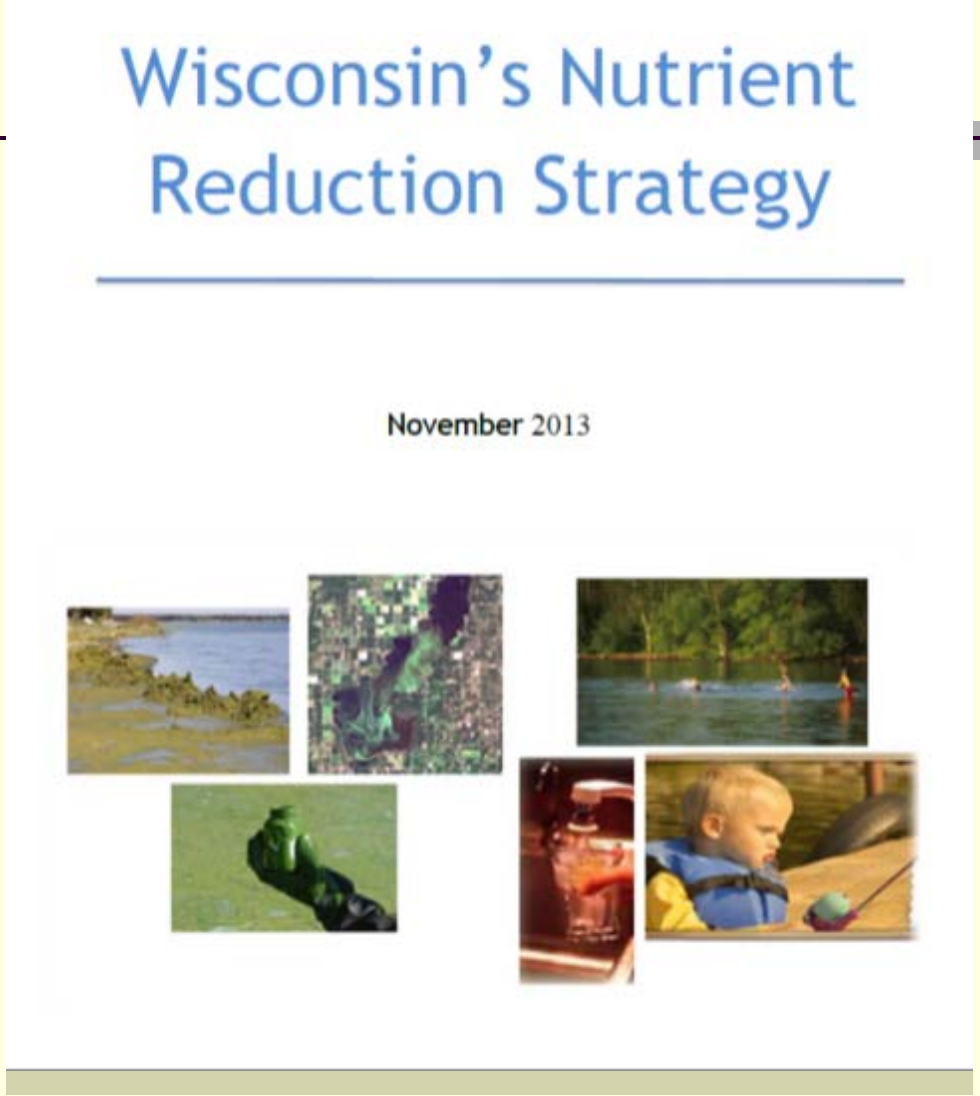
Jim Baumann

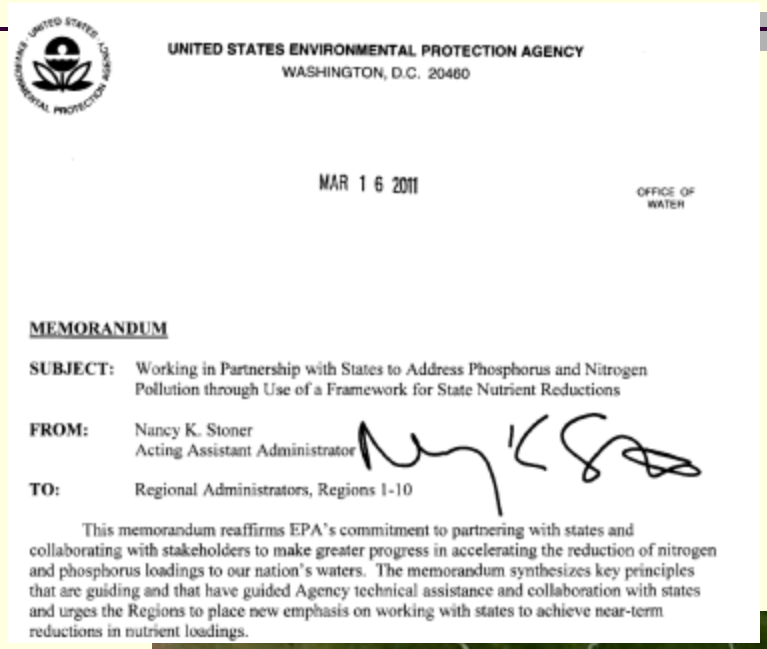
Department of Natural Resources

james.baumann@wi.gov



Developed in response to:

- Gulf Hypoxia Action Plan 2008
- EPA's March 2011 memo from Nancy Stoner
- Great Lakes Water Quality Agreement of 2012
- Nutrient related water quality problems in Wisconsin's lakes, streams and groundwater



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 16 2011

OFFICE OF WATER

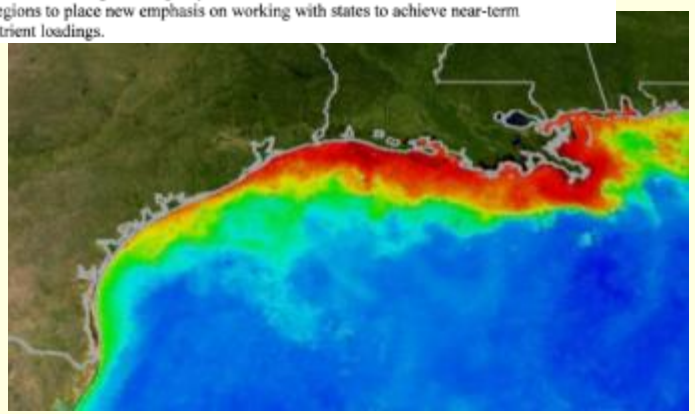
MEMORANDUM

SUBJECT: Working in Partnership with States to Address Phosphorus and Nitrogen Pollution through Use of a Framework for State Nutrient Reductions

FROM: Nancy K. Stoner
Acting Assistant Administrator

TO: Regional Administrators, Regions 1-10

This memorandum reaffirms EPA's commitment to partnering with states and collaborating with stakeholders to make greater progress in accelerating the reduction of nitrogen and phosphorus loadings to our nation's waters. The memorandum synthesizes key principles that are guiding and that have guided Agency technical assistance and collaboration with states and urges the Regions to place new emphasis on working with states to achieve near-term reductions in nutrient loadings.



Wisconsin Response

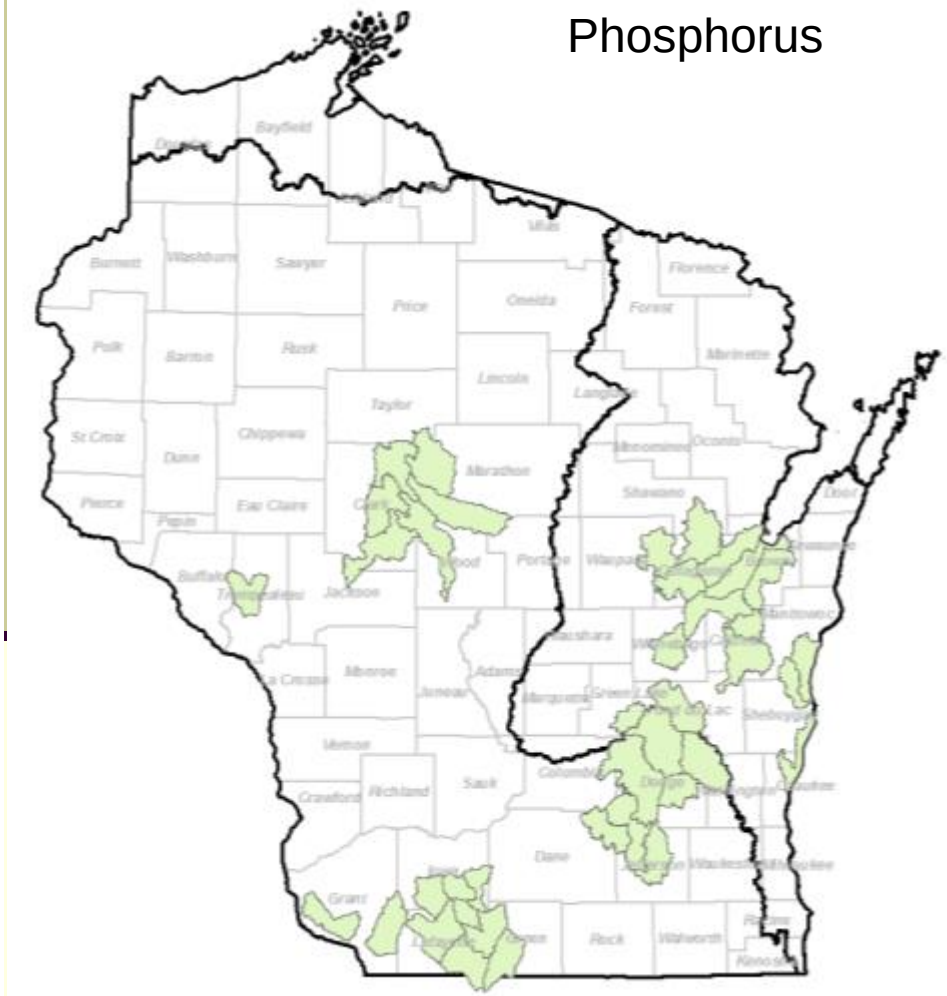
- Given:
  - new phosphorus rules and regulations adopted in 2010;
  - point source phosphorus discharge limits in place since 1993 or earlier; and
  - programs on-going for 30 years, general approach:

1. Build on existing programs
2. Identify and fill program gaps
3. Enhance coordination
4. Have not proposed any new rules or regulations

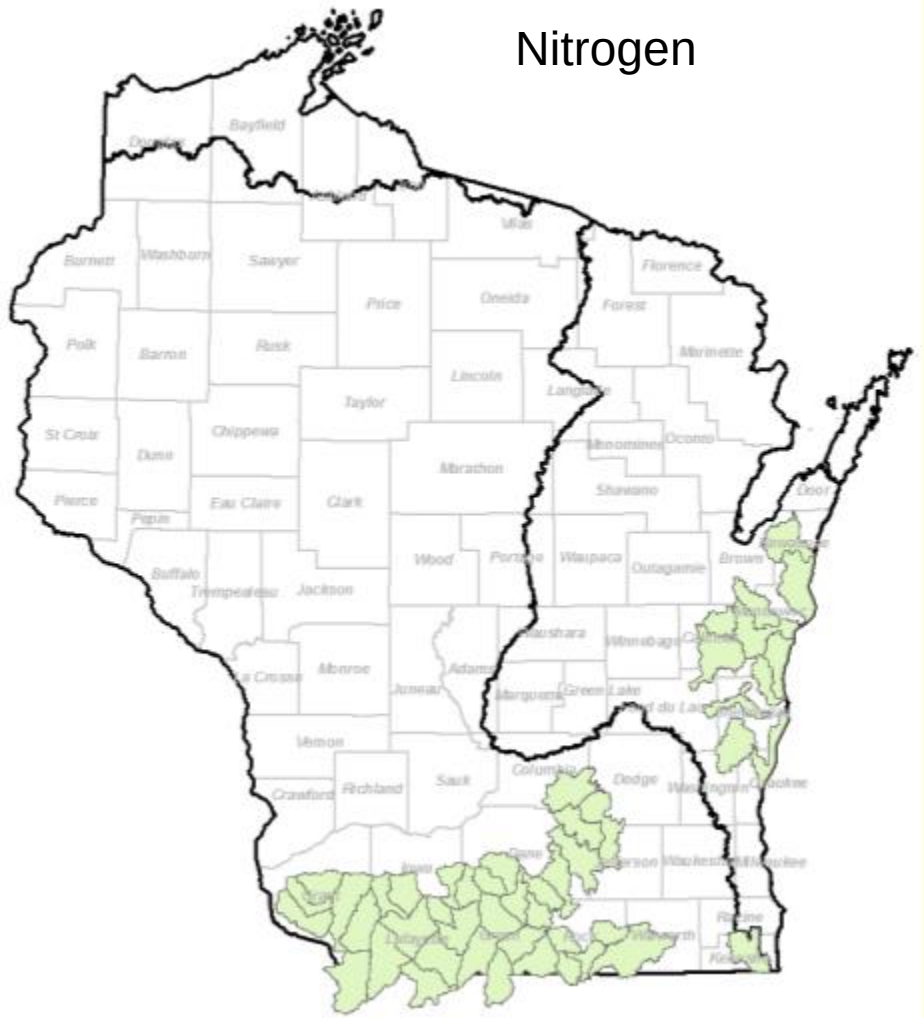
- Strategy includes many federal, state and local programs being implemented in Wisconsin

