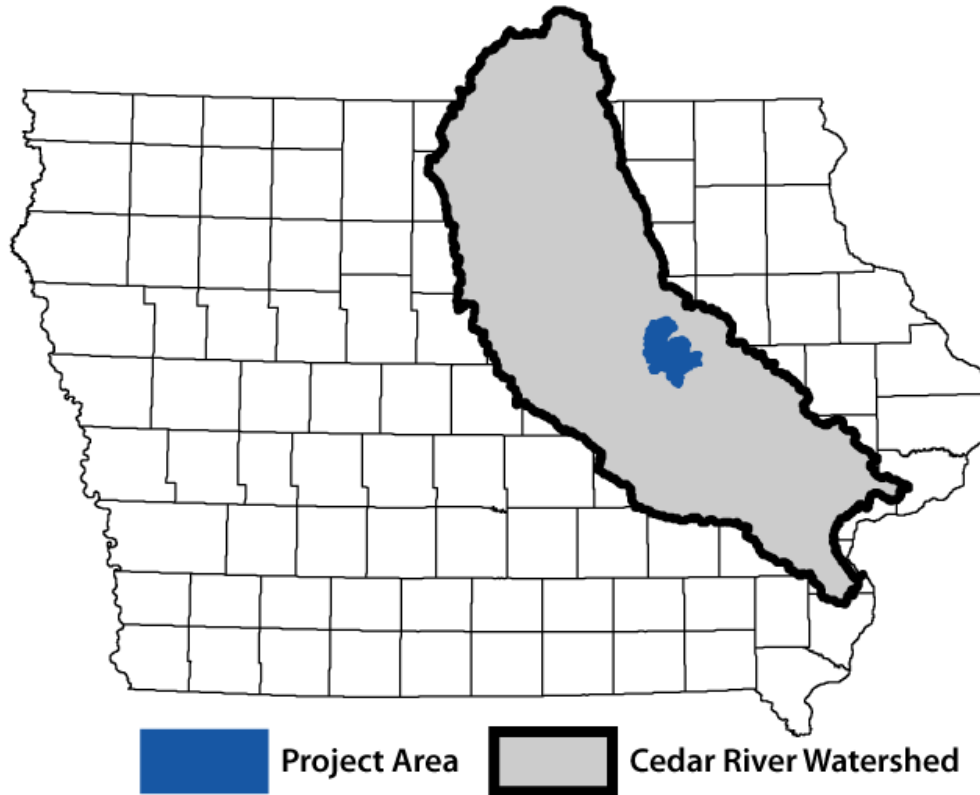


# Farming and Water Quality: Conservation Policies Working to Reduce Nutrient Loss



Steve Hershner, Utilities Director  
Barb Wagner, Utilities Water Quality Specialist  
Mike Kuntz, Utilities Environmental Manager  
Tariq Baloch, Water Utility Plant Manager

