

CONSERVATION FARMING: A GROWING FIELD

IOWA WOMEN IN AGRICULTURE CONFERENCE

GROWING CONNECTIONS

AUGUST 3RD, 2023

RUTH MCCABE

CONSERVATION AGRONOMIST


HEARTLAND CO-OP[®]

Roadmap:

✓ Introductions

- Who am I? Who is Heartland?
- What is Conservation Agriculture? Why do we need it?

✓ A Growing Field

- What's going on in conservation right now?

✓ Growing Pains

- Challenges or roadblocks to conservation adoption

✓ Action Items

- What can we do about those growing pains?

✓ Key Takeaways

Who am I?



IOWA STATE UNIVERSITY
Department of Agronomy



Who are we?

✓ Interesting Iowa facts:

- Home of the Red Delicious apple
- First female lawyer is from Iowa (Arabella Mansfield, Burlington IA)
- Bread slicing machine was invented here
- First electronic digital computer developed here
- Birthplace of Captain James T. Kirk
- Only US state bordered by two navigable rivers
- More than 85% of Iowa's land is used for agriculture

✓ We're also #1 in several agricultural commodities:

- Hog production
- Corn production
- Egg production
- Soybean (okay...#2 only to Illinois)



Who is Heartland Co-op?



Conservation Agronomy



- Nitrogen stabilizers
- Applying fertilizer in the spring
- Variable rate fertilizer application
- In-season N application
- Non-stream animal watering options
- Saturated buffers or bioreactors
- Cover crops and/or relay cropping
- Diversifying crop rotation, hay, pasture
- Vertical till, strip till, or no till
- Filter strips, waterways, prairie strips
- Improved wildlife habitat
- Wetlands, terraces, sediment basins

Why does Iowa need conservation ag?



Wind erosion = "Snirt"



Ephemeral Gullies



Why does Iowa need conservation ag?



Why does Iowa need conservation ag?

- ✓ Iowa loses approximately 5 – 6 tons of topsoil per farmed acre per year
- ✓ We're #1...
 - In phosphorus loading to Gulf
 - In nitrogen loading to Gulf
 - In sediment export to the Gulf



A worldwide problem...



NUFFIELD
INTERNATIONAL
FARMING SCHOLARS

 UNITED STATES of AMERICA

Past



New York City didn't stop discarding sewage into the ocean until 1992.



An abandoned car in Jamaica Bay, New York, June 1973. Arthur Tress/Documerica/US National Archives

Present



Still have some work to do...



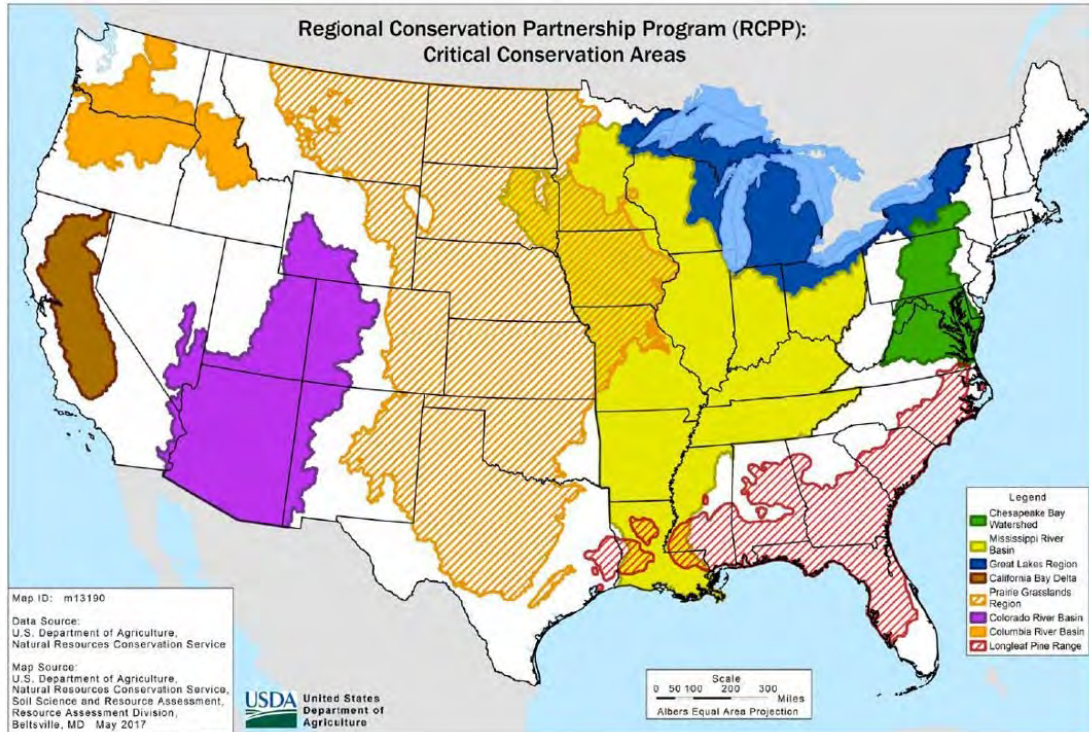
How does conservation farming help?



