

Minutes

The meeting called to order by WMA Chairman, John Kurtz at 1:37 pm.

Motion to approve the agenda. Motion made by David Lehman and seconded by Steve Breitbach.
Motion Passed.

Attendees: John Kurtz, *Buchanan County Supervisor*, Tori Nimrod & Ross Evelsizer, *Northeast Iowa RC&D*, Orlan Love, *City of Quasqueton*, Randy Leach, *City of Fredericksburg*, David Lehman, *Bremer County*; Cara Matteson, *Linn County*, Steve Breitbach, *Chickasaw County*, Mark Bohno, *City of Tripoli*; Ron Lenth, *Bremer SWCD*, Sherman Lundy, *Black Hawk County SWCD*, Ben Bonar, *Buchanan CCB*, Trevyn Cunningham, *Central City*; Brian Keierleber, *Buchanan County Engineer*; Steve Geerts, *City of New Hampton*, Karmin McShane, *Linn Co SWCD*, Laura Albert & Dave Nuss, *City of Sumner*; Ray Armbrrecht & Kyle Wendland, *City of Fredericksburg*; Matt Crayne & Chad Humpal, *Chickasaw County Conservation*; Rick Wulfekuhle, *Buchanan County EM*; Kristina McBurney, *Rep. Hinson's office*; Chris Eiby, *Delaware County SWCD*; Brandy Meisheid, *Linn County*.

Motion to approve the Minutes from October 1st, 2024. Motion made by Sherman Lundy and seconded by Orlan Love. Motion Passed.

Presentation:

Watershed Coordinator, Ross Evelsizer presented flood modeling results of a relay-cropping project with the American Flood Coalition.

Ross Evelsizer, Natural Resources Projects Director for Northeast Iowa RC&D, presented information about an ongoing project with funding through the American Flood Coalition, and in partnership with the Iowa Flood Center and Iowa State University. Since 2021, explored the potential of relay intercropping as a flood mitigation strategy. The analysis integrated soil moisture time series from relay intercropping fields, satellite-based evapotranspiration estimates, a literature review, hydrologic modeling, existing urban flood maps, and information on building locations. The study focused on the Cedar River Watershed upstream of Cedar Rapids, Iowa, covering the period between 2003 and 2018. This period includes the two largest peak flows recorded at Cedar Rapids in 2008 and 2016.

In-situ and remotely sensed data on relay intercropping were used to adjust the parameters of the existing GHOST model. These modifications considered a 30% increase in infiltration and reference evapotranspiration to reflect the benefits of implementing relay intercropping. Model simulations quantified reductions in annual peak flows, showing decreases ranging from 6% to 30%. The USA Structures dataset was used to estimate the number of structures that would have remained flood-free during the major floods of 2008 and 2016. Analyses indicate that approximately 500 structures in Cedar Rapids would have been protected if relay intercropping had been adopted in the Cedar River Watershed.

Watershed Coordinator Update:

FY26 Proposed Funding Mechanism Discussion

Coordinator, Tori Nimrod updated the board that fundraising letters with the new funding formula was sent to each board entity via email. Several donations have been trickling in. She reminded attendees to bring the letter to their boards and request funds for FY26. Coordinators made the point that Entity's donations are voluntary. Entities are able to give as much or as little as they want, the letter is purely a suggestion on what the WMA would appreciate from their entity.

Nimrod brought to the boards attention again the results of the on-line motion made on adopting the new funding formula based on the number of people living in each jurisdiction. Via email the motion passed with 17 "yes" votes. No significant opposition was received by board members. The only no vote was by Fayette County, who simply was not willing to contribute their increased amount in the new formula because they didn't feel right contributing more to the Wapsi than to the Turkey River WMA which makes up majority of their county. It was not because they were against the Upper Wapsi WMA from asking.

Northeast Iowa RC&D was one of 96 applications awarded in the Nation for the 2025 NRCS RCPP grant program. The grant was for 25 million dollars, to implement floodplain easements, and associated restoration, on lands in the Driftless region of Iowa, specifically the Turkey River Watershed and Dubuque County. While not directly affecting the Upper Wapsipinicon River Watershed, coordinators explained there is a potential for projects to expanded further west if funds allow. It also serves as an example of the types of projects watersheds can duplicate in other parts of the state.

