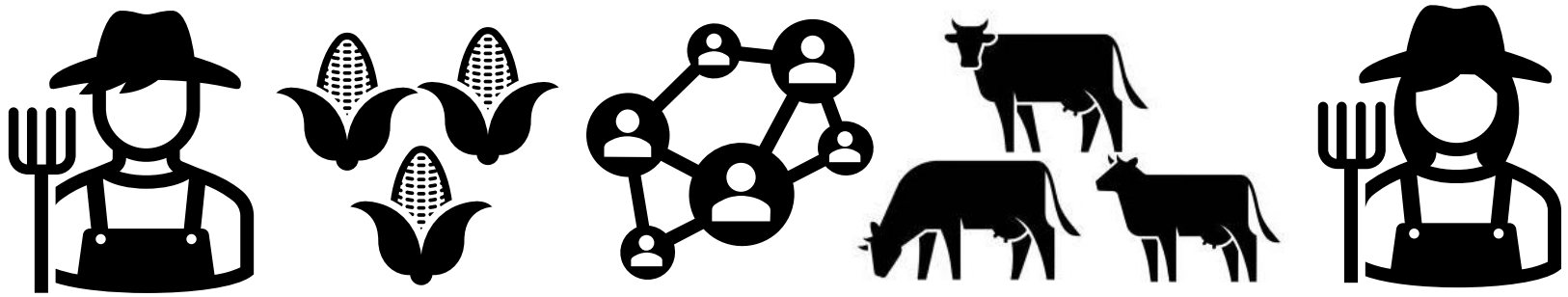
Catalyzing conservation adoption through peer-to-peer learning