Reduce or prevent the loss of soil and nutrients from our fields!



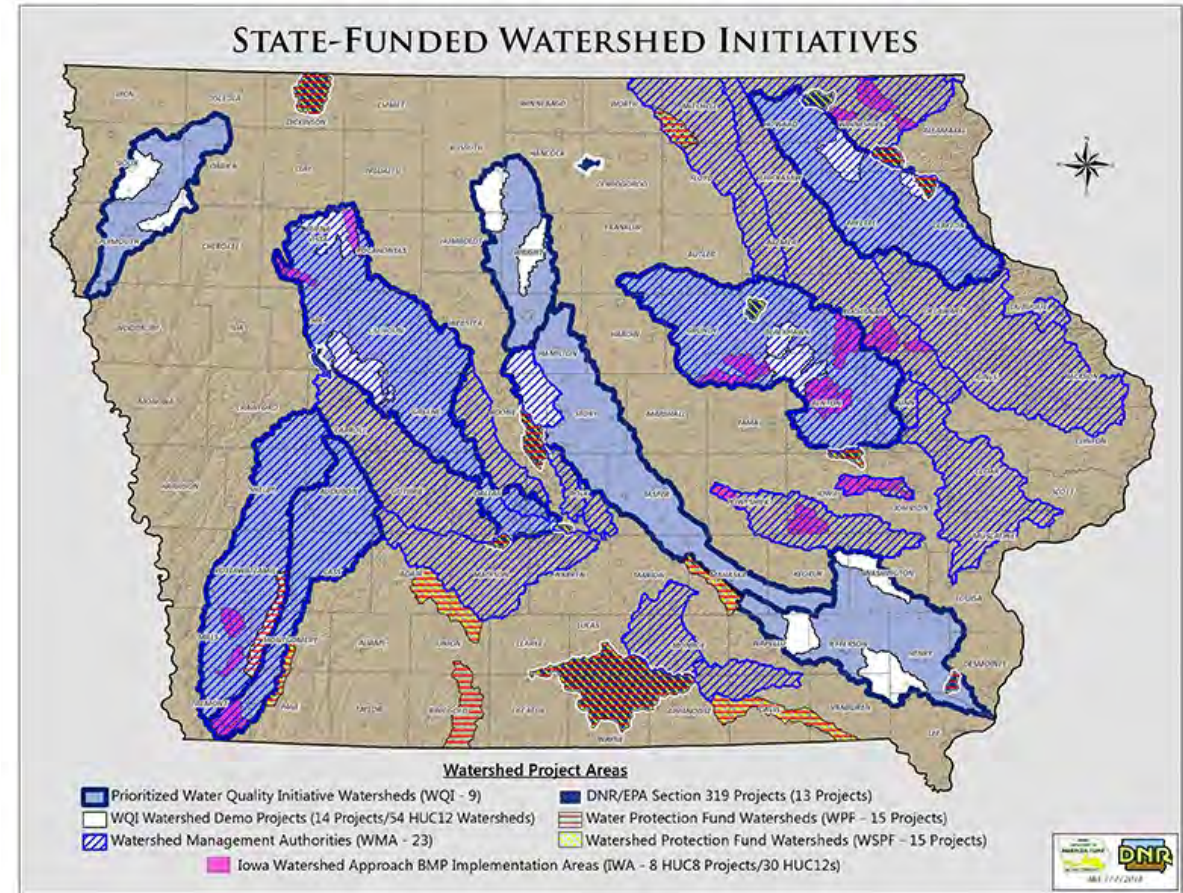
A growing field...Federal and State Programs



