

# **Issues Facing the Illinois Fertilizer Industry**



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

**IFCA's Mission Statement:** To assist and represent the crop production supply and service industry while promoting the sound stewardship and utilization of agricultural inputs

**1,100+ Members Including:**

**Ag Retailers**

**Fertilizer & Pesticide  
Manufacturers  
and Distributors**

**Equipment Suppliers**

**Input Consultants**



# Major Issues Facing Illinois Agribusiness

- **Controlling N & P Losses to Avoid Litigation**
- **Hours of Service Regulations**
- **The Sad State of Our State**



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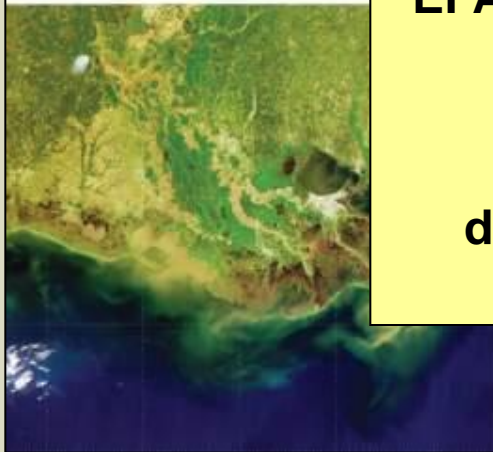
# Water Quality Challenges

- **Hypoxia**
- **Nutrient Standards – Numeric Criteria**
- **Fall Applied Nitrogen Gets Most Attention**
- **Lawn care Industry seeing more regulations**





**Hypoxia in the Northern Gulf of Mexico**  
An Update by the EPA Science Advisory Board



**EPA Hypoxia SAB report suggested**  
**45% less total N**  
**AND**  
**45% less total P**  
**discharge to the Gulf to reduce**  
**hypoxia**



### Nutrients and Hypoxia in the Gulf of Mexico — An Update on Progress, 2005

By A.J. Swadlow

Based on data presented here and to the U.S. Environmental Protection Agency's Science Advisory Board (SAB), EPA (2005) reports that progress has been made in reducing the amount of N and P to the Gulf of Mexico via groundwater through voluntary efforts by farmers, their advisors, and their suppliers. Stronger ground-water protection, local environmental planning, and other actions, and a greater environmental commitment and close working relationships between and among the Mississippi River Basin (MRB) States (Mississippi, Arkansas, Louisiana, and Texas) are necessary to achieve the goal of reducing N and P to the Gulf of Mexico to the level of the Mississippi River Basin (MRB).

Since 1995, the total amount of hypoxia (2.5 mg/L or less) in the northern Gulf of Mexico has been estimated annually in late July by scientists with the Louisiana Universities Marine Consortium (LUMCON). Figure 1 shows the extent of hypoxia beginning in 1995 and through 2004. Hypoxia extends southward from the mouth of the Mississippi River into the Gulf of Mexico. The extent of hypoxia in the Gulf has increased since 1995 and is currently the largest in the world. The extent of hypoxia in the Gulf is related to the amount of N and P discharged from the Mississippi and Atchafalaya River Basins (MRAB).



Extent of low oxygen (hypoxia) in the northern Gulf of Mexico in late July, 2005. The map shows the extent of hypoxia in the northern Gulf of Mexico in late July, 2005. The map shows the extent of hypoxia in the northern Gulf of Mexico in late July, 2005.

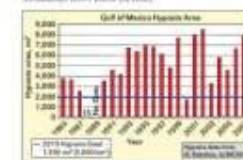


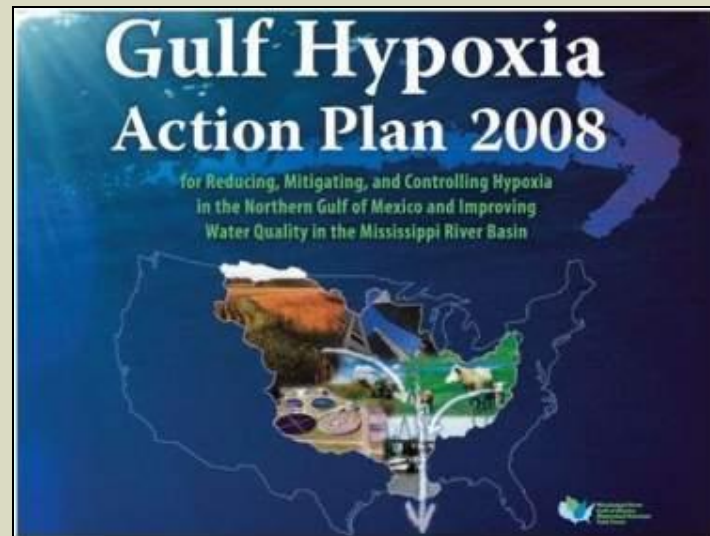
Figure 1. Area of hypoxia in the northern Gulf of Mexico, as determined by satellite remote sensing in late July. Data source: LUMCON (2005).

Federal, state, and tribal authorities developed an Action Plan and Action Plan to reduce the goal of reducing the hypoxia area in the northern Gulf of Mexico to a level no greater than 1,000 km² (100,000 ac) by 2015 (MAGNITUDE, 2001). Since 2001, knowledge has expanded in the complexity of factors (e.g., climate, weather, basin morphology, coastal water circulation patterns, water retention time, freshwater inflows, stratification of freshwater and saltwater, nutrient loading, and loss of processing marsh lands along the Louisiana coast) that contribute to the development of hypoxia in the Gulf. For example, a recent report by Holland and DeMarco (2005) has reported some of the complexities associated with coastal physical processes, and factors that

relate to the loading of the river, which affects hypoxia development and persistence east and west of the shelf edge south of Terrebonne Bay in Louisiana. These two authors suggest that a major obstacle to progress may be the dominant factor affecting the area and extent of hypoxia along the Louisiana coast, which is related to the loading of the Mississippi and Atchafalaya River Basins.

At the request of the Mississippi River Gulf of Mexico Watershed Pollution Task Force (MRGWPTF), EPA requested a team of leading scientists to form a Hypoxia Science Advisory Board to assess current best practices, identify the requirements of the hypoxia area and associated water quality and habitat conditions, and estimate and on all effects since the 2001 Action Plan (MRGWPTF, 2001) was released. The SAB reported, "Hypoxia area is currently in deep basins, bays, and along the coast, and is associated with high nutrient loading. However, nutrient-induced hypoxia in shallow coastal and estuarine systems is increasing worldwide" (EPA SAB, 2005). The SAB report also stated that "Recent science has confirmed the basic conclusion that contemporary changes in the hypoxia area in the northern Gulf of Mexico are primarily related to nutrient flows from the MRB." A new Action Plan is in development and a draft has been released to the public (MRGWPTF, 2005).

Future N-loading reduction goals (MRGWPTF, 2001) were based principally on N<sub>2</sub>O discharge reduction (currently regulated as the combined reduction of N<sub>2</sub> and N<sub>2</sub>O, known as N<sub>2</sub>O), but the 2001 EPA SAB report recommended reductions in nitrate and nitrite for this specific N<sub>2</sub>O strategy. If a phosphorus (P) loading management program (N<sub>2</sub>O loading, N<sub>2</sub>O, nitrate, and nitrite) is implemented, the SAB report recommended reductions in nitrate and nitrite for this specific N<sub>2</sub>O strategy.



