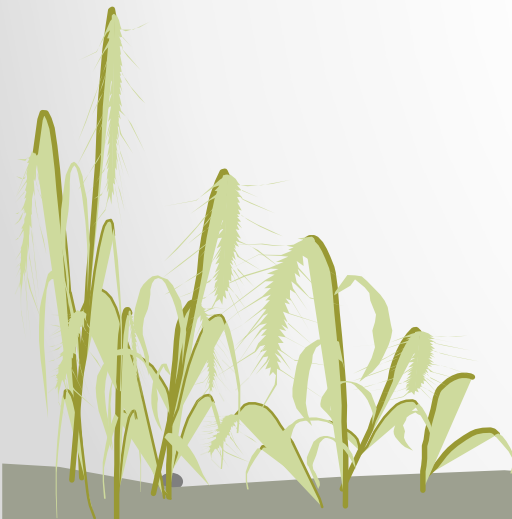


Keep it 4R Crop

How Did We Get Here and Why?



**Illinois Fertilizer &
Chemical Association**
Supply • Service • Stewardship

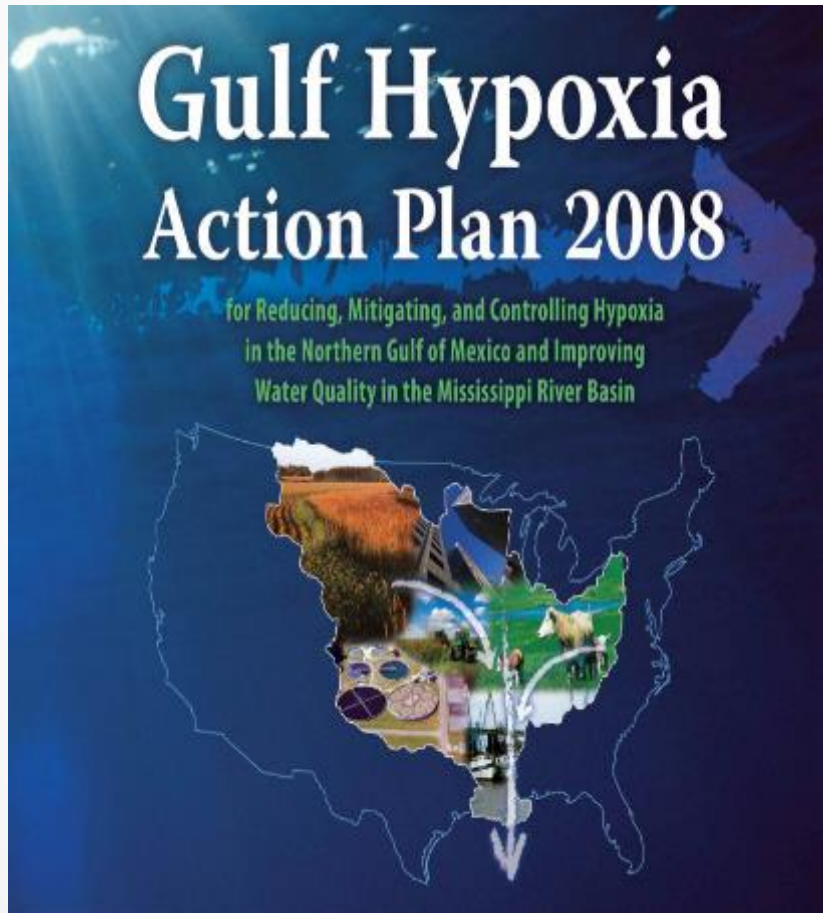


Nutrient Issues Surfaced Across the United States

- USEPA took action in the Chesapeake Bay and Florida to Regulate Agricultural Nutrient Use
- In the Chesapeake, Nutrient Management Plans Became Required
- Industry Filed Suit in Florida and Successfully Put Control Over Nutrients back to the State of Florida



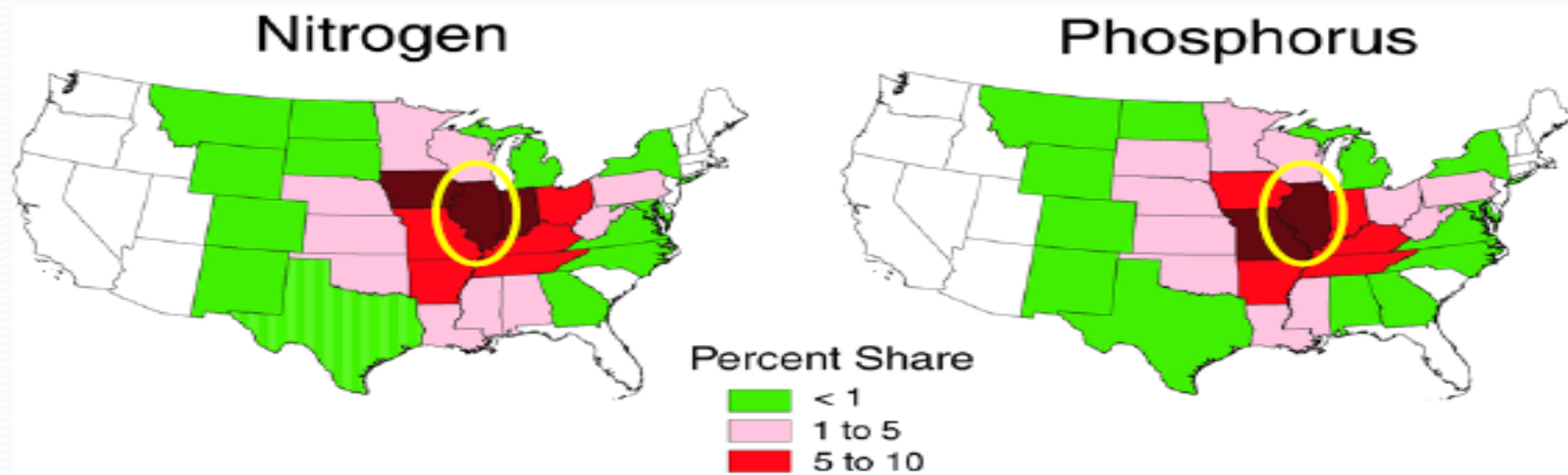
Gulf Hypoxia Task Force Study



- **GOAL**
 - Reduce Hypoxic Zone to 5,000 Km² (1,930 sq miles)
 - Reduce Nutrient Loading to Gulf of Mexico
- **Reduce Total Phosphorus and Total Nitrogen to the Gulf by 45%**

USGS SPARROW MODEL

Total Nitrogen				Total Phosphorus			
State	Percent of Total Flux	Cumulative Percent of Total Flux	Delivered Yield ($\text{kg km}^{-2} \text{yr}^{-1}$)	State	Percent of Total Flux	Cumulative Percent of Total Flux	Delivered Yield ($\text{kg km}^{-2} \text{yr}^{-1}$)
Illinois	16.8	16.8	1734.9	Illinois	12.9	12.9	117.4
Iowa	11.3	28.1	1167.2	Missouri	12.1	25.0	89.4
Indiana	10.1	38.2	1806.6	Iowa	9.8	34.8	89.2
Missouri	9.6	47.8	800.5	Arkansas	9.6	44.4	94.6
Arkansas	6.9	54.7	750.1	Kentucky	9.0	53.4	113.4