Greatest Contributing Watersheds

Phosphorus

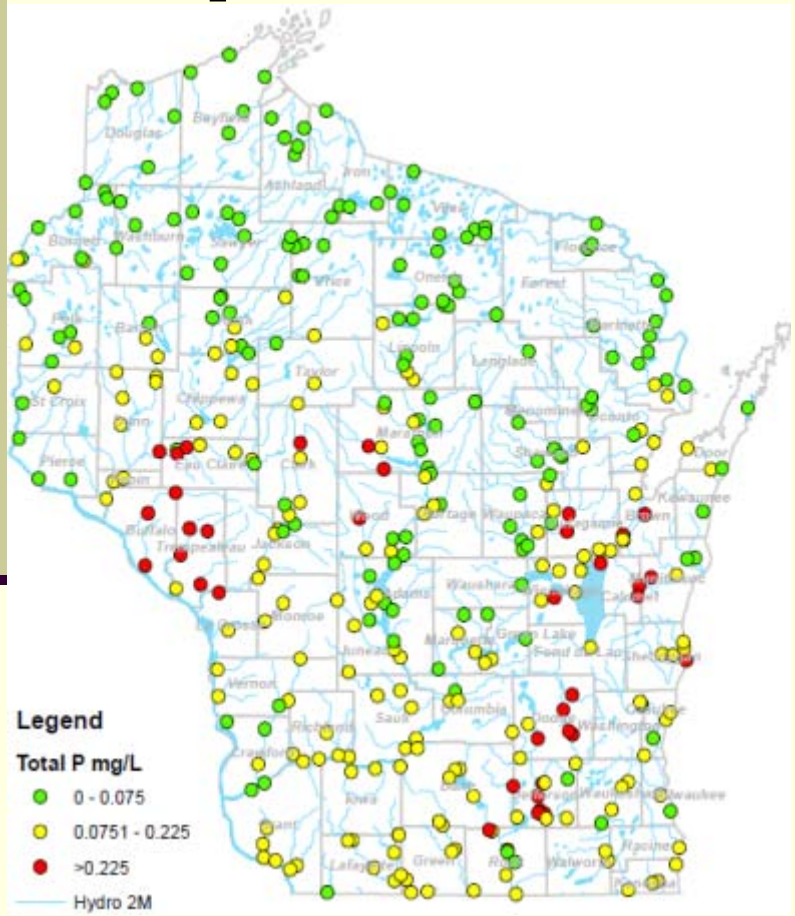


Nitrogen

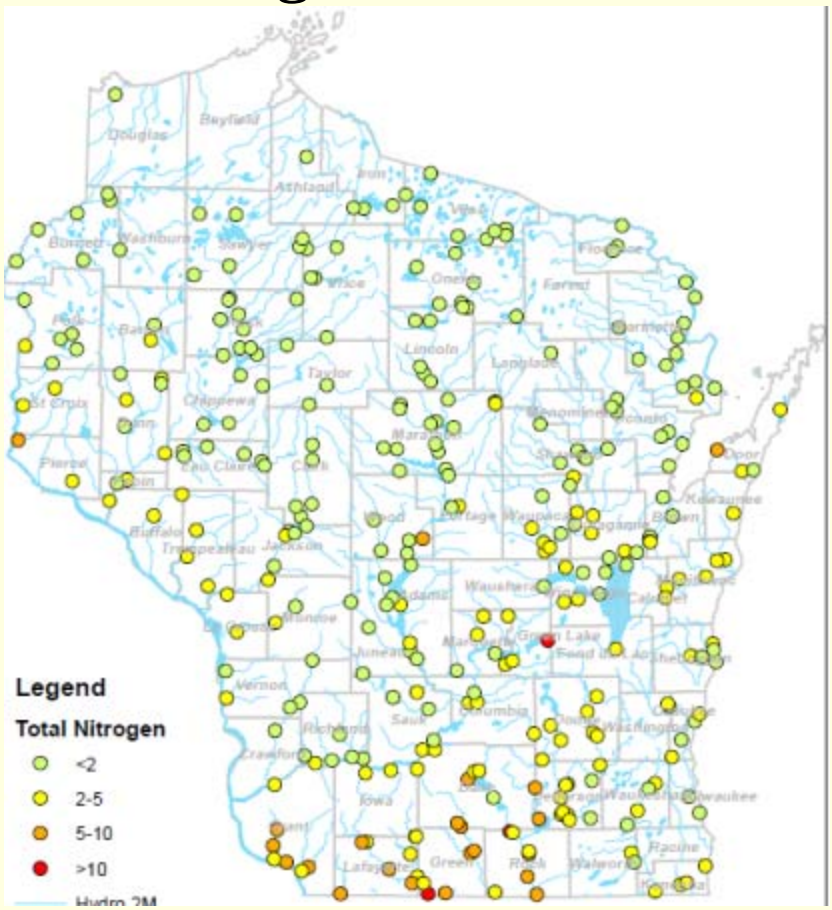


Status

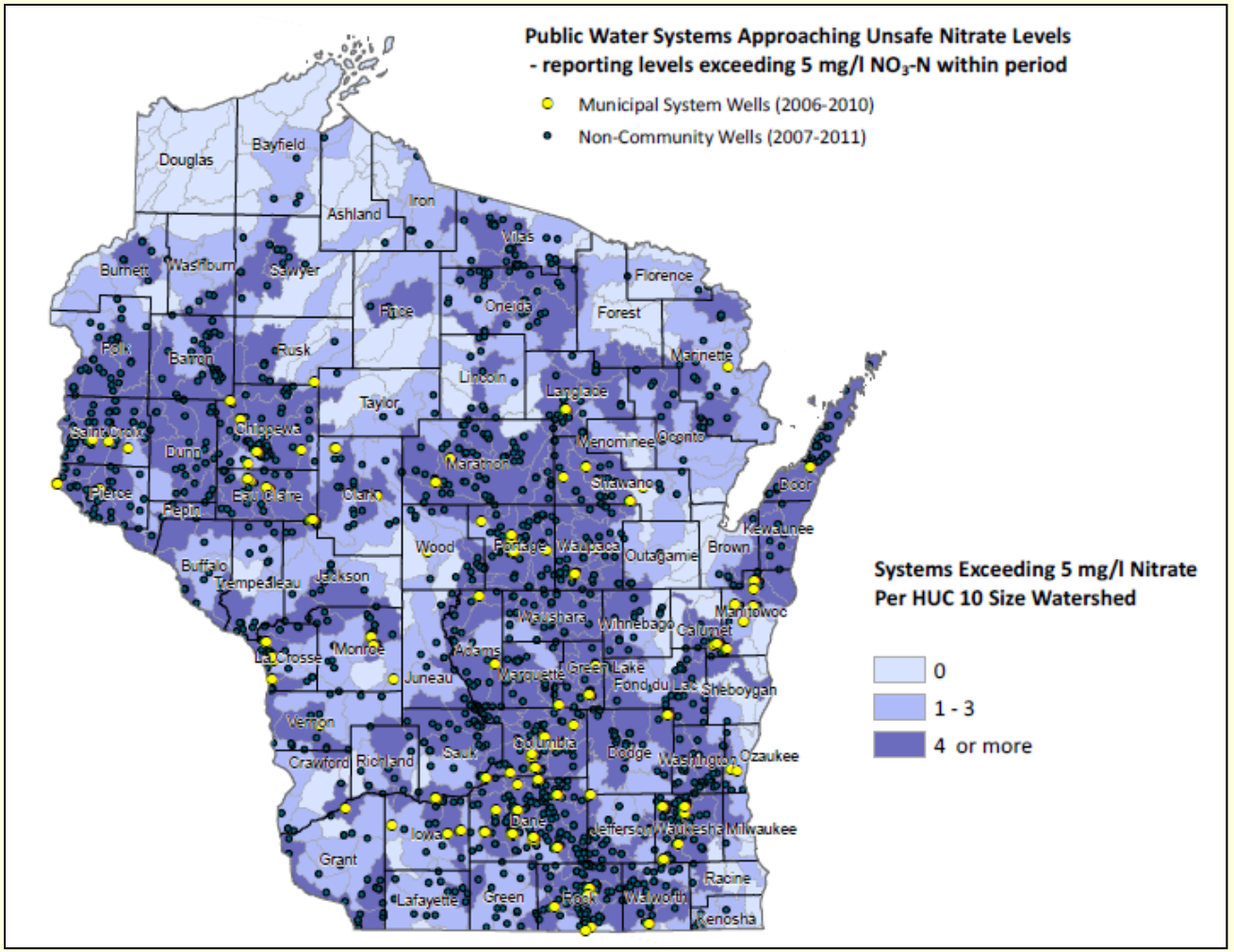
Phosphorus in streams



Nitrogen in streams

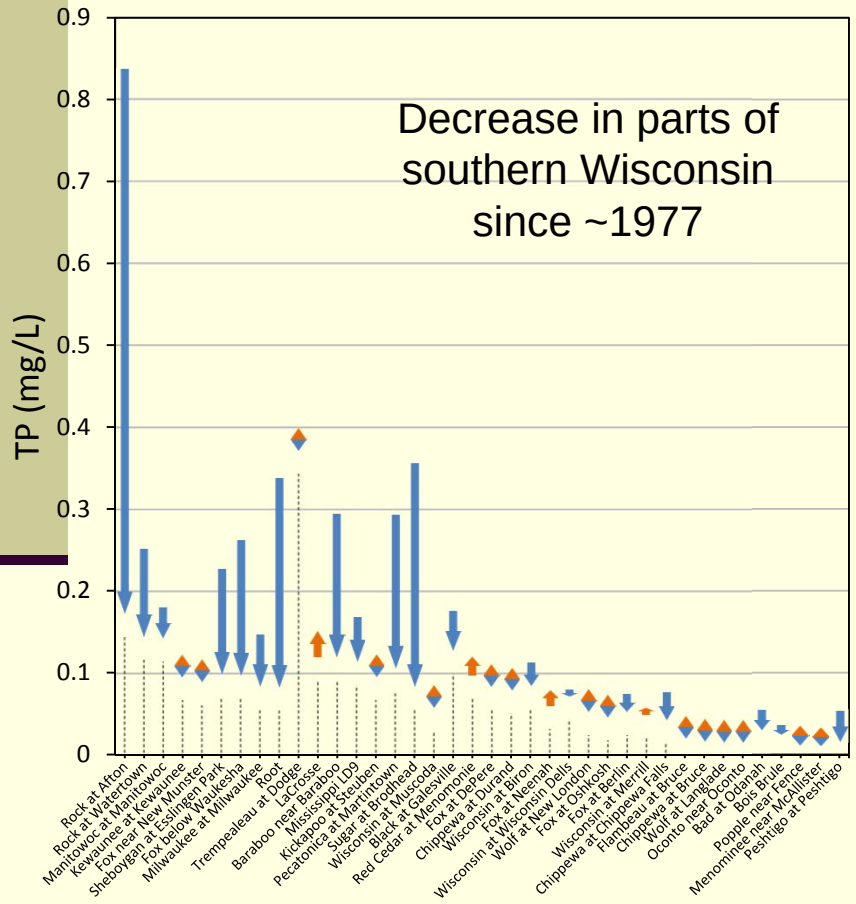


Groundwater Status

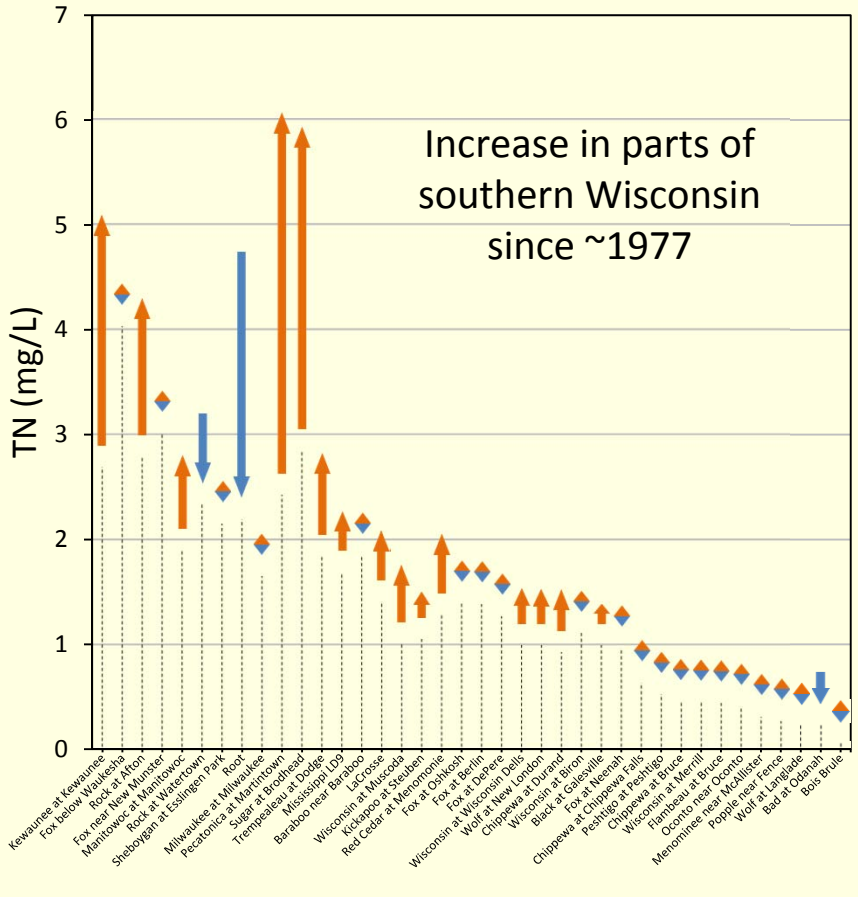


Trends

Phosphorus

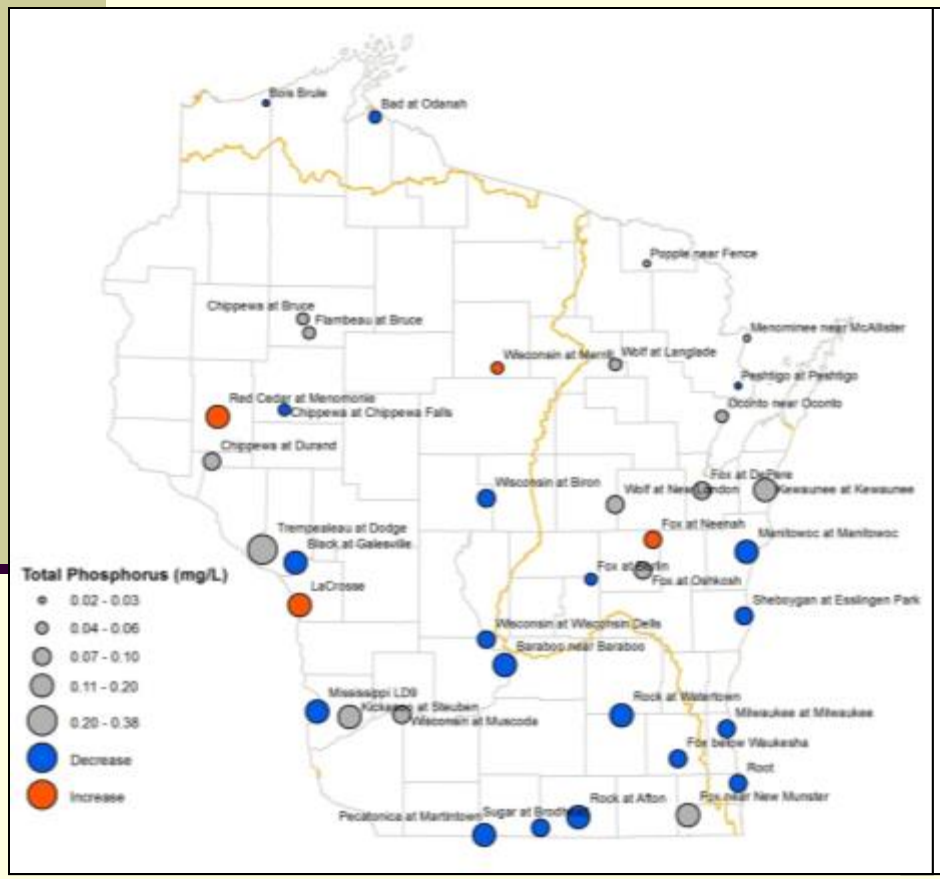


Nitrogen

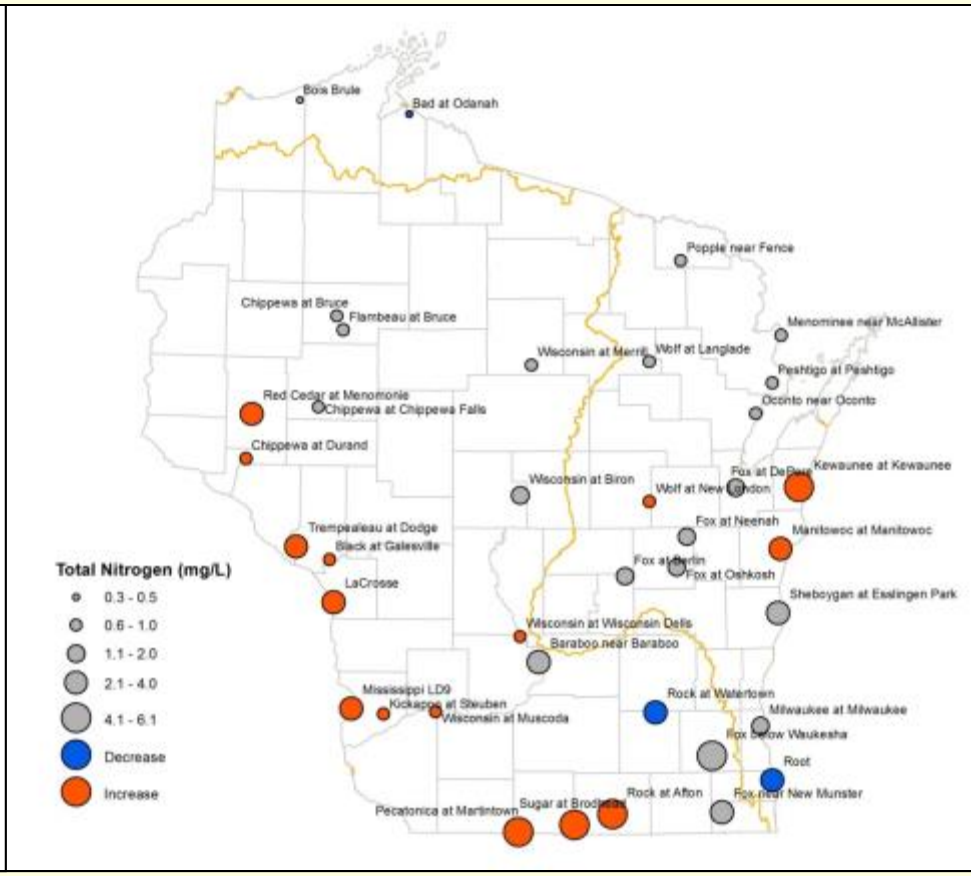


Trends

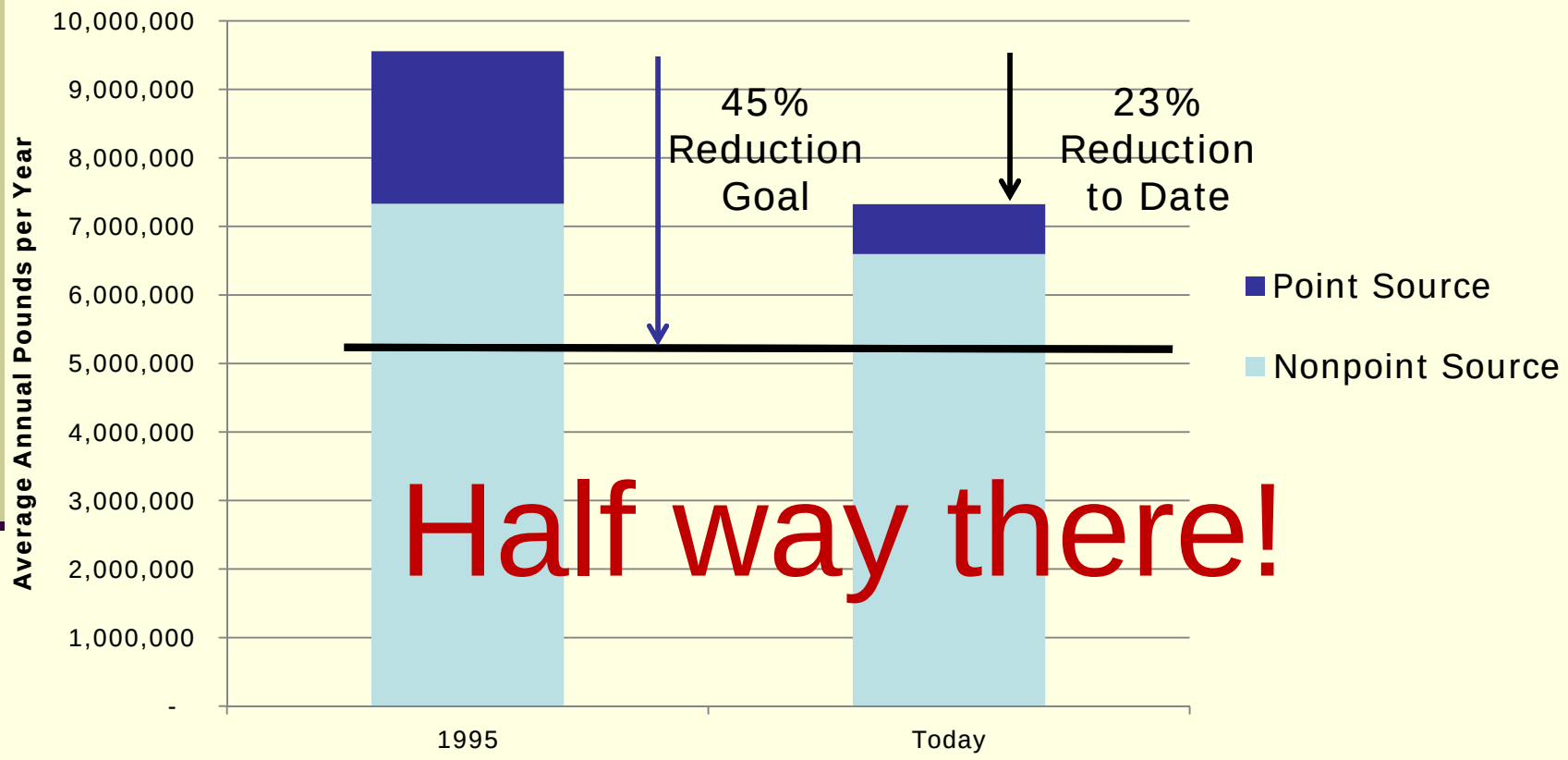
Phosphorus



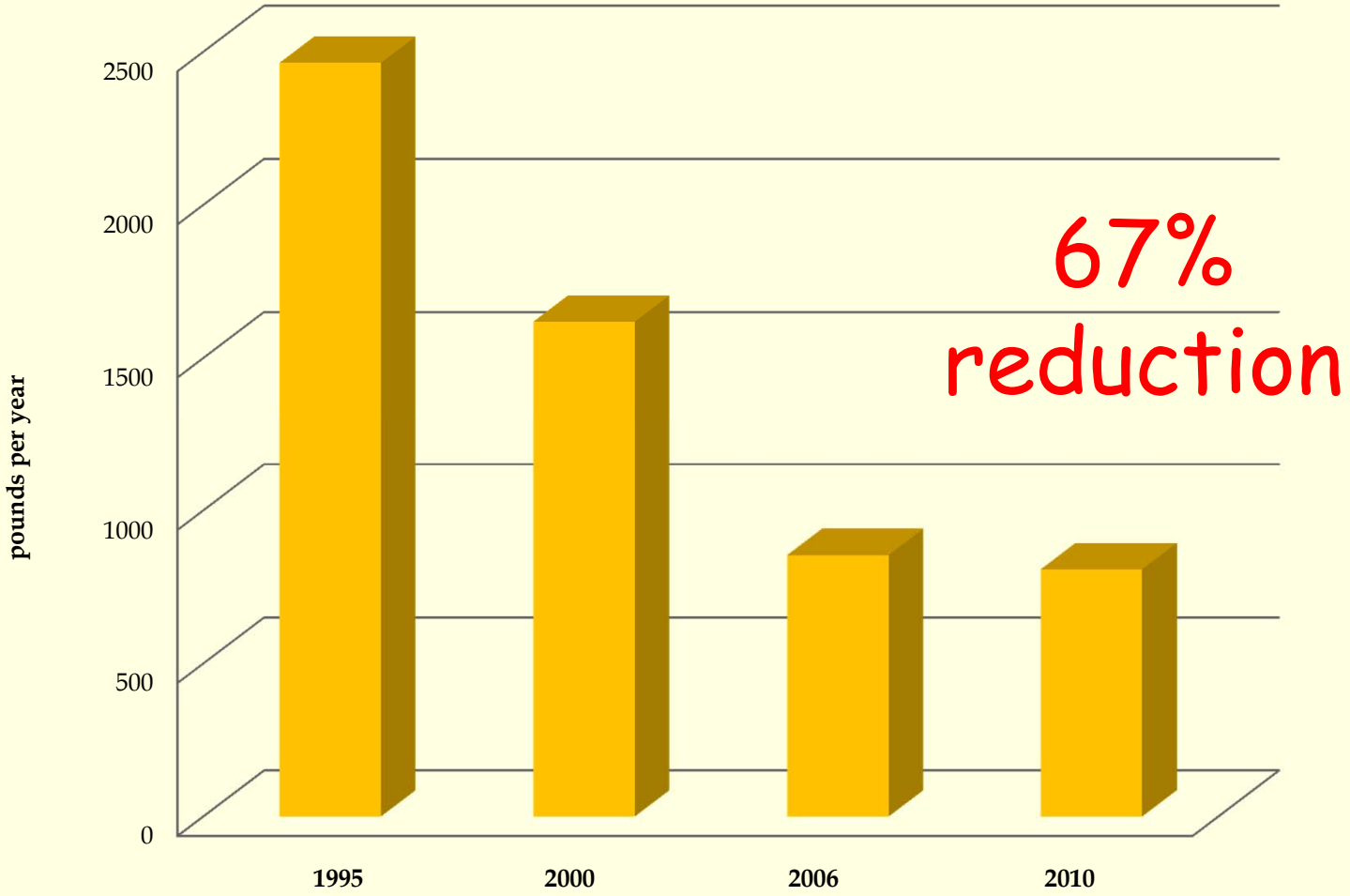
Nitrogen



45% Reduction Phosphorus – Mississippi River Basin: Progress



Point Source Phosphorus Discharges -- Mississippi River Basin



54% reduction in Lake Michigan Basin

Point Source Permits