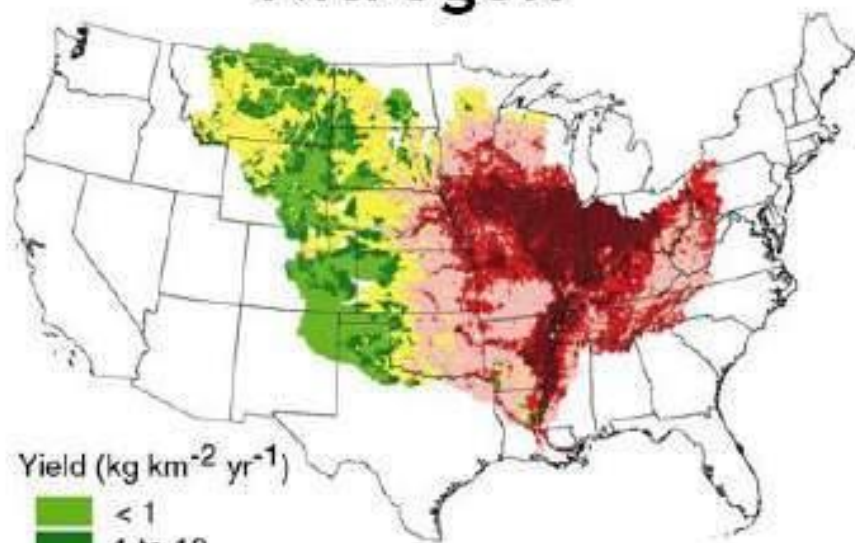


# Is Illinois the Next Florida?

- Illinois EPA has challenged Illinois agriculture to reduce nitrogen & phosphorus losses
- Illinois Chapter of Sierra Club threatening to sue to set standards if agriculture does not develop a strategy
- IEPA Bureau of Water Chief is asking for a plan from the ag industry in the next 6-8 weeks; after that opportunity may be lost to control this issue.

# USGS Estimates Loss of N and P and Delivery to the Gulf of Mexico

## Nitrogen



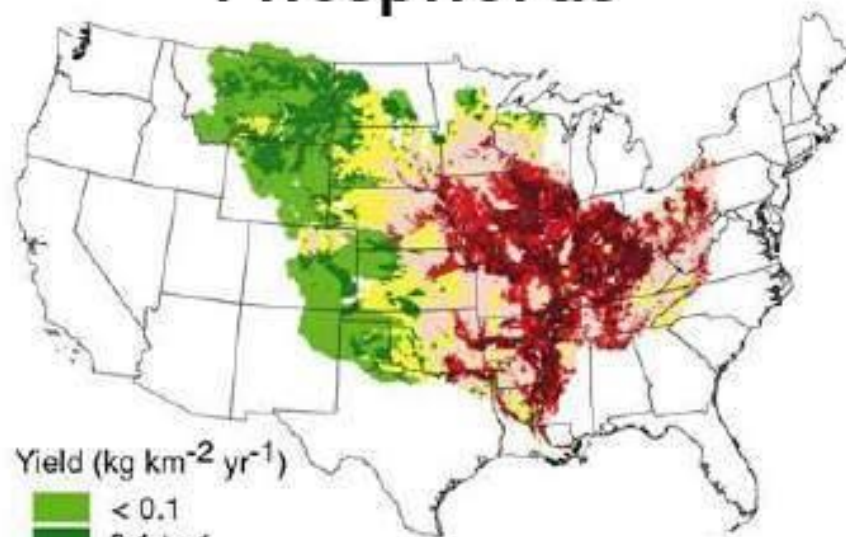
Yield ( $\text{kg km}^{-2} \text{ yr}^{-1}$ )



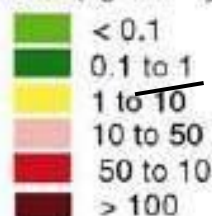
kg/ha

.01  
.01- 0.1  
0.1 to 1  
1 to 5  
5 to 10  
>10

## Phosphorus



Yield ( $\text{kg km}^{-2} \text{ yr}^{-1}$ )



kg/ha

.001  
.001- 0.01  
0.01 to 0.1  
0.1 to 0.5  
0.5-1.0  
>1

in press

# Illinois' Crop Systems Make Controlling Nutrient Losses Particularly Challenging

- Biggest Corn Counties are the Most Heavily Tiled

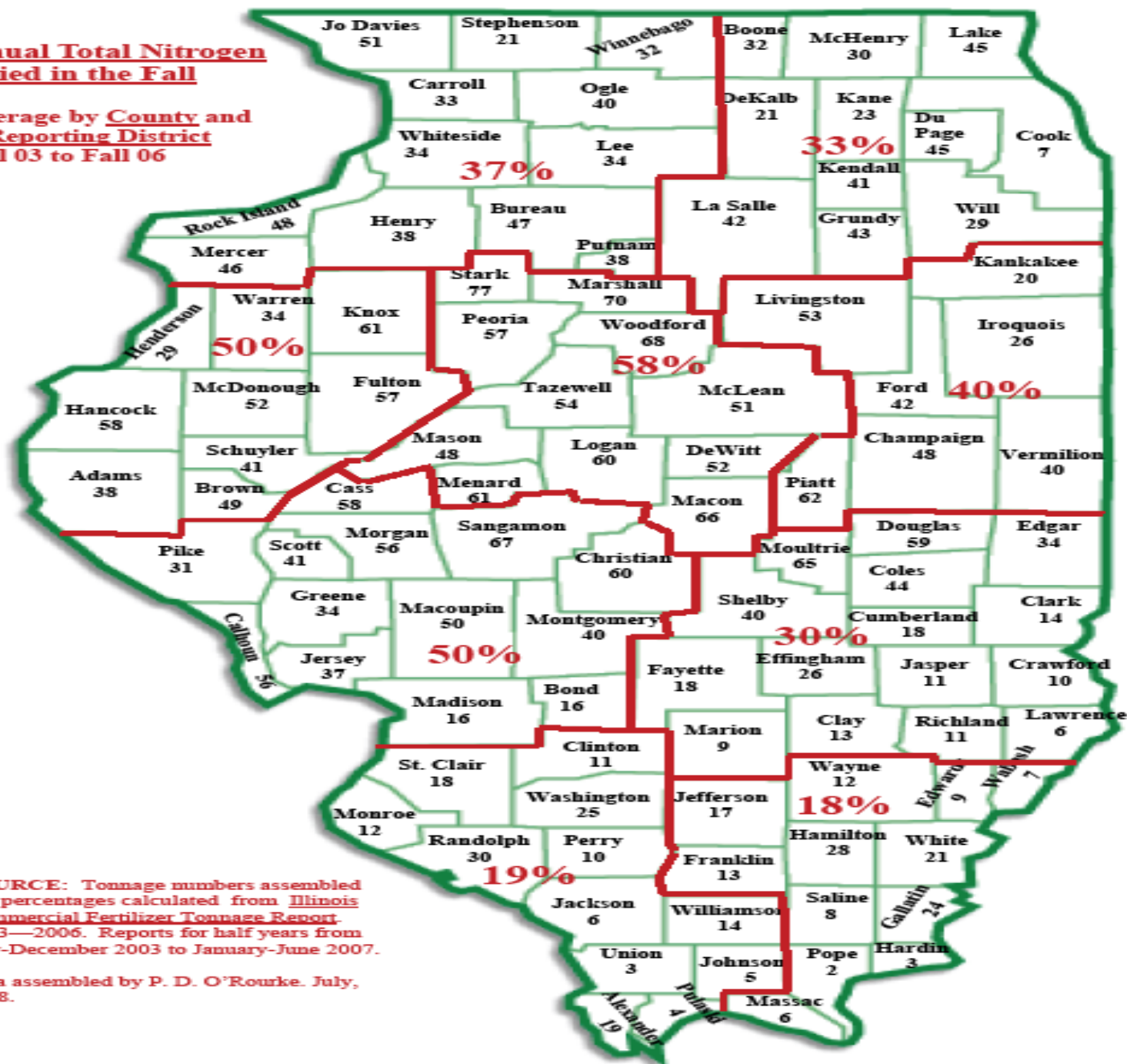




- **ILLINOIS IS AN AMMONIA STATE**  
**(60% NH<sub>3</sub>, 35% UAN, 5% Dry)**
- **In a “normal” year nearly 50% of all nitrogen goes down in the fall (350,000 tons approximately) in the form of anhydrous ammonia**