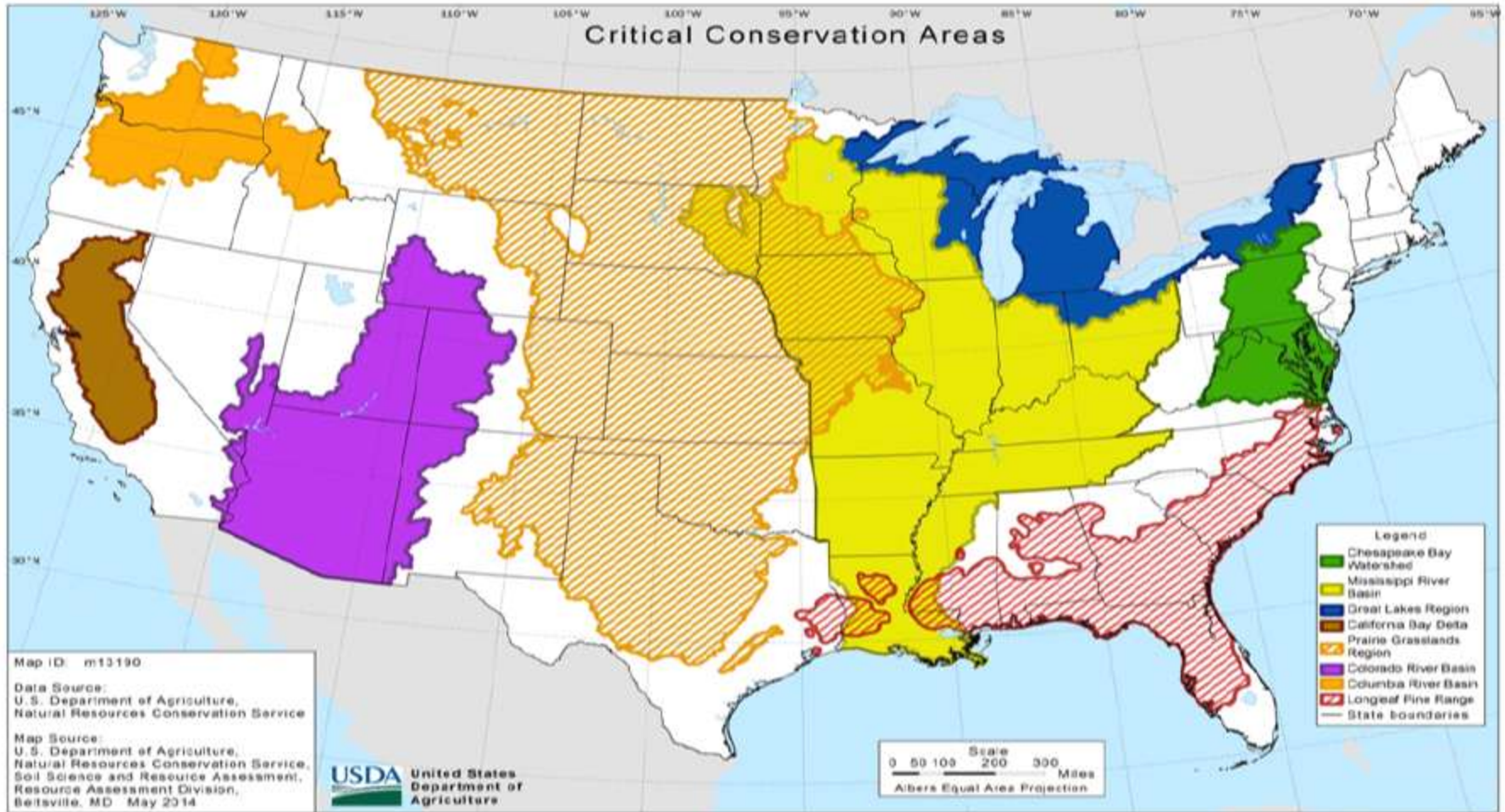
# Soil and Water Connected

**Healthy Soil is crucial for a  
Healthy Environment**

**Healthy Soil  
helps Iowa  
Farmers and  
Iowa**

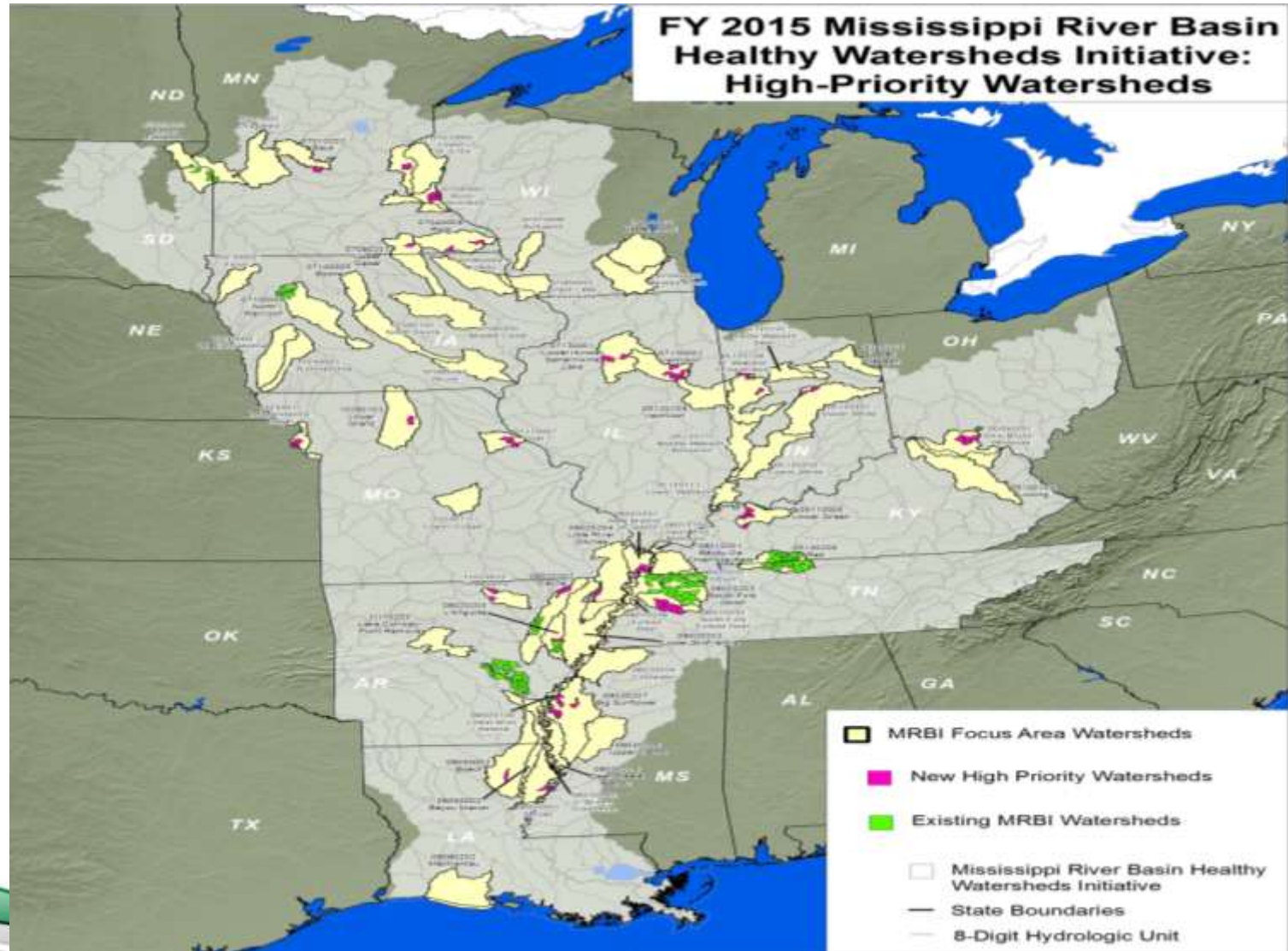
**Healthy Soil  
means Cleaner  
Water**

# National Perspective





# Priority Watersheds



# Iowa Nutrient Reduction Strategy



First draft September 2011, Latest revision October 2014

Science and technology-based, consistent with EPA framework

23 individuals and organizations, 2 years of work,  
representing:

Point source: IA Water Environment Assoc., League of Cities, & IA Assoc.  
of Business Industries

Non-point Source: USDA NRCS, USDA Ag Research, IDNR, IDALS, Iowa  
State University

# Local Perspective

**Driving factors for collaboration upstream**

**Contaminants**

- Nutrients
- Nitrates

**Flood Impact**

- Public Health and Welfare
- Public Water Supply
- Industry and Economy



**June 13, 2008**





# Industrial Impact

- ADM
- ADM Drymill
- BioSpringer
- Cargill
- Cedar River Paper
- DuPont
- JRS Pharma
- Red Star
- Canadian Harvest
- Ingredion/Penford
- Pepsico/ Quaker Oats
- General Mills





# Industrial Impact



# Industrial Impact



Ingredion.