- Programs in place for phosphorus:
  - Wastewater facilities –
    - technology and water quality based limits
    - Enhancing nitrogen monitoring
  - CAFO permits
  - MS4 permits

Emphasis on Agricultural Nonpoint Source Management

- Federal, state and local programs
  - Over $50 million available in Wisconsin for 2013
- University of Wisconsin – CALS Nitrogen Science Summit – 2014

Tracking/Accountability

- System in place to track wastewater discharges phosphorus contributions
- No statewide system in place to track agricultural nonpoint source phosphorus contributions
  - Lack baseline
  - Lack good system of best management practice installation/maintenance
  - Lack means to translate BMP installation to load reductions

Working on Building Tracking System

- Use county based systems
- Aggregate information at the HUC 12 small watershed level
- Incorporate point source information at the HUC 12 small watershed level

Monitoring

- Major basin, HUC 10 watershed , HUC 12 small watershed, edge-of-field monitoring
- Enhancing river long-term trend network
  - Sites may fit with Mississippi River and Lake Michigan networks

Numeric Nutrient Water Quality Criteria

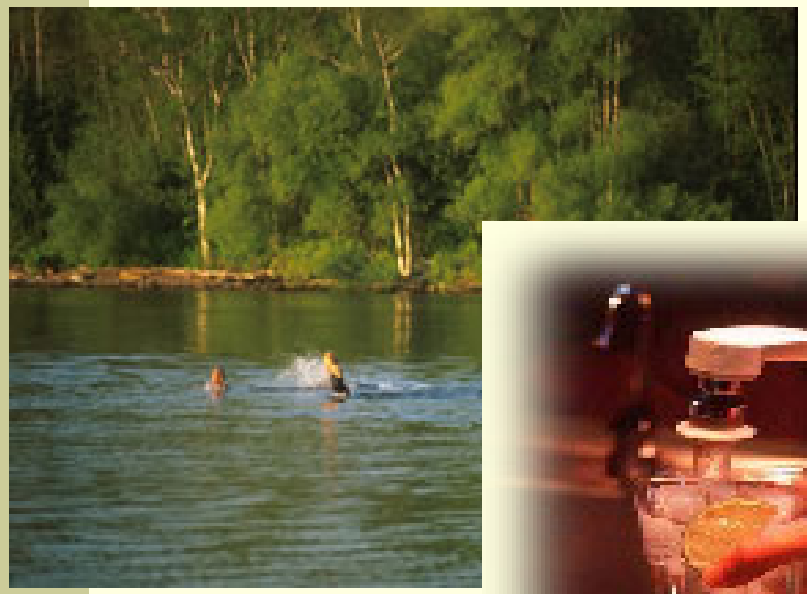
- Adopted and EPA approved phosphorus criteria for streams, rivers, lakes, reservoirs and Great Lakes
- Conducting further research on nitrogen in streams
  - Focusing on high nitrogen/low phosphorus streams

Annual Reporting

- Annual Nutrient Summit
- Reports on website

What Does This Mean?

