

Human Dimensions – Social Political, and Economics of our Prairie Lakes Systems

Prepared by:

John Lawrence, Iowa State University

jdlaw@iastate.edu

Overview

- Disclaimer
- Decision process
- Human dimension
 - Theory
 - Practice

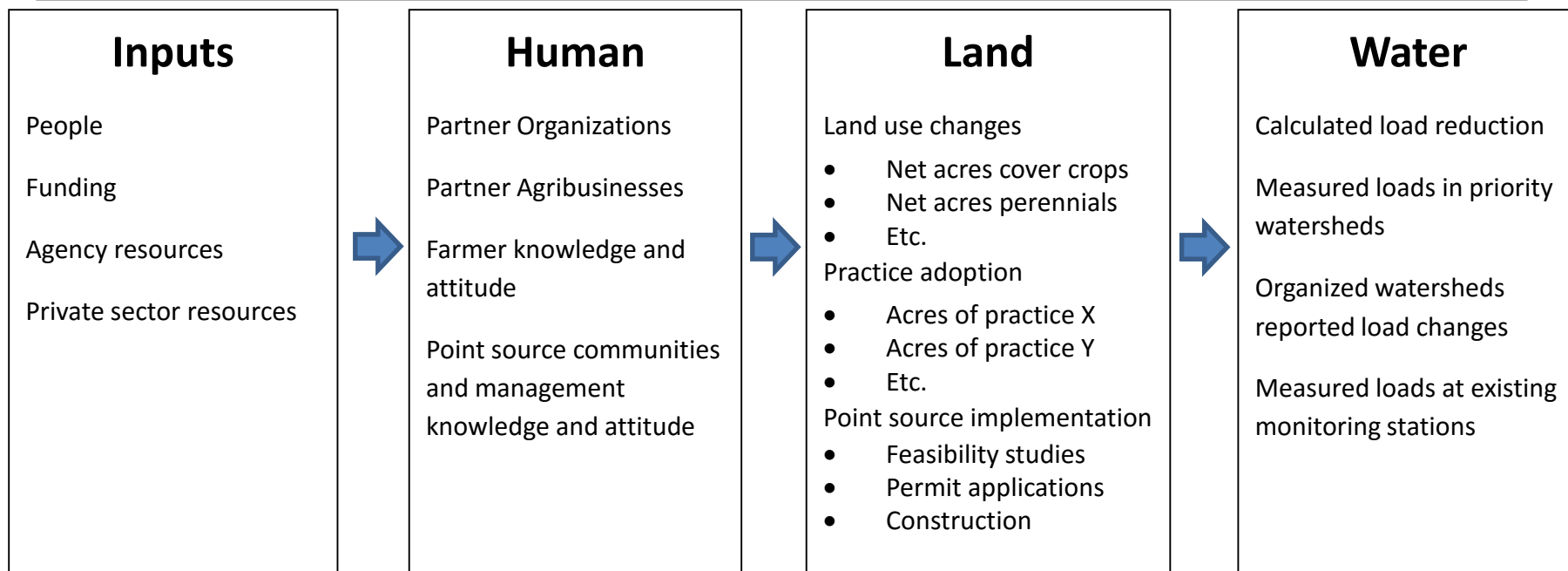
Disclaimer

- My perspective
- Where are you on the continuum
- Relatively new science

NRS Logic Model

Measurable indicators of desirable change

Specific indicators in attached text



Science and technology role

- Research-based information
- Chemical and physical measures
- Engineering and hydrogeology
- Planning and design
- Best management practices

Technical challenge

- The technical issues can be difficult, but are clear cut
- This “Expert” role is necessary but not sufficient
- Selection and implementation depend on engaged people with a vested interest in the outcome.

Political and structural aspects

- Rules and regulations
- Zoning and use
- Incentives
- Property rights and public goods

Political and structural challenge

- Legal rules, processes, and incentives are “one size fits all”; and can lead to maladaptive rather than remedial and effective solutions
- Diverse and competing interests can become polarized; delaying and blocking positive changes and solutions
- Effective progress toward the “preferred” outcome depends on engaged people with a vested interest in the outcome.