Water sampling for the 2024 season is complete. Coordinators are waiting to receive results and hope to have a report by the next Upper Wapsi WMA Meeting in April.

Partner Updates:

None

- **Next Meeting Date:** Tori, will send out potential meeting dates for April, 2025

Meeting Adjourned at 2:28 Motion made by Ray Armbrrecht, Second by Steve Geerts. Motion Passed.

Multi-Cropping as a Flood Mitigation



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@MultiIowa

What is multi-cropping?

- Multi-cropping as a form of regenerative agriculture
- “Regenerative Agriculture is a system of farming principles and practices that increases biodiversity, enriches soils, improves watersheds, and enhances ecosystem services.”
- More than one crop harvested from the same field in the same year



Defining multi-cropping

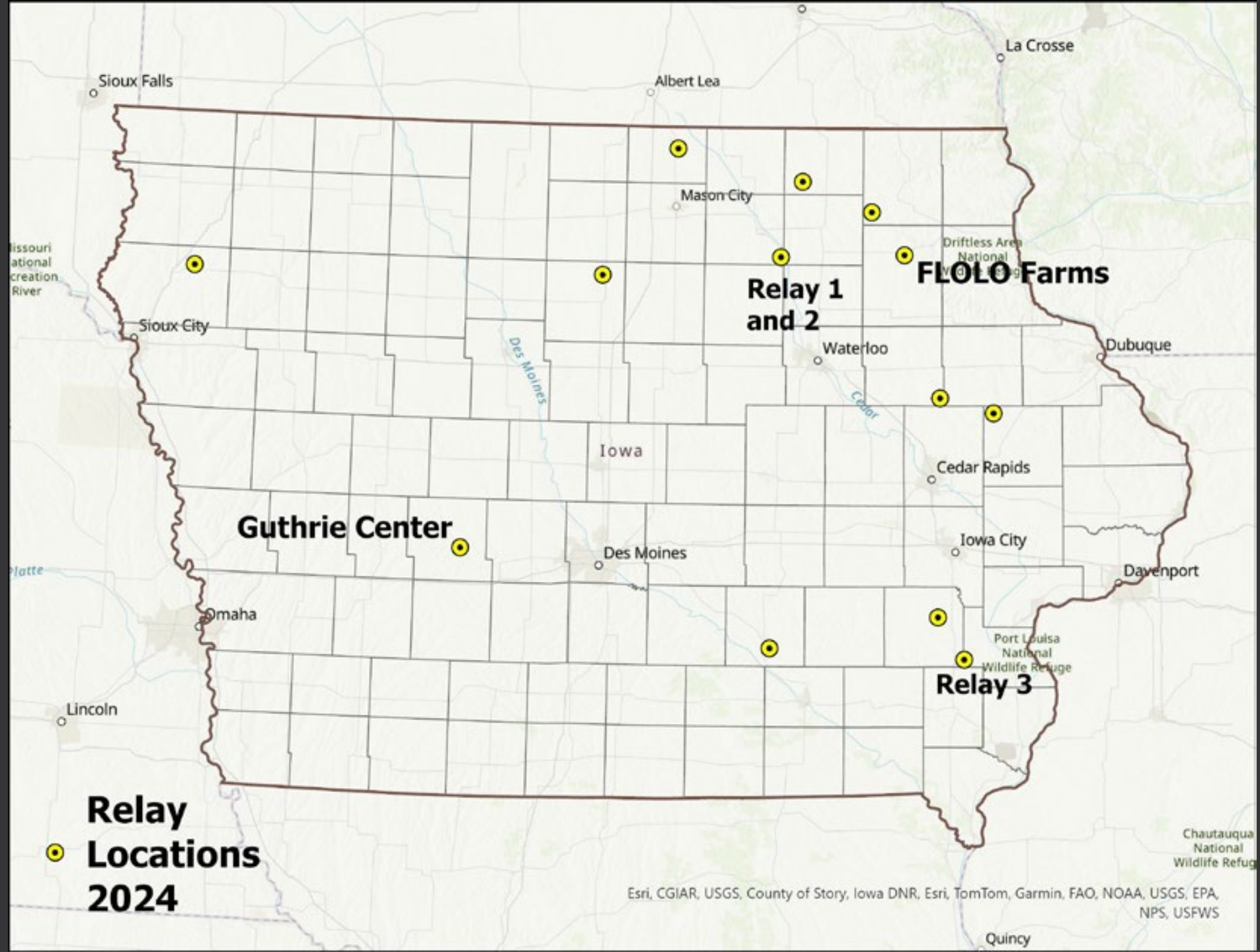


- Relay-cropping – 2 or more crops with overlapping growing seasons
- Double-cropping - 2 crops grown and harvested together OR back to back crops that don't overlap growing seasons
- Poly-cropping – 3 or more crops grown together
- Inter-cropping – 1 or more crop planted into an existing crop prior to harvest
- More than one crop harvested from the same field in the same year

Objectives

- Partnership with American Flood Coalition and Iowa Flood Center
- Field trials to determine practice viability
- Demonstrate the practice and benefits
- Measure the field level impacts of regenerative vs conventional management
- Scale the results to the HUC-8 watershed level using GHOST model





Conventional Ag

- Multiple tillage passes
- Lacks diversity and soil coverage
- Input reliant
- Poor infiltration
- Excess runoff
- Poor soil structure