Lessons from the Wisconsin Demonstration Farm Networks Program



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February 10, 2026

ILLINOIS

The Nature Conservancy

Great Lakes RESTORATION

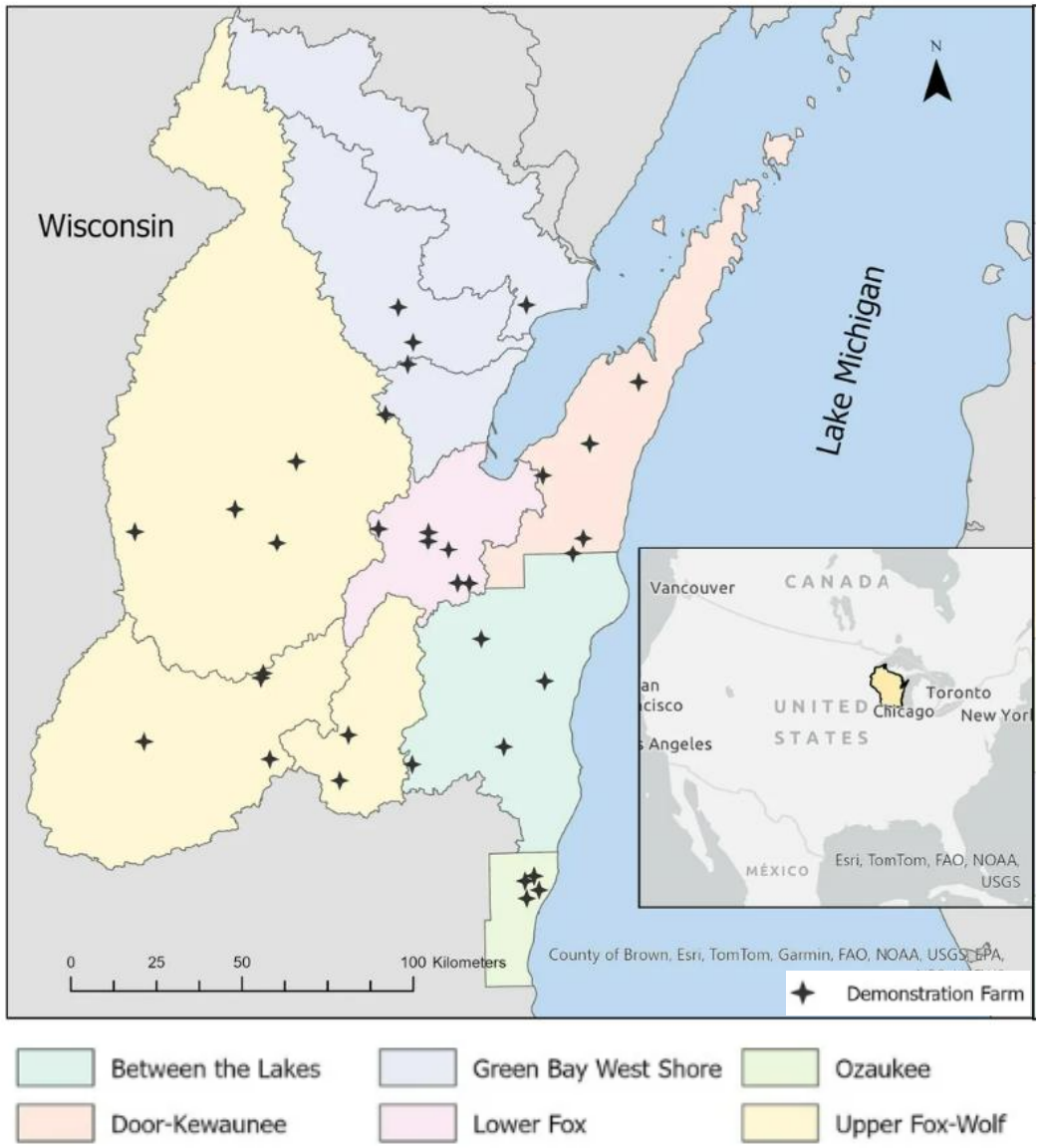
WISCONSIN DEMONSTRATION FARM NETWORKS

Wisconsin Demonstration Farm Networks Program

- NRCS-GLRI Funding in Lake Michigan basin
- First network established in 2014

Program Region	Year founded	# Demo farmers	Boundary area (km^2)
Lower Fox	2014	7	1,678
Door-Kewaunee	2017	4	2,573
Upper Fox-Wolf	2018	10	15,319
Ozaukee	2018	4	610
Between the Lakes	2020	4	3,465
Green Bay West Shore	2021	4	6,507

- Demo leaders receive financial and technical support to implement and promote conservation
  - Additional staff hired
- Activities: Field days, roundtables, signage



HOW MUCH did the demonstration farm program increase conservation adoption?

Spatial and Temporal Study

How has the presence of the demonstration farm networks influenced cover crop adoption in Wisconsin watersheds?

Methods

Data Collection	Cover Crop Data (2016 to 2021), Program boundaries and addresses, Wiscland 2.0 Land Use & Land Cover
Geospatial Analysis	100 samples of 100,000 random points within program area: 5 and 10 km buffers, demo farms within boundaries, cover crops at point
OLS with Fixed Effects	Estimating changes in cover crop adoption after demonstration farm activities begin
Event Study Analysis	Pre & post exposure windows assessing cover crop adoption over time