Map Source: USDA-NRCS

Figure 1. Regional Conservation Partnership Program (RCPP): Critical Conservation Areas.

Regional conservation partnership programs (RCPP)



Watershed Demonstration Projects

A growing field...private industry investment



PEPSICO



**Cover Crop
Cost Share Programs**
Fall 2021



Unilever

A growing field...public-private partnerships!



And coming soon...

A growing field...public-private partnerships!

The Wetland Wave!



A Growing Field...Statewide numbers so far!

- ✓ 8 million acres no-till (~30%)
- ✓ 3 million acres cover crops (~12%)
 - Up from only about 1 million acres five years ago!
- ✓ 150+ Saturated buffers and bioreactors since 2020
 - Up from only 6 structures from 2015 – 2020
- ✓ 105 CREP and water quality wetlands since 2002
 - Another 72 wetlands under development in 2022

A growing field...Heartland numbers since August 2020

- ✓ 65,000 acres of cover crops
- ✓ 92 tile outlets treated with saturated buffers or bioreactors
 - 57 more on the way!
- ✓ 200 acres prairie establishment (enrolled in CRP)
- ✓ 2 sediment basins
- ✓ 2 ponds
- ✓ One small wetland
 - And more wetlands on the way!

Growing Pains:

Challenges and Roadblocks to Conservation Adoption



TLDR: We all have some responsibility here

Growing Pains:

Challenges and Roadblocks to Conservation Adoption



- ✓ #Not All Farmers...
- ✓ #Not All Landowners...
- ✓ #Not All Federal Employees...
- ✓ #Not All People...

Growing Pains – Rented Land

- ✓ Roughly 60% of Iowa farmland is rented
 - Half of those landowners have never farmed
- ✓ 87% Iowa's rented farmland is cash rent:
 - Farmer makes all the decisions
 - Landowner does not contribute to crop production
 - Most are one-year leases
- ✓ 23% of Iowa farmland is owned in a trust
- ✓ 20% of Iowa farmland is owned by non-residents
- ✓ A tenant farmer can expect to earn a margin that is one-half to one-third of what they'd earn on land that they own



Action Item #1 – Landowners

Consider a **collaborative** relationship with your farm tenant rather than a **transactional** relationship

- ✓ Multi-year leases
- ✓ Flex rent leases
- ✓ Crop sharing
- ✓ **Splitting the cost of conservation adoption**



Growing Pains – Bureaucracy

✓ We often hear “Farmers are resistant to change”

✓ In reality: NO ONE LIKES CHANGE

- Not farmers
- Not landowners
- ...**and neither do federal agencies**

✓ All kinds of familiar excuses:

- “We’ve never done it that way”
- “That’s now how I would do it (and I won’t approve your way)”
- “It’s too much paperwork, just do cover crops instead”
- “It will take too long to get approved / we don’t have the time”
- “The person in charge of that isn’t here, call back next week”



**US Army Corps
of Engineers®**

Growing Pains – Bureaucracy



- ✓ Rigid interpretation of (nebulous or unpublished) rules with zero flexibility
- ✓ Job approval authority is siloed at upper levels within federal agencies
- ✓ Most conservation funding is siloed within ONE AGENCY

Action Item #2 – Voters

Diversify who has conservation funding and **Job Approval Authority**

- ✓ Get political! Talk to your policy makers!
 - Attend an SWCD meeting
 - Support public-private partnerships

- ✓ Support increased funding for IDALS conservation programs:
 - Iowa State Cost Share program
 - Water Quality Initiative
 - SF512: Water Quality Bill

- ✓ Support the Natural Resources & Outdoor Recreation Trust Fund
 - www.fundthetrust.org



IOWA DEPARTMENT OF
**AGRICULTURE &
LAND STEWARDSHIP**



Growing Pains – Show Me The Money!