2010: The Situation in Illinois

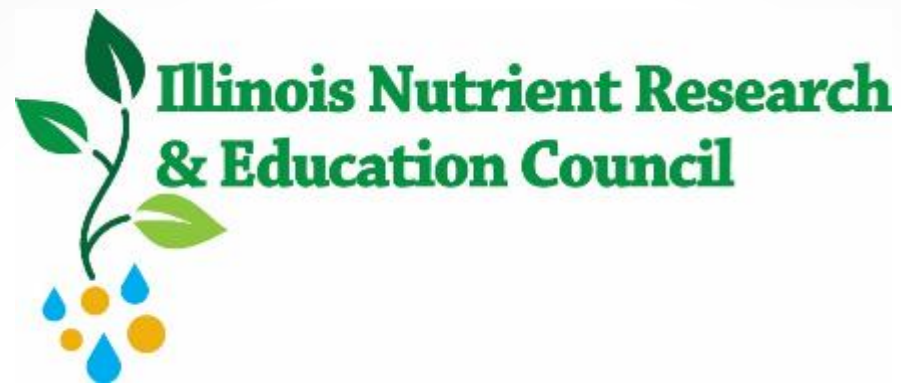
- Fertilizer Research Council (FRECP swept of over \$1 million between 2006-2010 (state fund from 12.5 cent fertilizer tonnage fee)
- CFAR Funding Cut from high of \$15 million to 0 dollars in 2010
- Cuts to UI Crops Systems Extension Educators
- How do you address nutrient issues with no \$?



Getting KIC by 2025 Off the Ground

- CBMP Launched KIC by 2025 at the Farm Progress Show in 2011
- IFCA Members CF Industries, Koch Nitrogen, Mosaic, Potash Corp and Agrium Donate \$150,000 to Kick-Start the Program





- ❖ In 2011, IFCA got approval from IDA to Revamp FREC
Public-Private Partnership to Protect the Funds
Added IEPA & Environmental Groups to the Council
- ❖ Set Bulk Tonnage Fee from .50 to \$3.00 per ton
This Would Raise \$2 - \$3 million per year
- ❖ Bill Passed the Senate but Was Held in the House
Had to Start Over in 2012 But Successful 2nd Time

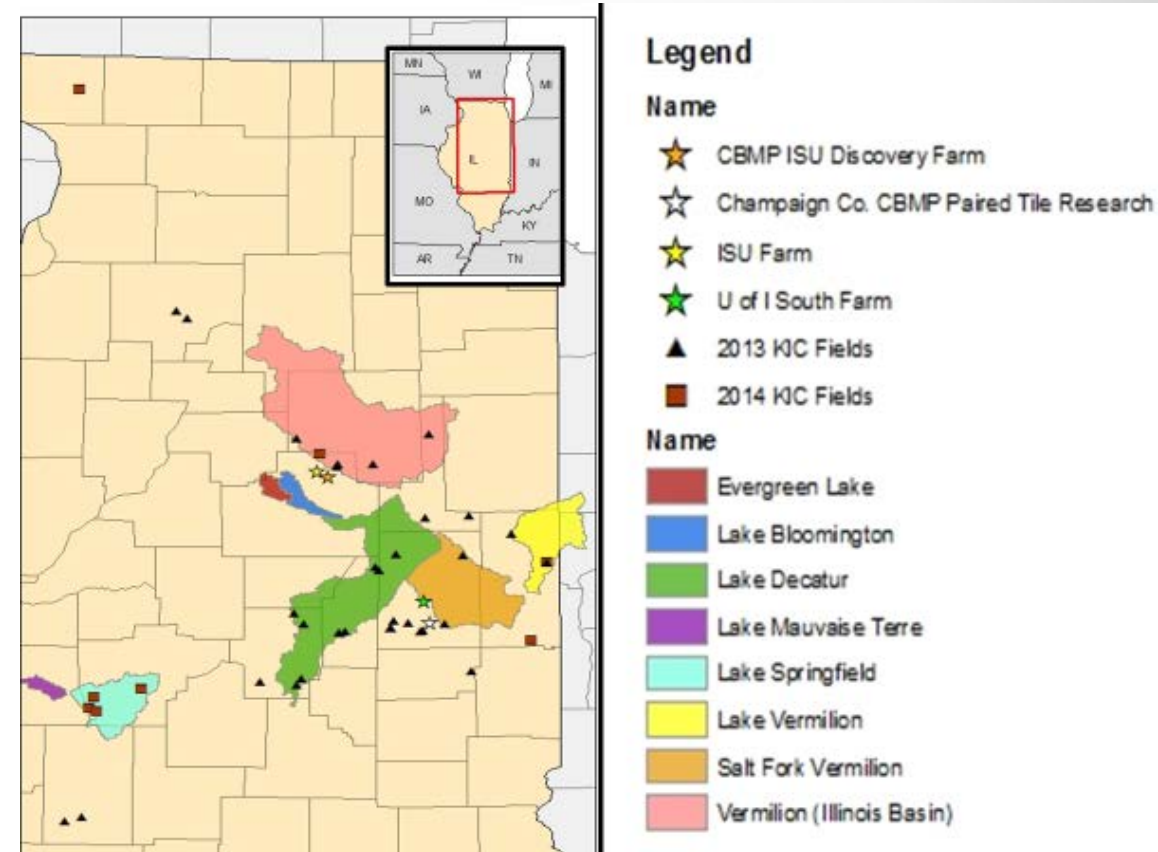
NREC Bill Signing: August 12, 2012



The Work Begins.....

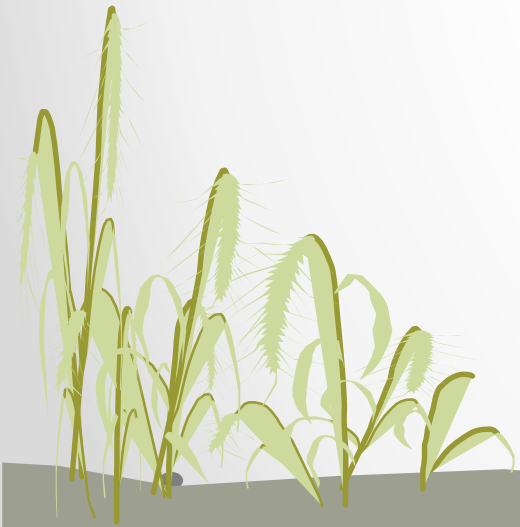
- Members of CBMP Collectively Develops “Keep it for the Crop by 2025”

IEPA Designates “KIC Watersheds” as Priorities for Agriculture to Focus On



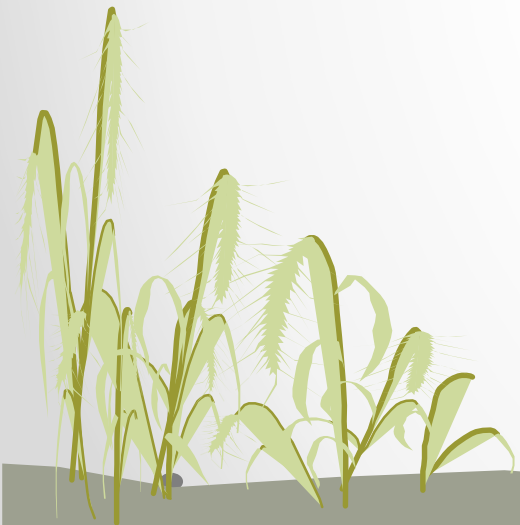
Drought of 2012: First Test

- Used N-WATCH to Show that Anhydrous Ammonia Applied in Fall 2012 Was Not Source of High N Levels in Water Supplies



2013: N Rate Trials and N Tracking

- Industry Partners with Universities to Assure Retailer and Farmer Support of On-Farm Research on Nutrient Utilization and Reducing Nutrient Losses with N Rate Trials and N-WATCH



