

# MORE!!! Water Quality and Soil Conservation Through Expedited Infrastructure Process in Iowa



**Bobby Kuennen**

Northeast Iowa Field Representative  
Iowa Department of Agriculture and Land Stewardship

# National Rankings for Iowa Agriculture

#1



Corn  
2.6 billion bushels



Pork  
23.8 million hogs



Eggs  
14.9 billion eggs



Ethanol  
3.7 billion gallons

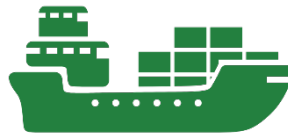


Red Meat Production  
8.96 billion pounds

#2



Soybeans  
622 million bushels



Ag Products Exported  
\$12.6 billion

#3



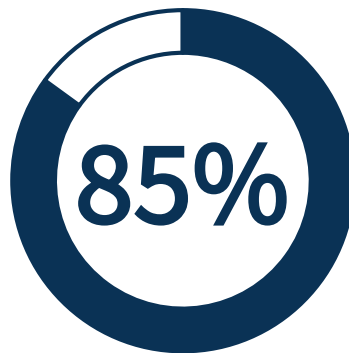
Number of Farms  
84,900



# Fast Facts About Iowa's Agriculture

185

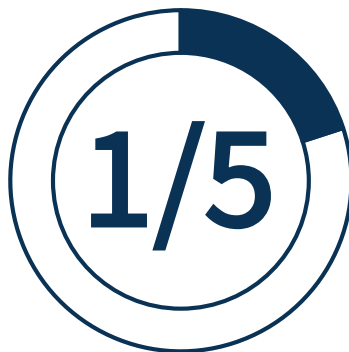
countries import  
products from Iowa



of Iowa's land is used for  
agriculture

11.5

million turkeys are raised  
in Iowa each year



of jobs in Iowa are  
connected to agriculture



of the nation's pork is  
raised in Iowa



of the nation's food is  
grown in Iowa





# Cost of Agriculture

Prior to European settlement, wetlands covered 4 to 6 million acres, or approximately 11% of Iowa's surface area. Wetlands were part of every watershed in the state, but nearly 95% of them have been drained.



## STATEWIDE MAPPING OF EXISTING CONSERVATION PRACTICES USING AERIAL IMAGERY SHOWS A STRONG FOUNDATION

**114,000** POND DAMS

**325,000** ACRES OF GRASSED WATERWAYS

**460 MILLION** FEET OF TERRACES

**240,000** WATER AND SEDIMENT CONTROL BASINS

**THESE EXISTING PRACTICES WOULD REQUIRE  
AN ESTIMATED \$6.2 BILLION TO BUILD TODAY**





# Water Quality Wetlands

**WQ Wetlands** are strategically located and designed to remove nitrate from tile-drainage water from cropland areas.

The larger the wetland, the greater the percentage of N removal; nitrate concentration reduction averages 52%. Wetlands also provide improved habitat for Iowa wildlife.

1 acre of wetland can remove excess Nitrogen in runoff from 100 acres of corn producing ground.

