

HOW SOCIAL NETWORKS IMPACT AGRICULTURAL LAND STEWARDSHIP IN IOWA

Prepared by: India Luxton, Ellie Ellis, Parker Arnold, Prasiddha Shakya, Juliet Lee, Emilia Ravetta, Ted Toombs, PhD, Anne Mook, PhD, Jeni Cross, PhD

Midwestern farmlands are among the most agriculturally and economically productive in the world. However, challenges – such as soil erosion, nitrogen pollution, and susceptibility to flood and drought – threaten the long-term sustainability and profitability of these farmlands. To combat these challenges, farmers have adopted land stewardship practices to increase their operation's resilience and sustainability. To learn more about the role of social networks in practice adoption, we conducted 38 surveys with farmers in Iowa.

Why social networks?

Most research on *what* drives adoption of farming practices has focused on individual farmers' characteristics and circumstances, rather than assessing the influence of social factors. Some research suggests that social networks significantly influence farmer decision-making and adoption.

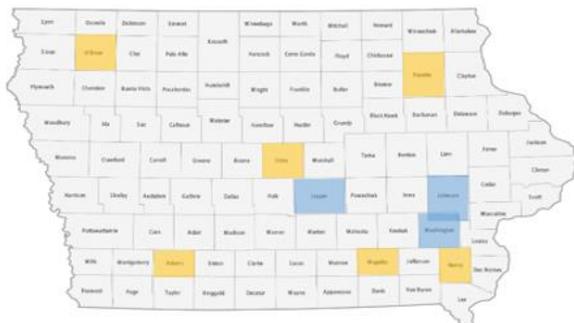
Social networks are interpersonal connections through which information is shared, learning occurs, and resources are exchanged. Social network analysis (SNA) is an interdisciplinary method that maps connections between actors such as farmers and organizations. We used SNA to learn more about the relationship between social networks and land stewardship practice adoption.

How did we conduct this study?

To learn more about the role of social networks in land stewardship, we collected survey information from 38 farmers in 9 counties. Participants were recruited in partnership with the Iowa Natural Resource Conservation Service (NRCS) office and through referrals from other farmers.

Surveys were conducted from December 2022 to March 2023 using Network Canvas. Participants provided information on their farm operations, practice adoption, and who they turn to for information on land stewardship.

Figure 1. High-adoption counties are in blue, and low-adoption counties are in yellow.



Who did we survey?

16 farmers in Washington County, **9** in Henry County, and **12** from other counties throughout the state



The average farmer's age was **55**. Participants ranged in age from 28 to 82. **95 percent** of participants were male, and **100 percent** identified as white.



Farmers age 60+ own **33 percent** more acres than younger farmers, on average. **58 percent** of farmland acres are owned by the primary operator.



97 percent of farmers in our sample produce both corn and soybeans. Participants also produced livestock, forage crops, small grains. And specialty crops.



The average farm size was **1307 acres**. Farm size ranged from 40 to 5200 acres.

What did we learn?

We asked participants to name people they visit for information about land stewardship practices. This chart shows the number of people named in each category. Friends, neighbors, and NRCS employees were named most often. Farmers are most likely to report discussing land stewardship practices with local friends and neighbors. They also seek advice from NRCS employees, agronomists, and university extension agents. They trust the views of transactional relations such as seed or chemical salespersons to a much smaller extent.