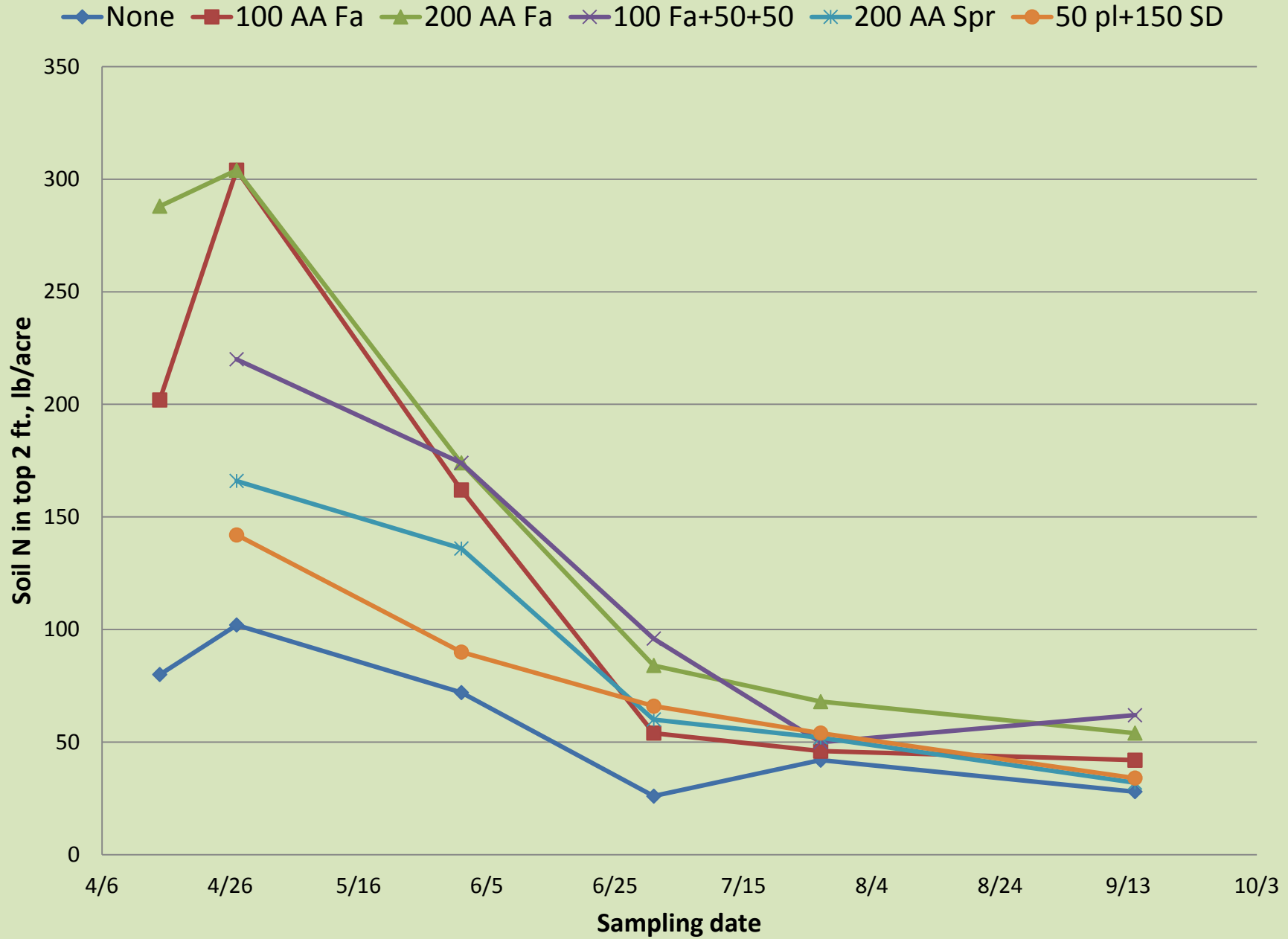
Lake Springfield Project 2013-2016

- 3 Year Project with CWLP, Ag Groups (CBMP), Sangamon County SWCD to Keep Lake Springfield below 5 ppm
- IFCA Conducted N Rate Trials and N-WATCH in the Watershed

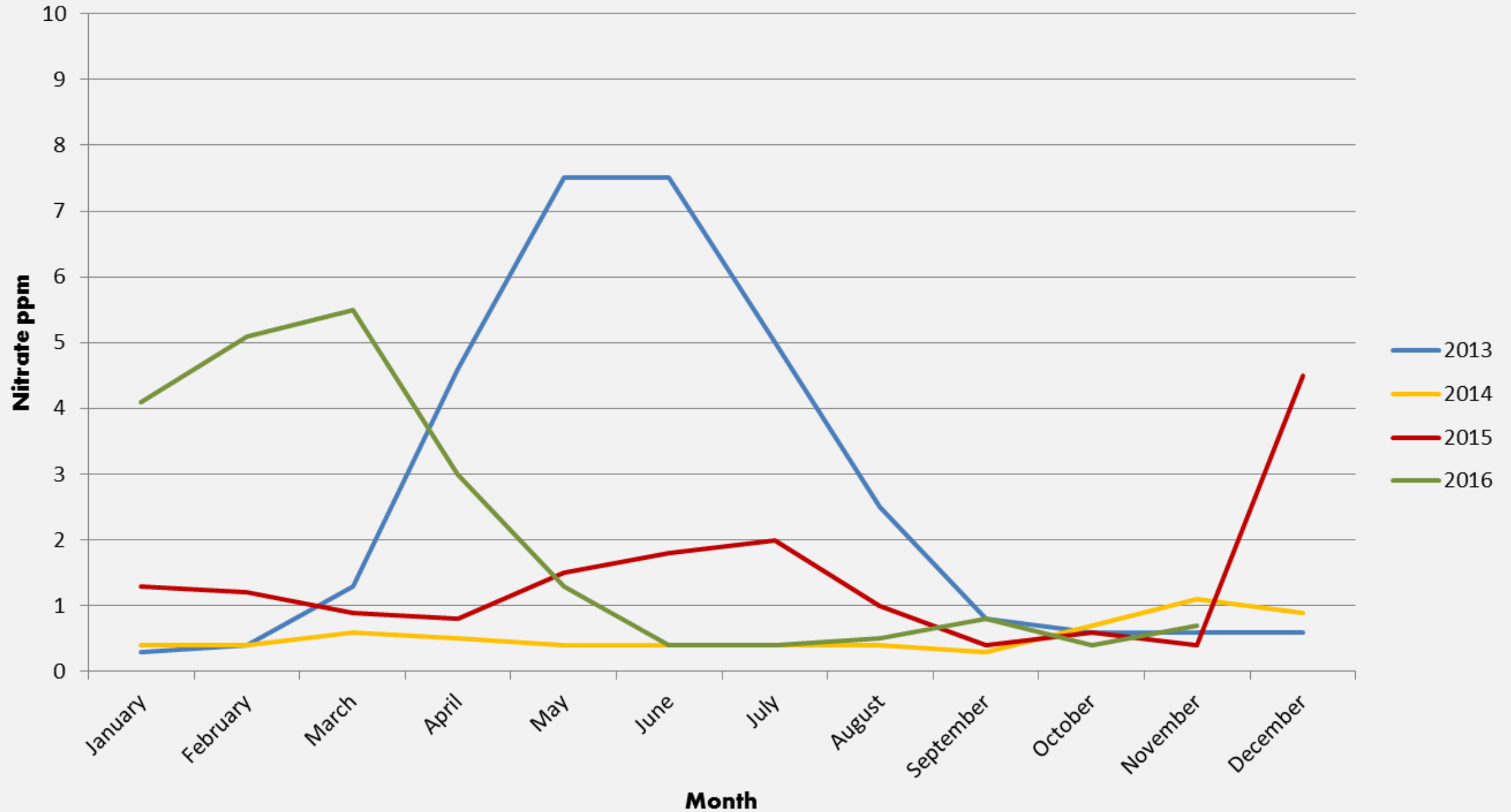
*CWLP Used Funds from Atrazine Settlement to Support the Project;
CBMP Got Grant from NFWF*