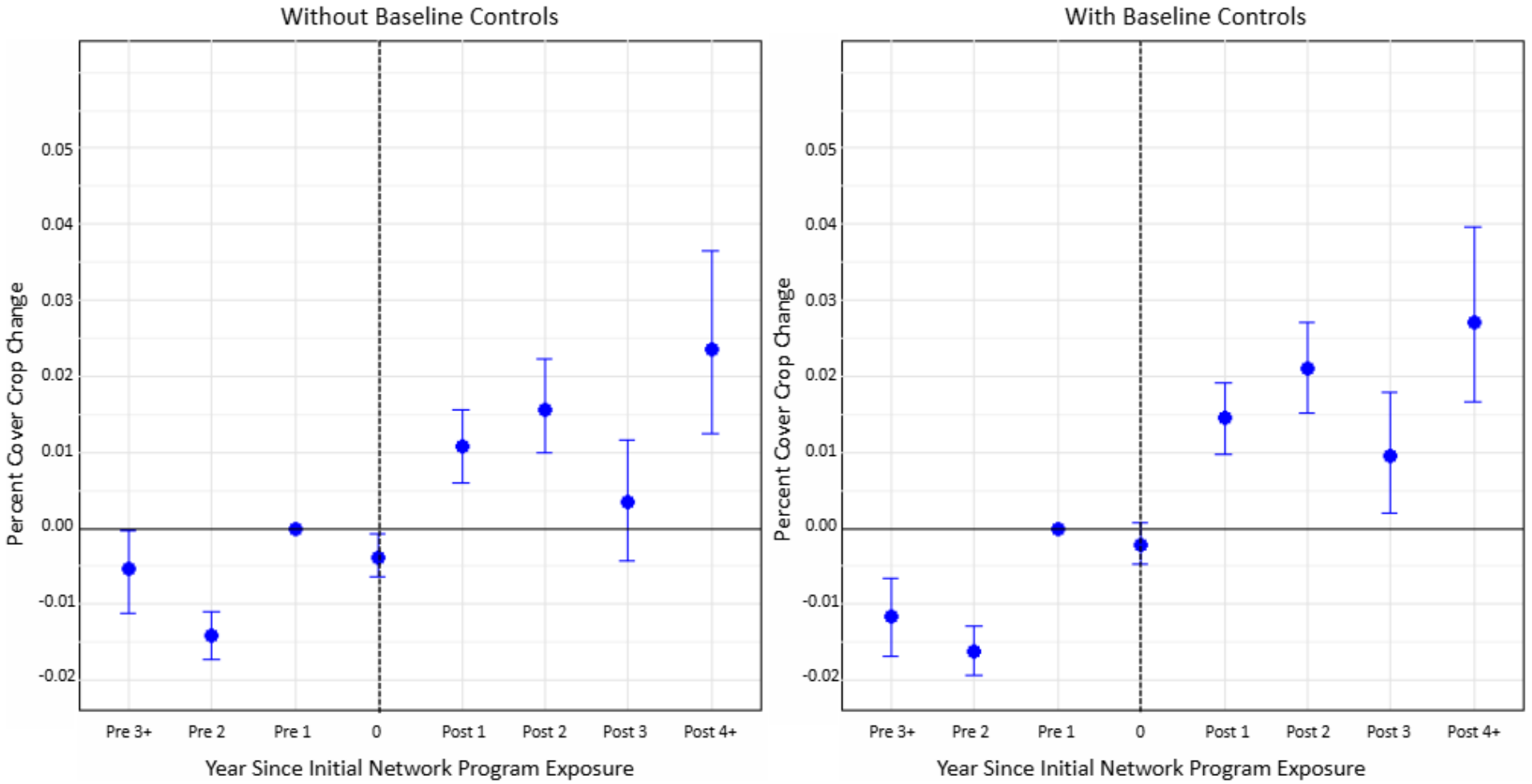
Results

- If a point was:
  - In an active network → **10%** more likely to have cover crops.
  - Closer to a demo farm (within 5km) → **13%** more likely.
- Based on previous research, EQIP payments alone should have increased cover crops by only **0.06%** (Park et al., 2023)

Craska et al., 2025 *Conservation Letters*

Results

- Cropland was **50%** more likely to have cover crops in a network active for 4+ years



Craska et al., 2025 *Conservation Letters*

HOW did the demonstration farm program catalyze conservation adoption?

Interview-based research

Social Network Study

- How does information about conservation practices move through a farming community?

Social Norms Study

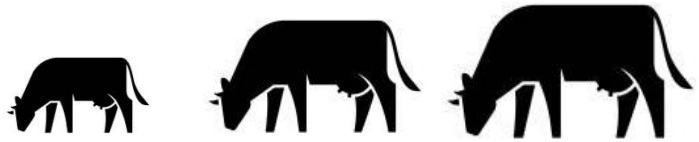
- How have social norms related to conservation adoption shifted in the demo farm region?

