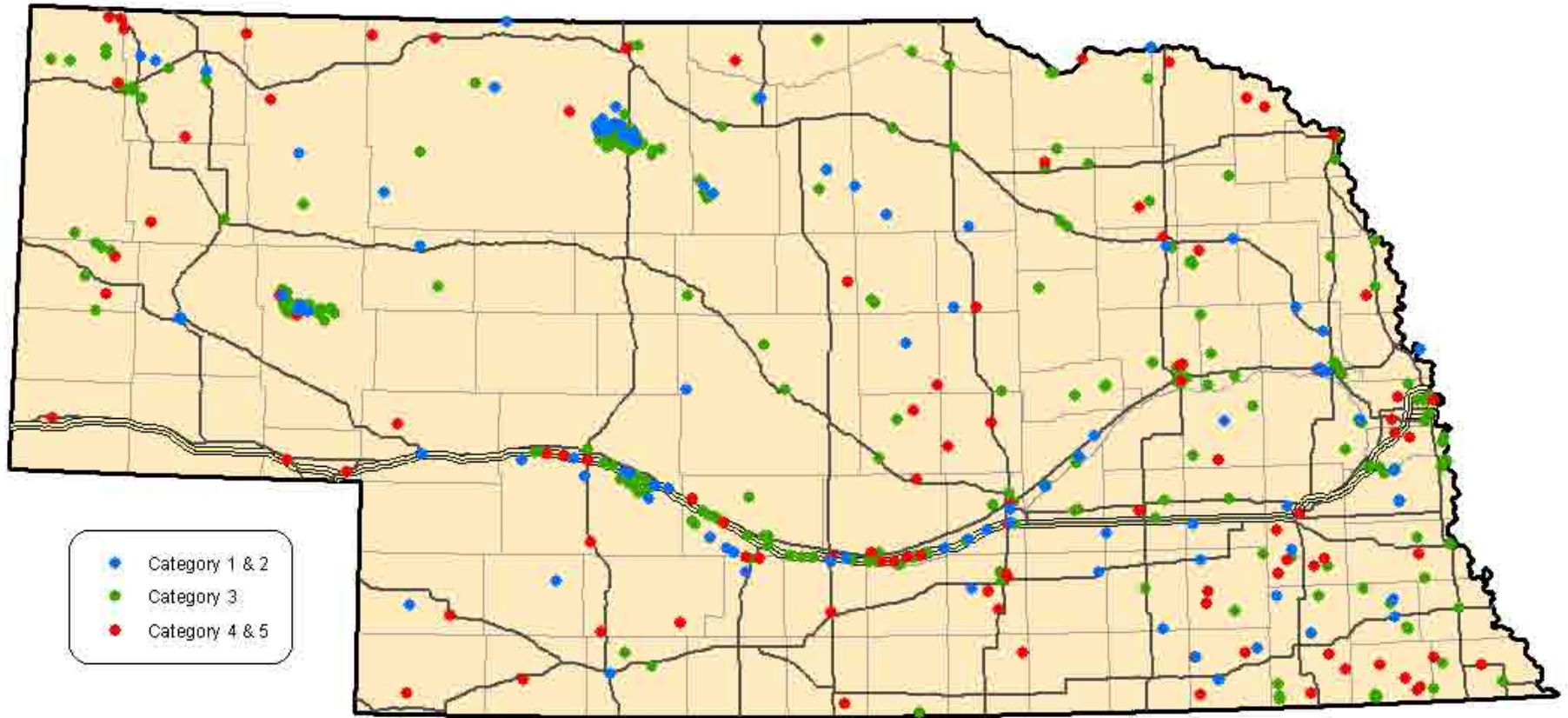


Integrated Report

(303(d) + 305(b) of Clean Water Act)