- Need to “fully” implement the federal, state and local programs we have in place
  - Continue or increase funding
- Better develop our approach to managing nitrogen
- Track what is being accomplished
- Report periodically



WI Nutrient Management Regulations

NR 151 & ATCP 50 rules

Wisconsin Department of Agriculture, Trade and Consumer Protection

Sara Walling

Nutrient management and water quality section chief

608-224-4501 sara.walling@wi.gov

AGRICULTURE IS A $59 BILLION ANNUAL BUSINESS RESPONSIBLE FOR MORE THAN 10% OF JOBS IN THE STATE, SO IT'S ESSENTIAL THAT WE PROTECT OUR AGRICULTURAL LANDS, FOOD, AND CONSUMERS

That's why nutrient management planning is so important!

What is Expected of Farmers?

- **Meet tolerable soil loss** (T) on cropped fields
- **Develop and follow 590 Nutrient Management** technical standard
- **Prevent direct runoff from feedlots** or stored manure to waters of the state
- **Limit livestock access** along waters to maintain vegetative cover
- **Maintain manure storage** structures to prevent leaking and overflow
- **Follow manure storage technical standards** for constructing and abandoning

Near surface water or areas susceptible to groundwater contamination

- **Do not stack** manure in an unconfined pile
- **Divert clean water** away from feedlots, manure storage, and barnyards

When Are Producers Required to Have a Nutrient Management Plan?

ATCP 50.04 (3)

Nutrient management plans need to include every field that has mechanically applied nutrients. The farmer shall have and follow an annual NM plan when applying nutrients to any field.

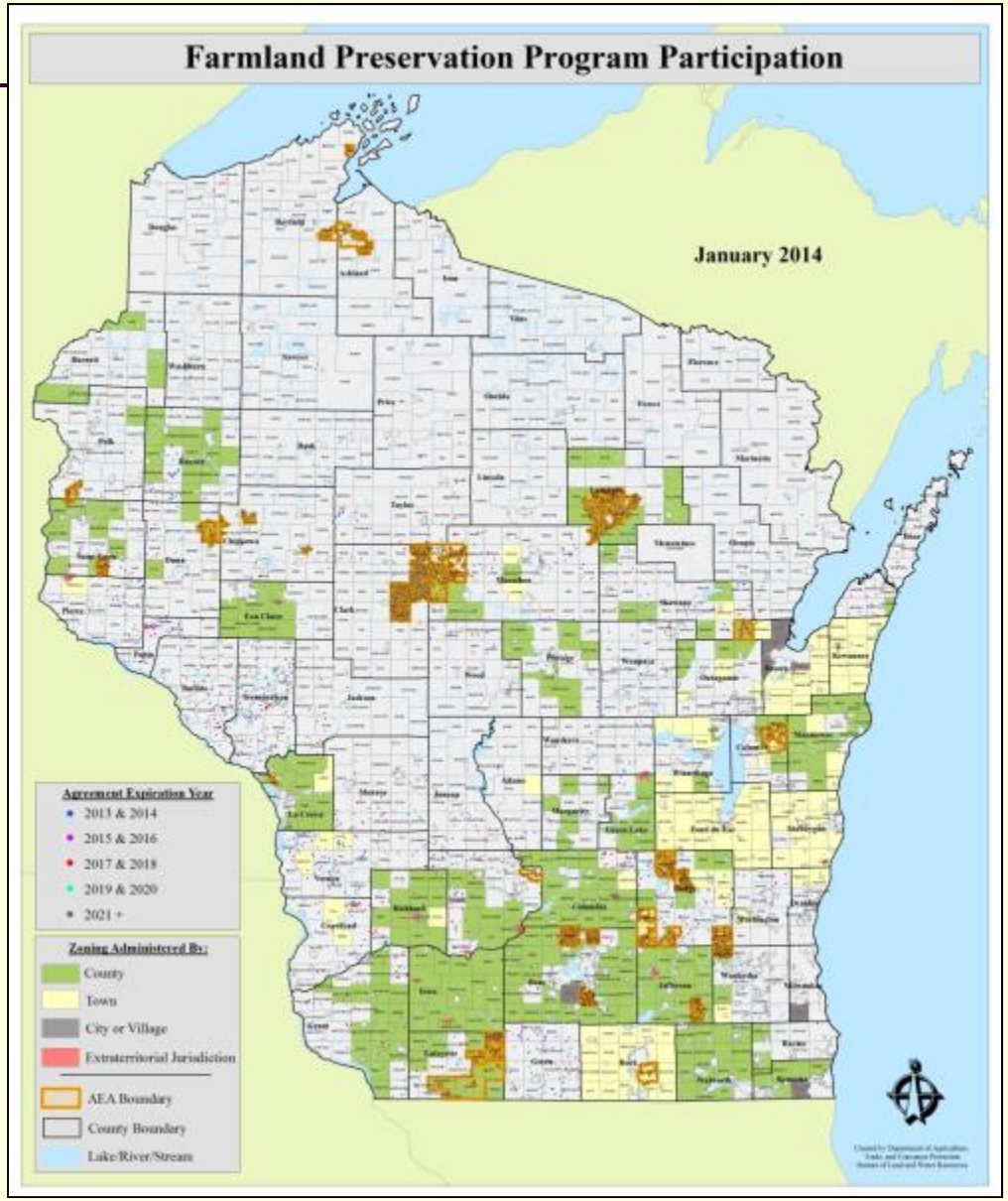
Nutrients include nitrogen, phosphorus, and potassium from manure, legumes, organic byproducts, and commercial fertilizer.

Effective January 2008.

WI Certified Exclusive Ag Zoning

FPP Tax Credits:

- **$7.50/acre/yr** - Ag preservation zoning district
- **$5.00/acre/yr** - if in Agricultural Enterprise Area (15 year agreements)
- **$10.00/acre/yr** - if in AEA <u>and</u> zoning



Programs

- Farmland Preservation - $19 million/year
- Nutrient Management Cost-share - $1.2 million/yr
- Nutrient Management Farmer Education - $175,000/yr
- SnapPlus Nutrient Management Planning Software - $200,000/yr
- Countless partnerships with UW, Extension, DNR Programs, NRCS
  - NPM, GLRI, Grazing Brokerage Program, etc.

What's in a Nutrient Management Plan?

- Accounts for **ALL** crops, management decisions, and N-P-K nutrients for the crop rotation
- Soil testing:

  UW Soil test need – nutrient credits = fertilizer to apply

- Limitations on P applications to reduce P delivery to water systems
- Restrictions on nutrient application rates, timing and method where sensitive landscape features exist
- Biosolids - Contain the P removed from WWTPs is applied to local farm fields
  - One ton of biosolids contains 30-50 times more P than one ton of dairy manure

Core Nutrient Management Principles

- Nutrient applications **must not run off** the intended application site
- Fields receiving nutrients **must have sheet and rill soil erosion controlled** to tolerable soil loss rates or “T” over the crop rotation
- Areas of concentrated flow, resulting in reoccurring gullies, **must be protected with perennial vegetative cover**

Requires qualified planners to prepare the plan:

Certified Crop Adviser, Professional Agronomist, Soil Scientist, Professional Crop Consultant, farmer planners

WI 590 NM plan addresses water quality with seasonal application restrictions

Blue = spreading restrictions for **surface waters** non-winter applications.

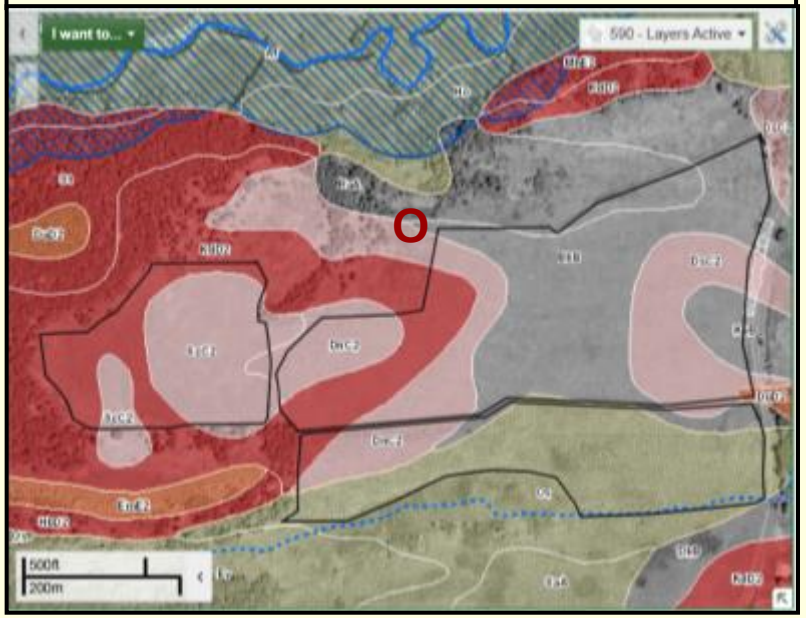
Blue & **Red** = **No winter spreading** (slopes > 12%)

Pink and **clear** can have winter manure apps if contoured or if slopes are 9% or less. Winter manure apps can not exceed 7,000 gals/acre or P removal of the crop.