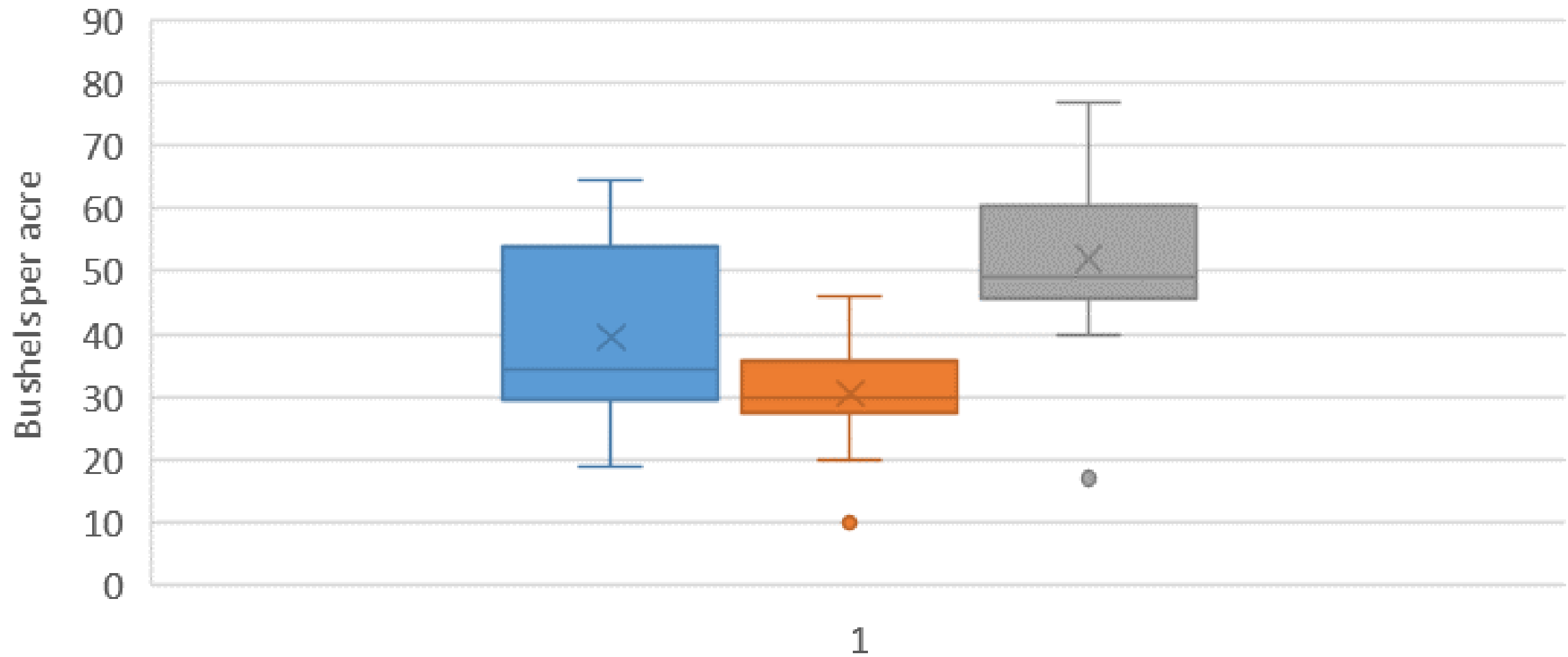
Relay Cropping

- Increases diversity
- Added biomass above and below ground
- Robust soil coverage year round
- Increased infiltration
- Higher rate of evapotranspiration
- Maximum biomass during critical periods