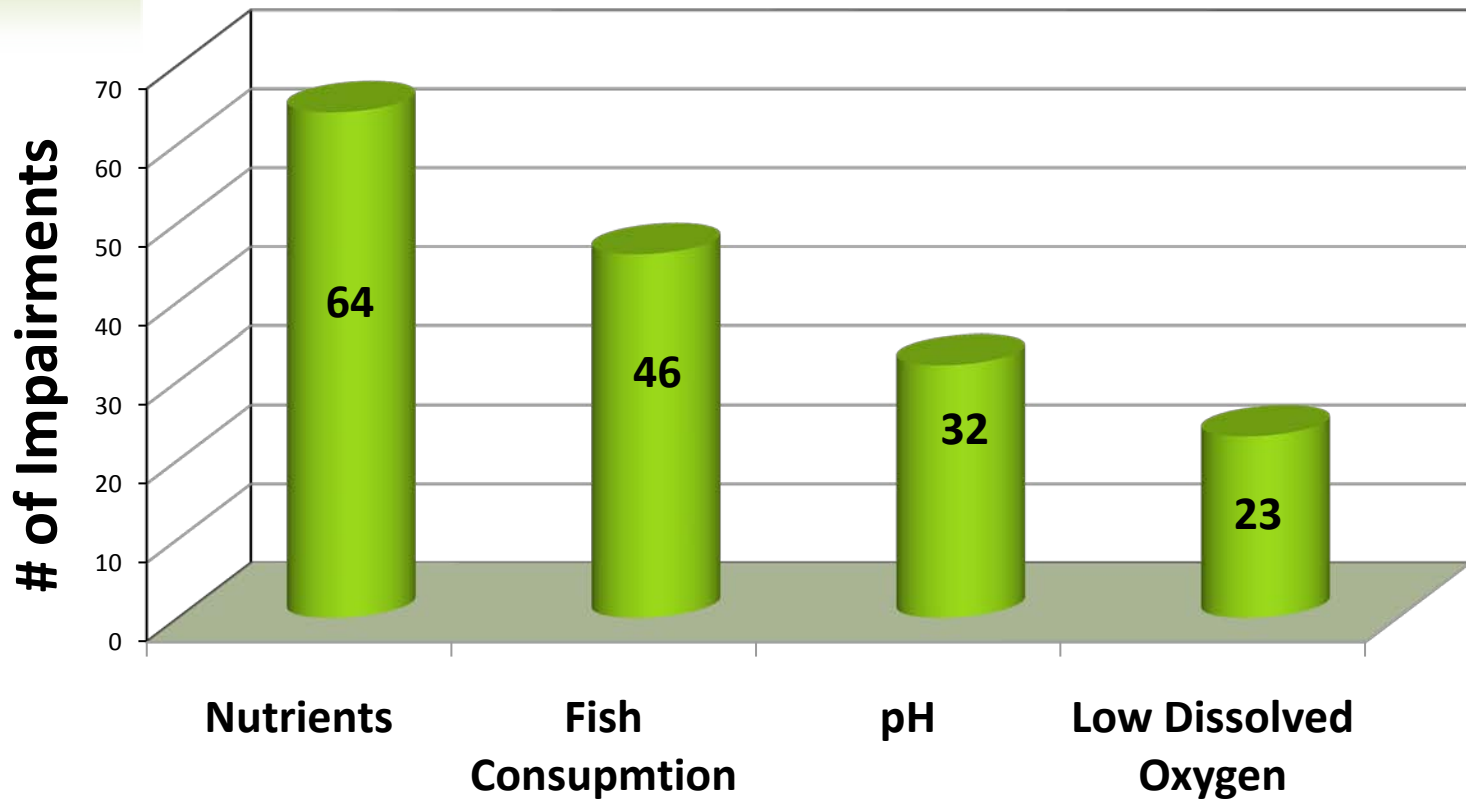
**Required April 1,
even numbered years**