**% of Annual Total Nitrogen  
Applied in the Fall**

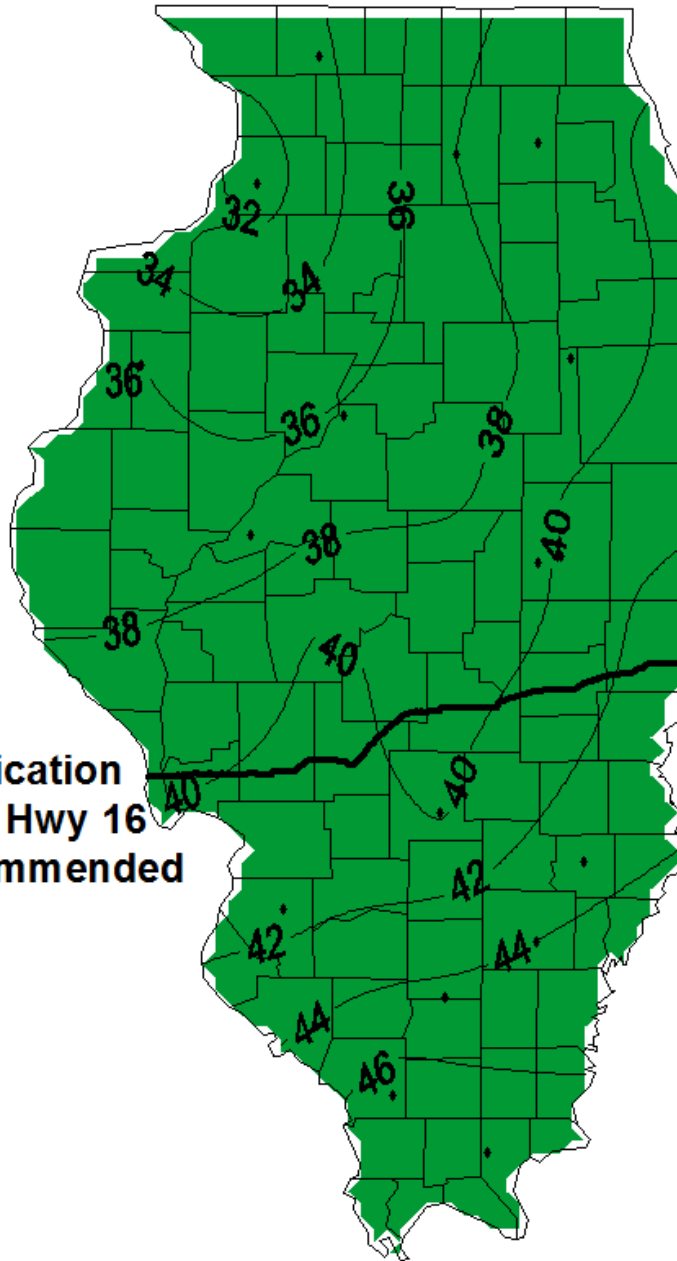
**4-year Average by County and  
Crop Reporting District**  
Fall 03 to Fall 06



**SOURCE:** Tonnage numbers assembled and percentages calculated from Illinois Commercial Fertilizer Tonnage Report, 2003—2006. Reports for half years from July-December 2003 to January-June 2007.

Data assembled by P. D. O'Rourke. July, 2008.