Sample population and characteristics

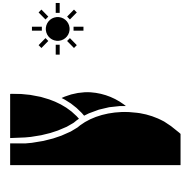
- Sample population
  - 22 demo farmers
  - 23 non-demo farmers
- Farm and farmer characteristics

	Demo farmers	Non-demo
Lower Fox	4	4
Door-Kewaunee	3	4
Upper Fox-Wolf	6	6
Ozaukee	3	4
Between the Lakes	4	2
Green Bay West Shore	3	2

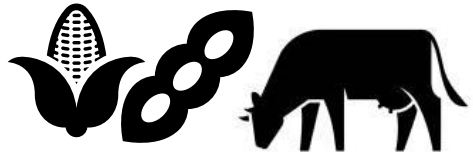
12 first gen, 15 multi-gen, 18 centennial



11 small, 11 medium, 17 large



Avg. farm 1,595 acres



Top crops

Social Network Study

Sociogram used to collect network information during interview

Who Do You Talk To For Information About Conservation Practices?

We would like to know who you **exchange information** with related to **the use of conservation practices,** such as cover crops, conservation tillage, and low disturbance manure application. This will help us to understand **agricultural social networks** and which groups are **trusted sources of information.**

Please fill out the names of the people and groups in your information network.

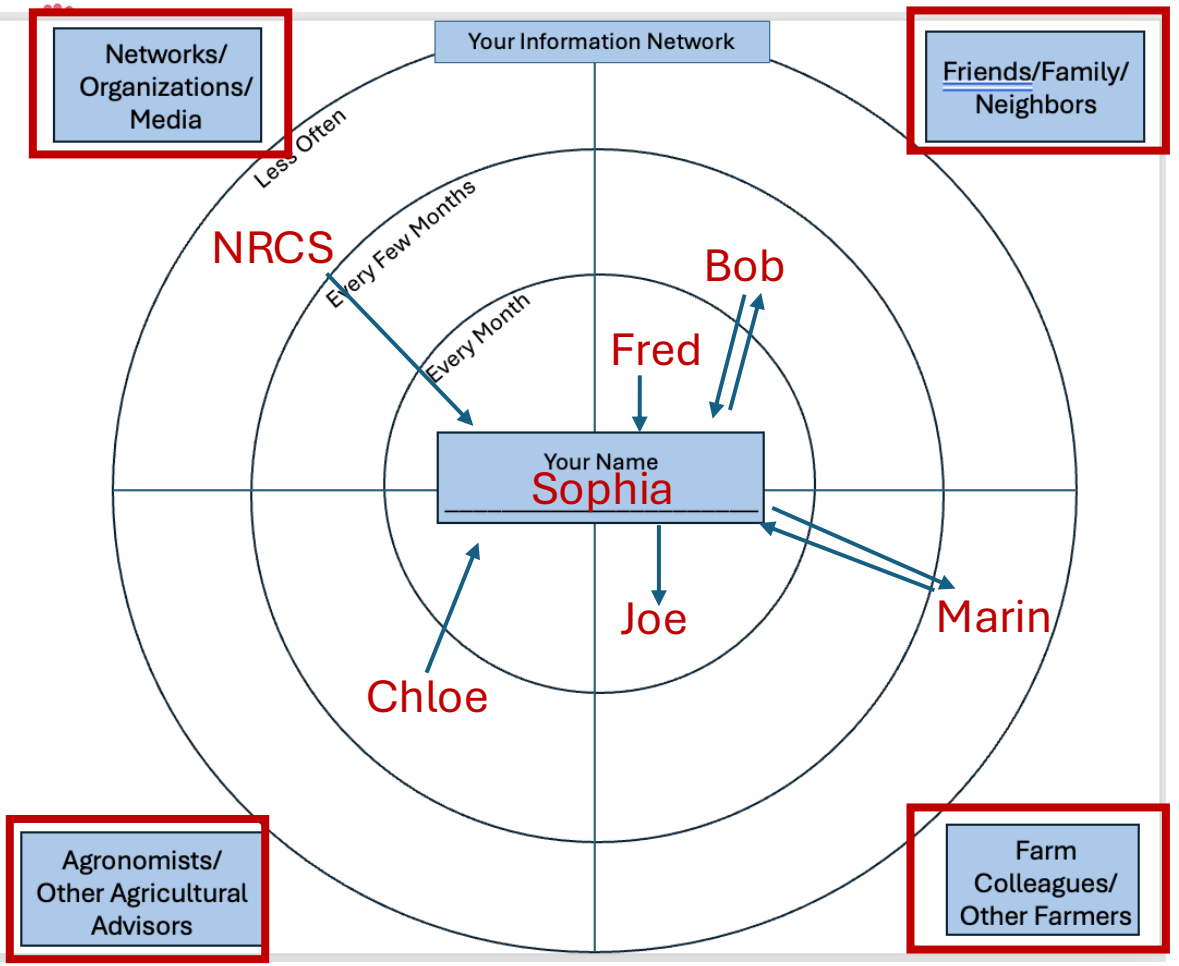
**The names you provide will not be shared with anyone else or in our results. Also, we will not share this information or tell them that you listed their names.*