**PENFORD**  
CORPORATION



# Industrial Impact

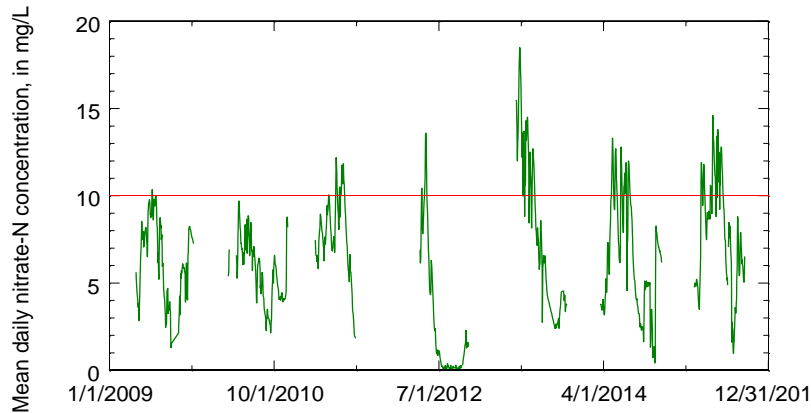




# Nitrate Monitoring

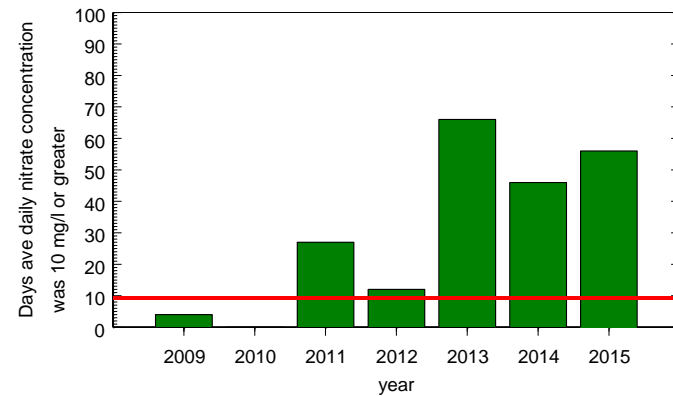
## Nitrate concentration in the Cedar River 2009-2015

Cedar River at Cedar Rapids, IA



Cedar River at Cedar Rapids, IA

(April through October)



# Nitrate Monitoring

Raw water highly influenced by river water quality

Public notification at 10 mg/L

Hach Nitratax



# Cumulative Impact

Food Processing  
& Biotech are key  
100,000+ bu/day  
soybeans  
1,000,000 bu/day  
corn  
Processed or  
used everyday

Water  
Consumer  
Safety and  
Health  
  
Industry  
success

Vitally connected  
to upstream  
watershed:  
Economic  
resource  
Source Water  
Flood impacts