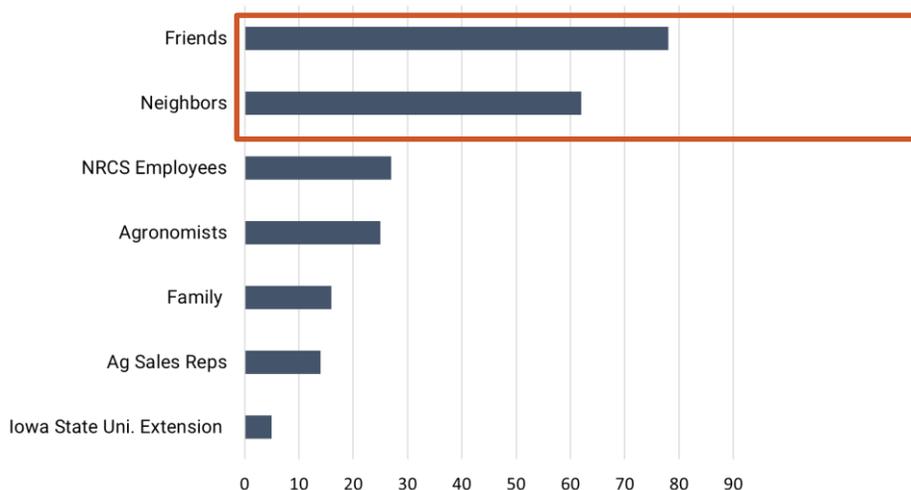


Figure 2. Types of connections mentioned by farmers

View the full report here: <https://hdl.handle.net/10217/237523>



What influences land stewardship practice adoption?

MOTIVATIONS TO ADOPT

Farmers highlighted the practical advantages of land stewardship practices. These practices were used as a strategy to navigate land and operation needs, such as reducing labor demands through no-till, cover crops as a strategy for reducing soil erosion and increasing soil health and reducing the amount of planting in year.

Some conservation practices are more likely to be adopted in specific production systems. We see that farmers who plant a combination of corn, soybeans, alfalfa, and livestock are more likely to adopt agricultural conservation practices and incorporate alternative land uses like rotational grazing and upland wildlife habitat.

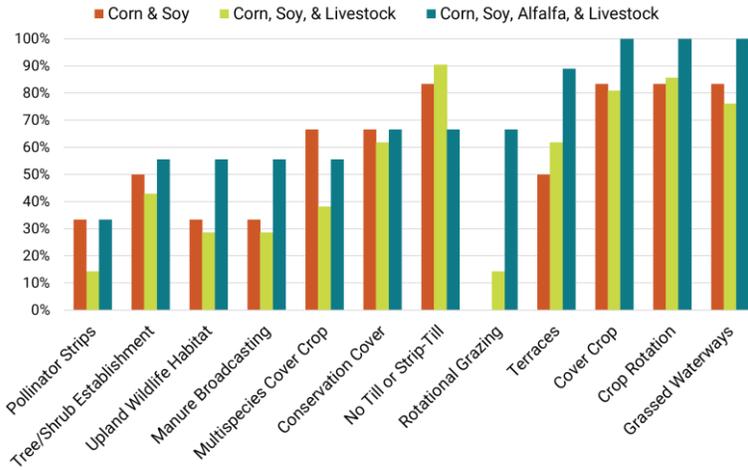


Figure 3. The rate of conservation practice uses by types of crops produced.

FARMER-TO-FARMER CONNECTIONS

When exploring new practices, farmers turn to peers in the community, the internet, and social media as sources of information. Learning from the lived experiences of other farmers, their challenges and successes, is key to practice adoption. Farmers in high-adoption areas have, on average, more connections (3.7) from whom they seek advice regarding land stewardship practices than farmers in low-adoption areas (3.0).

Federal government organizations, including the Farm Service Agency and the NRCS, were the most consulted resources for land stewardship information. Younger farmers are more inclined to use social media, while older farmers tend to consult magazines.