2010 Lakes



● = Impaired

2010 Lakes – Common Impairments



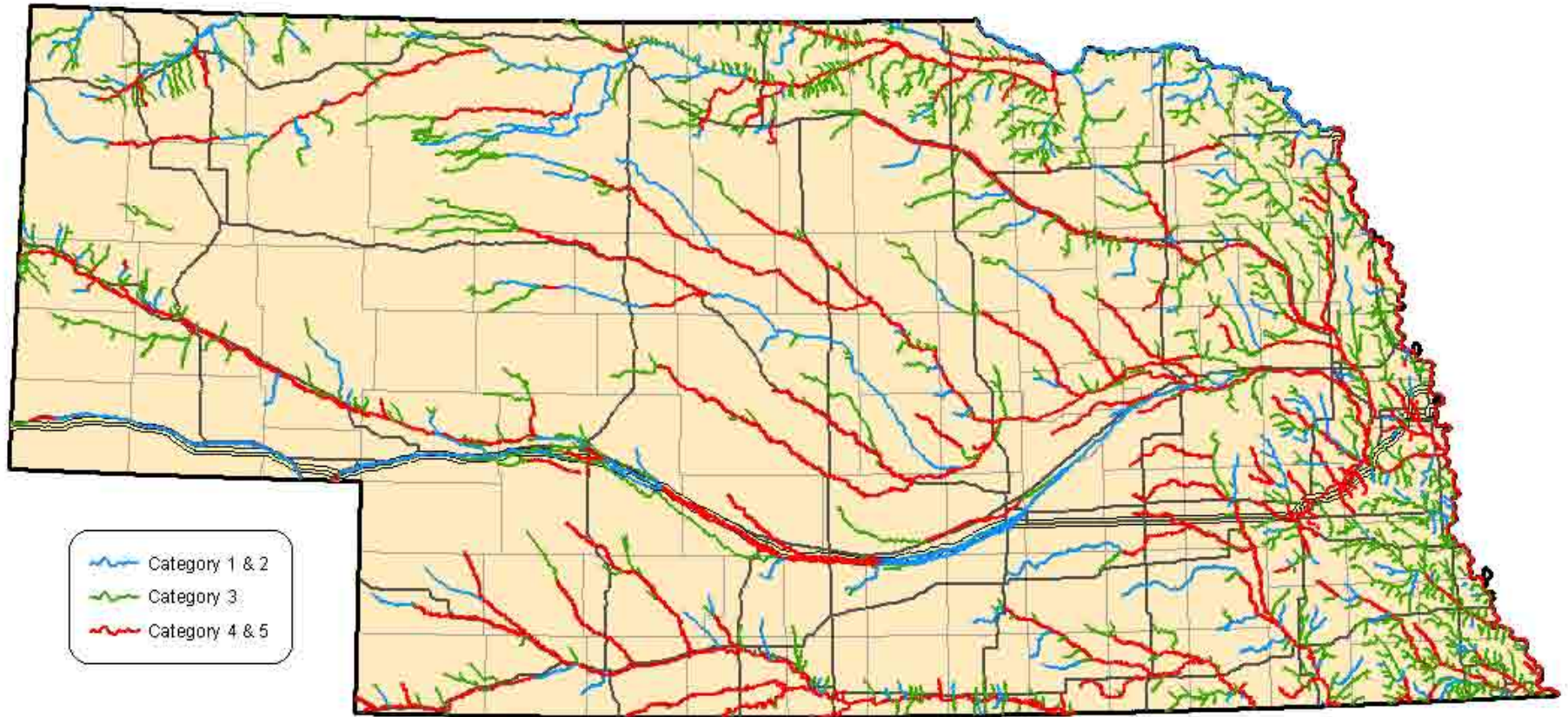
2010 Lakes – Impairment Notes:

**NO NPDES discharges allowed to Lakes
~ Title 117**

December EQC: Propose Nutrient Standards

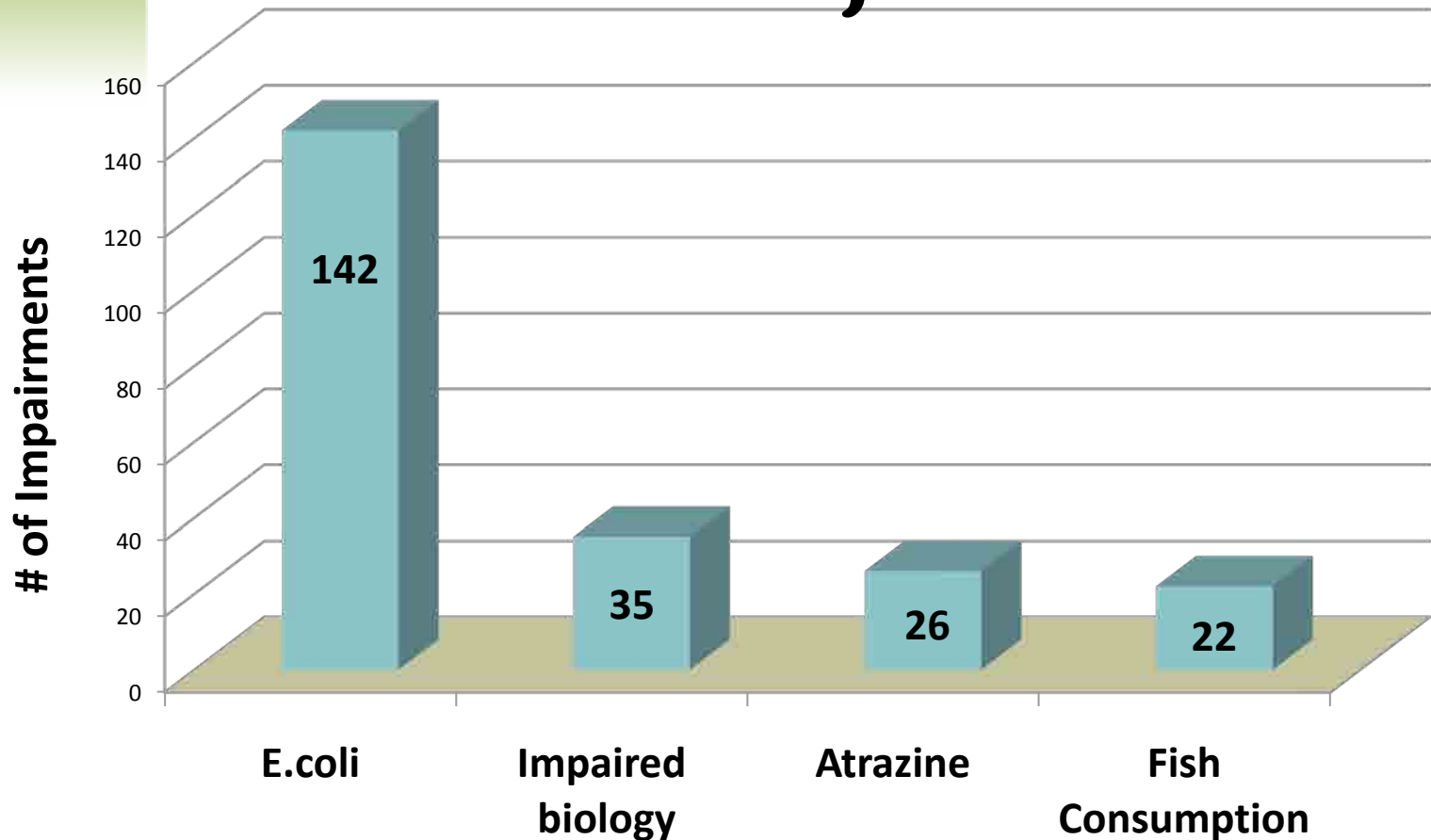
Area of State	Chlorophyll A	Total N	Total P
East	10 ug/l	1000 ug/l	50 ug/l
	0.01 mg/l	1 mg/l	0.05 mg/l
West	8 ug/l	800 ug/l	40 ug/l
	0.008 mg/l	0.8 mg/l	0.04 mg/l

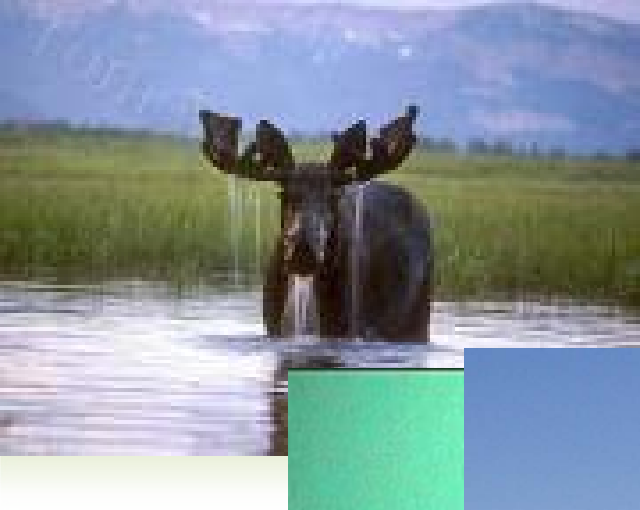
2010 Rivers/Streams



 = Impaired

2010 Rivers/Streams – Common Impairments





Determine Source of Pollution

Point Source

Nonpoint Source



Point Source Pollution

Discharge from Municipality, Industry

Discharge from Stormwater

Discharge from Livestock (LWC or land ap)

Other: Landfill, Superfund, RCRA, UST





Nonpoint Source Pollution

Run-off from fields, lawns

(nutrients, sediment, pesticides, bacteria)

Run-off from parking lots (gas, oil)

Septic Systems



“Solving” Problems

Point Source Pollution

- Usually Permit or Enforcement

Nonpoint Source Pollution

- Usually Voluntary
- Holistic Watershed Management
- USDA programs; CWA319 grants; Env. Trust

Monitor

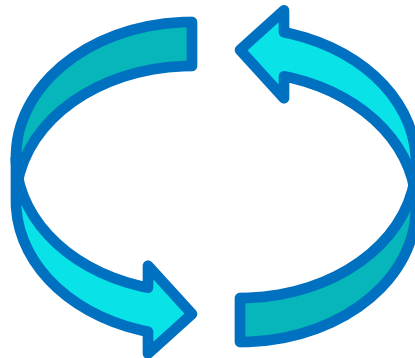
Assess/Statistics

Report/Assign Problem to Program

“Solve” Problem

Monitor

Etc.