Yellow = **N soil restrictions**. These soils are likely to leach N to groundwater. Best to Spring apply.

O = wells; incorporate applications 200' up slope of **wells**

Nutrient Application Restriction Maps
free for all of Wisconsin



www.ManureAdvisorySystem.wi.gov

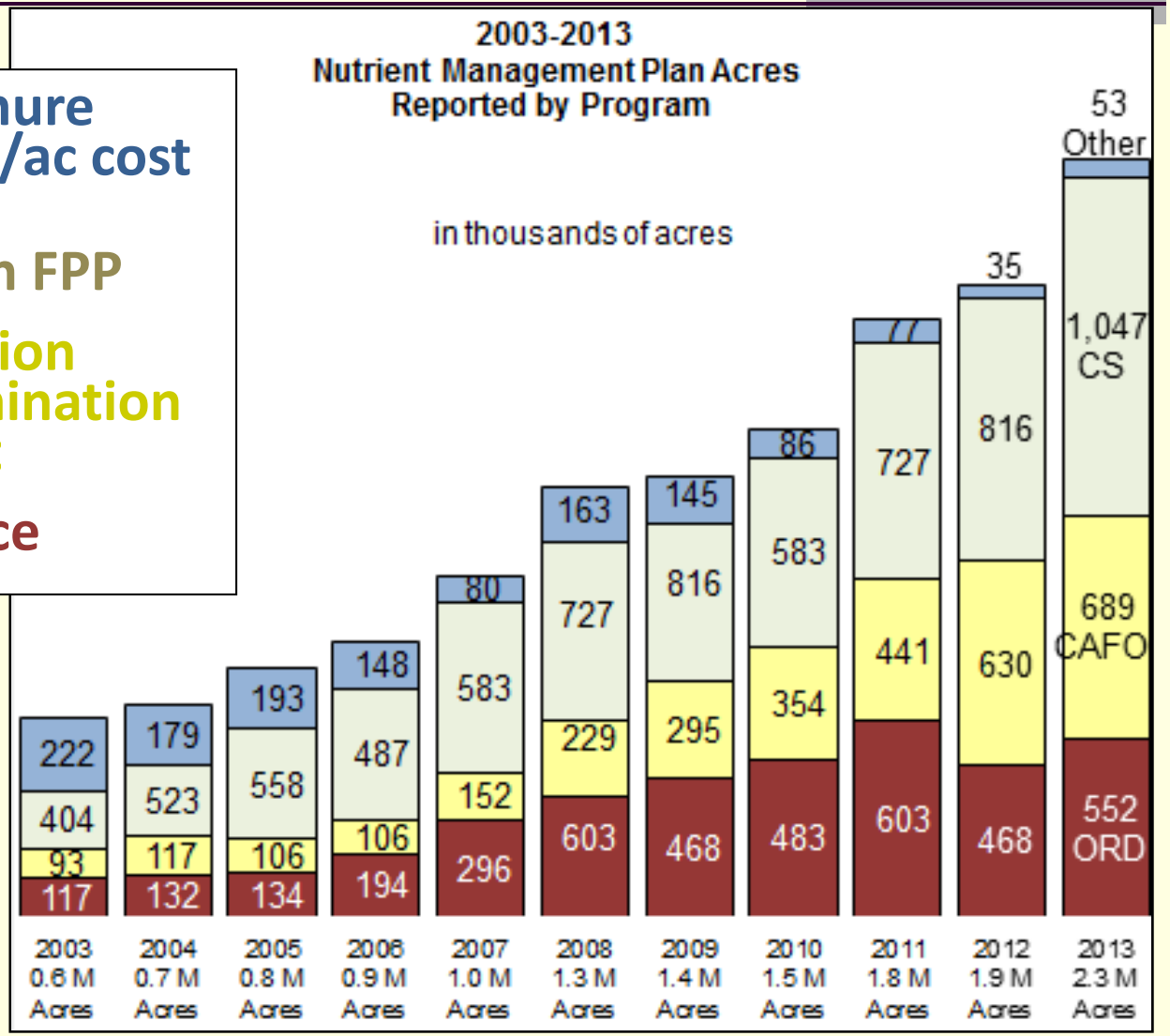
Benefits of a Nutrient Management Plan

- Helps to manage applications of nutrients to fields to ***maximize*** profitability
- Helps reduce runoff risks and ***minimize*** groundwater and surface water degradation
- Provides a defense to public and private nuisance lawsuits if in compliance with state and local regulations and following a NM plan that meets state standards (ATCP 50)
- Track crops, nutrient applications, and meets soil conservation needs by field

Snap Plus gives a record keeping system for past and present applications

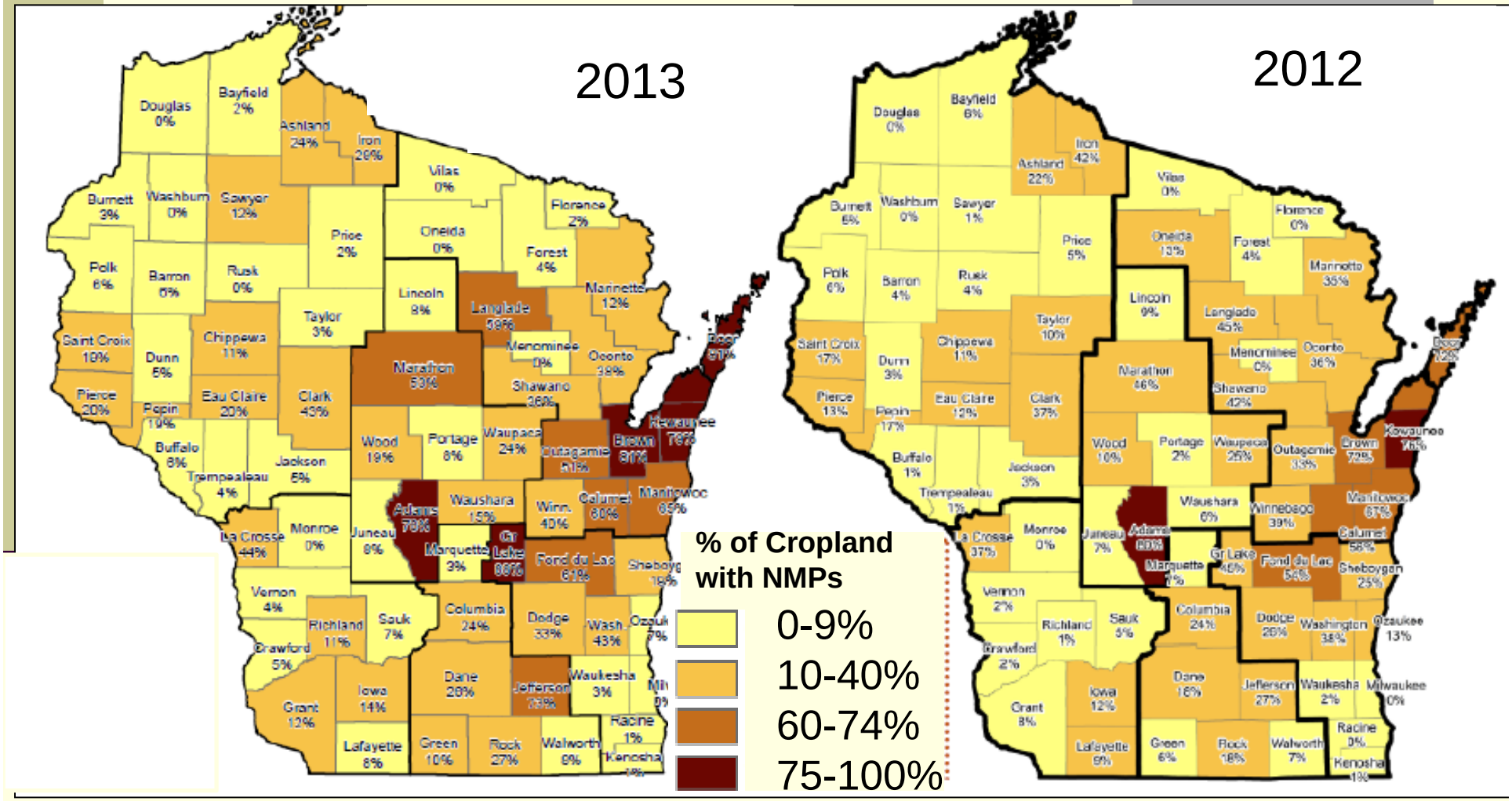
2013 Nutrient Management Plans cover ~ 26% of WI cropland