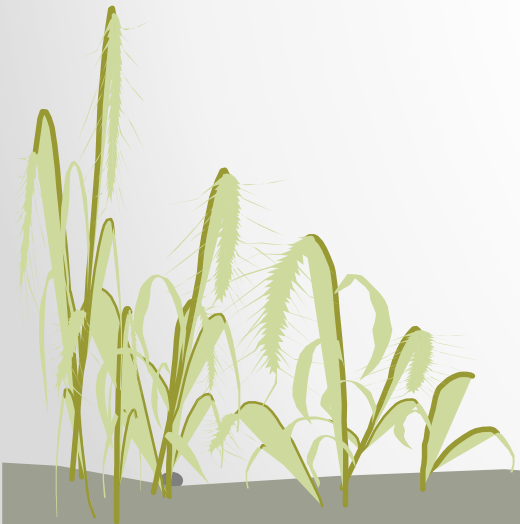
Sangamon County 2015



Lake Springfield Nitrate Levels



Toledo Ohio: August 2014



Ohio Law in Lake Erie Basin

Requirements	
Nutrient application levels are at or below limits in recommendations recognized by a land-grant university (LGU)	Broadcast P applications without incorporation within one week are not recommended unless: <ul style="list-style-type: none">• Field has been in no-till for 3 years• There is a cover crop or growing crop• The risk for P loss is low
If levels are higher than LGU recommendations, documented on-farm data are required that show reasonable expectation of improved crop yield without increased risk of harm to water quality	Broadcast P applications without immediate incorporation are neither made nor recommended unless the NOAA forecast indicates less than a 50% chance of a rainfall event of more than an inch in the next 12 hours
Soil tests are conducted at least every 4 years and include at a minimum: OM, P, K, pH, and CEC	P applications are neither made nor recommended to be made on frozen or snow covered ground

The Des Moines Register



WEDNESDAY, MARCH 11, 2015 | THE NEWS IOWA DEPENDS UPON | DESMOINESREGISTER.COM | METRO EDITION

A GANNETT COMPANY

FEDERAL LAWSUIT

WATER WORKS VOTES TO SUE 3 COUNTIES

FARM RUNOFF FOULING IOWA RIVERS, UTILITY SAYS

By Timothy Meinch
tmeinch@dmreg.com

Des Moines Water Works will file a federal suit against three rural counties in northwest Iowa, an action that could trigger far-reaching effects on how states approach water quality regulation.

The action follows a 60-day warning that sparked little promise for solving water quality concerns at



Graham Gillette

Water Works, according to utility trustees. The board voted unanimously during a special meeting Tuesday to file a lawsuit against

drainage districts in Buena Vista, Calhoun and Sac counties.

Graham Gillette, chairman of the board of trustees, said since January the public utility hit a wall with local and state leaders, including Gov. Terry Branstad and Secretary of Agriculture Bill Northey.

"Not one responded in any substantive way to the claims we have made in the intent to sue," Gillette said. "Frankly, they did not acknowledge the significant threats faced by those we serve."

Water Works officials

TILES ON TRIAL

Des Moines Water Works claims drainage tiles in farm fields from northwest Iowa are contributing to high nitrate levels in central Iowa. The utility claims that water, nitrogen and other nutrients that enter intakes like this are eventually carried underground by drainage lines to streams and rivers that feed the Des Moines and Raccoon rivers, the source of water for 900,000 central Iowa customers.



BOBNEY WHITE/REGISTER PHOTOS
A tile collects water from a field at Dwight Dial's Calhoun County farm near Lake City, Ia. Calhoun is one of three counties that Des Moines Water Works will sue.

Farmers: We feel unfairly targeted

Some frustrated producers threaten to boycott Des Moines

By Donnelle Eller
deller@dmreg.com

LAKE CITY, Ia. — With decades of conservation farming under his belt, Dwight Dial has a hard time understanding why Des Moines Water Works is so intent on suing three northwest Iowa counties for contributing to high nitrates in the Raccoon River, a source of drinking water for roughly 500,000 residents in central Iowa.

"We're not deliberately dumping our nitrogen into the Raccoon or Des Moines river systems," said Dial, who raises corn, soybeans and pigs near Lake City in Calhoun County, a target of the Des Moines lawsuit along with Sac and Buena Vista counties.

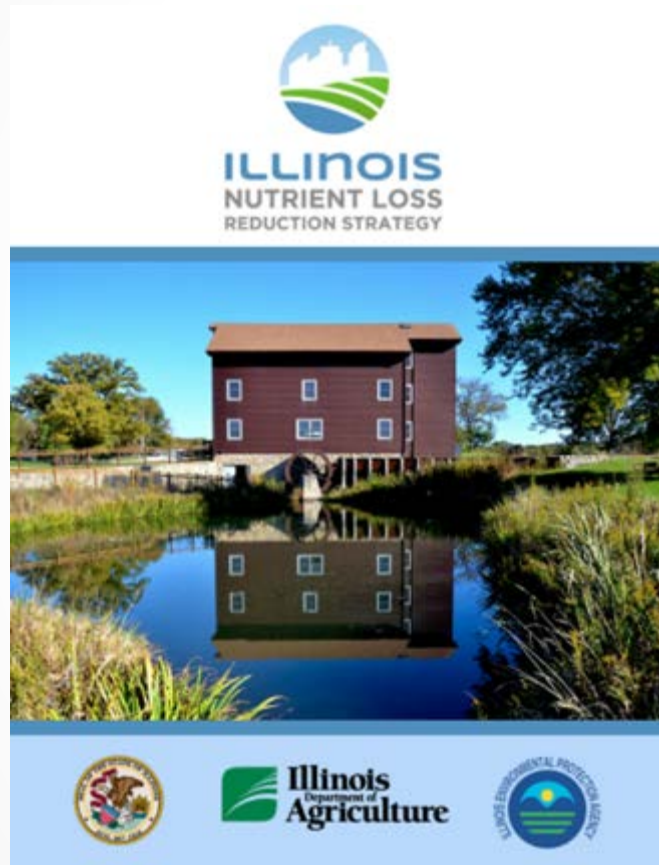
"We're doing everything we can to retain nutrients in the field for our plants. ... But we can't control Mother Nature."

Officials with the Des Moines utility say Water Works has fought too long with high nitrate levels and can no longer afford to wait for farmers to ramp up conservation efforts to help improve water quality.