The BIG challenge

How to effectively integrate

- Science and technical expertise;
 - Political and structural rules and incentives;
 - Diverse individual and group values, views, preferences, and resources
-to get to better water quality outcomes?

It's about people

Re-solving and re-negotiating solutions to complex and difficult water issues is a human-social process....

requiring citizens to integrate science, technologies, diverse values and perspectives, and resources; and negotiate solutions

Human dimension

The Citizen Effect is about the processes and consequences of citizen's public engagement with water and each other and the actions they take to make their waters better.

Pathways to Getting Better Water Quality: The Citizen Effect
Lois Wright Morton and Susan S. Brown, editors. Springer, 2011

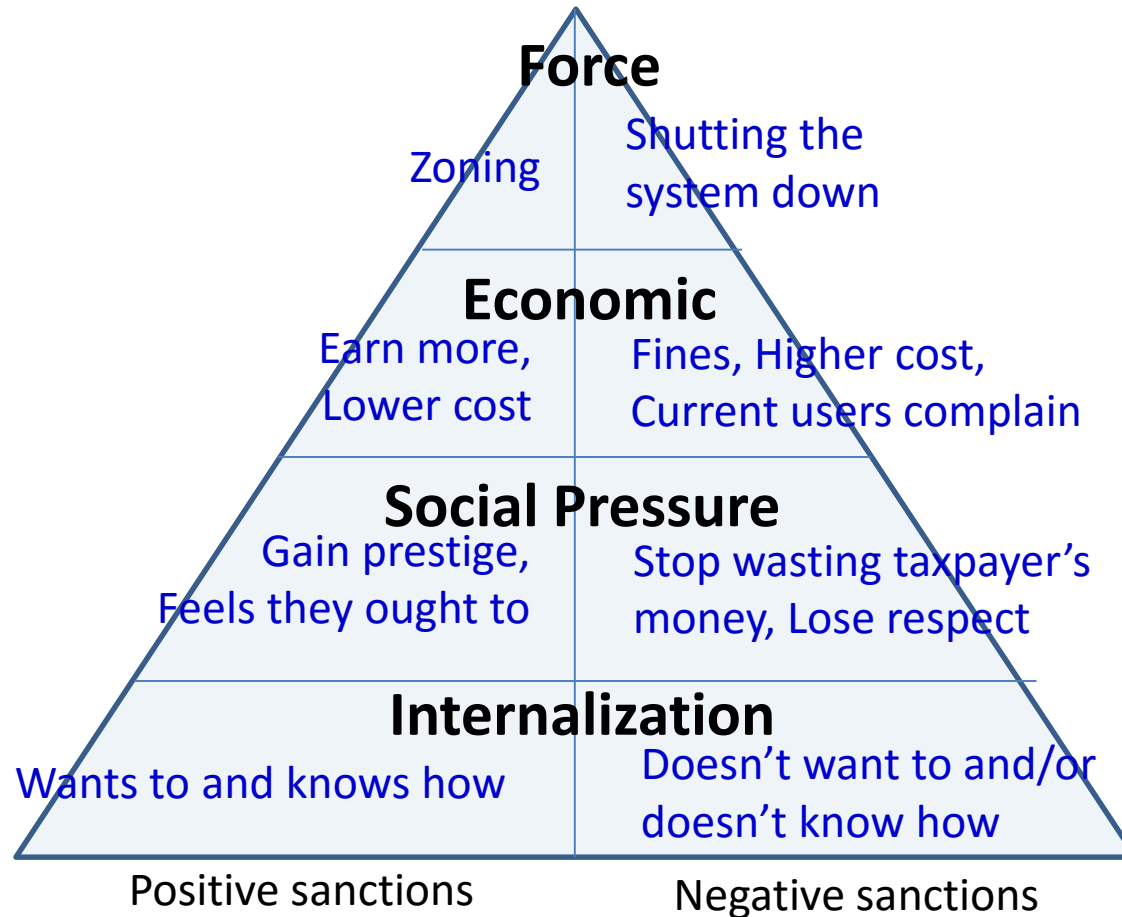
Definitions

- *Civic structure* is built by citizens invested in helping the community deal with issues of the public commons; it consists of formal and informal groups, organizations, institutions and their social relationships
- *Civic engagement* is the deliberations and actions that occur when diverse people come together to find solutions to shared public concerns