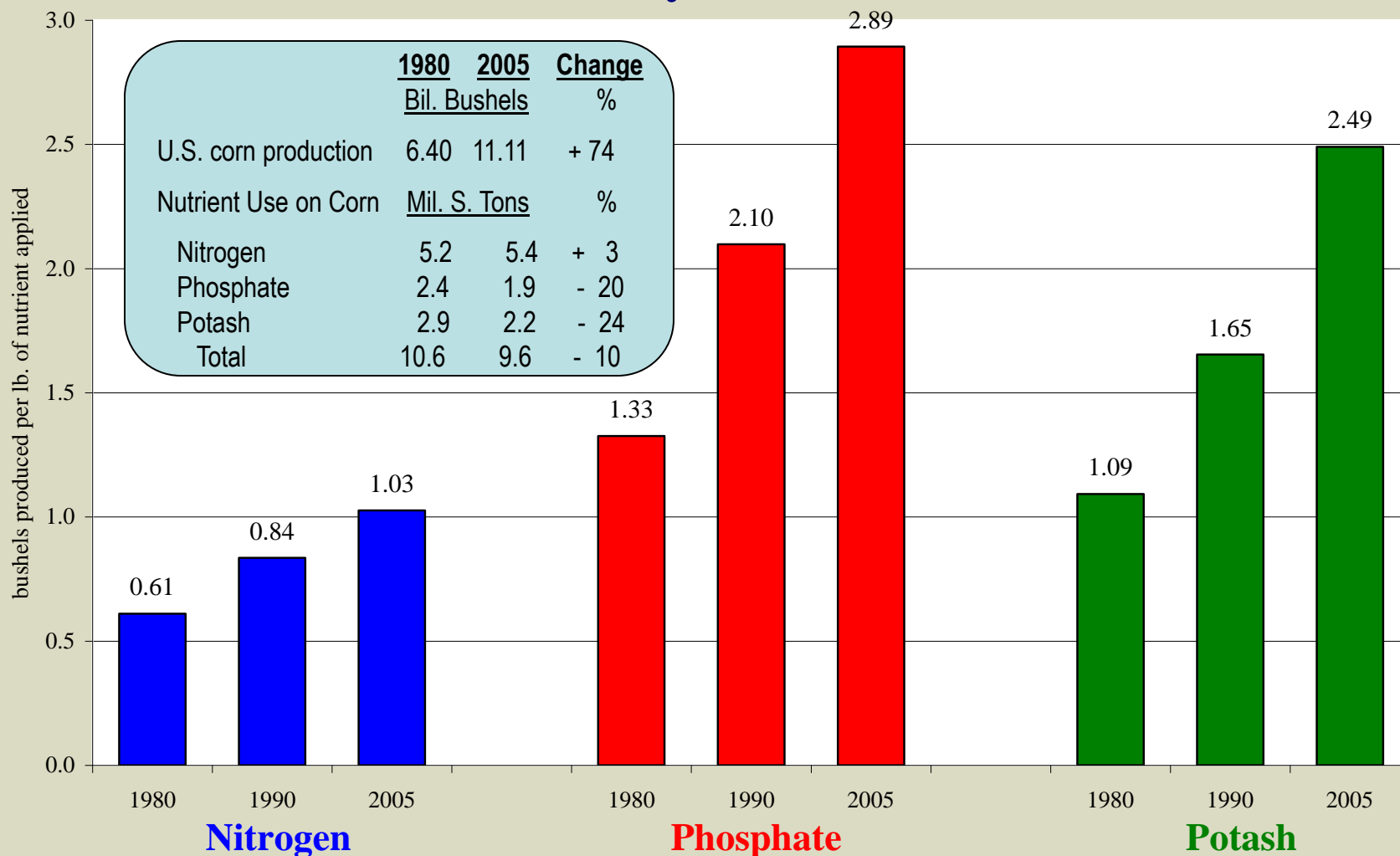
November 30, 2010



Fall N application  
south of IL Hwy 16  
is not recommended

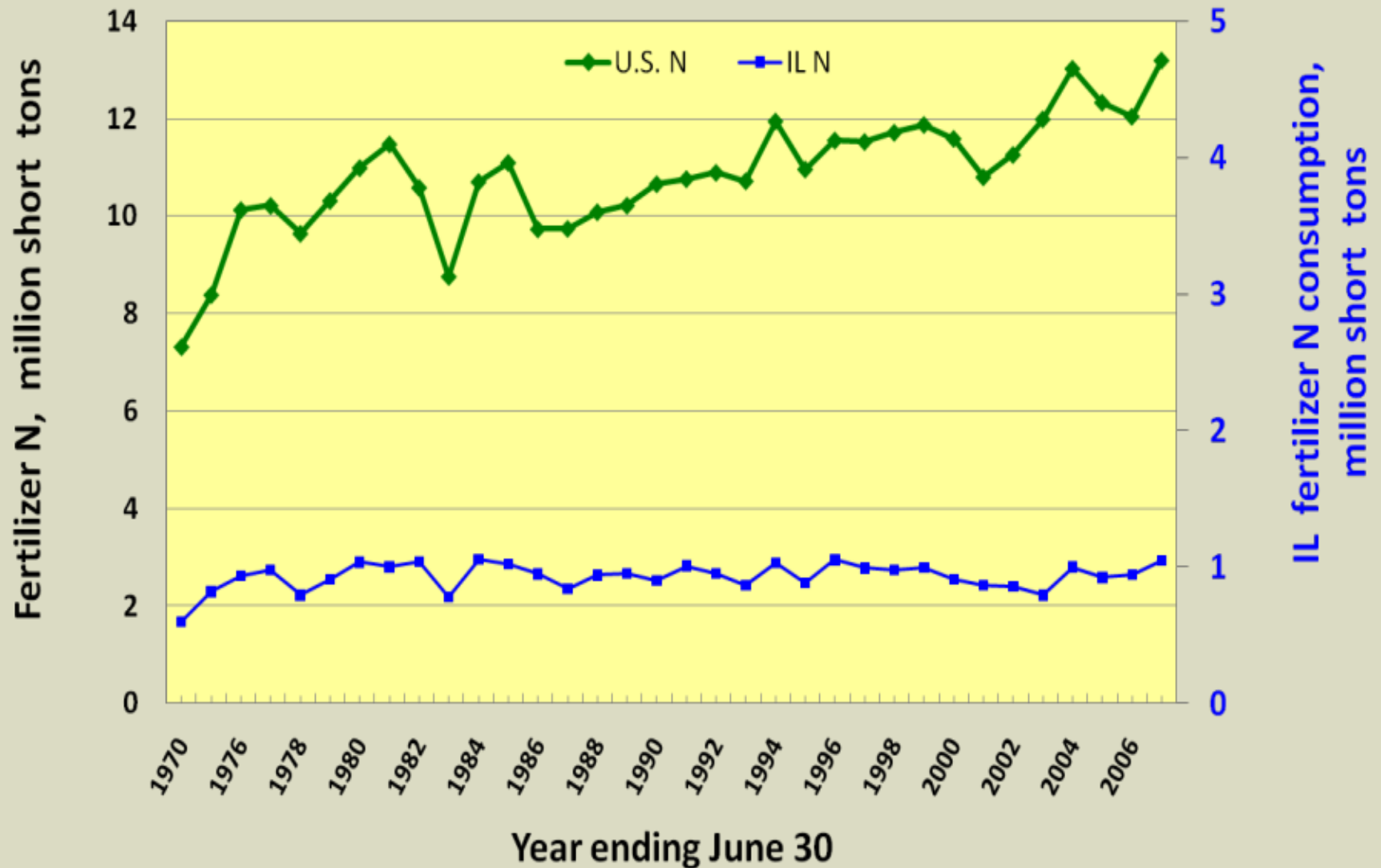
- IFCA Posts State 4 inch bare soil temps on our website
- Site is Red when soil temps are above 50 degrees
- Stabilize at 60 or wait until 50 is history; new recommendations call for waiting till 50 degree soil temps to start

# Nutrient Use Efficiency in U.S. Corn Production



Source: Computed by The Fertilizer Institute from data reported by USDA.

# U.S. and Illinois Fertilizer N Consumption





# Impact of Nitrogen Management on Corn Grain Yield and Nitrogen Loss on a Tile Drained Field

Matt Clover and Bob Hoelt



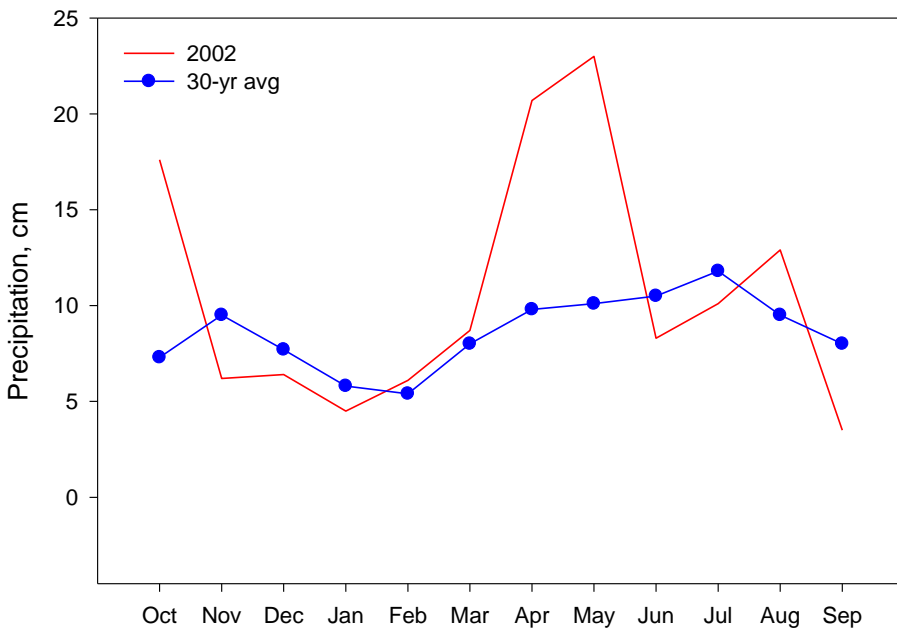
# Objectives

- Determine the effect of time and rate of nitrogen application and use of nitrification inhibitors on nitrate concentration and content losses from subsurface tile lines and on corn grain yield