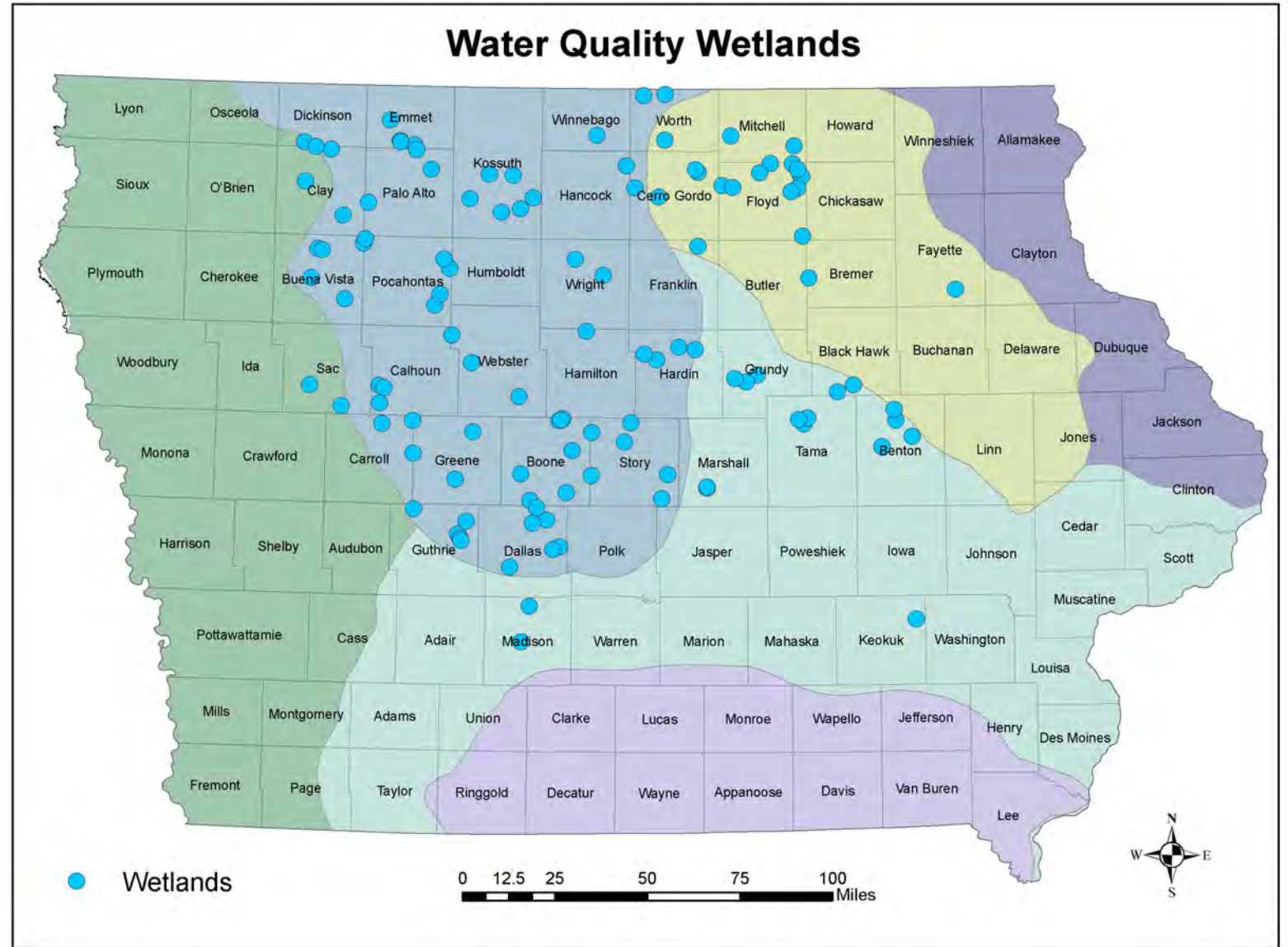




# Wetlands

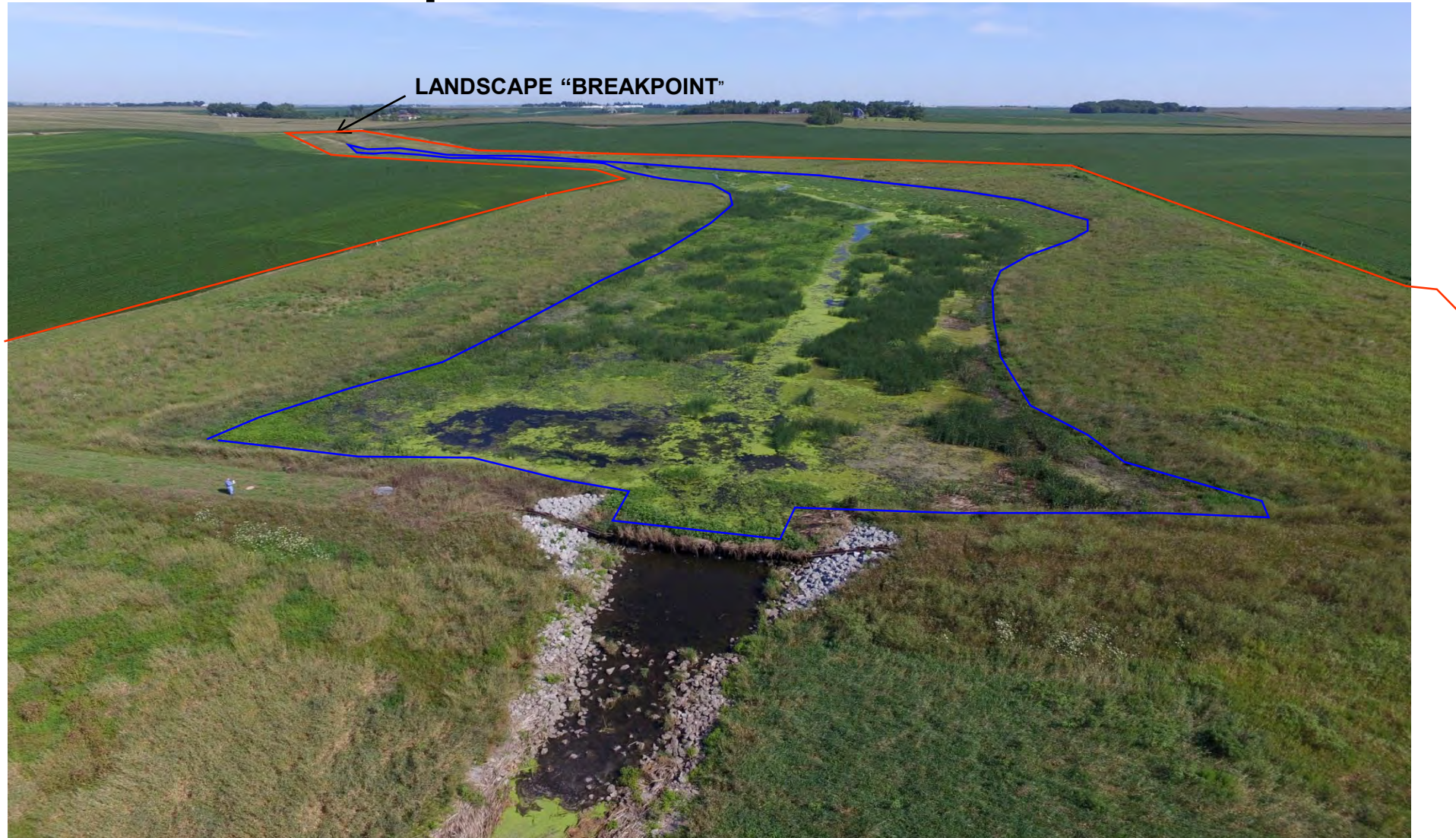
## Conservation Reserve Enhancement Program (CREP)

- Iowa's **CREP** program established in 2002 to target water quality wetlands on and along Des Moines Lobe
- Proven monitoring program
- 105 CREP wetlands installed to date (11 additional non-CREP water quality wetlands)