Two models of citizen involvement

- Agroecosystem management model, Flora
- Catalytic influence of local champions, *Morton*

Flora's Agroecosystem management model in *Citizen Effect*



Flora's Agroecosystem management model in *Citizen Effect*

- Force and Economics
 - Necessary but not sufficient to sustain change
 - Costly and must be maintained
- Social Pressure and Internalization
 - Internal beliefs underlie adoption
 - Cultural expectations exert pressure
 -*knowledge, beliefs, values and attitude motivate status quo or change.*

Catalytic influence of local champions

Impaired water

2-3 key land managers

Exposure to science and technologies
for land-water management

Peer-to-peer learning
(Share and discuss)

Reconstruct values and beliefs
about farming/land use to include
environmental goals

Champion managing for
the environment

Leverage and build civic
structure

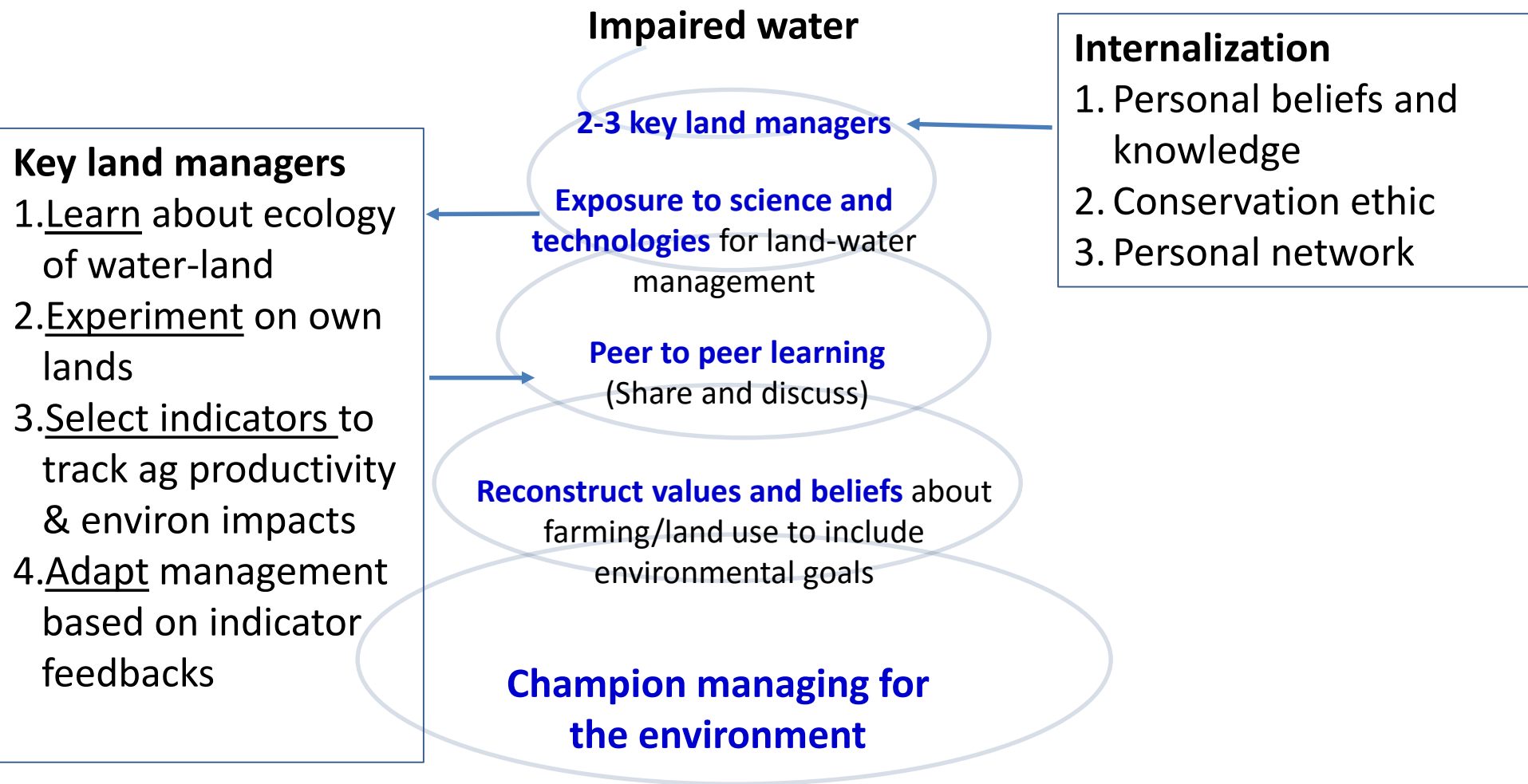
Many land managers learn and
change practices