Questions:

1.) Who do you **receive** information from?
(Draw an arrow from their name to yours)

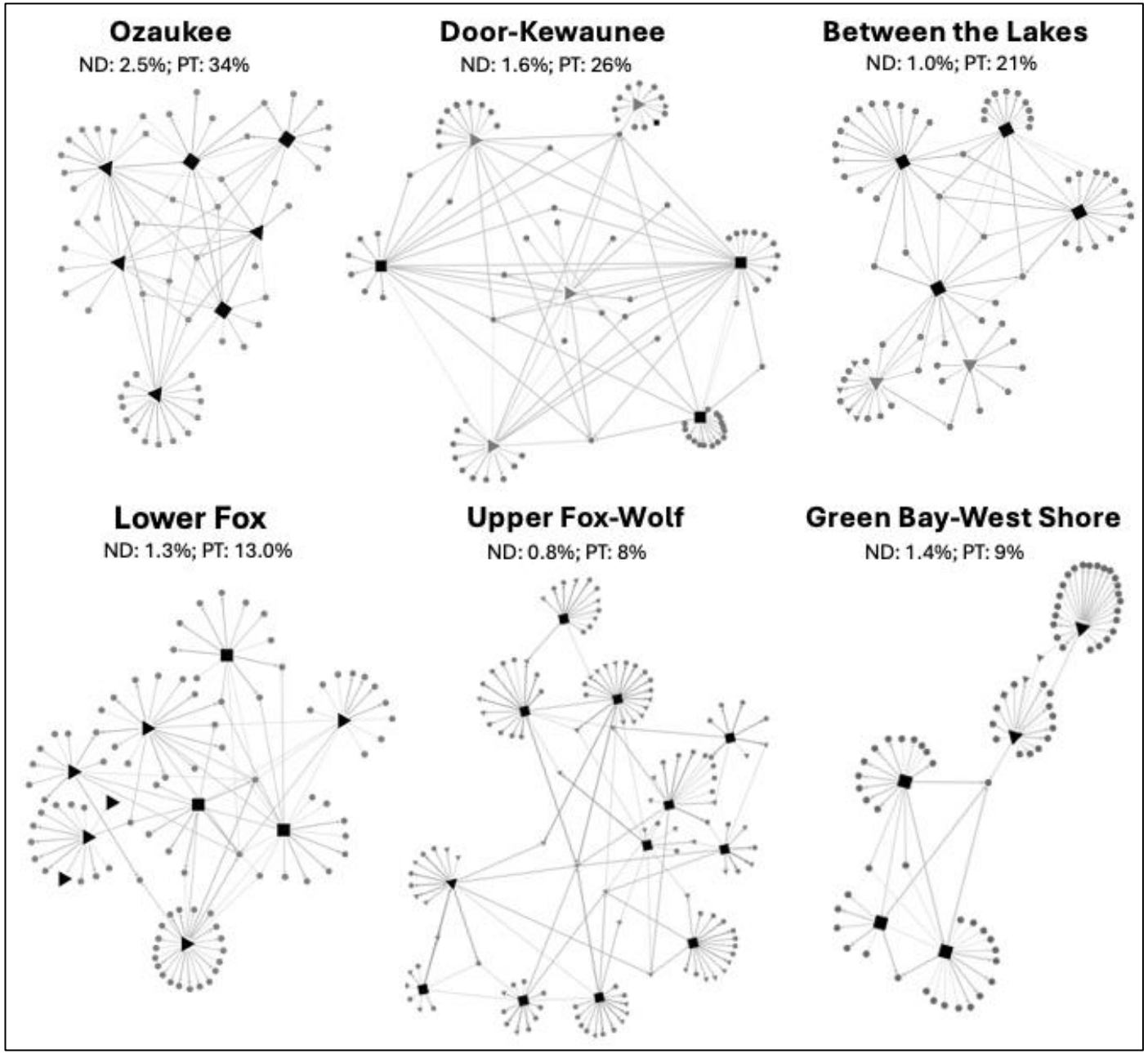
2.) Who do you **give** information to?
(Draw an arrow from your name to theirs)