# Traditional Breakpoint





# Excavated

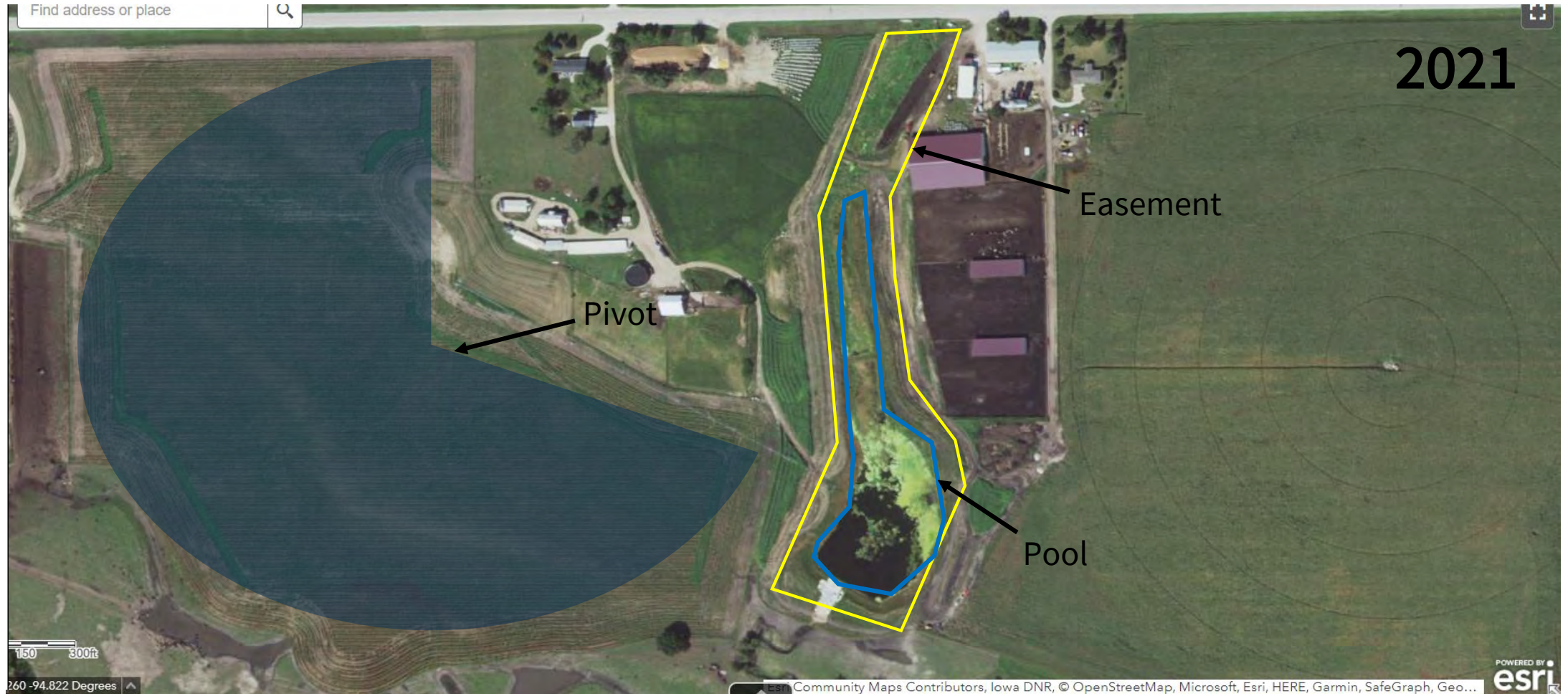


Vern Fish, Black Hawk SWCD





# Drainage Water Recycling







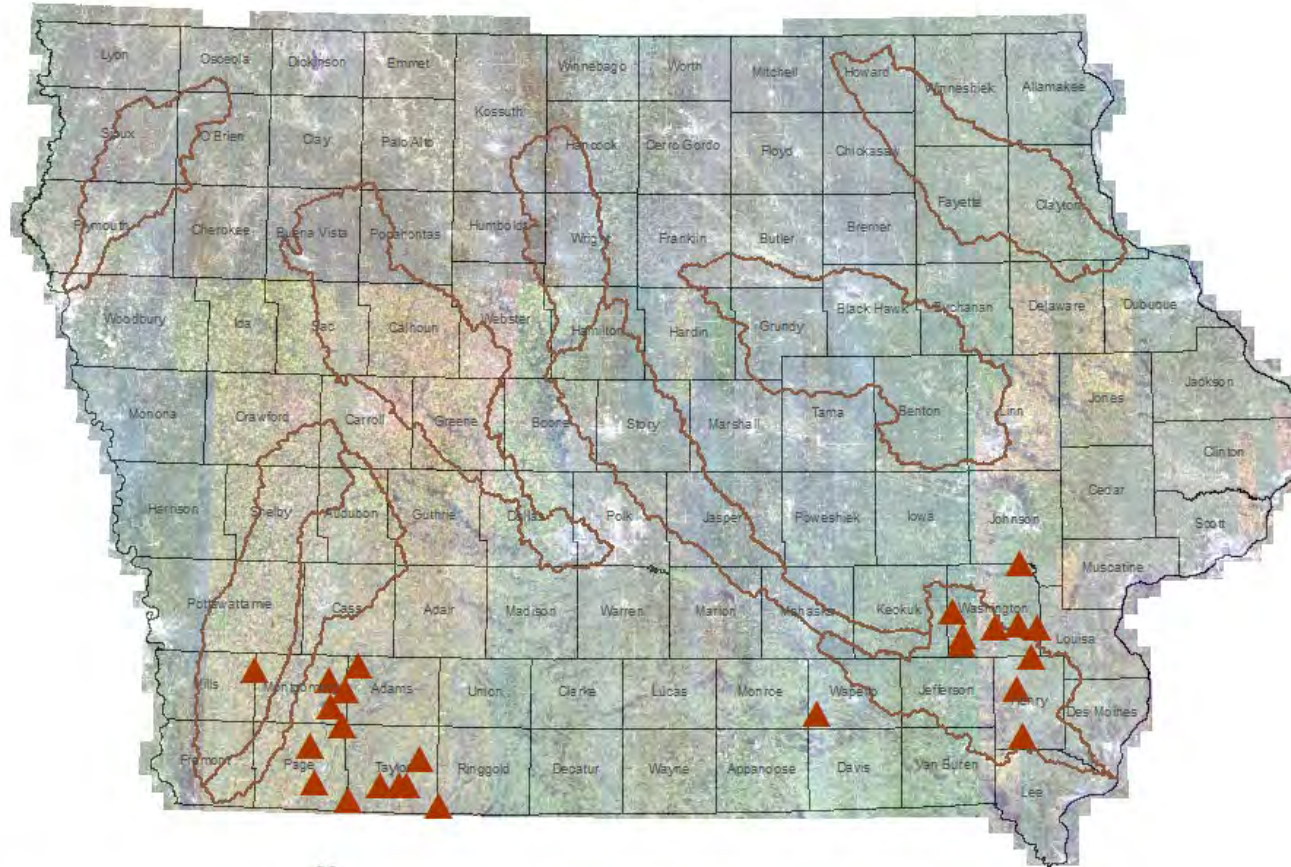
## Grade Stab's (Ponds) in key areas



IOWA DEPARTMENT OF  
**AGRICULTURE &  
LAND STEWARDSHIP**



## Grade Stabilization Structures



- ▲ Grade Stabilization Structures
- ▭ NRS Priority HUC8 Watersheds
- ▭ Counties