Social outcomes

Field practice outcomes

Improved water quality

Catalytic influence of local champions



Catalytic influence of local champions

Social outcomes

1. Community awareness of water problems
2. Public set common watershed goals
3. Collective solutions and action: resources invested/ reaffirmed/ strengthened
4. Conservation ethic becomes generalized norm
5. Continued collective monitoring to sustain practices

Champion managing for the environment

Leverage and build civic structure

Many land managers learn and change practices

Social Outcomes

Field practice outcomes

Improved water quality

Build civic structure

1. Communicate to others
2. Leverage networks of people and organizations
3. Create social pressure for community benefit (legal and social)

Field practice outcomes

1. Watershed goals internalized
2. Practices on personal lands identified to accomplished goals
3. Practices implemented
4. Effectiveness of practices monitored, evaluated
5. Adaptive management

Catalytic influence of local champions

- Work to internalize and change culture
- Follows the *Early Adopter* model
- 2-3 **leaders** introduced to research findings
- They learn, internalize and share
- Broaden the network to others
- Safe, inclusive, engaged civil structure
- Continuous improvement process

What makes this model work?

Shared leadership

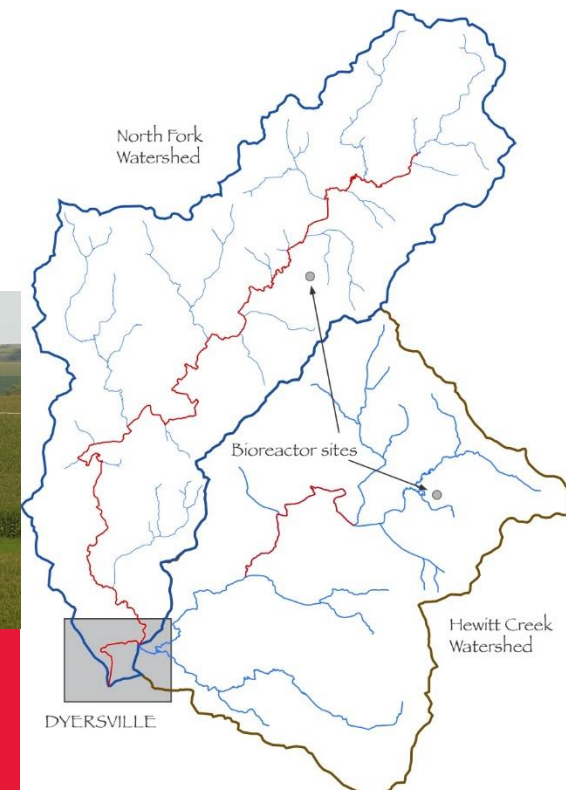
- *Multiple members of a watershed community engage in leadership behaviors simultaneously*
- Effective leaders are reliable, credible and respected by the community
- Help the community create and own a vision of what is to be accomplished and understand why it is important