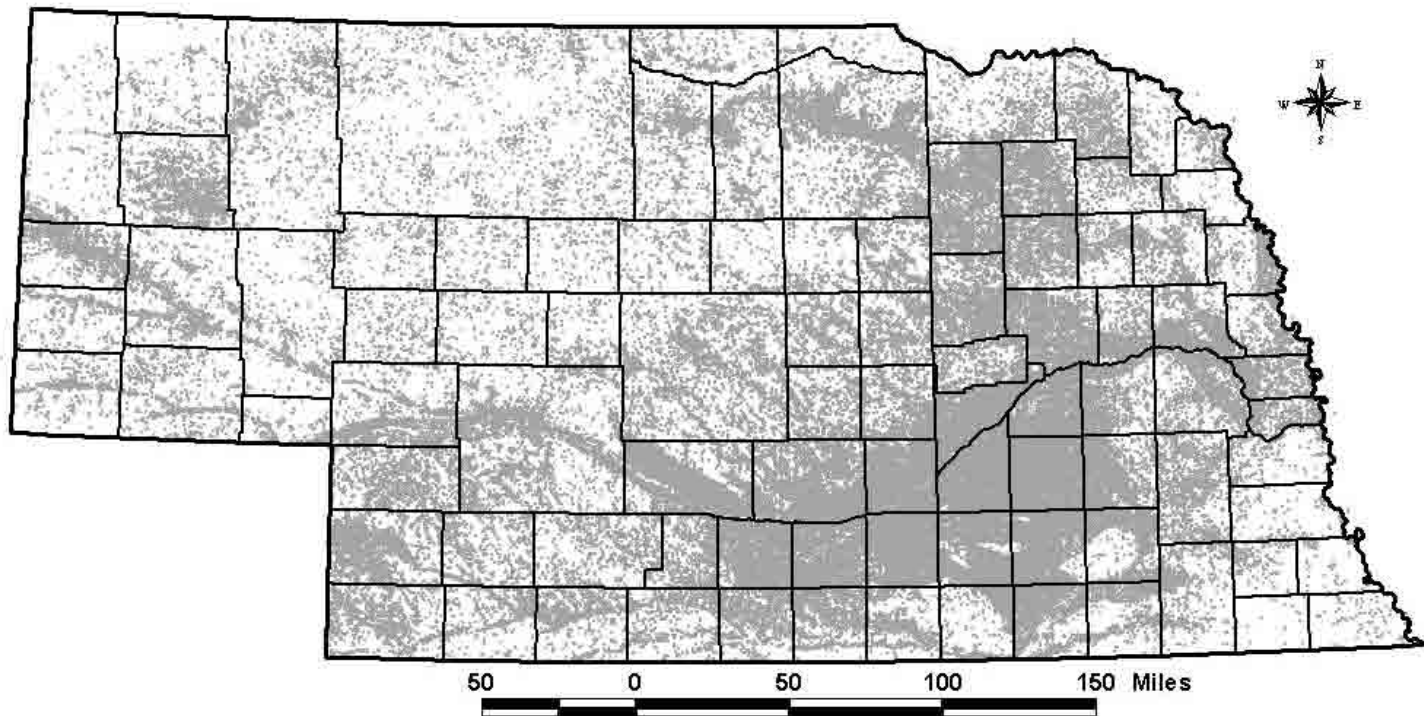


Ground Water



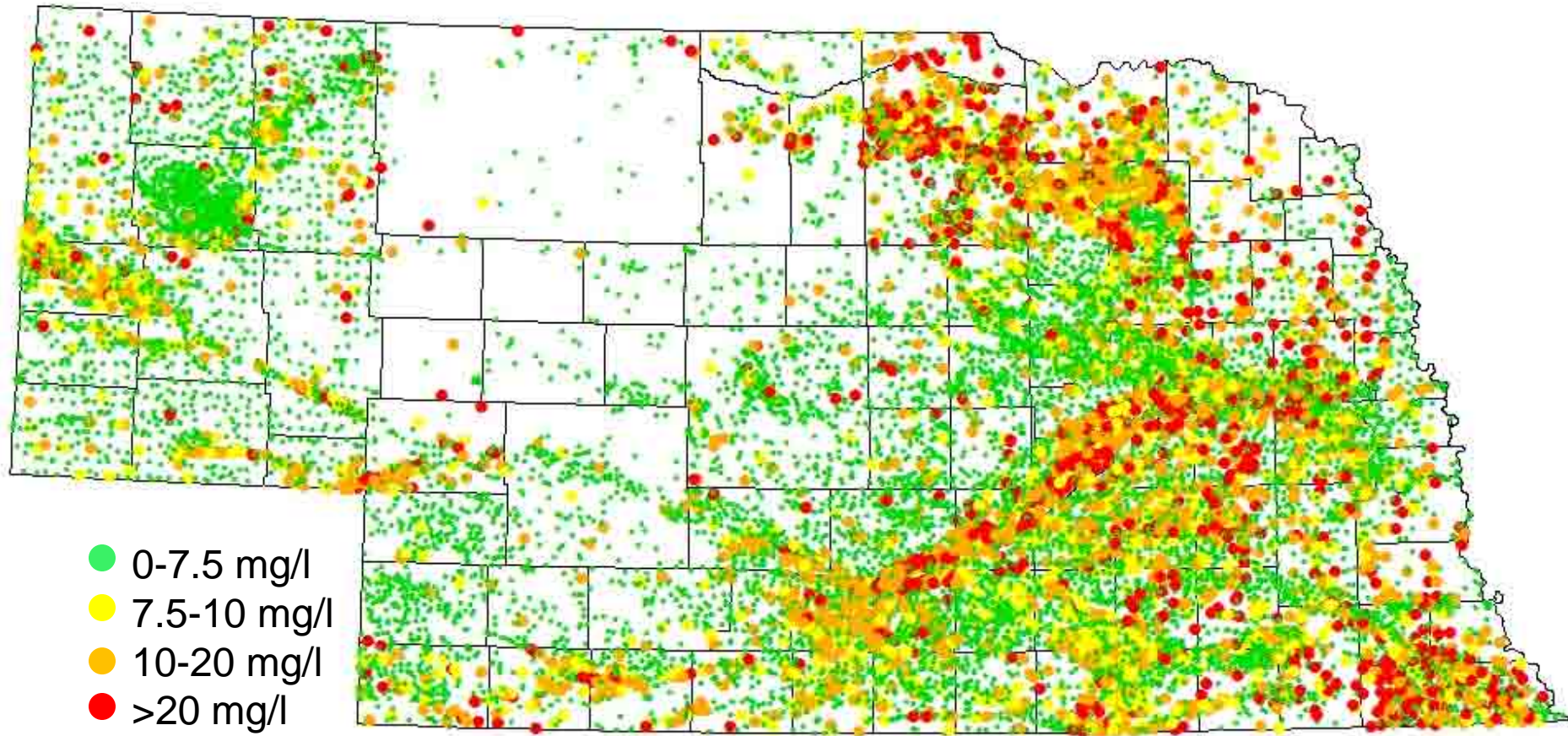
Ground Water Monitoring

- ~161,000 registered wells
- 22,539 wells sampled for nitrate-N
(in Ag Chemical Database)
- 404,162 Analyses in Database