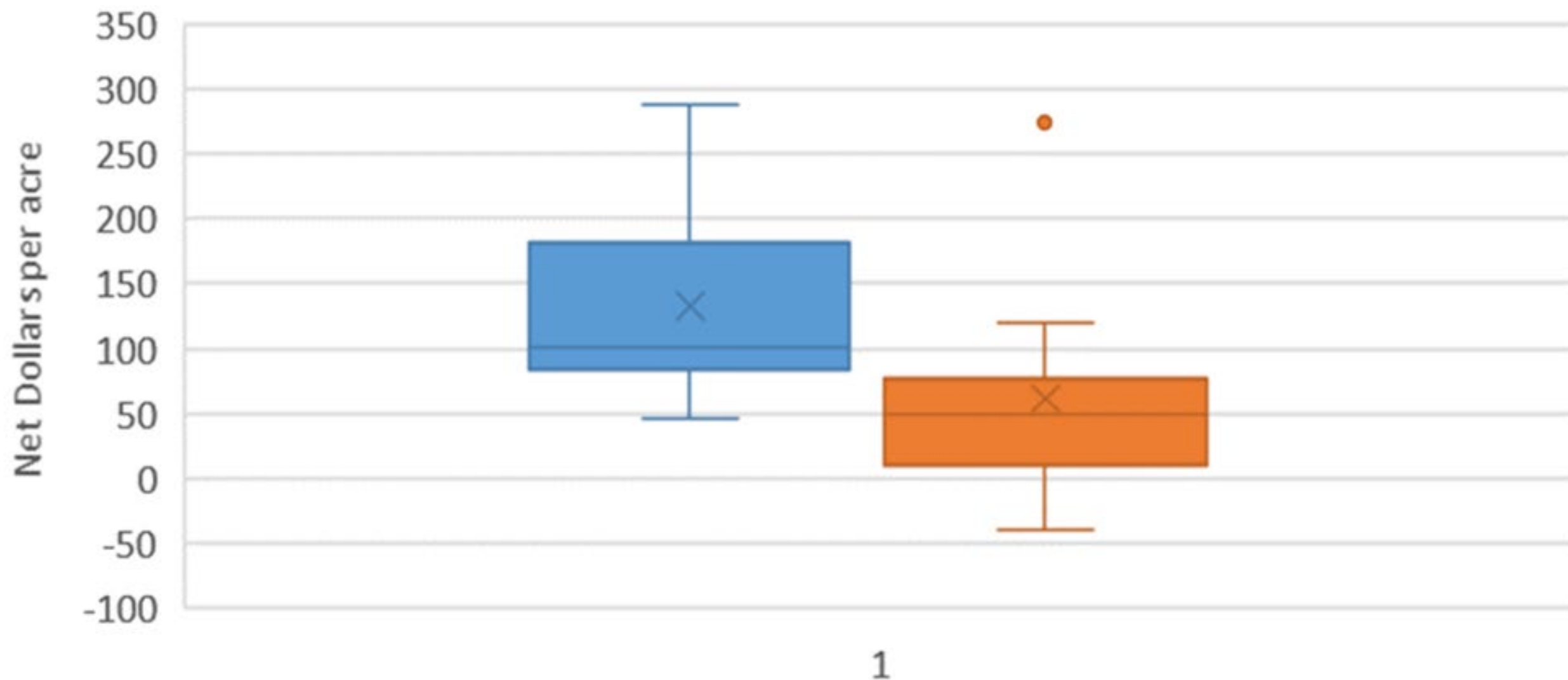
Crop Yields

Relay Soybean Yield Cereal Yield Mono Soybean Yield



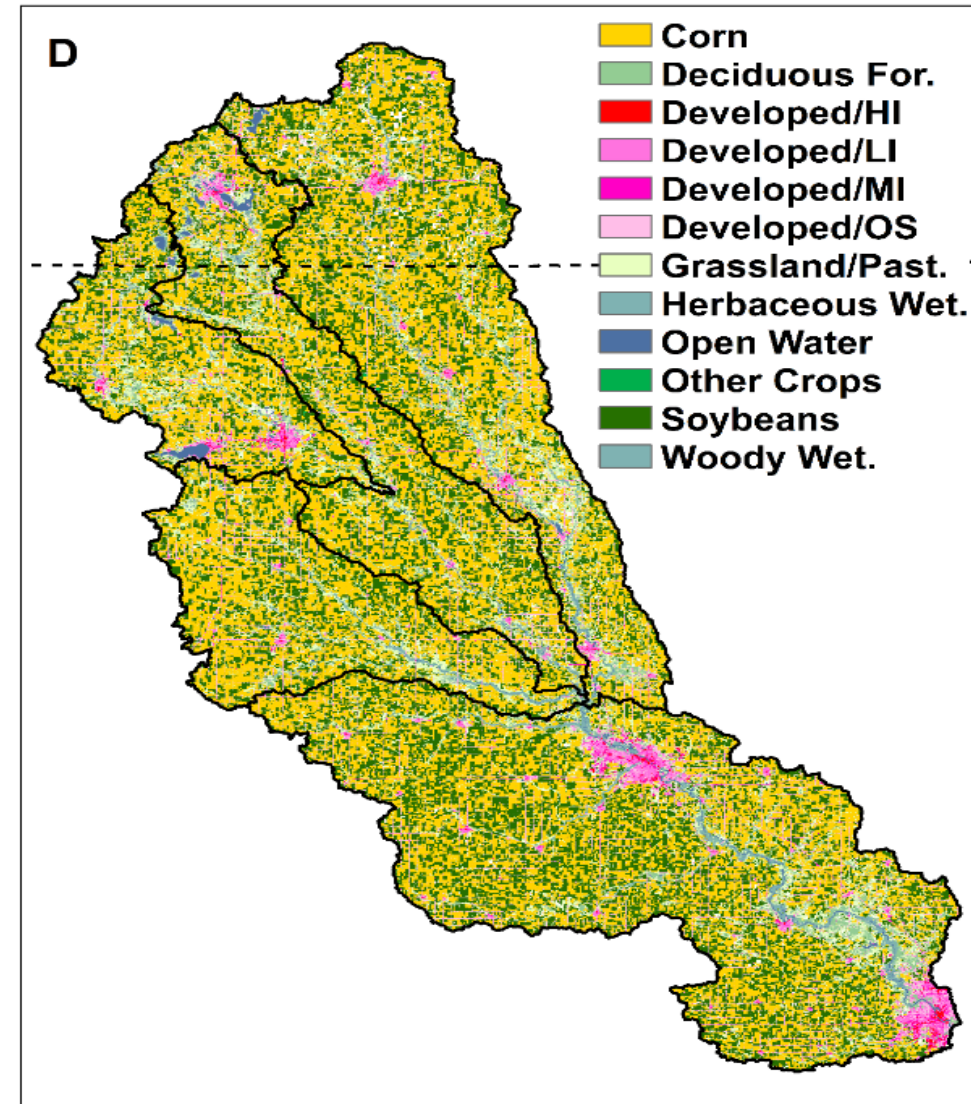
Net Field Revenue

Relay Net Revenue Mono Net Revenue



Modeling

- Cedar River Watershed – 10,800 square miles
- Modeled by Antonio Arenas and Iowa Flood Center
- Feeds to Cedar Rapids
- Event models from 2008 and 2016