Shared leadership

- *Multiple leaders partner to use their connections to create a web of influence rather than a chain of command*

Example: Hewitt Creek

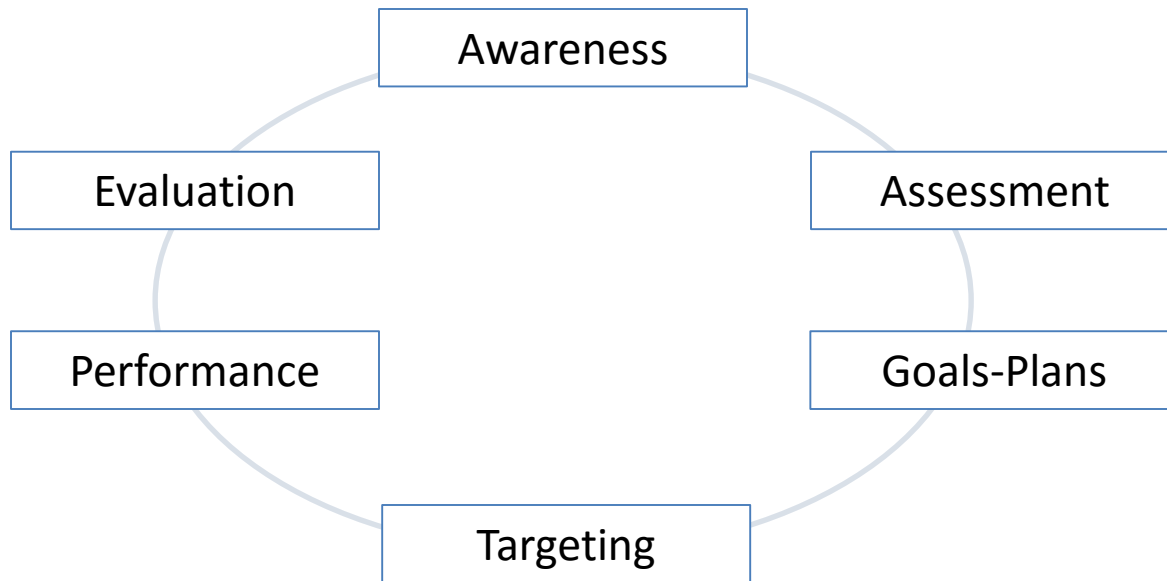
- In Maquoketa River Basin in NE Iowa
- 23,000 acre hilly HUC-12 watershed
- More than 80 farms, livestock intensive
- 2002 EPA 303(d) list. High in N, P and animal fecal coliform



Hewitt Creek response

- Farmers organized to address problem
- Meet monthly to focus on watershed
- Goal is to get off the 303(d) list
- Small amount of grants and assistance
 - Iowa Farm Bureau and WIRB
 - ISU Extension
 - EPA, USDA, IDALS, LICA, ICPB, UIU, high school vo-ag

Continuous improvement performance-based model with feed-back loops



Hewitt Creek response

- Farmer committee decision making
- Small payment for performance
 - \$25-400 per farm, \$10/acre for cover crops
- Collect and compare data across farms
 - Late season stalk nitrate test
 - P-Index
 - Soil Condition Index