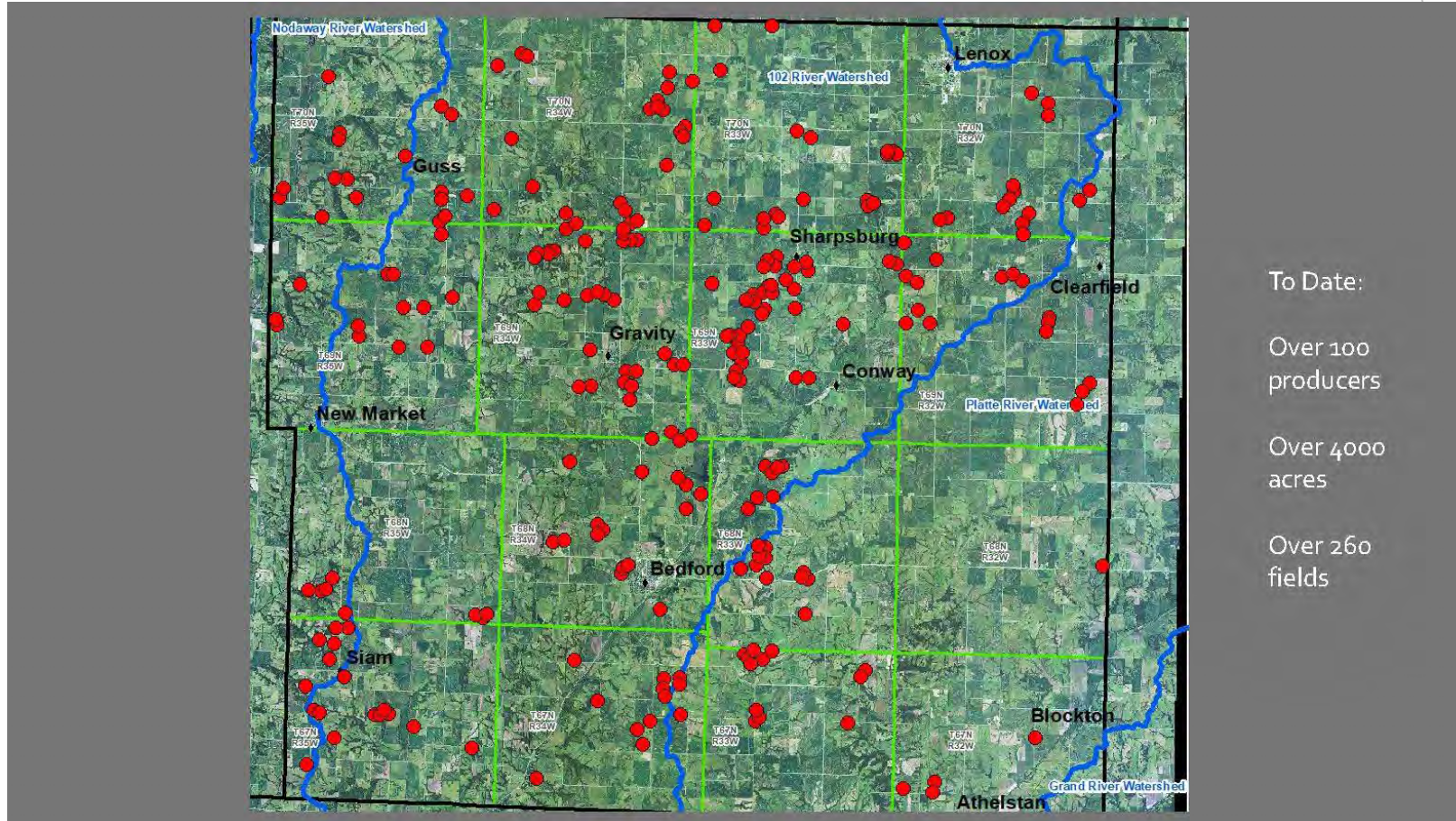


0 12.5 25 50 75 100 Miles





# Land Conversion - Unproductive Land to Productive Land







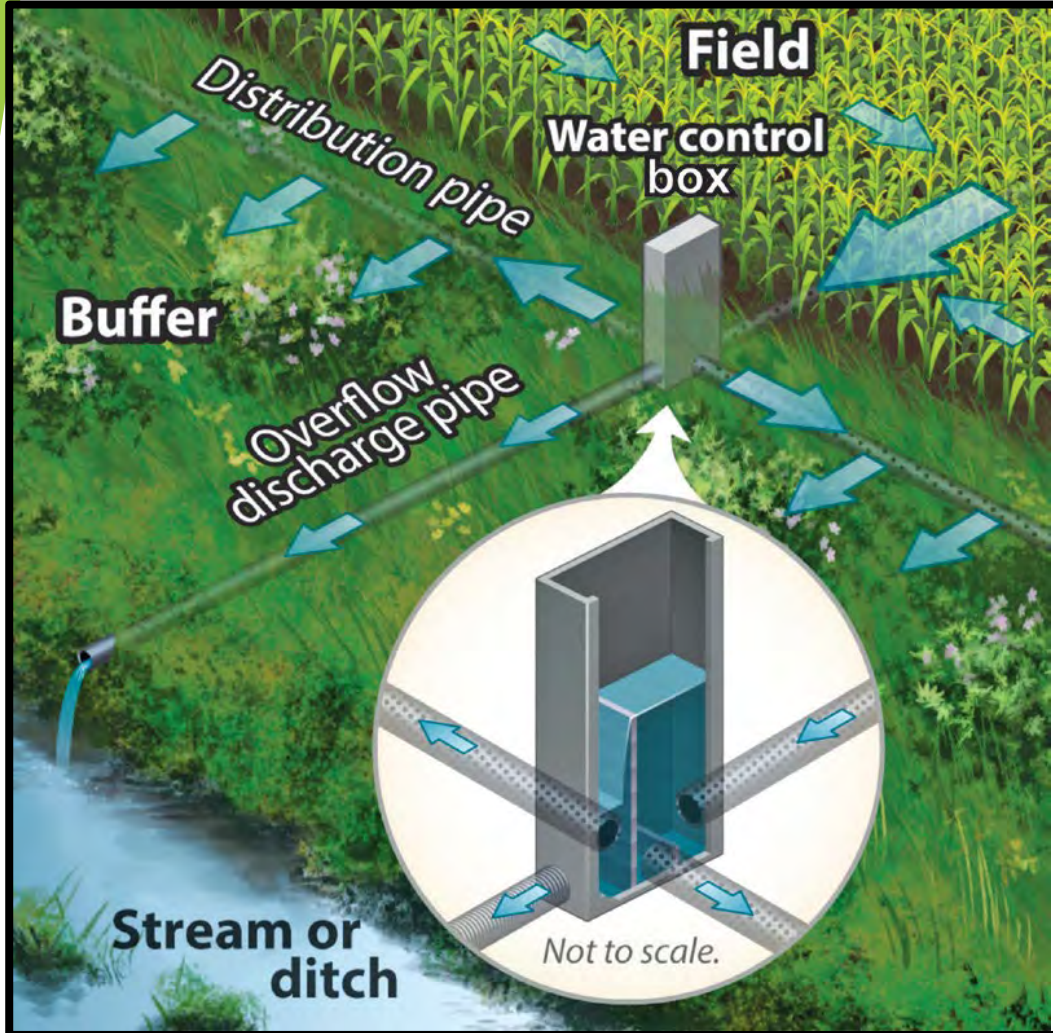
## Edge of Field Practices

- Saturated Buffers
- Bioreactors





# Saturated Buffers









# Bioreactors









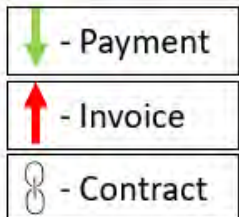
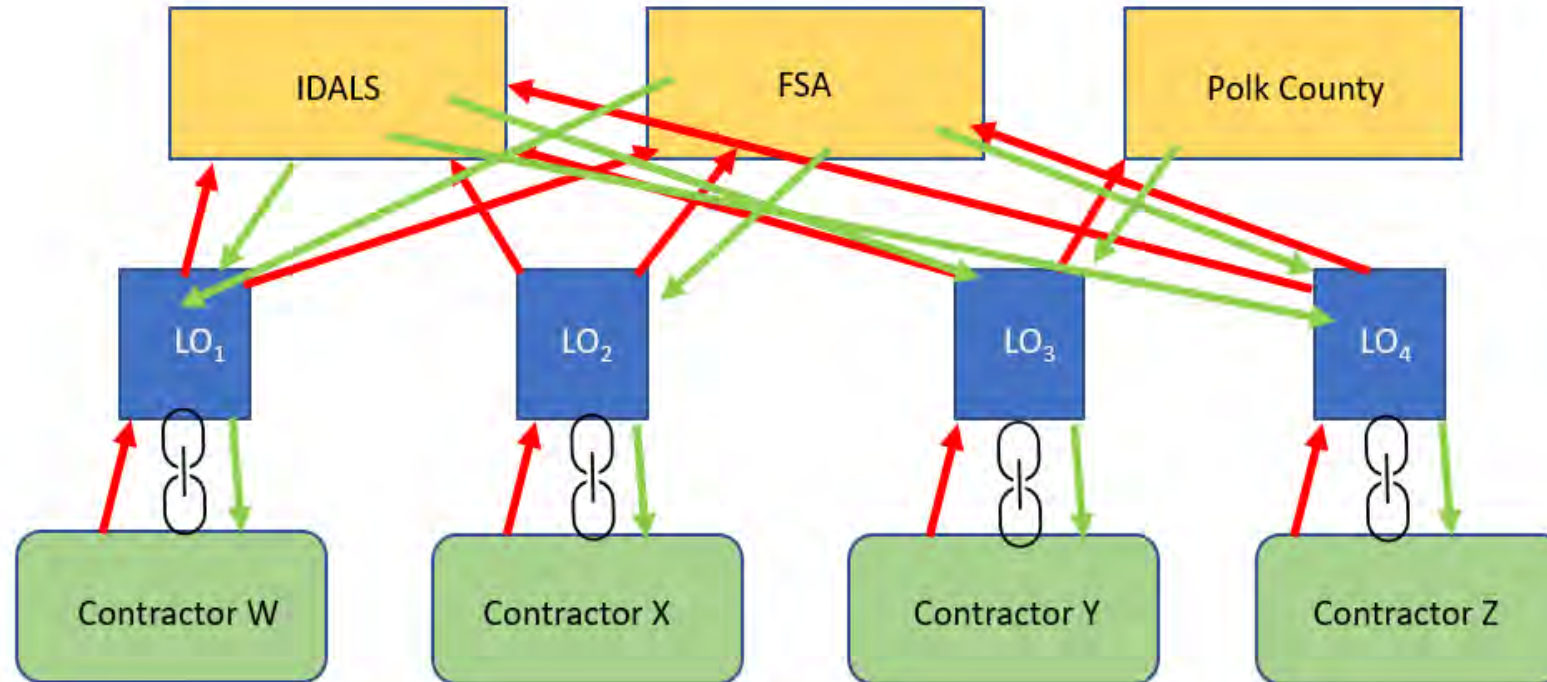
# The First Batch and Build