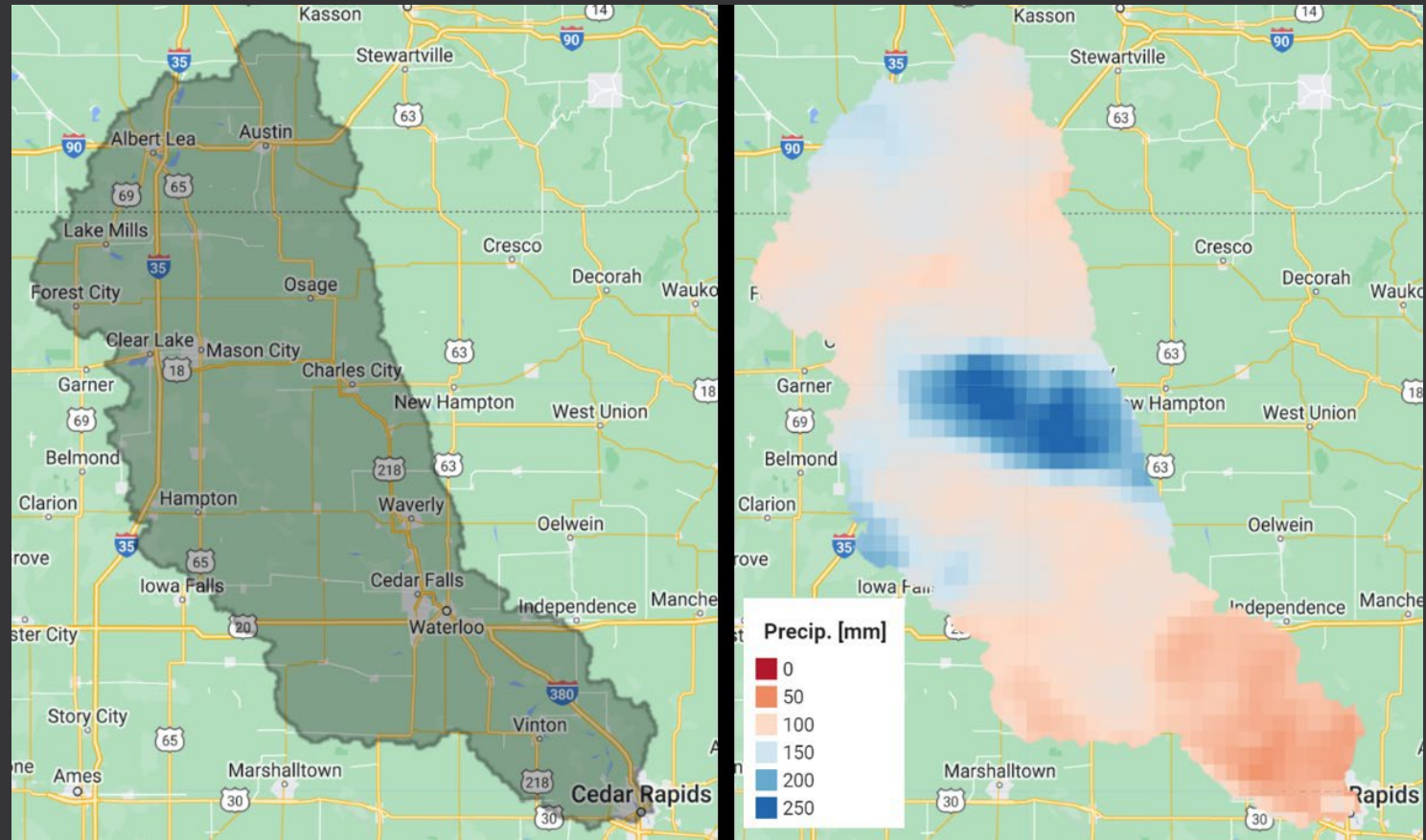
2008 Flood

- Impacted over 10 square miles of Cedar Rapids
- Over 10,000 residents were displaced
- 1,300 properties demolished
- \$848 million in damages for the state