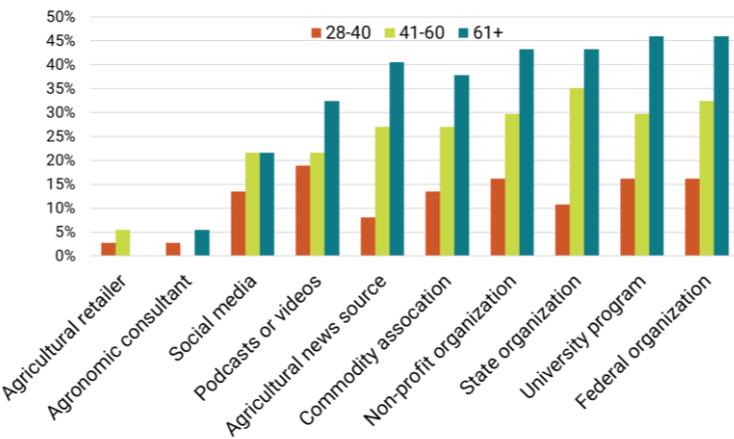


Figure 5. Top societal influences by age group

IMPLICATIONS FOR THE FUTURE

Social networks and trust play a significant role in adoption. The recommendations from this research include connecting influential farmers, organizing farmer meetups, and engaging experts to expand connections. Investment in learning opportunities and networking is essential for farmers in low-adoption areas. Resources should be allocated strategically to boost awareness of support programs in low-adoption counties.

We organized these practices using the following typology:

- **Fundamental:** commonly used practices, often prescribed or mandated in some production systems or ecologically sensitive areas.
- **Improved:** practices that reduce the environmental impacts of existing production systems, often requiring a financial or technical investment.
- **Transformational:** practices that transition to fundamentally different ways of farming or land uses (e.g., perennial vegetation, pasture, or restoration of native ecosystems).

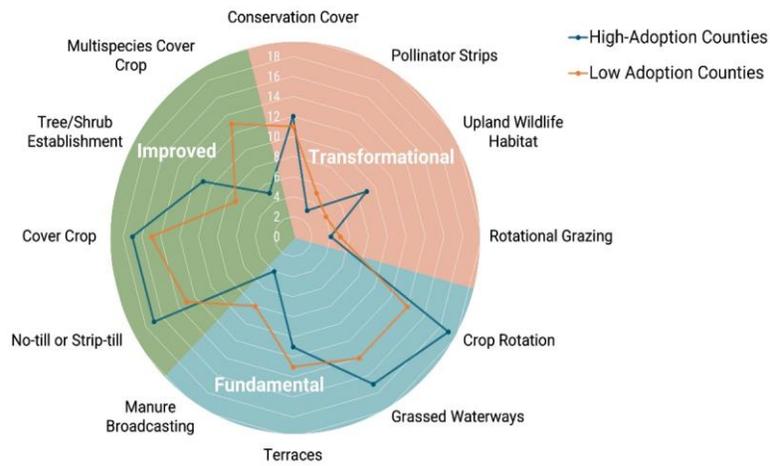


Figure 4. The number of farmers using select conservation practices, separated by counties with high-adoption of conservation practices (blue line) and low-adoption (orange-line).

COMMUNITY PERSPECTIVES

Farmers in low-adoption counties perceive lower community support and environmental sustainability concerns. However, farmers in counties with low conservation practice adoption rates expressed desire to increase conservation. Farmers in high adoption counties were more likely to feel appreciated for their efforts and to note community-wide benefits.

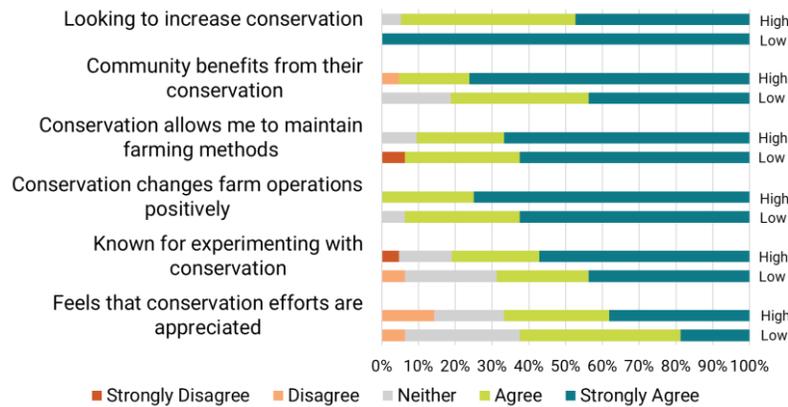


Figure 6. Farmer attitudes towards agricultural conservation practices.