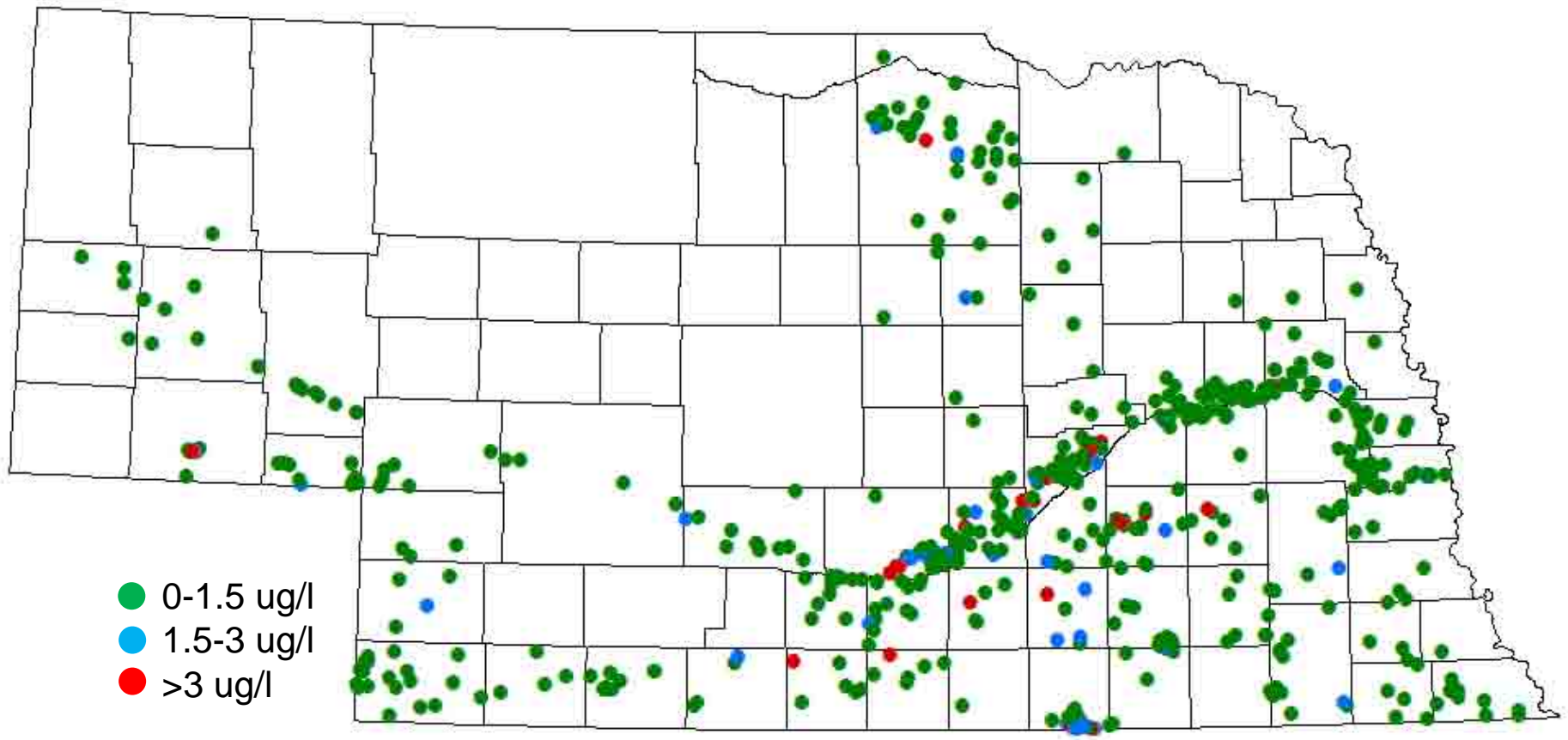
Ground Water Monitoring

Last recorded nitrate concentration, 1974-2009



Ground Water Monitoring

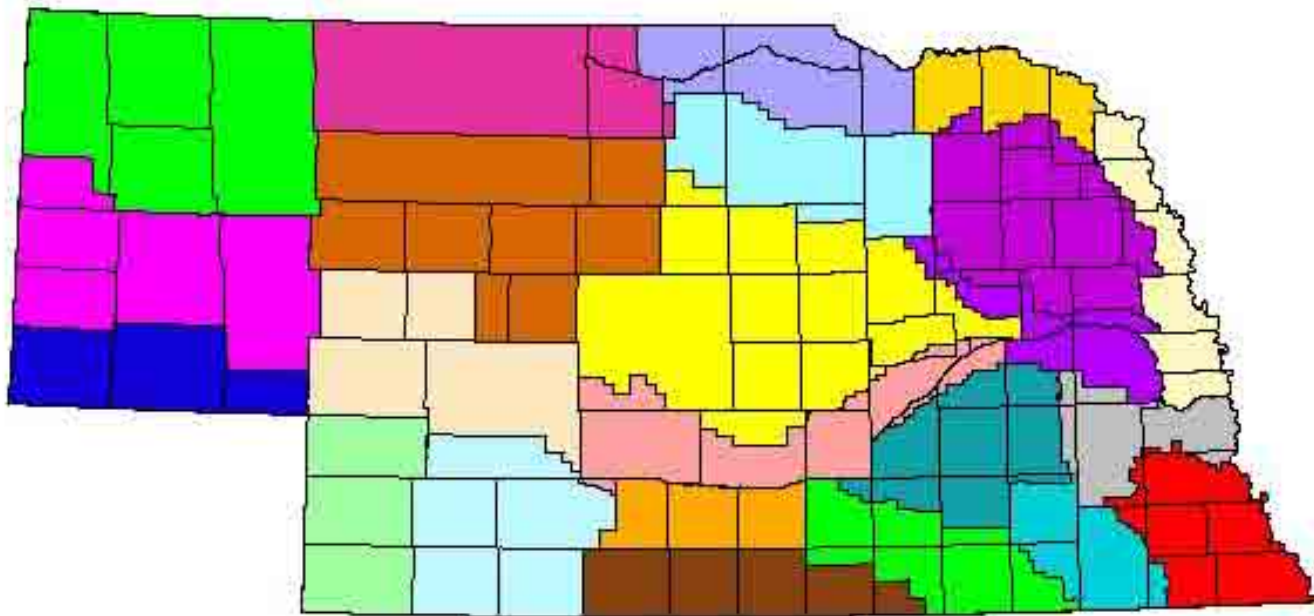
Last recorded Atrazine concentration, 1974-2009