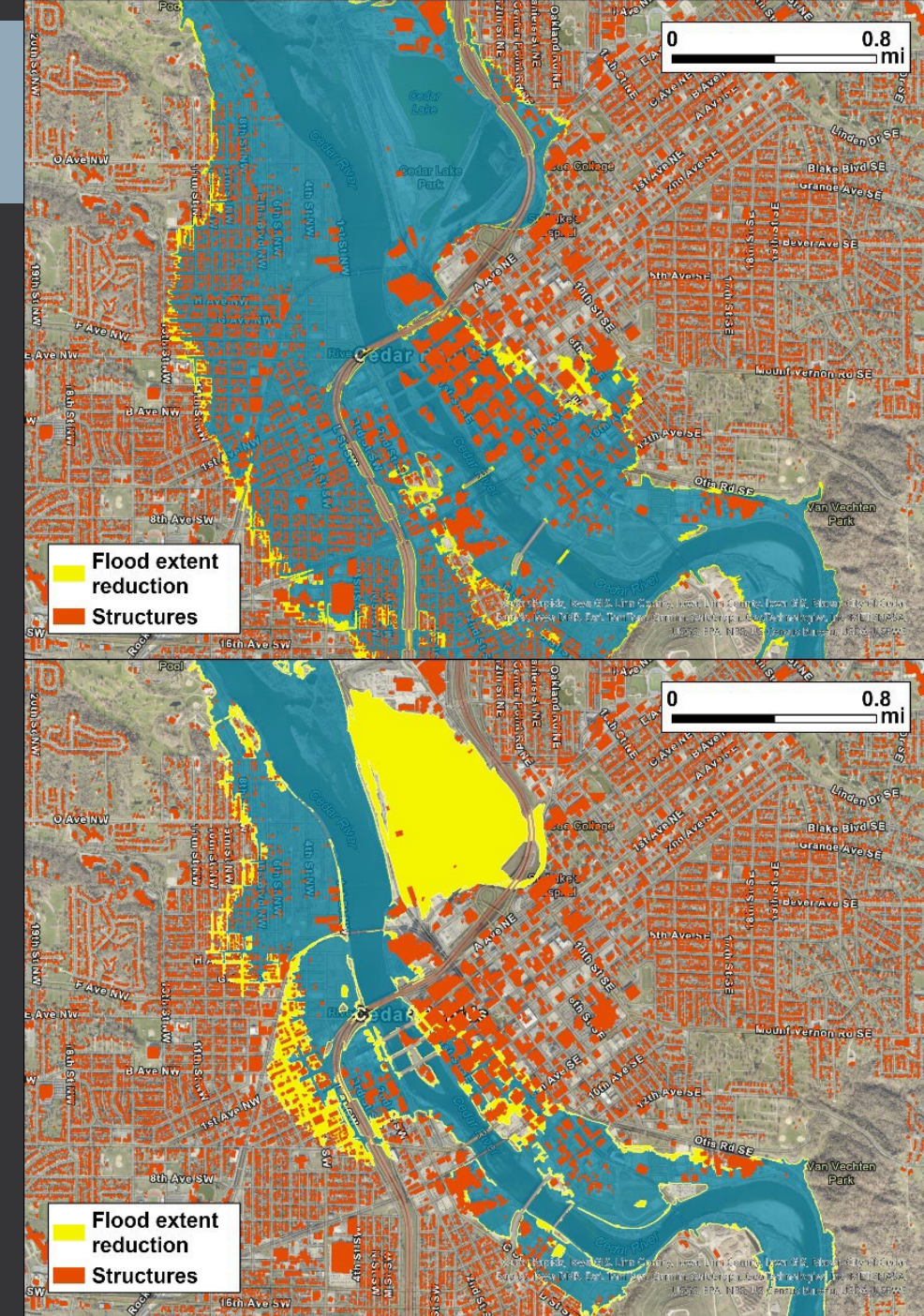
2016 Flood

- 2nd highest discharge level other than 2008
- Much more localized rainfall
- Unique timing with flooding occurring between September 21st and Oct 3rd



Impacts

- Flow reductions
- 2008 – 6.5%
- 2016 – 7.1%
- Structures saved
- 2008 – 550
- 2016 – 489
- Area inundated
- 2008 - .16 square miles less
- 2016 - .62 square miles less



Questions?



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A special thank you to our funders and partners

Funders

- Iowa NRCS
- American Flood Coalition
- McKnight Foundation
- Iowa Department of Ag & Land Stewardship – State Soil Conservation & Water Quality Committee
- Fishers and Farmers

Partners

- Iowa Soybean Association
- Iowa Flood Center
- Iowa State University
- Luther College