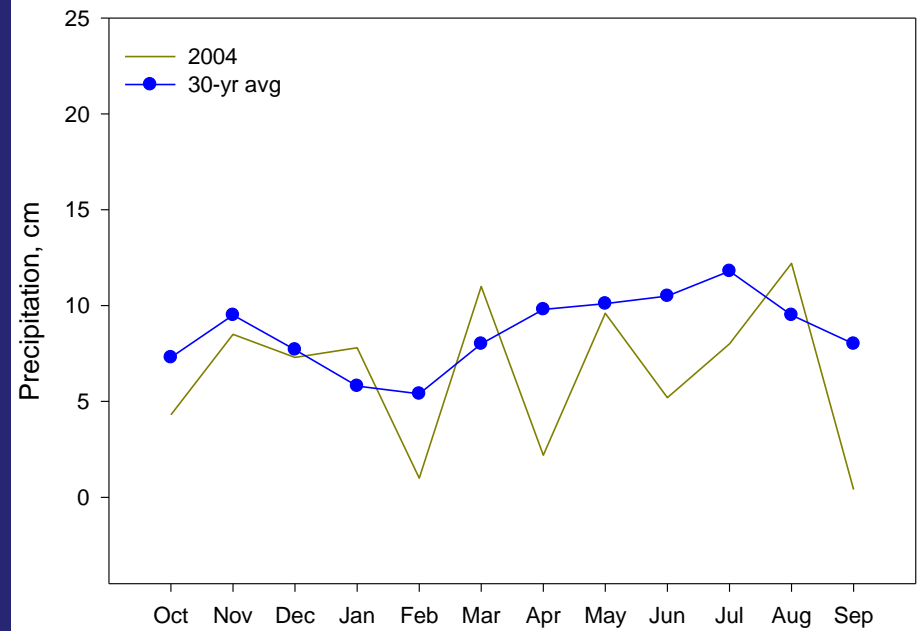
# Climatic Conditions

## Precipitation

2002

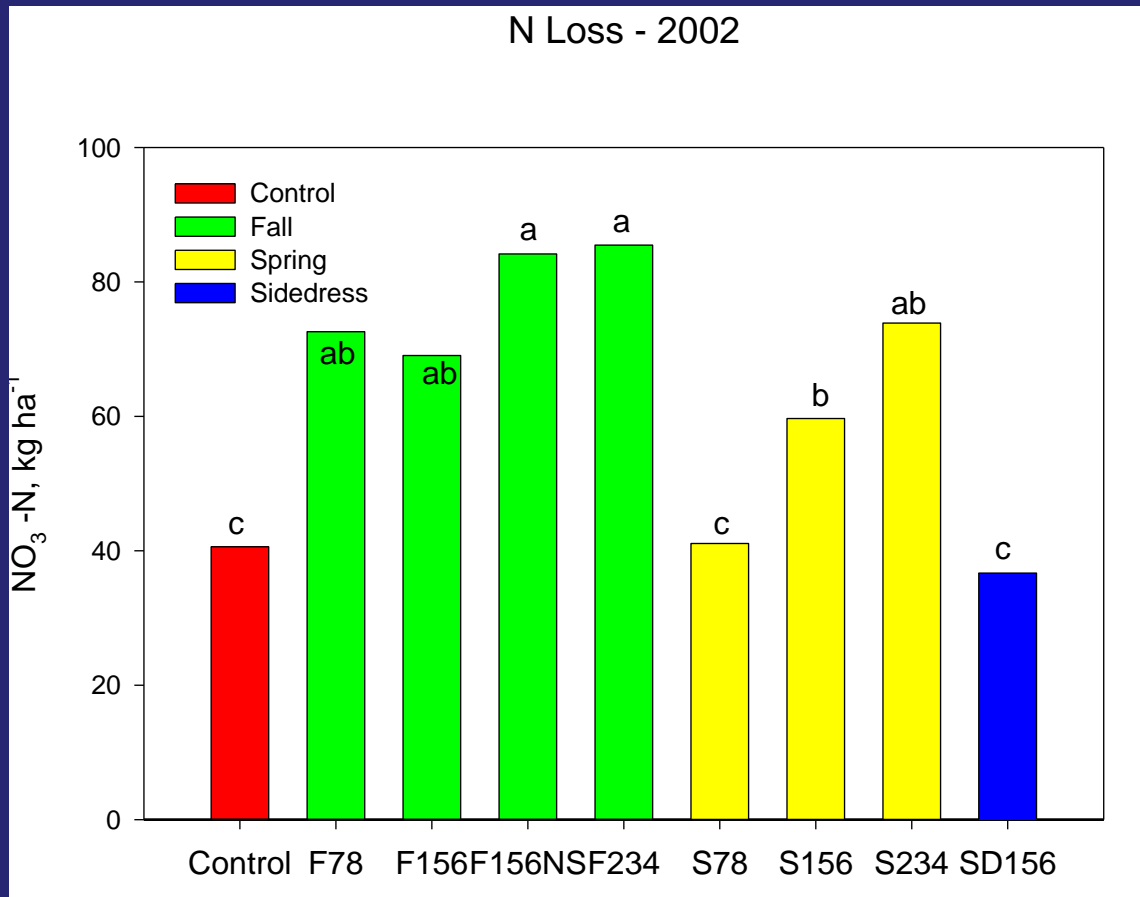


2004





# Nitrogen Loss – 2002 Corn



Contrast

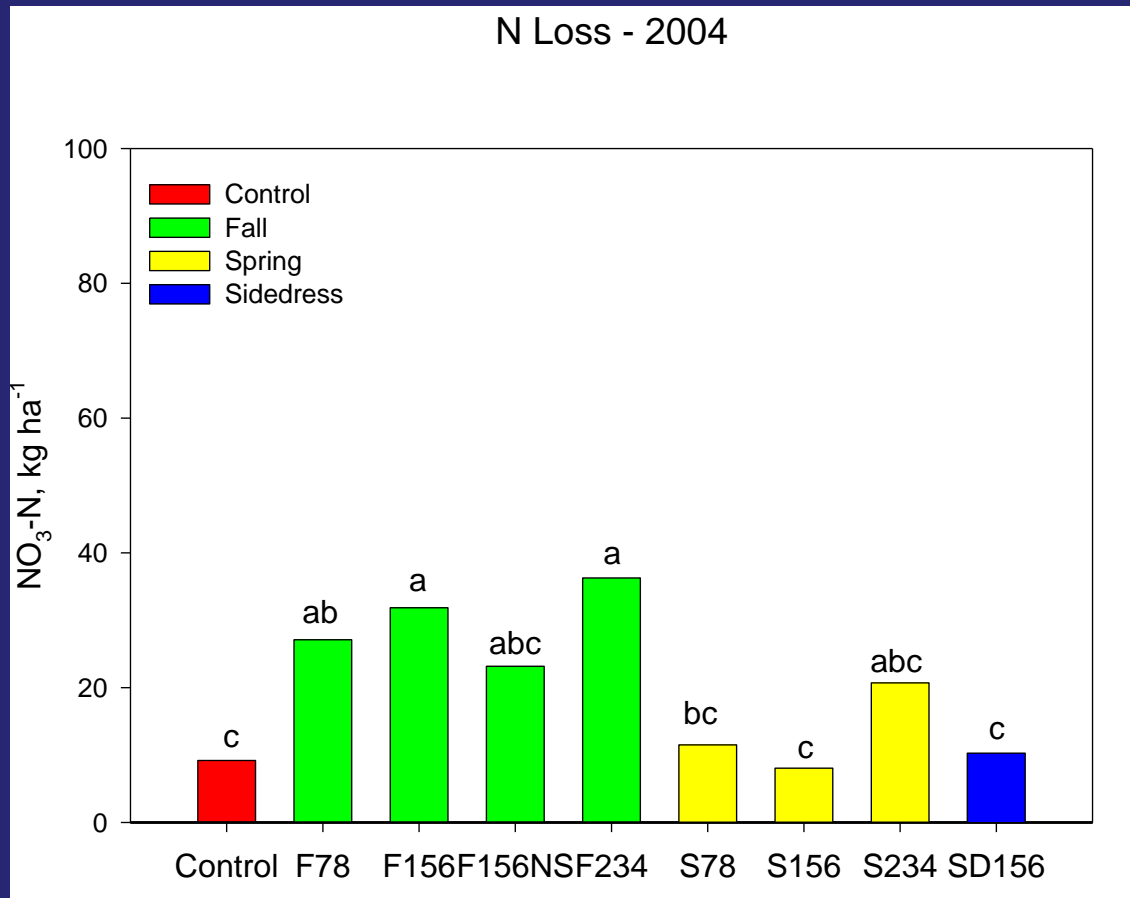
Pr > F

Fall vs. Spring

0.0030

$\text{LSD}_{.10} = 18.30$

# Nitrogen Loss – 2004 Corn



Contrast

Pr > F

Fall vs. Spring

0.0007

LSD<sub>.10</sub> = 15.84



# Results

- On the average, losses from the fall applications were significantly higher than those in the spring in both years
- The Sidedress treatment significantly decreased losses as compared to the Fall 156 kg ha<sup>-1</sup> treatment in both years, and the Spring 156 kg ha<sup>-1</sup> treatment in only 2002