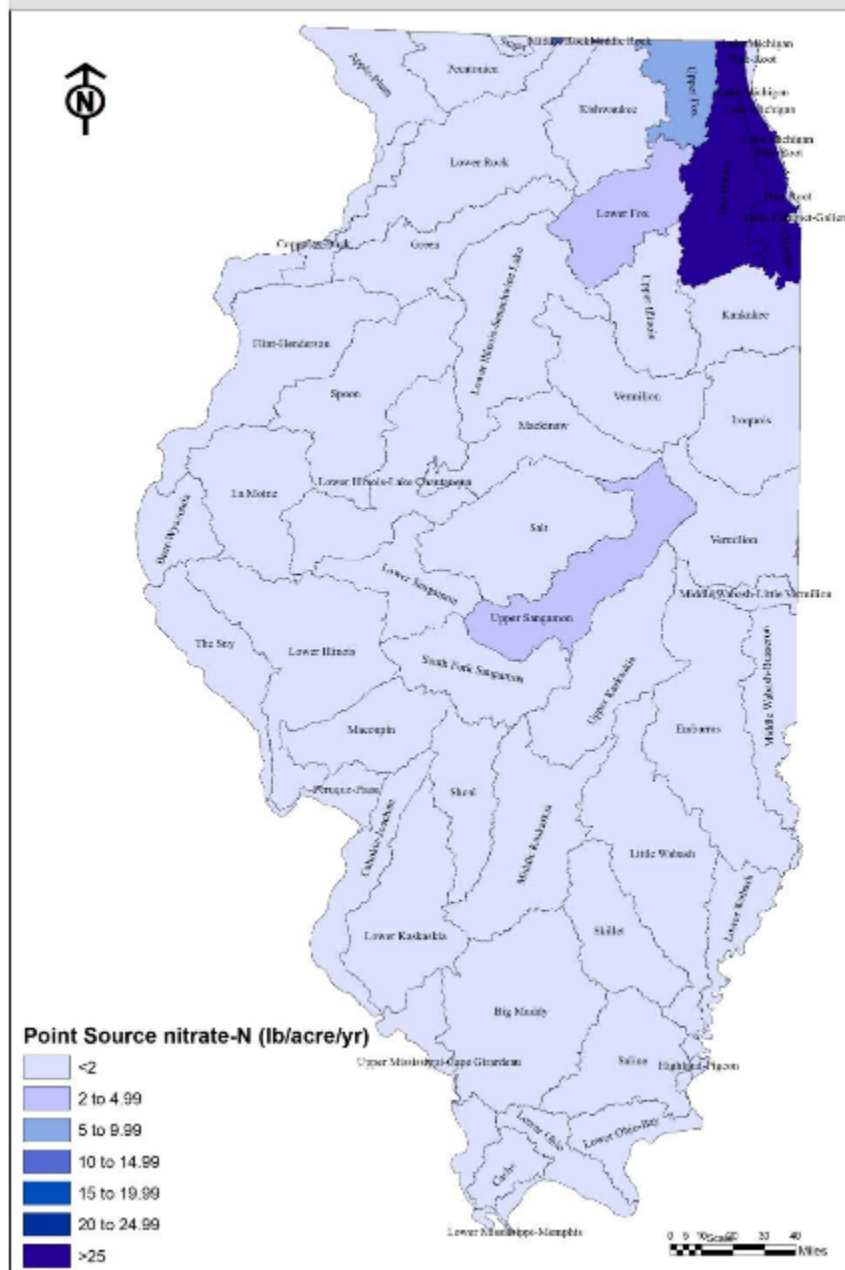
The utility's board agreed Tuesday to pursue a suit against drainage districts in Calhoun, Sac and Buena Vista counties.

Dial, like other farmers and rural Iowans, is frus-

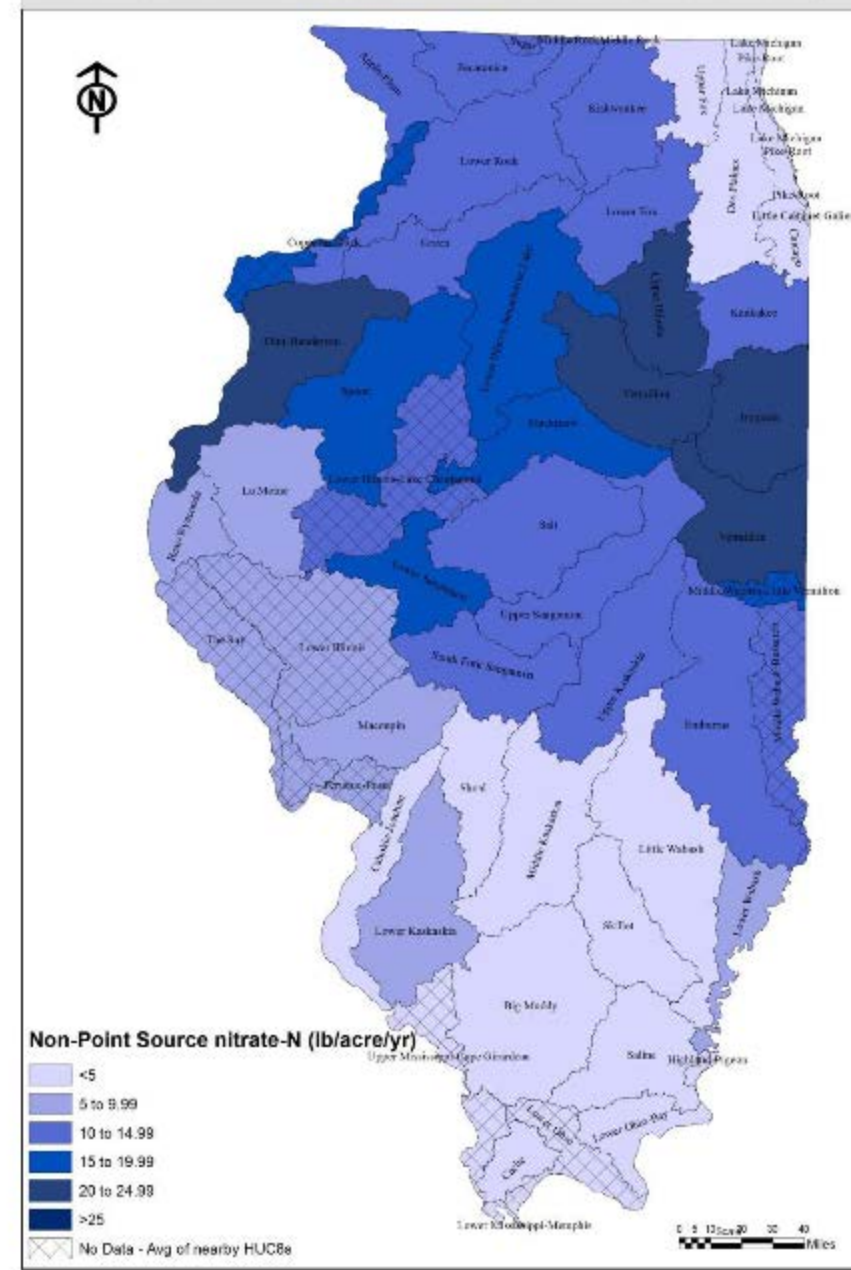
Illinois Nutrient Loss Reduction Strategy: July 2015