- From 4,614 wells

Ground Water Monitoring

Who is doing the monitoring?



Nebraska
DEQ





Monitor



Assess/Statistics



Report



Determine Source/“Solve” Problem

Determine Source of Pollution

Point Source

Nonpoint Source



Point Source Pollution

Spill: Truck accident, Ag chemicals

Landfill Leachate

Industry spill/leak/accident

Livestock Lagoon/Holding Pond

LUST, Hazardous Waste, etc.





Nonpoint Source Pollution

Leachate from fields, lawns

(nitrogen, pesticides from land application)

Septic Systems

GW-SW interaction

“Solving” Problems

Point Source Pollution

- Usually Remediation and/or Enforcement

Nonpoint Source Pollution

- NRDs' GWMA Rules and Regs
- T196, T124, T130 (NDEQ)
- Holistic Watershed Management
- CWA319 grants; Env. Trust

Monitor

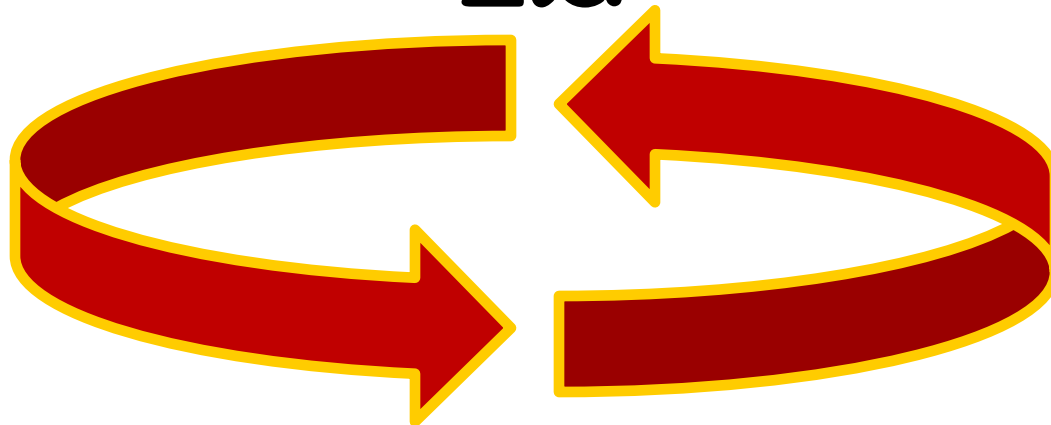
Assess/Statistics

Report/Assign Problem to Program

“Solve” Problem

Monitor

Etc.





Reports Mentioned or Referenced:

2010 Integrated Report (April '10)

2010 Nebraska Water Monitoring Programs Report (Jan.'11)

2010 Nebraska Groundwater Quality Monitoring Report (Dec. '10)

Ag Chemical Database (www.dnr.ne.gov)

http://www.deq.state.ne.us/

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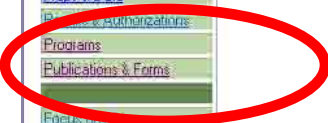
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We hope you find our site informative and helpful. Our mission is to protect the quality of Nebraska's environment - our air, land, and water resources. We enforce regulations and provide assistance, but to fully accomplish this vital mission we need your assistance. We encourage you to work with us to ensure future generations can use and enjoy the precious natural resources we enjoy today.
Please take a few minutes to view a report on [Your Environment](#)

May 10 Info Session Will Focus on Haymarket Cleanup Activities

April 20, 2011 - NDEQ will host a public information session from 5-7 p.m. May 10 in Lincoln to discuss environmental cleanup work at the West Haymarket Redevelopment Site North.
[More information](#)

Environmental Update Meeting May 3

[Update on Crow Butte North Aquifer Exemption](#)

[Grant Funds Available for Drinking Water Protection](#)

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and Improve the Water & Environment.