- ◆ Watershed Management Plan- 300 outlet goal/10 year
- ◆ 6 completed from 2015-2019
  - ◆ 100% cost share
  - ◆ Monitoring funds available
- ◆ How do we increase adoption? Batch and Build!
  - ◆ Targeting
  - ◆ Hassle factor
  - ◆ Contractors
  - ◆ Simplify the process
  - ◆ Prioritize Saturated Buffers



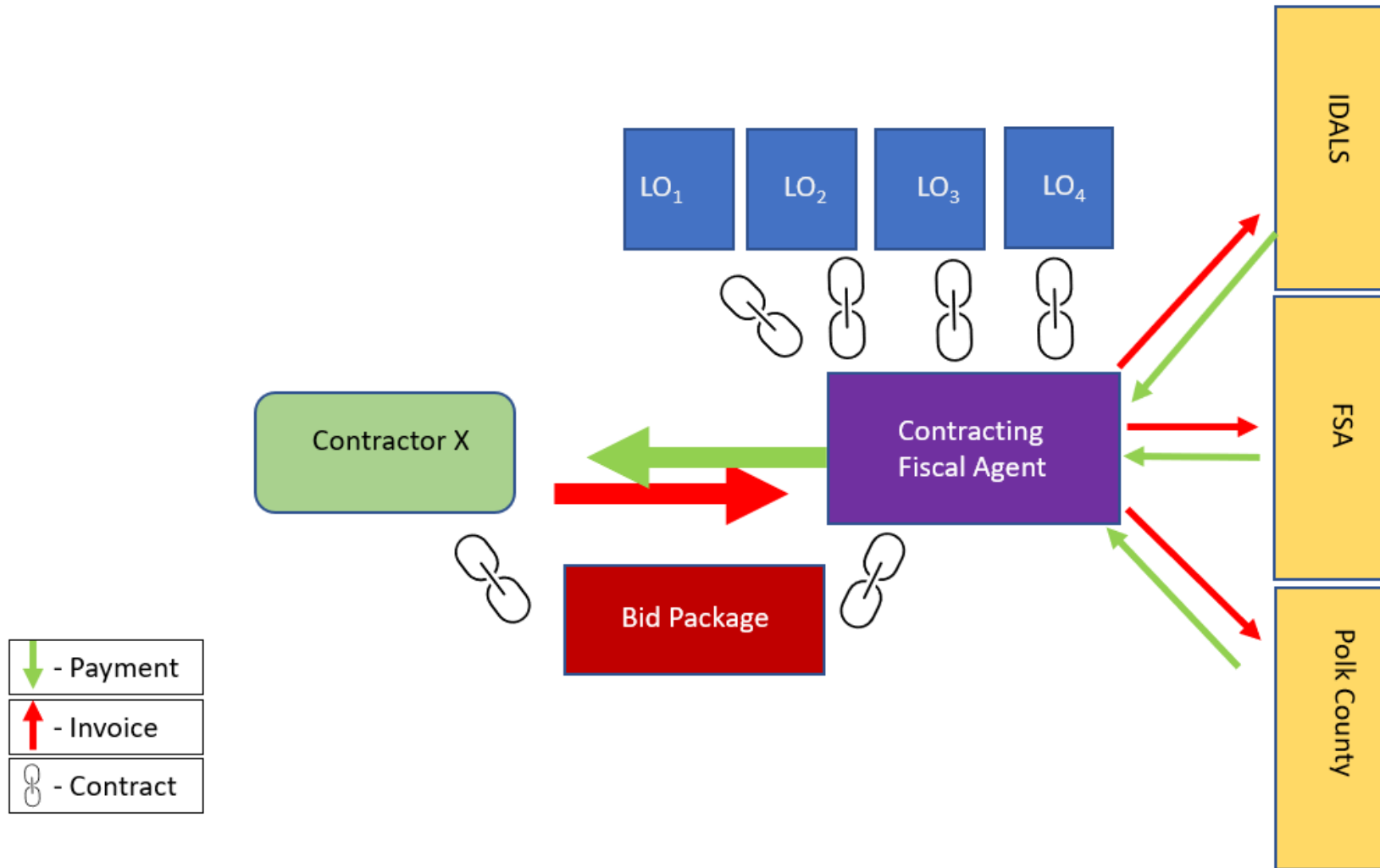


## Conventional Funding Model





# Fiscal Agent Funding Model

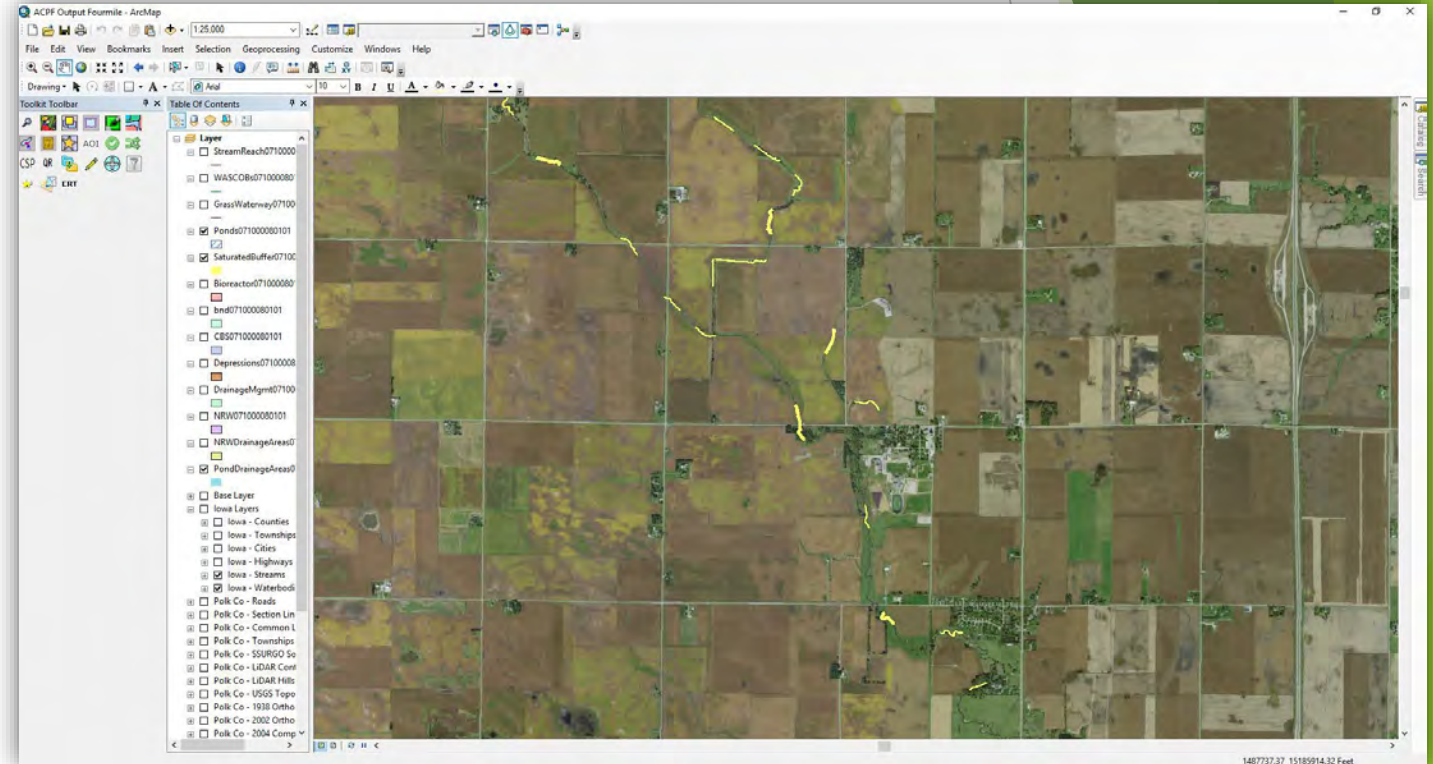
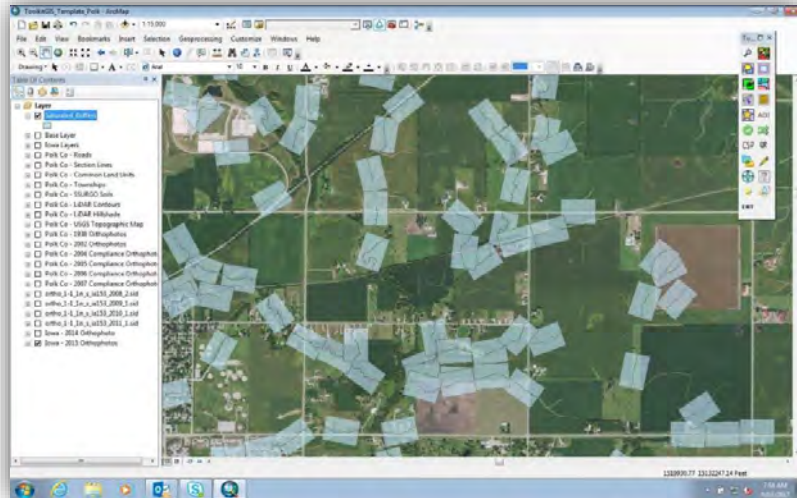