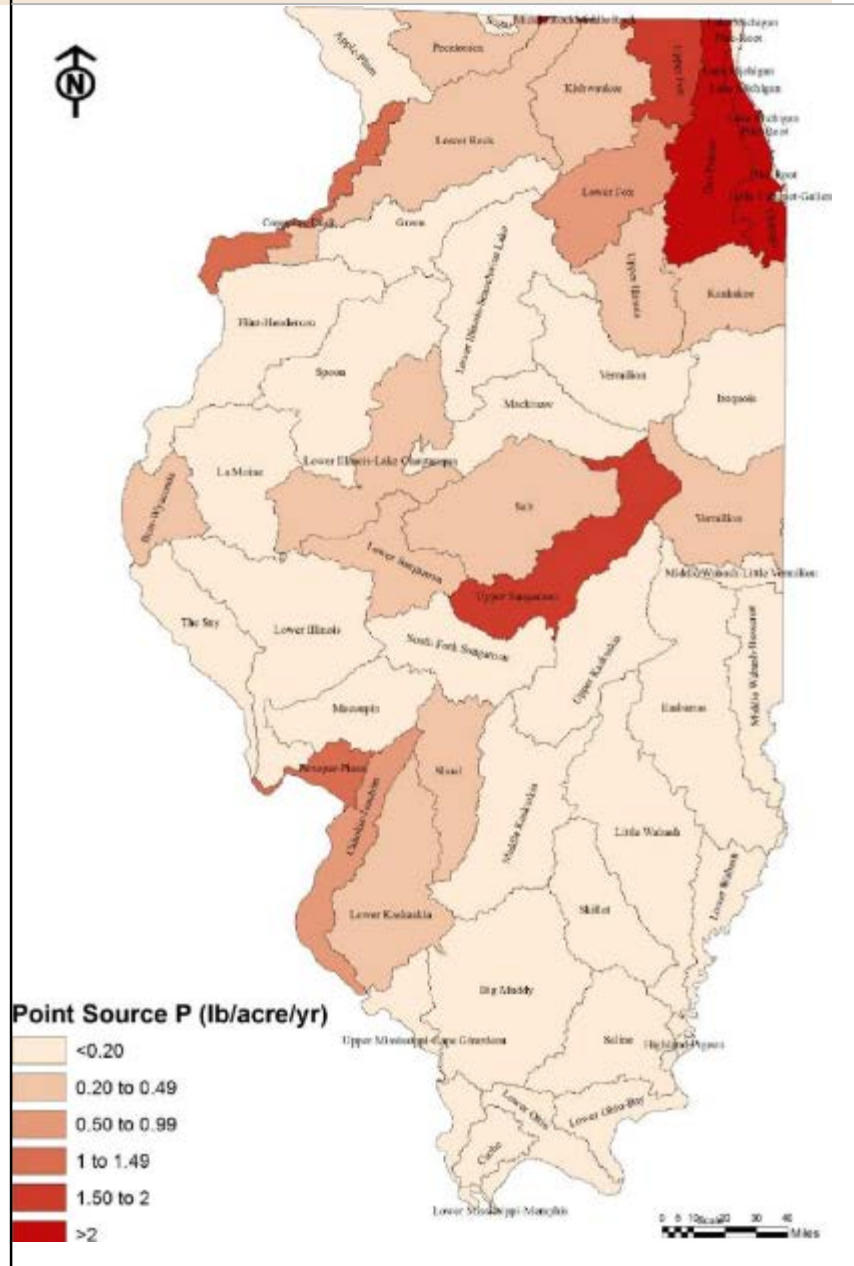
HUC8 Point Source nitrate-N Yields



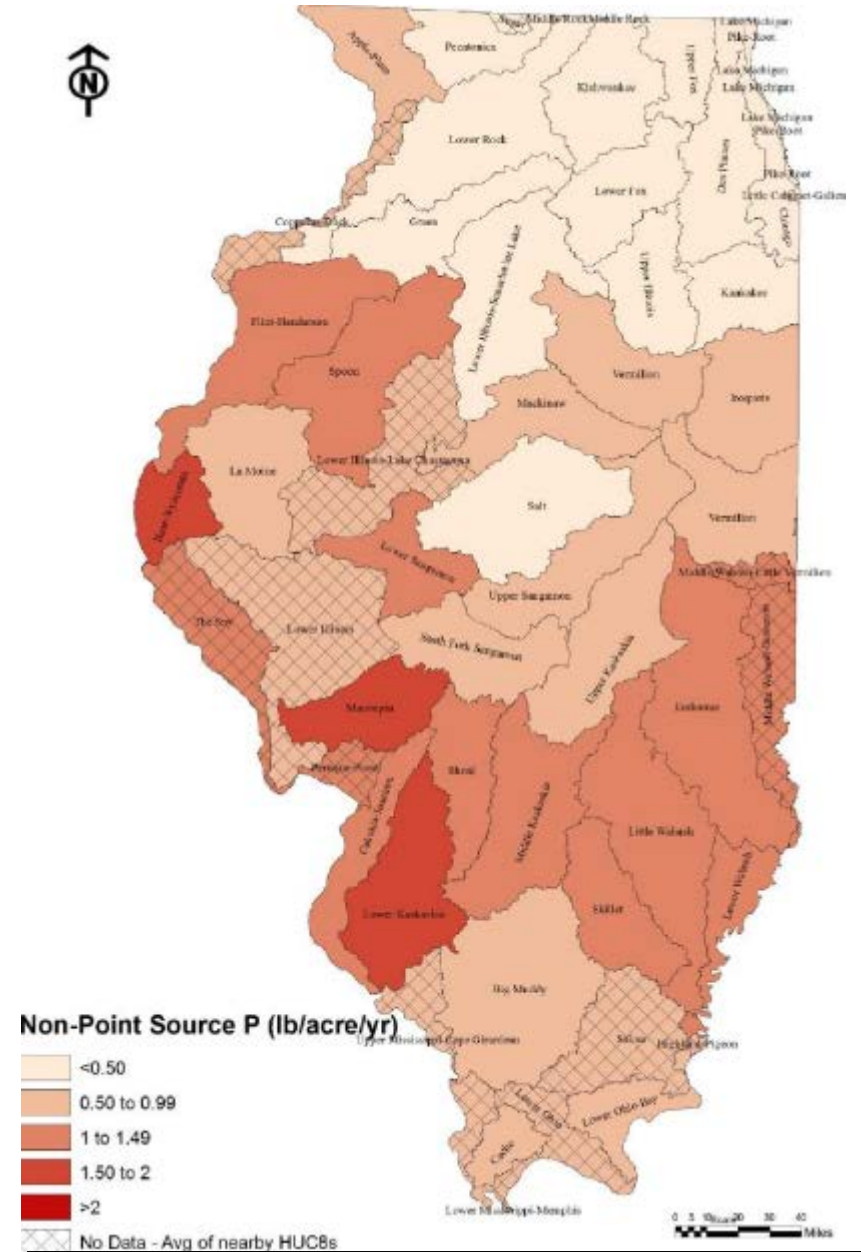
HUC8 Non-Point Source nitrate-N Yields



HUC8 Point Source P Yields

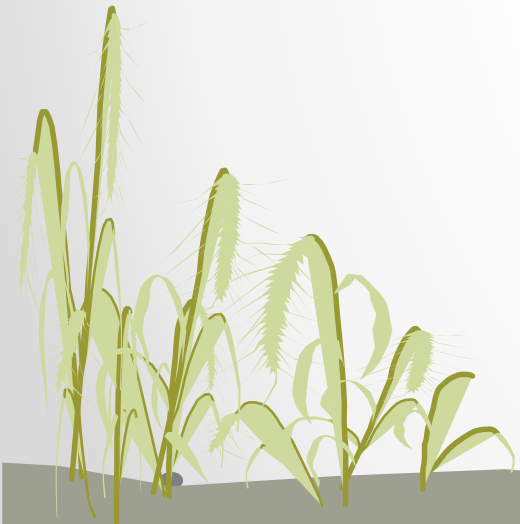


HUC8 Non-Point Source P Yields



Ag Groups Hit the Road on INLRS

Summer 2015





nutrient
stewardship

**KEEP IT
4R CROP**

Illinois Fertilizer & Chemical Association

**I
F
C
A**





IFCA's Nutrient Stewardship Team

Dan Schaefer, Director of Nutrient Stewardship

Jason Solberg, Assistant Director of Stewardship Programs

Continued Steps to Demonstrate Stewardship & Leadership

4R Code Of Practice Pledge

Rectangular Snip



I PLEDGE, as the representative of our company, that we will support the IFCA 4R Code of Practice and work to educate our employees and our customers on 4R methods outlined in the Code to improve nutrient use efficiency and reduce nutrient losses to the environment. We will also support IFCA with information to help build industry metrics on adoption of 4R practices to share with other nutrient stakeholders to document the progress of our industry as a whole in this effort.

Take The Pledge

Please complete the information below and click submit. (*) denotes a required field.

