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# Iowa Water Issues

**Jim Gulliford, Executive Director**
**Soil and Water Conservation Society**

# Soil and Water Conservation Society

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- Private, non-profit professional society
- 5000 members - scientists, educators, practitioners, farmers, ranchers
- Advocate for sustainable soil, water, natural resource management
- Private, working lands

# Population

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- Current Population – 310 million
- Projected 2050 Population – 438 million*
  - 41% increase over next 40 years

* Pew Research Center, 2/11/2008

# Population

- Current US Population – 310 million
- Projected 2050 Population – 438 million*
  - 41% increase over next 40 years
- Need for our nation's private working lands to provide food, fiber, forage, and fuel for the US and world's population

* Pew Research Center, 2/11/2008

# International Commitment

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- 2000 United Nations General Assembly
  - to halve the world's undernourished and impoverished population by 2015

- Virtually no progress*

* UN Millennium Goals, 4 August 2007

# Addressing Projected Food Demand

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- Bring more lands into production
- Produce more from current land in production - increase productivity
- Import more food into the country

# 2010 CEAP* Release

- Conservation Practices on Cultivated Cropland
  - 32 million acres of corn
    - 40% corn grain harvested nationally
  - 19 million acres of soybeans
  - 15% cropland acres have excessive erosion
  - 25% cropland acres are losing soil carbon
  - 62% cropland acres require additional nutrient management to reduce nitrogen and/or phosphorus loss from fields
  - 5% tile drained lands protected from Nitrate N loss

* NRCS Conservation Effects Assessment Program, Upper Mississippi River Basin - June, 2010

# Challenge

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- Meeting the food, fiber, forage and fuel needs in the United States
- Sustaining and improving the productive capability of the nation’s farm and ranch lands
- Protecting and improving environmental quality

# Challenge

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- Meeting the food, fiber, forage and fuel needs in the United States
- Sustaining and improving the productive capability of the nation's farm and ranch lands
- Protecting and improving environmental quality

**Scientific challenge,**

**Grossly underestimated**

# Non-solutions

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- Bringing more lands (non-Ag lands, marginal Ag-lands) into food and commodity production

- Continuing current Ag production activities that have non-sustainable, adverse environmental impacts

# Solution Model

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- Advance science that makes our most productive lands, more productive **and** environmentally sustainable
  - Improve crop, input, soil and water management systems
  - Improve nutrient management (N, P) to optimize production and reduce nutrient loss
  - Intercept and address nutrients lost through drainage and runoff
  - Market ecosystem services from Ag lands

# Technologies and Initiatives

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- Iowa denitrification wetlands
- Iowa drainage and wetlands landscape initiative
- Iowa Statewide Nutrient Reduction Strategy
- USDA Upper Mississippi River Basin Initiative

# Accountability

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- Address drainage districts like watersheds
  - Assure wetland functions and values are protected; fair mitigation
  - Install treatment wetlands to scrub nutrients that escape the Ag production system
  - Improve nutrient management
  - Enhance drainage to enhance Ag productivity
  - Document drainage district environmental performance

# Accountability

- Measure technology and program performance
  - Document wildlife implications of wetland establishment, mitigation and management
  - Address the question of denitrification wetlands becoming nutrient/pollutant sinks
  - Address the question of drainage implications on landscape hydrology, flood routing
  - Determine if precision nutrient management can be a more effective practice in landscapes with enhanced drainage performance

Pothole
Depression
Typical of Farmed
Wetland
May 2007

Same
Pothole
Depression
June 2007

# Kossuth County – 0.4 Acre Farmed Wetland with Crop Loss Spring 2007

# Targeted Wetland Restoration: Iowa CREP Wetland

## Conclusions

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- Agriculture must address two of the most pressing world challenges – hunger and environmental protection – simultaneously
- Model must change – more of the same is not enough
- Change must be encouraged, accommodated and monitored – first in experiment and demonstration, then in program implementation

# Conclusions

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- Questions associated with proposed change must be addressed scientifically, and simultaneously
- Don’t let ‘perfect’ be the enemy of the ‘good’ – make the ‘good’ better, through adaptive management processes


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