# Partnering for Success With USDA NRCS

NRCS through  
RCPP  
contributing  
\$2.0M

Primarily  
financial, some  
technical  
assistance



16 MCPP  
partners  
contributing  
\$2.3M

Primarily  
technical,  
some  
financial  
assistance



\$4.3M  
available  
over the next  
five years

Clock started  
June 5, 2015



# Approach

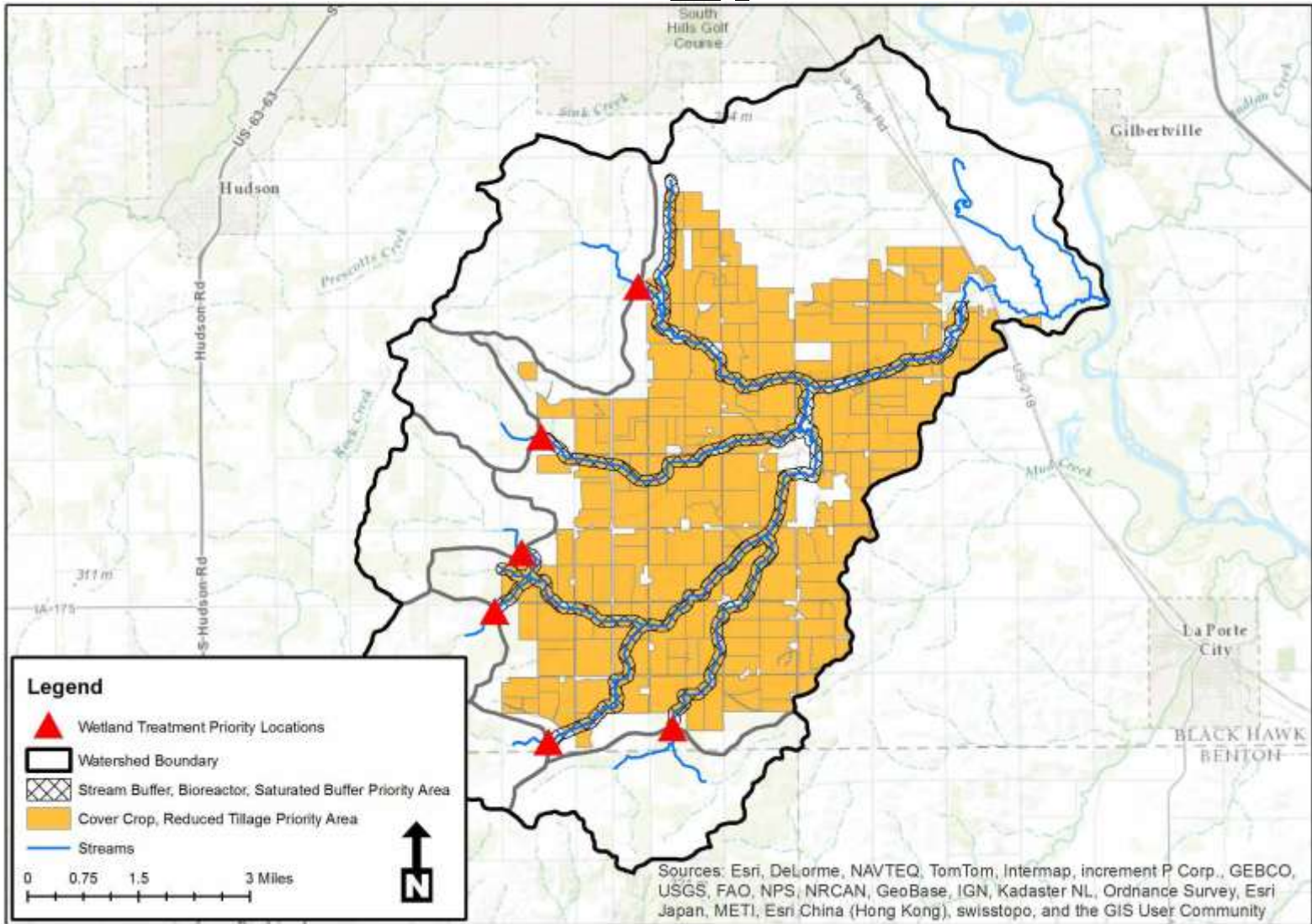
## Working Together

- Improve Soil Health
- Improve Water Quality
- Reduce Water Quantity

## Expanding on a Good Thing

- Miller Creek WQI
- Benton/Tama Nutrient Reduction Demonstration Project

# Watershed Conceptual





# Key Objectives



**Objective 1:**

Develop watershed plans to include monitoring and evaluation that will optimize placement of Best Management Practices (BMP)

**Objective 2:**

Implement BMPs through financial and technical assistance to reduce nutrient loads and peak flow runoff to the Cedar River

**Objective 3:**

Conduct outreach activities with landowners and producers in the five subwatersheds

# Denitrifying Bioreactor

- Designed by Jeff Lutz, NRCS CET
- Constructed September 9-11, 2015
- Drainage area of 55 acres
- Will be monitored in ISA program