First Name *

Last Name *

Address 1 *

Address 2

City *

State/Province *

Zip/Postal Code *

Country *

Illinois Agriculture Must Take Action to Reduce Nutrient Losses and Avoid Regulation!

Do your part to STOP potential regulations by adhering to the 4Rs of nutrient stewardship: Talk to your crop adviser about Right Source, Right Rate, Right Time, Right Place practices on your farm to reduce losses of nitrogen and phosphorus and increase nutrient utilization.



Keep it 4R Crop: With the **Illinois Nutrient Loss Reduction Strategy** in place, agriculture must take action to reduce nutrient losses and protect water quality. Follow these **4R Practices** to reduce nutrient losses and demonstrate agriculture's voluntary commitment to nutrient stewardship:



DO NOT SPREAD DRY FERTILIZER ON FROZEN OR SNOW COVERED SOIL.

University of Illinois research shows that incorporating phosphorus containing fertilizers reduces surface runoff of P even on fields with less than 2% slope. Spread in fall or spring to Keep It 4R Crop.

DO NOT APPLY ANHYDROUS AMMONIA IN THE FALL UNTIL THE MAXIMUM DAILY SOIL TEMPERATURE FALLS TO 50° AND IS TRENDING DOWNWARD.

Go to www.ifca.com and click on "Soil Temperature" to monitor soil temps and trends.

USE LABELED NITRIFICATION INHIBITORS ON ALL FALL APPLIED AMMONIA.

Also consider using labeled nitrification and urease inhibitors on early spring applied nitrogen to protect both water and air quality.

USE THE APPROPRIATE NITROGEN RATE AND SPLIT YOUR NITROGEN APPLICATIONS.

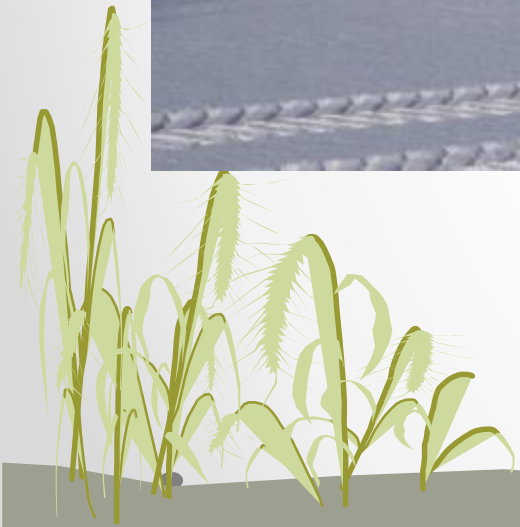
Follow the Maximum Return to Nitrogen (MRTN) University of Illinois recommended rate for your region and soil type. Enter "MRTN Calculator" on your Apple device or pw.ly/PHYVU for DROID. Go to www.Keepit4RCrop.org to access to N-Cal, a web-based program to help develop your split nitrogen program.

Talk to your ag retailer or crop adviser about 4R practices you can use to ensure Illinois farmers have freedom of nutrient choice today and well into the future. These 4R practices are endorsed by:



The 4R Code of Practice: Is it the Right Time? The Right Place?

There is a Better Time and Place to Apply Nutrients



IFCA Quarterly Partner Updates



SUMMER 2016

Our Mission: To promote and implement the 4Rs of nutrient stewardship (right source, right place, right time, right rate) to minimize environmental impact, optimize harvest yield and maximize nutrient utilization.

IN THIS SPECIAL THREE PAGE EDITION:

- **Ag Retailer in Action:** John Musser, Stephenson Service Company, Stockton IL
- **Nitrogen Management in 2016:** N-WATCH Reveals Both Applied and Mineralized Nitrogen
- **The Next Generation of Nutrient Stewards:** Students Active in NREC Projects and Field Work
- **Priority Surface Water Supplies:** Water Quality Update

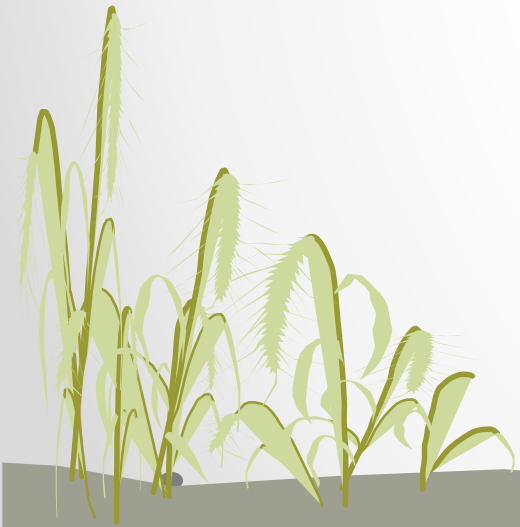
Ag Retailer in Action: John Musser, Stephenson Service Company

John is the Business Technology Manager for Stephenson Service Co. in Stockton, IL. He's been in the ag retail sector for 36 years and received his CCA designation in 1994—the second year of the CCA program. John recently achieved the 4R Nutrient Management Specialist certification and serves on the IFCA Board of Directors.

John's been a strong advocate of the N-WATCH™ soil nitrate testing program, and has been doing these soil tests in Northwestern Illinois since the program began in 2013. Everything he's learned about nitrogen management from N-WATCH and N-Rate Trials becomes part of the conversation he has with his farmer customers. "The farmers definitely have a better understanding of nutrient utilization and loss mechanisms than they had five years ago, and there's no longer an assumption that "it will be ok" if they don't take the goals of the nutrient loss reduction strategy to heart in their farming operations."



Partnerships with Water Supply & Treatment Officials



February 2016: 4R Nutrient Management Specialty

Illinois Leads The Nation In 4R Certified Nutrient Management Specialists



Posted By: [Matt Hopkins](#) | [Email](#)

April 22, 2016

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As **Illinois agriculture works to educate farmers about minimizing environmental impact and optimizing the use of ag nutrients**, Illinois now leads the nation in the number of Certified Crop Advisers (CCA) who are trained to educate farmers as “4R Nutrient Management Specialists” (4R NMS). There are 100 4R Nutrient Management Specialists nationwide, nearly half of whom are from Illinois.



Enter search criteria...

Illinois Fertilizer & Chemical Association

Supply · Service · Stewardship

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LEGISLATION ▾

MEMBERSHIP

KEEP IT 4R CROP ▾



To assist and represent the crop production supply and service industry with
the sound stewardship and utilization of agricultural inputs