# The Steps: Finding Sites

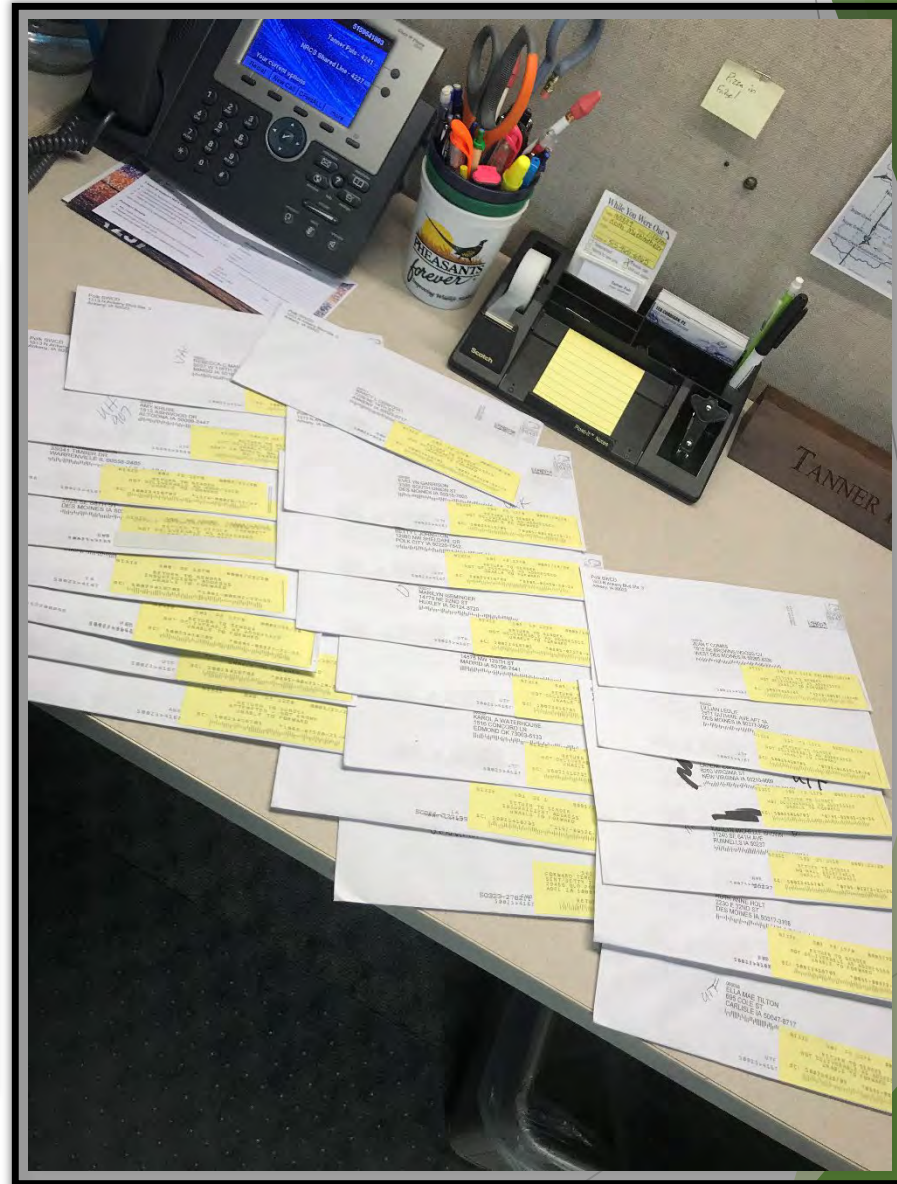
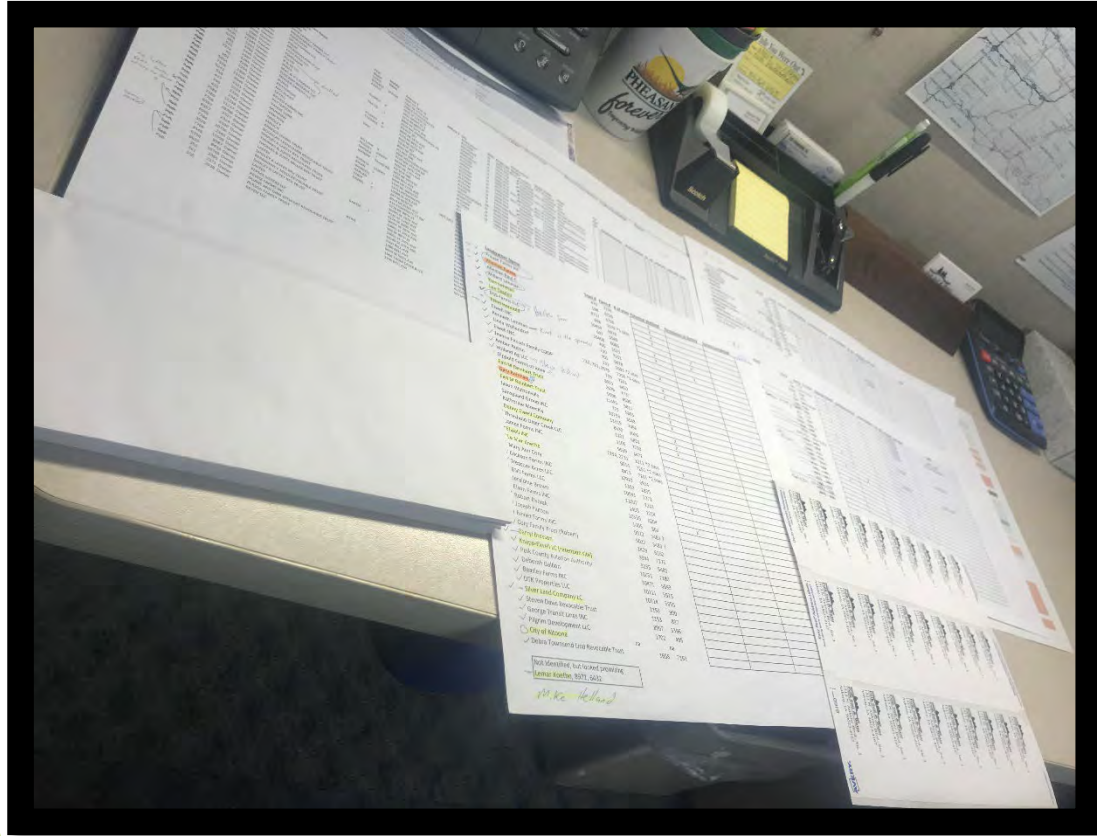
## ACPF Tool