# Results

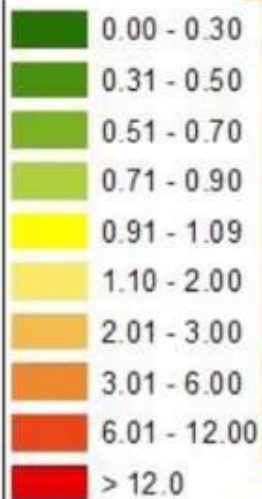
- A significant yield increase due to applied nitrogen over the control was seen in all three years regardless of season of application or use of nitrification inhibitors
- On the average, spring applications yielded significantly higher than fall applications in 2 of 3 years
- The use of N-Serve significantly increased yields over the Fall 156 kg ha<sup>-1</sup> treatment in 2004
- A significant yield increase from the Spring 234 kg ha<sup>-1</sup> treatment over the Spring 156 kg ha<sup>-1</sup> was seen in both 2002 and 2004

# Challenges on Nitrogen

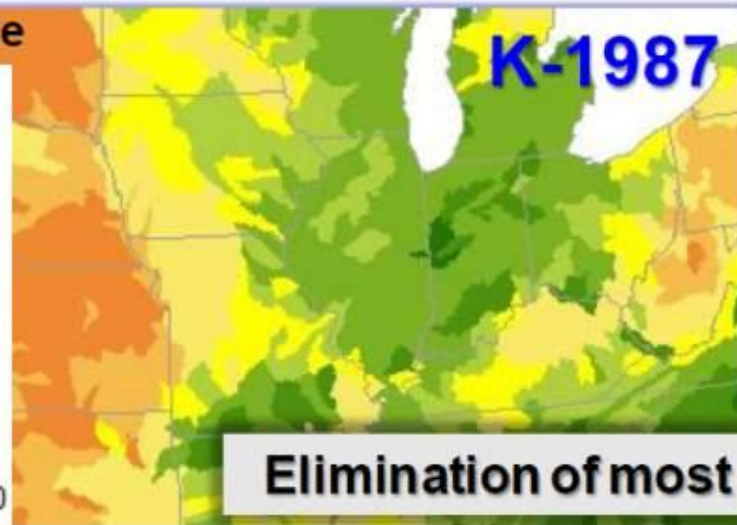
- **IFCA Study:** Moving all N to Spring in Illinois would require a \$1 billion investment in infrastructure at the retail level.
- This does not take into consideration possible higher N prices due to supply and demand situations in the spring

# Changes in Corn Belt P and K Budgets

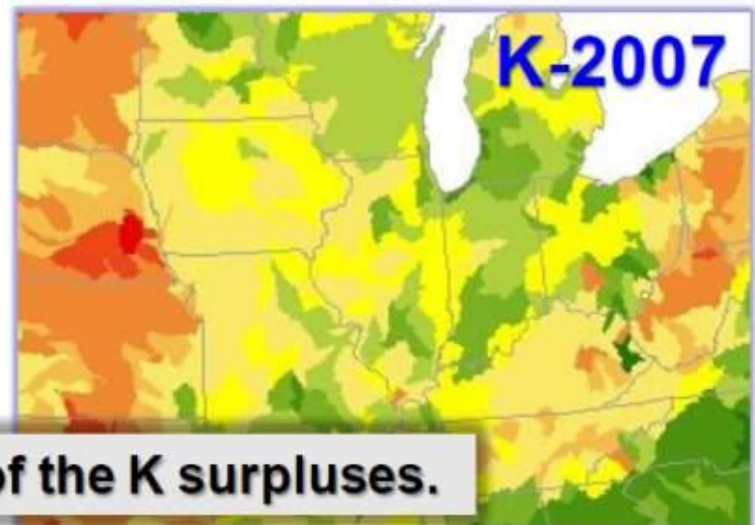
Removal/Use



K-1987

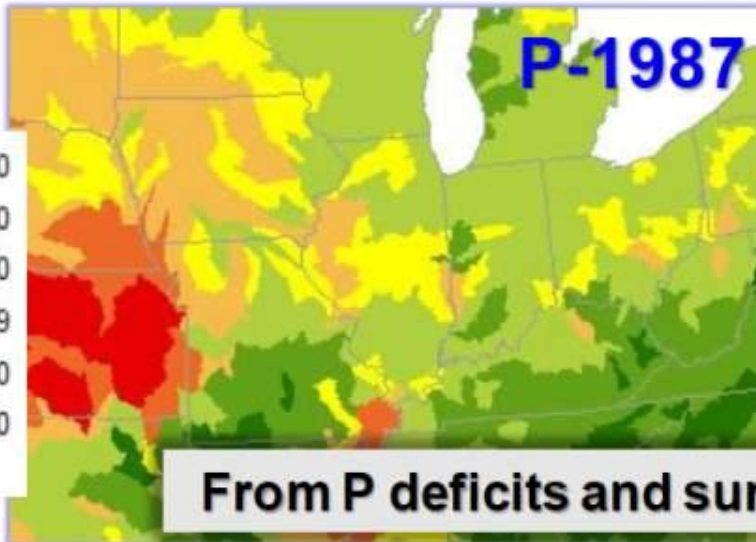


K-2007

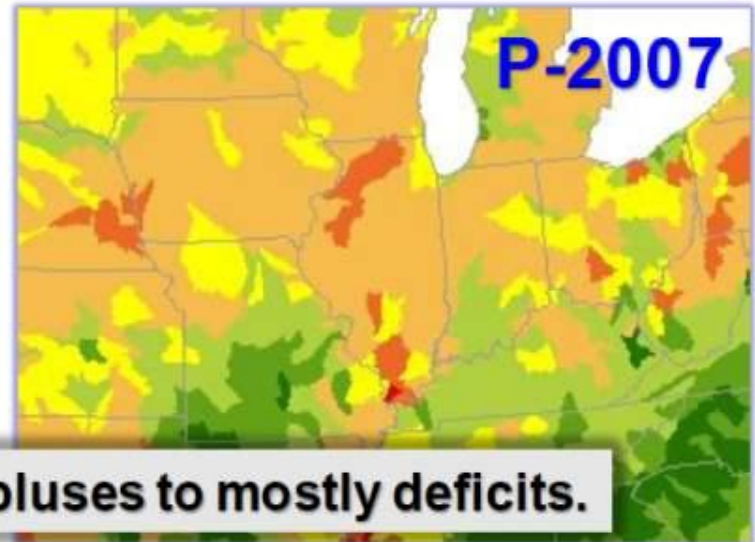


Elimination of most of the K surpluses.