If the conservation practice doesn't have an **immediate, bottom-line benefit**, you're not going to see **widespread adoption**

Growing Pains – Show Me The Money!



State Cover Crop Cost Share: \$15 per acre up to 160 acres (\$25 in the first year)

Private cost share: \$10 per acre

No Till: \$10 per acre up to 160 acres first year only

Federal Cost Share (EQIP) pays more but program is complicated difficult to access

Bottom Line? \$15 - \$25 cost share per acre up to 160 acres for cover crops after the first year

Growing Pains – Show Me The Money!



Bottom Line? Net negative of \$10 to \$20 per acre plus the risk of yield hit and increased chemical use

Costs of a cover crop:
\$35 - \$45 per acre per year and risk of a yield hit depending on spring moisture

Costs of no-till:
Machinery expenses
Yield drag for the first 3-5 years

Reliance on chemicals to control weeds

Growing Pains – Show Me The Money!

Brazil: 100% no till adoption and roughly 50% cover crop adoption

No state or federal cost share

Their costs to adopt cover crops and no till are similar to ours

Using cover crops and no till enables them to plant two crops and get a yield in the dry season



Growing Pains – Show Me The Money!

Western Canada: 100% no till
No state or federal cost share
Their costs to adopt no till are similar to ours

Using no till enables them to skip a chemical fallow and get a yield every year



Growing Pains – Show Me The Money!

Maryland: 55% no till and 50% cover crop adoption

Cover Crop Cost Share: \$40 - \$60 per acre with no acreage caps

High rainfall, sandy soils, high rates of nutrient leaching to the Bay

No till helps them conserve moisture but cover crops compete directly with their cash crops for spring moisture

By using cover crops, they take a yield hit ahead of their corn, but the cost share gives them an overall net benefit – so they use cover crops anyway!



Growing Pains – Show Me The Money!



State Cost Share for waterways is usually 50%

Federal Cost Share (CRP) is 100% plus yearly rental payments on those acres

Waterways on about 65% of our farmland

Growing Pains – Show Me The Money!



Brazil



Canada

Action Item #3 – Policy Makers

Conservation adoption must make **financial sense** for the farmer or landowner

- ✓ Increase funding for state cost share programs
- ✓ Remove acreage caps on state cost share programs
- ✓ Finally fund the Iowa Outdoor Trust Fund!
- ✓ Tax incentives for long-term leases for landowners
 - Ireland offers significant income tax relief for farm leases that are 5 years or longer
 - \$19,600 for 5 years up to \$43,700 for 15 years

Key Takeaways!