4R CODE

N-RATE TRIAL RESULTS

NITROGEN UPDATES

4R EDUCATION

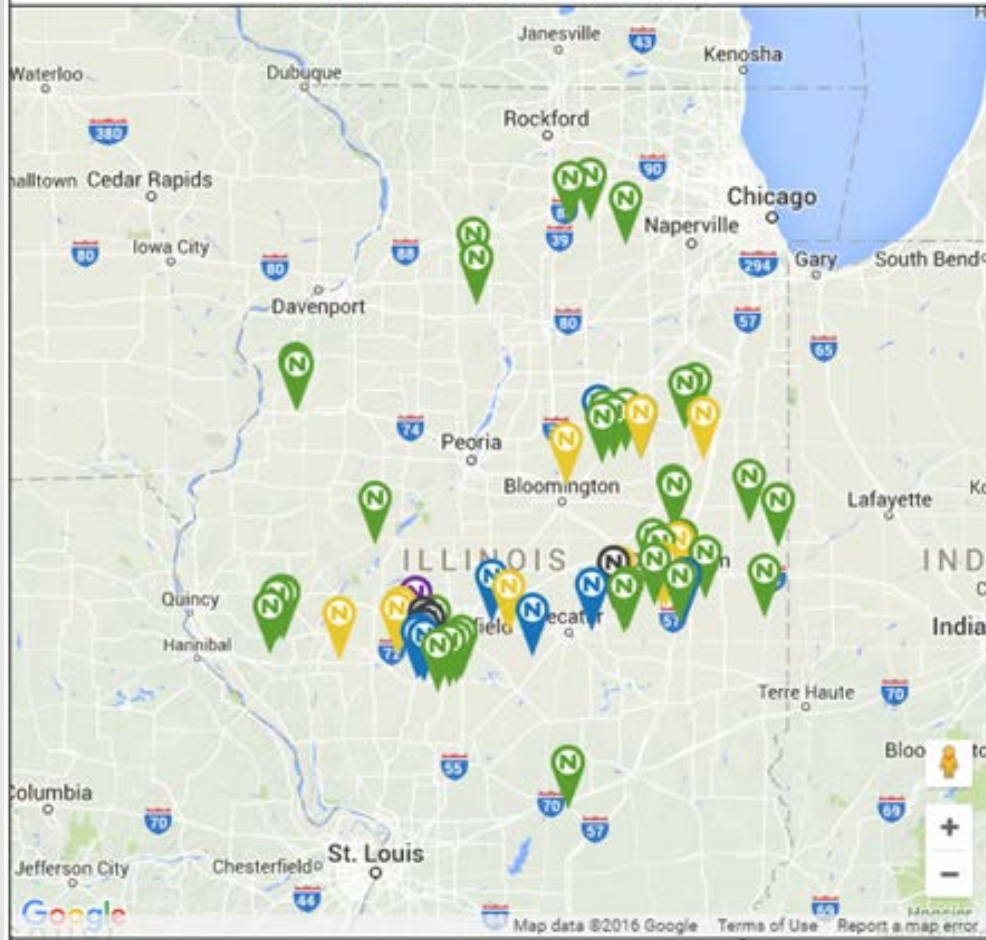
4R REPORTS

MRTN

N CALCULATOR

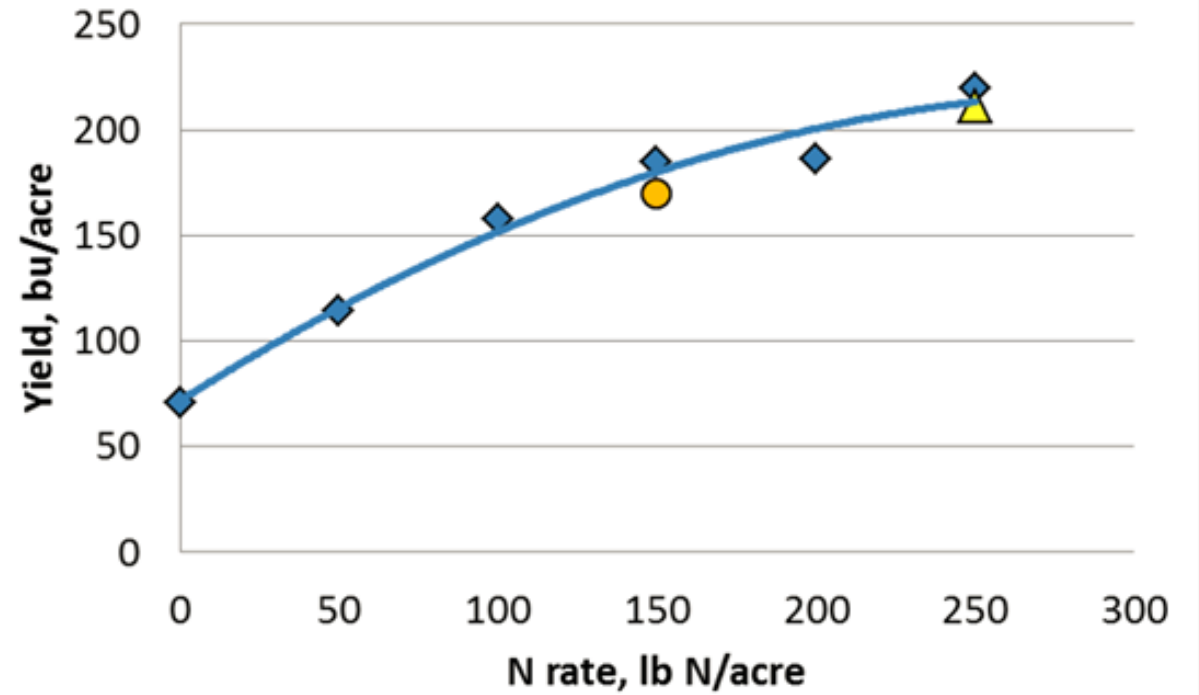
SOIL TEMPS

Keep It 4R Crop N-Rate Trials



McLean Co., Corn after Soy, 2015

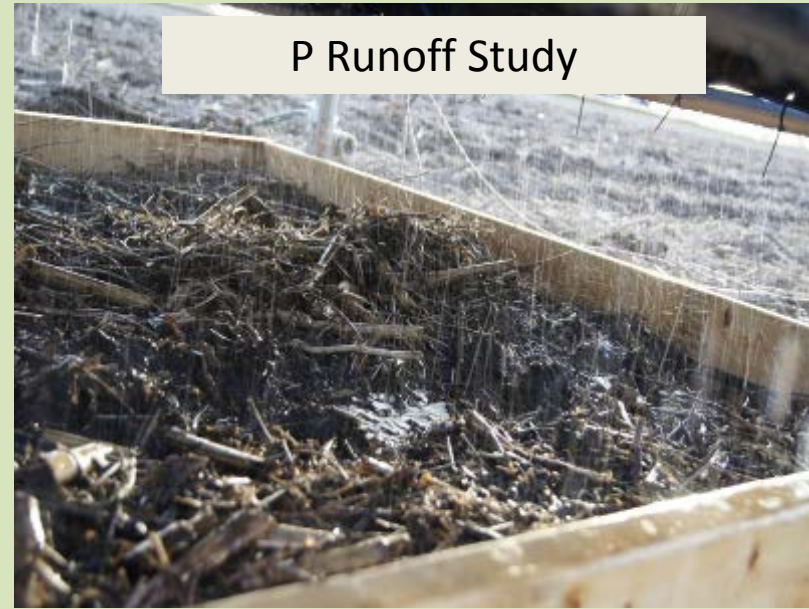
▲ Optimum-fall NH3 ● Fall 75 NH3 + Spring 75 SD NH3 split



Douglas County Tile Project on
Nitrogen Management



P Runoff Study



On-Going NREC Projects on Reducing Nutrient Losses – IFCA Assistance

TRACKING SOIL NITROGEN

with
NWATCH

KELLEY FARMS

An On-Farm Research Project by
University of Missouri &
Missouri Fertilizer & Chemical Association

ILLINOIS

ACES

Missouri Fertilizer & Chemical Association

Missouri Fertilizer & Chemical Association

Missouri Fertilizer & Chemical Association

Evaluating Bioreactors in Piatt County



Coming Soon: 4R Metrics

- 4R Certification of Ag Retailers Who Embrace These Principles and Practices – Coming Soon
- Number of Acres Under 4R Management
 - Right Source & Time (Split Applications)
 - Right Rates for N & P
 - Right Time (Fall BMPs)
 - No Spreading on Frozen, Snow Covered Soil
 - Education of Retail Advisers and Farmers
- Overall Fertilizer Sales Data – Spring & Fall

IFCA Members & CCAs:
You are Leaders in Nutrient Stewardship
THANK YOU!



**Illinois Fertilizer &
Chemical Association**
Supply • Service • Stewardship