P-1987

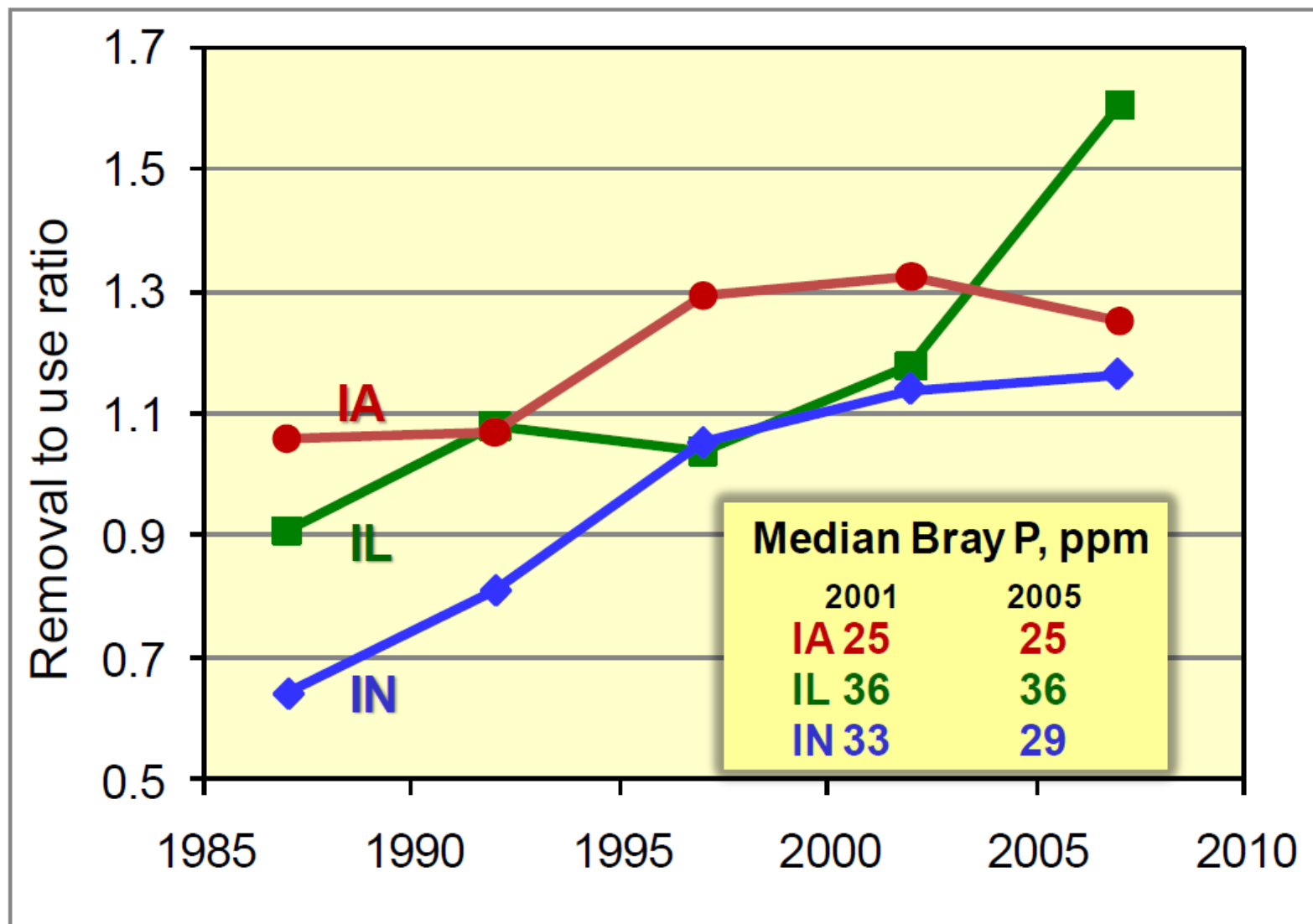


P-2007



From P deficits and surpluses to mostly deficits.

## P removal to use ratios for the “I” states





# Overall Nutrient Strategy

- Invest in research and education (IFCA has a plan)
- Encourage (eventually require?) farmers to develop a nutrient management plan based on 4R program
- Prioritize vulnerable watersheds where fall N in heavily tiled fields is an issue; encourage move to split and/or spring application to save fall N use in less vulnerable areas of the state
- Document our success; we've failed to do this in the past thus we get no credit for accomplishments

# **MORE FEDERAL ISSUES**



**Illinois Fertilizer &  
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# Ag Hours of Service Exception

- FMCSA rescinded the exemption in late 2009 over interpretation
- **This is CRITICAL to meets the seasonal demands.**
- Illinois moved 33,460 cargo tanks loads from terminal to retail site in 2008 under this exception
- Focused so much on the problems associated with ammonia we didn't dream that FMCSA would not give exemption for liquid or dry fertilizer!



# Ag Hours of Service Exception

- IFCA submitted extensive comments to FMCSA
- **IFCA Board and Members Personally Visited FMCSA Director Anne Ferro**
- FMCSA granted 90 day waiver for ammonia in spring 2010; gave 2 year waiver for ammonia in fall 2010 (just in time)
- **With Congressman Oberstar defeated, hope to fix this problem for good, we have lots of support.**



# The Sad State of Our State





## The Starting Point:

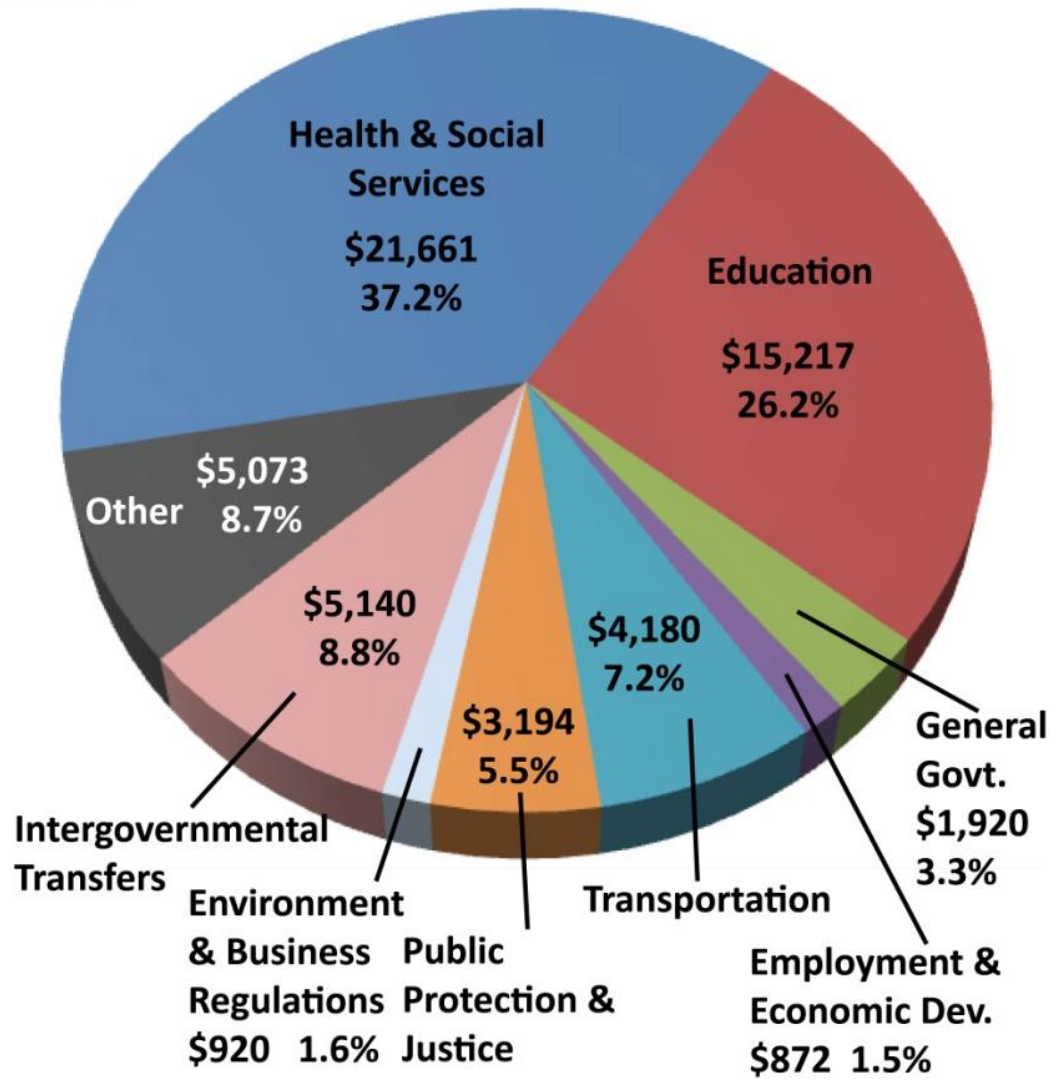
**Illinois State Government is in the worst fiscal crisis since the Great Depression**

- The backlog of unpaid bills is over \$8 billion and continues to rise.
- Illinois businesses have not received 2008 or 2009 tax refunds owed to them.