- **Accepting manure storage or $28/ac cost share**
- **Participating in FPP**
- **DNR WI Pollution Discharge Elimination System permit**
- **Local Ordinance**



More NM Plans

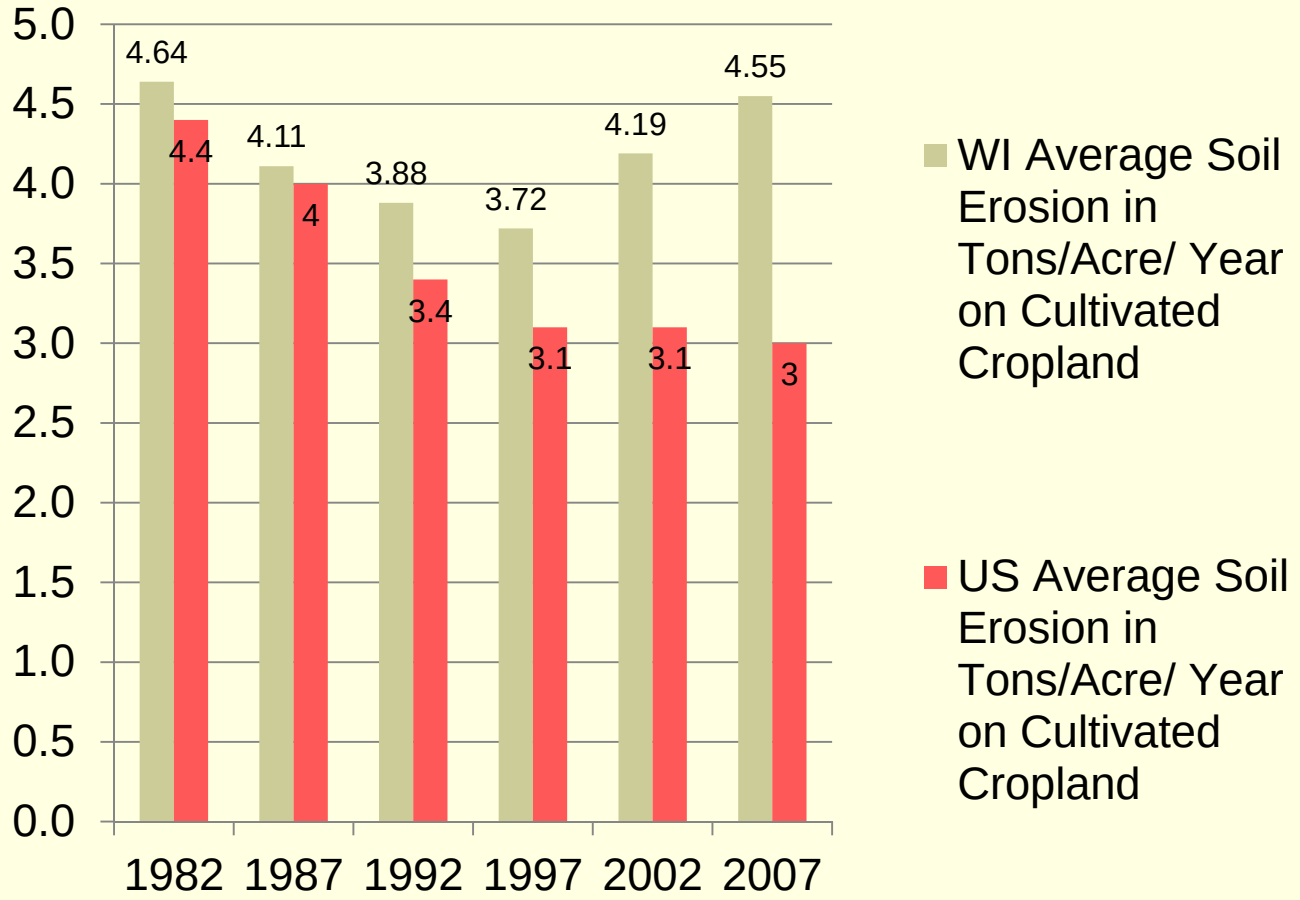
% of County Cropland



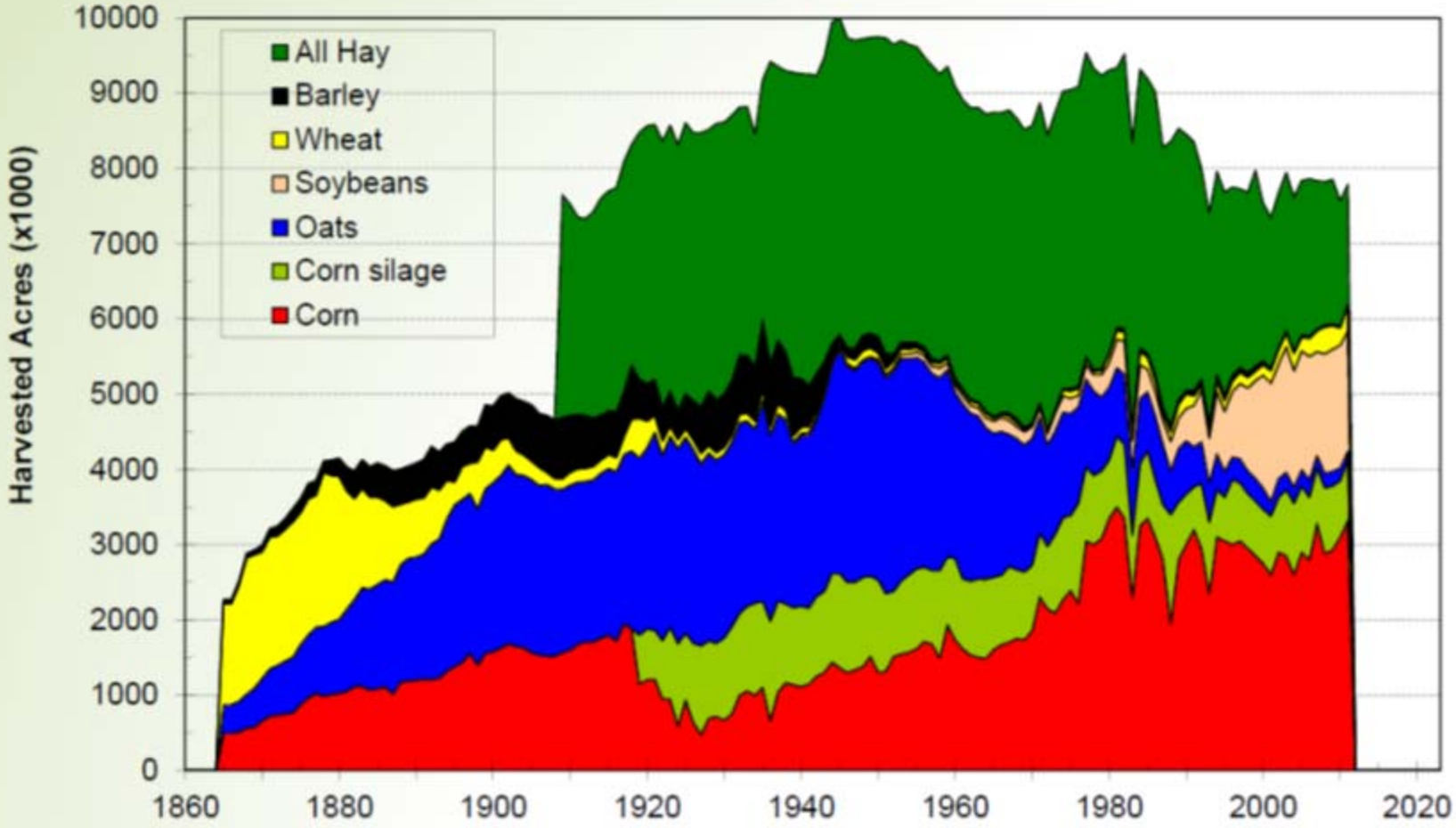
Soil Erosion #1 nonpoint-source pollutant in US

WI vs. US

2007 National Resources Inventory



Harvested Acreage of Various Crops in Wisconsin



UW Extension
University of Wisconsin-Extension

Lauer © 1994-2013
http://corn.agronomy.wisc.edu

Lauer, 2012 (Data source: USDA-NASS)

Other DATCP Initiatives

- Nutrient Management Farmer Education and Grant Program - ongoing
- Nutrient Management Farmer Survey – Summer 2014
- Manure Advisory System
- 590 Nutrient Management Standard Revision - ongoing

Questions?

Jim Baumann, DNR
608-261-6425
james.baumann@wi.gov

Sara Walling, DATCP
608-224-4501
sara.walling@wi.gov