After 4 years

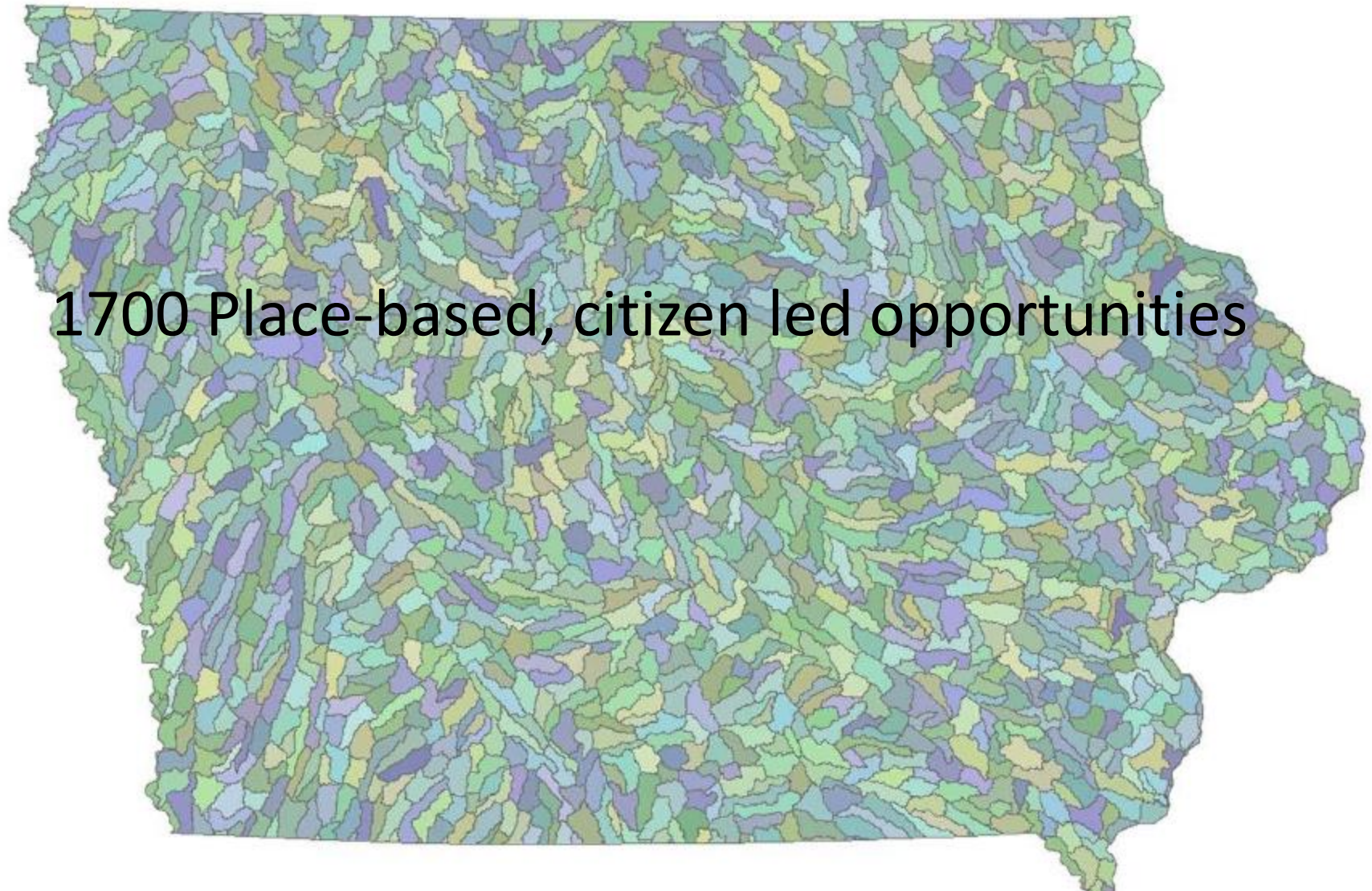
- 67% of farms participated
- 396 fields, 9893 acres tracked
- Significant improvements SCI and P-Index
- Significantly less N application and sediment delivery to Hewitt Creek
- Farmers have reduced cost of production and soil loss and see value in actions

Evaluation

- *There are fish in the creek where there had not been for years and years*
- *Eagles are around the creek and had been many years since they had been there*
- In 2014, still on the 303(d) list.
- They continue to make improvements

Iowa Watersheds

Hydrologic Unit Code (HUC) 12



Summary

- Science, economics and politics are part of the solution and got us to here
- A civil society provides a structure to move us forward
- Many pathways to achieve water quality outcomes
- Citizens with a common vision and shared leadership will make a difference.