Walmart 



PEPSICO

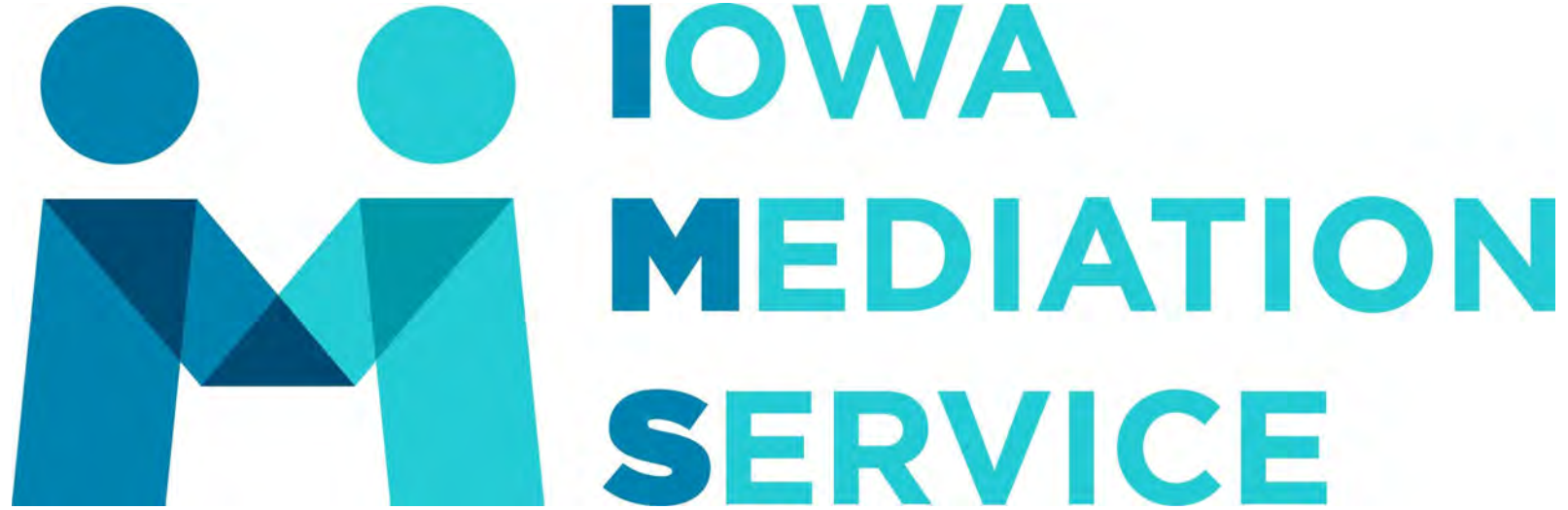


Unilever

Thank you!