- Completed for all watersheds
- Used for targeted outreach



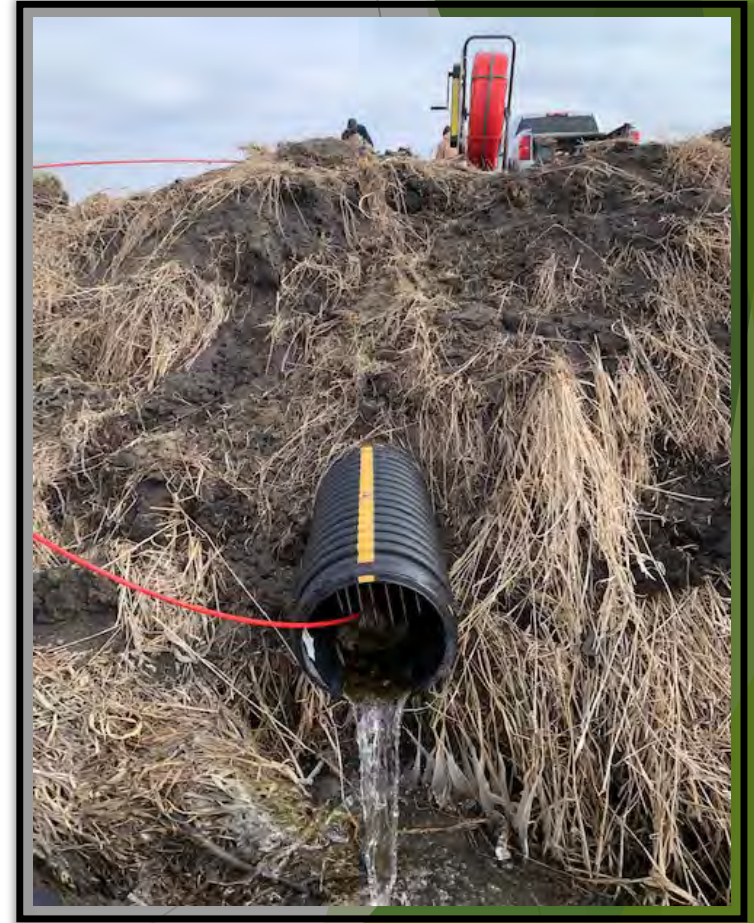


# The Steps: Outreach





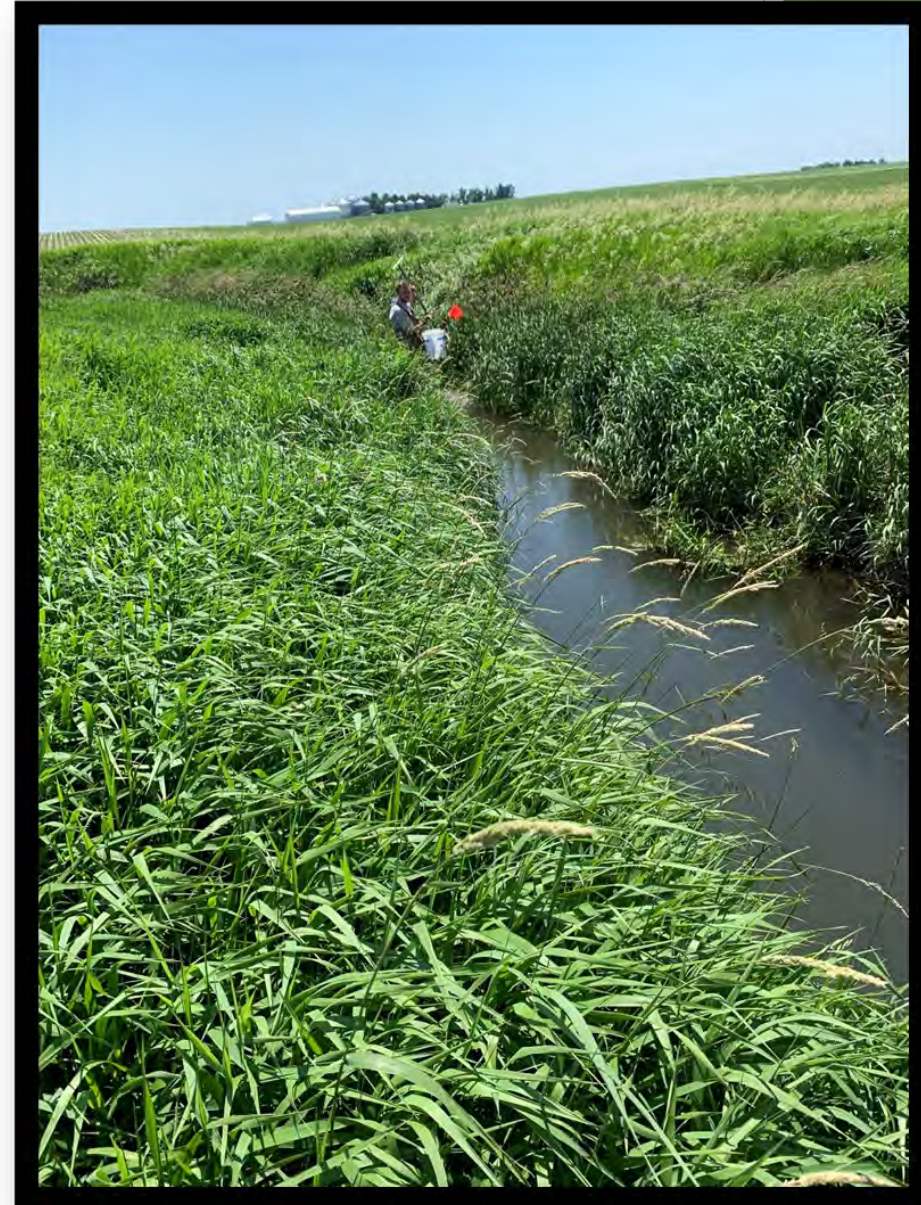
# 129 Sites Surveyed





# What are the numbers?

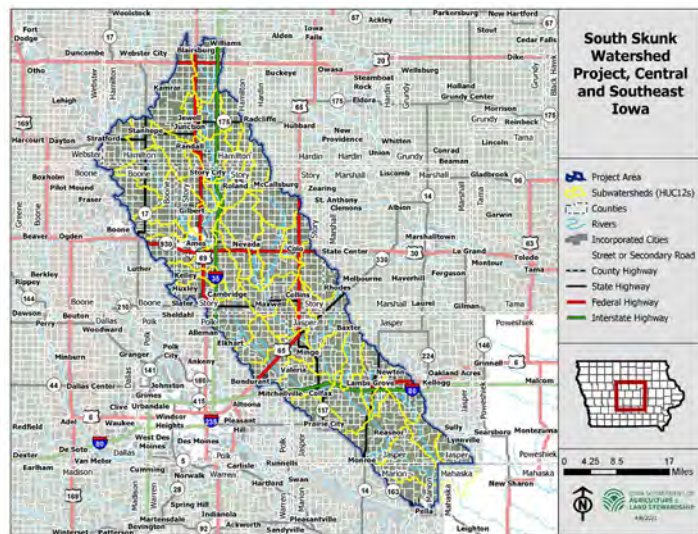
- Year 1 Goal - 25 Saturated Buffers
- Year 1 Results
  - 51 Outlets treated (12 landowners)
  - Total Project cost \$426,077
  - 10 Bioreactors, 41 Saturated Buffers
- Year 2 Results
  - 48 Outlets treated





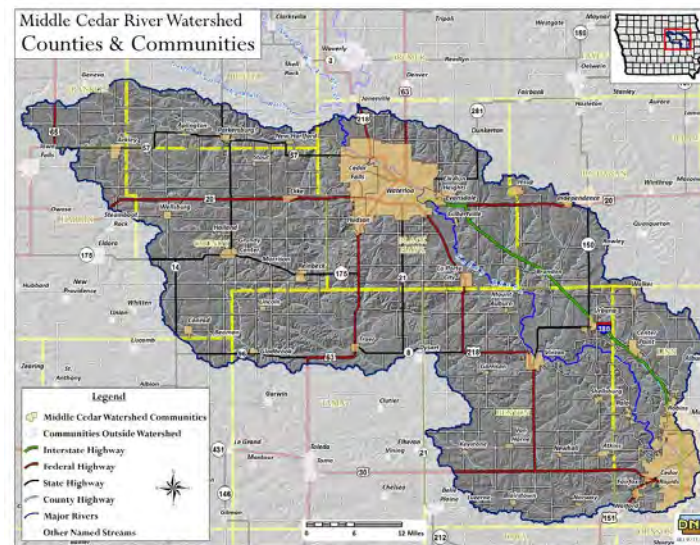
# Expanding Batch and Builds

## ◆ Story County



- ◆ 20 outlets treated
- ◆ Working with City of Ames and Story County Conservation
- ◆ Fall 2022 construction