# Denitrifying Bioreactor



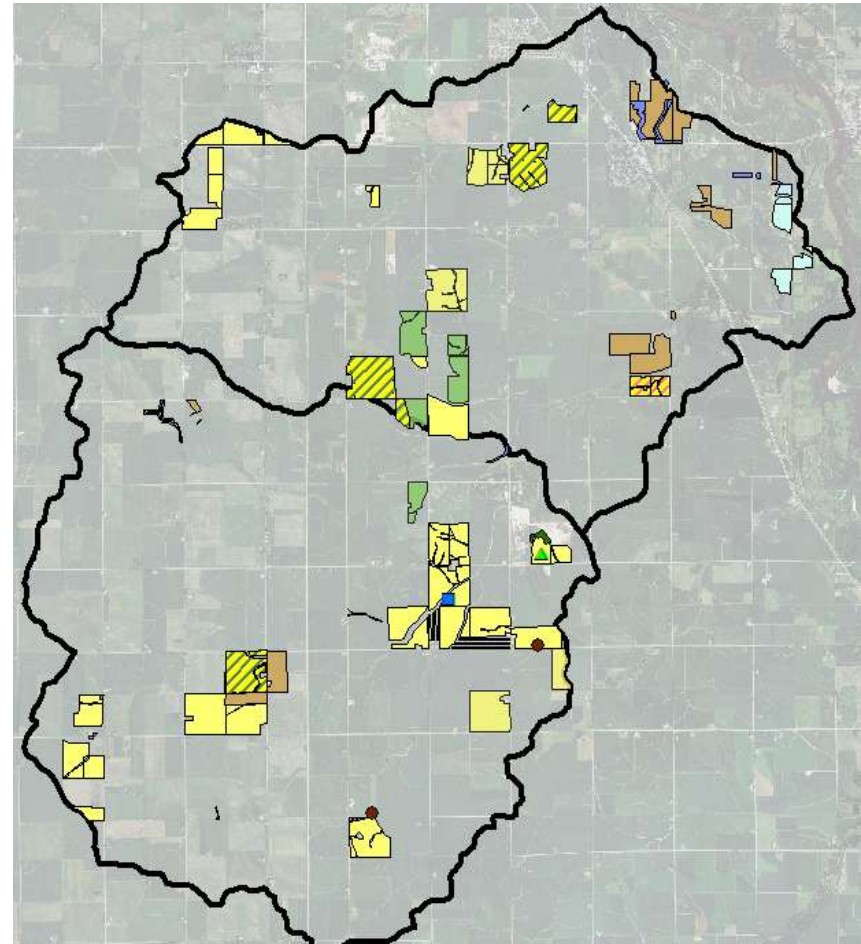


# Cover Crops



# Practice Acres Miller Creek

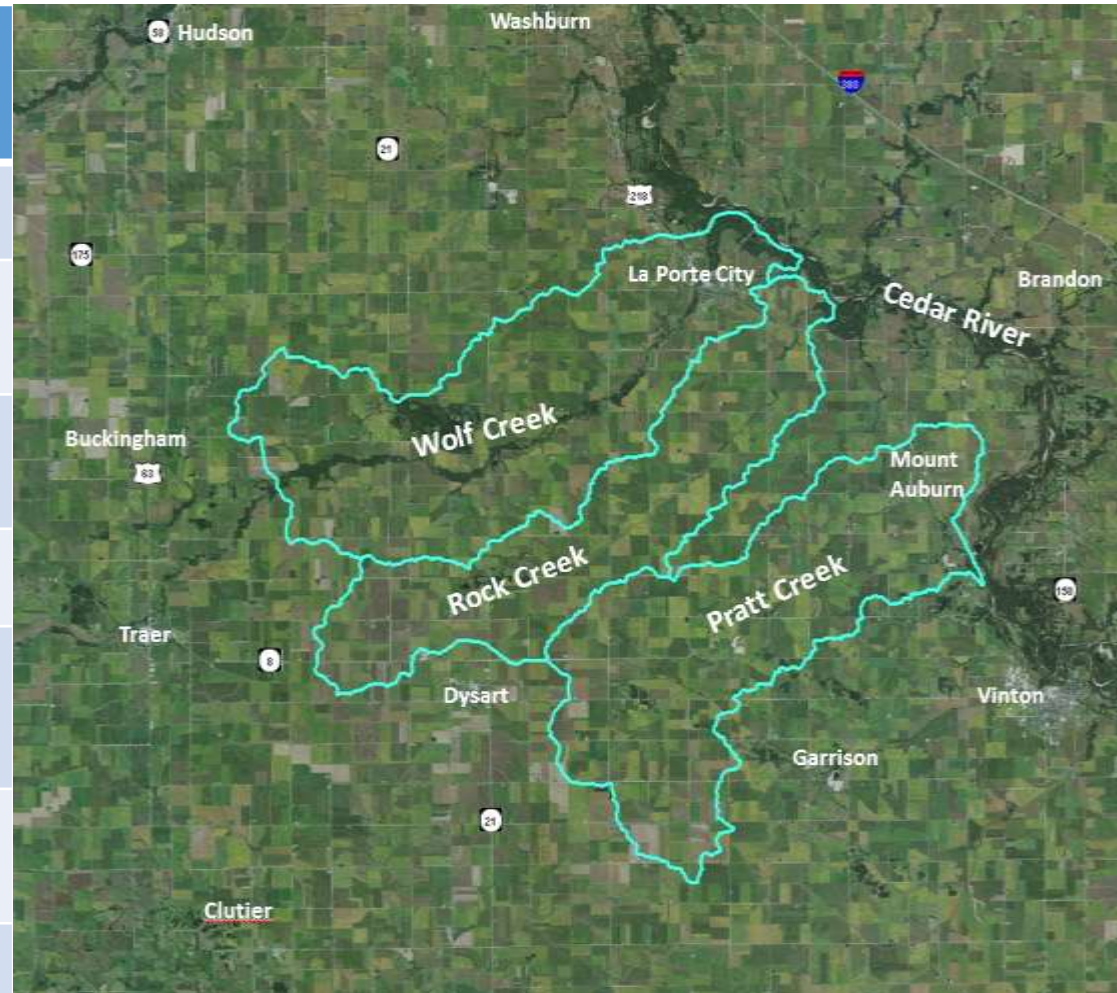
Conservation Practice	2015 Signups
Cover Crops	2,703.07 acres
Strip-Till/No-Till	594.90 acres
Denitrifying Bioreactor	2 systems (1 installed)
Saturated Buffer	1 system installed
Prairie Strips	4.00 acres
Grass Waterway (CP-8A)	4.68 acres
Filter Strips (CP-21)	76.19 acres
Riparian Buffer (CP-22)	11.01 acres
Pheasant Recovery (CP-38)	120.32 acres
Pollinator Habitat (CP-42)	580.98 acres





# Practice Acres Benton/Tama

Practice	Acres
Cover Crops	4376
No-till/strip-till	2280.6
Nitrogen Timing	833
N-Inhibitor	695
P – Based on Soil Test	444
Conservation Tillage	240
P – Knife in	30

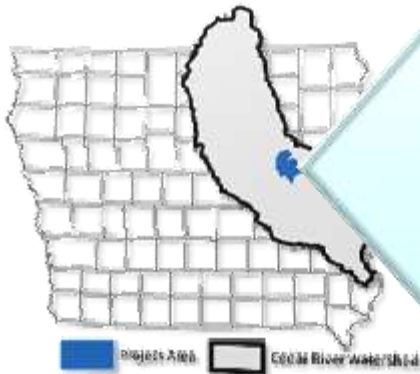




# Field Days



# MCPP Partners



## Farmers/ Producers

Natural Resources Conservation Service (USDA NRCS)  
Benton/Tama Counties and Miller Creek Watershed Quality Initiative projects  
Benton Soil and Water Conservation District (BSWCD)  
Tama Soil and Water Conservation District (TSWCD)  
Black Hawk Soil and Water Conservation District (BHSWCD)  
DuPont Pioneer (DP)  
Sand County Foundation (SCF)  
The Nature Conservancy (TNC)  
Iowa Farm Bureau (IFB)  
Iowa Soybean Association (ISA)  
Iowa Pork Producers Association (IPPA)  
Iowa Corn Growers Association (ICGA)  
Iowa Department of Agriculture and Land Stewardship (IDALS)  
Iowa Department of Natural Resources (IDNR)  
Iowa State University Extension Service (ISUES)  
City of Cedar Rapids



# From all the partners, Thank You!

## Middle Cedar Partnership Project (MCP)

Collaborating for Soil & Water Quality