Iowa Mediation Services



<https://www.iowaMediationService.com/>

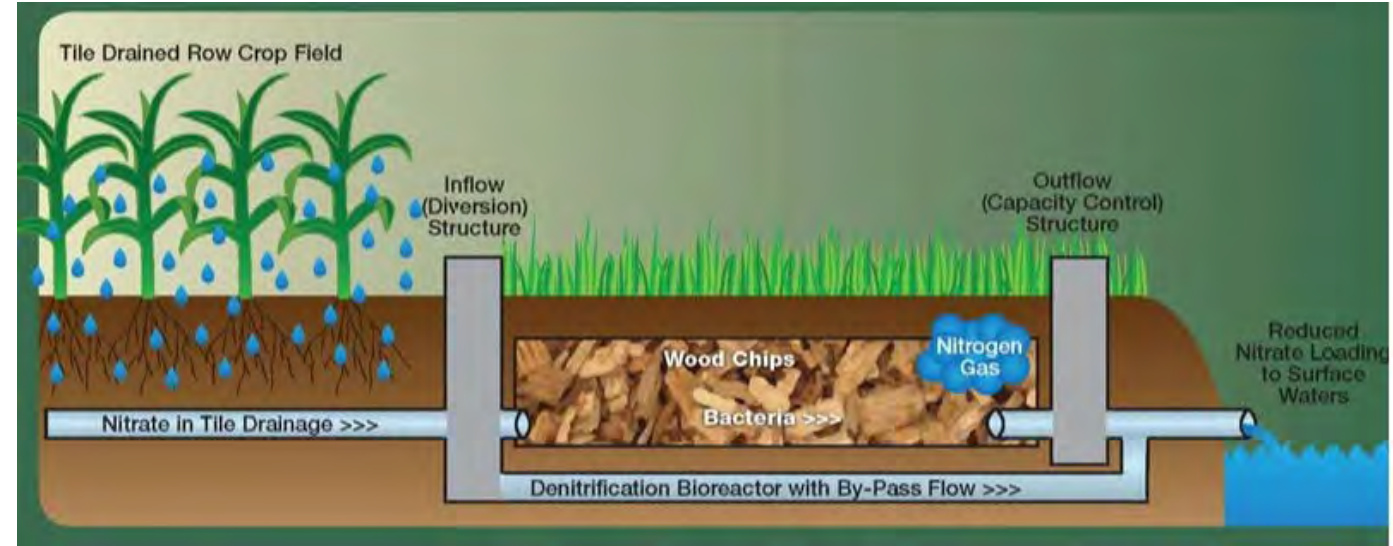
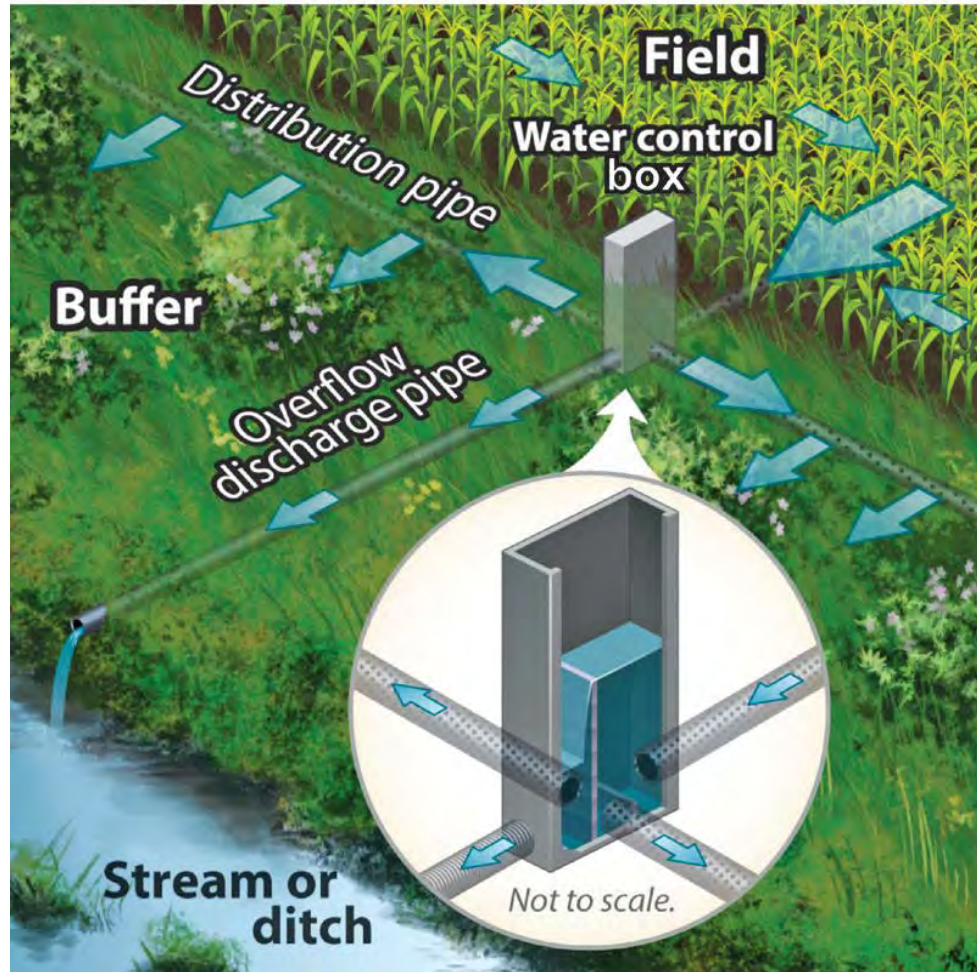
Natural Resources & Outdoor Recreation Trust Fund

- ✓ 2010 Constitutional amendment approved by 63% of Iowa voters to create the trust fund
- ✓ Permanent source of state-level funding for clean water initiatives, outdoor recreation, soil quality, and wildlife habitat
- ✓ The Trust Fund requires 3/8ths cent increase to state sales tax to get funded
- ✓ We haven't had a state sales tax increase since 2010

<https://www.iowadnr.gov/about-dnr/grants-other-funding/natural-resources-rec-trust>

<https://www.fundthetrust.org/>

Saturated Buffers & Bioreactors

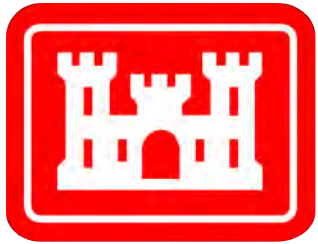


- Specialized drainage management structures
- Generally non-invasive in field
- Effective nitrate reduction
- Minimal maintenance
- Longer life spans
- Aggressive cost share support

Growing Pains – Bureaucratic Brick Walls



= Waters of the United States



**US Army Corps
of Engineers®**