## ◆ Middle Cedar

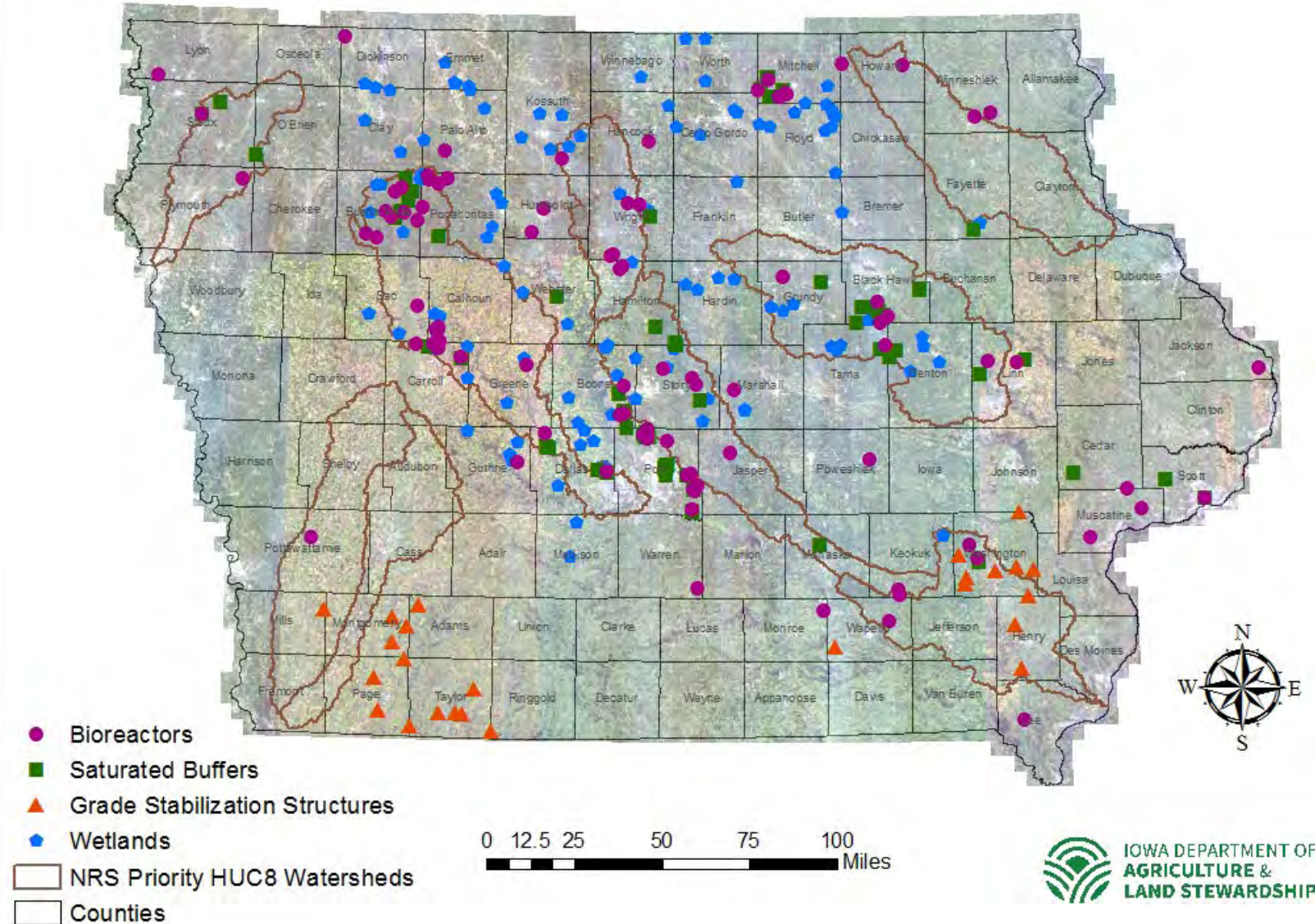


- ◆ 6 counties involved
- ◆ Multiple project coordinators
- ◆ Spring/Summer 2023 construction



# Statewide Efforts

## Water Quality Infrastructure - 2022





# Contact for answers!



**Matt McDonald**

Water Quality Initiative Projects Coordinator  
Iowa Department of Agriculture and Land Stewardship

Email: [matt.mcdonald@iowaagriculture.gov](mailto:matt.mcdonald@iowaagriculture.gov)

Phone: 515-725-1037



**Tanner Puls**

Statewide Edge of Field Coordinator  
Iowa Department of Agriculture and Land Stewardship

Email: [tanner.puls@iowaagriculture.gov](mailto:tanner.puls@iowaagriculture.gov)

Phone: 515-344-9319