5

## Expenses FY 2008

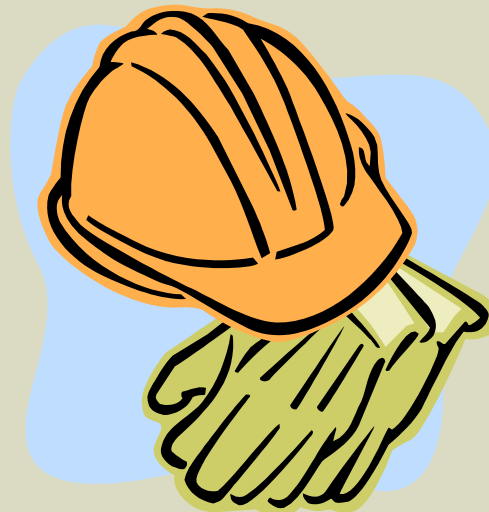
(\$ in millions)

**\$58,177 Total**

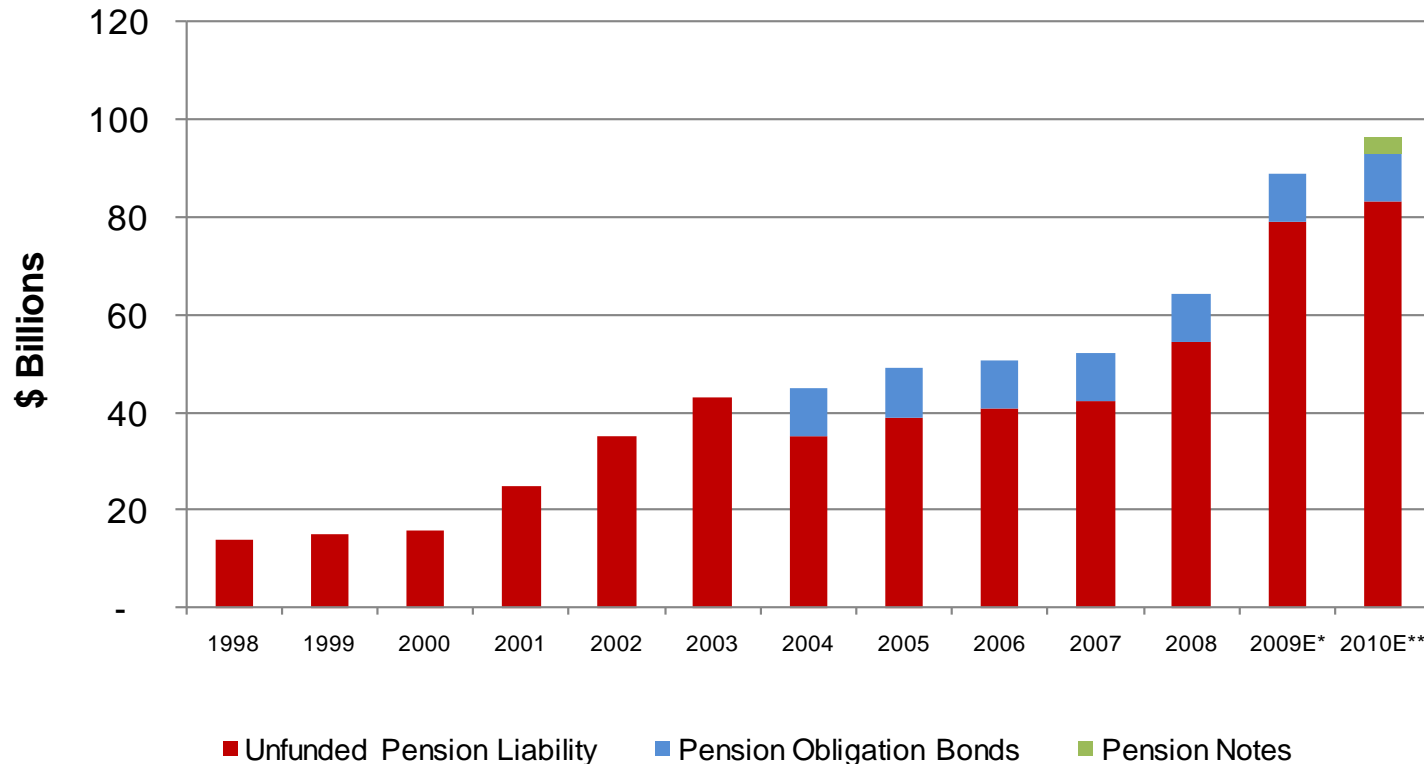
Source: *Comprehensive Annual Financial Report, 2008*, Illinois Office of the Comptroller, Springfield.

**Between 1990 and January 1, 2008,  
Illinois lost 249,000 manufacturing jobs  
(a decline of 27%)**

- **This loss was worse than both the  
Midwest (-23.2%) and the Nation  
(-23.9%).**



# State Unfunded Pension Liability and Other Pension Debt



\*Estimate is based on COGFA April 2009 Pension Briefing projection of \$78.9 B unfunded liability at the end of FY2009.

\*\*Estimate is based on COGFA April 2009 Pension Briefing projection of \$83 B unfunded liability at the end of FY2010 and \$3.5 B in pension notes issued in FY2010. The Governor's proposed \$16 B in new pension bonds would not change the total amount of pension debt, but would convert approximately \$16 B (minus transaction costs) of unfunded liability into pension obligation bonds.

Source: "2008 Bonded Indebtedness Report of the State of Illinois," January 2009, Commission on Government Forecasting and Accountability; Commission on Government Forecasting and Accountability Monthly Briefing, April 2009; "Report on the Financial Condition of the State Retirement Systems," February 2009, Commission on Government Forecasting and Accountability; Commission on Government Forecasting and Accountability Monthly Briefing, February 2009; "Report on the Financial Condition of the State Retirement Systems," February 2008, Commission on Government Forecasting and Accountability; "Report on the Financial Condition of the State Retirement Systems," July 2007, Commission on Government Forecasting and Accountability; Historical unfunded liability data from Senate GOP staff.

## The Context:

### BIG 'N RICH



- In 2008, Illinois ranked fifth nationally with a Gross State Product in excess of \$633 billion (BEA).
- That would be the 27<sup>th</sup> largest economy of any nation in the world-greater than Egypt, Saudi Arabia, Colombia, Belgium, Sweden, Greece, Ireland, Portugal, Norway and Nigeria, to name a few.

**ILLINOIS' ECONOMY  
IS LARGE**

# Illinois State Sales Tax

**\$8.5 billion in revenues**

Average Annual Growth Rate	1991 – 2000	6.3%
	2001	-1.1%
	2002	1.6%
	2003	0.1%
	2004	4.5%
	2005	4.2%
	2006	7.5%
	2007	0.6%
	2008	1.1%
	2009	-6.1%
	YTD 2010	-13.6%

**State of Colorado removed sales tax exemption for ag inputs this week**



## IL Dept of Ag Fee Increases

- From \$20 to \$30 for private applicators
- New fees for some other pesticide licenses
- \$100 agrichemical facility containment permit fee
- Slight increase in scale inspection fees
- Increase in pesticide product registration fees

IDA faces another 15% budget cut; industry working to keep IDA viable.

## What is Yet to Come in Illinois?

- Personal and corporate income tax increase; but will only raise \$5 billion against a \$15 billion deficit.
- Service tax could be proposed
- Elimination of exemption (ag inputs) could be proposed
- Big sucking sound as neighboring states have new Governors and legislatures with more business friendly attitude.

Pray for Illinois!