3.) Who is **affiliated** with the NRCS Wisconsin Demonstration Farm Network?
(Circle the names of those who work for or participate in the Demo Farm Network)



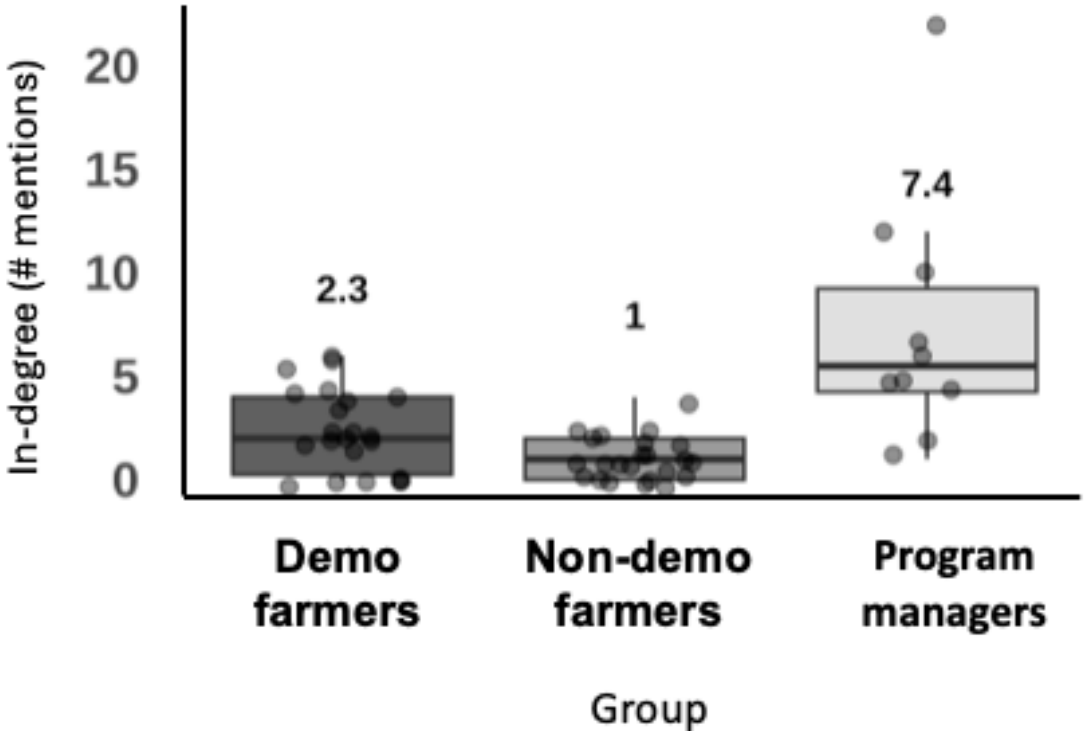
Results

- Network density refers to how connected the nodes are
  - Overall low network density
- Ozaukee: densest, most triads (closed loop relationships)
- Upper Fox-Wolf: least dense



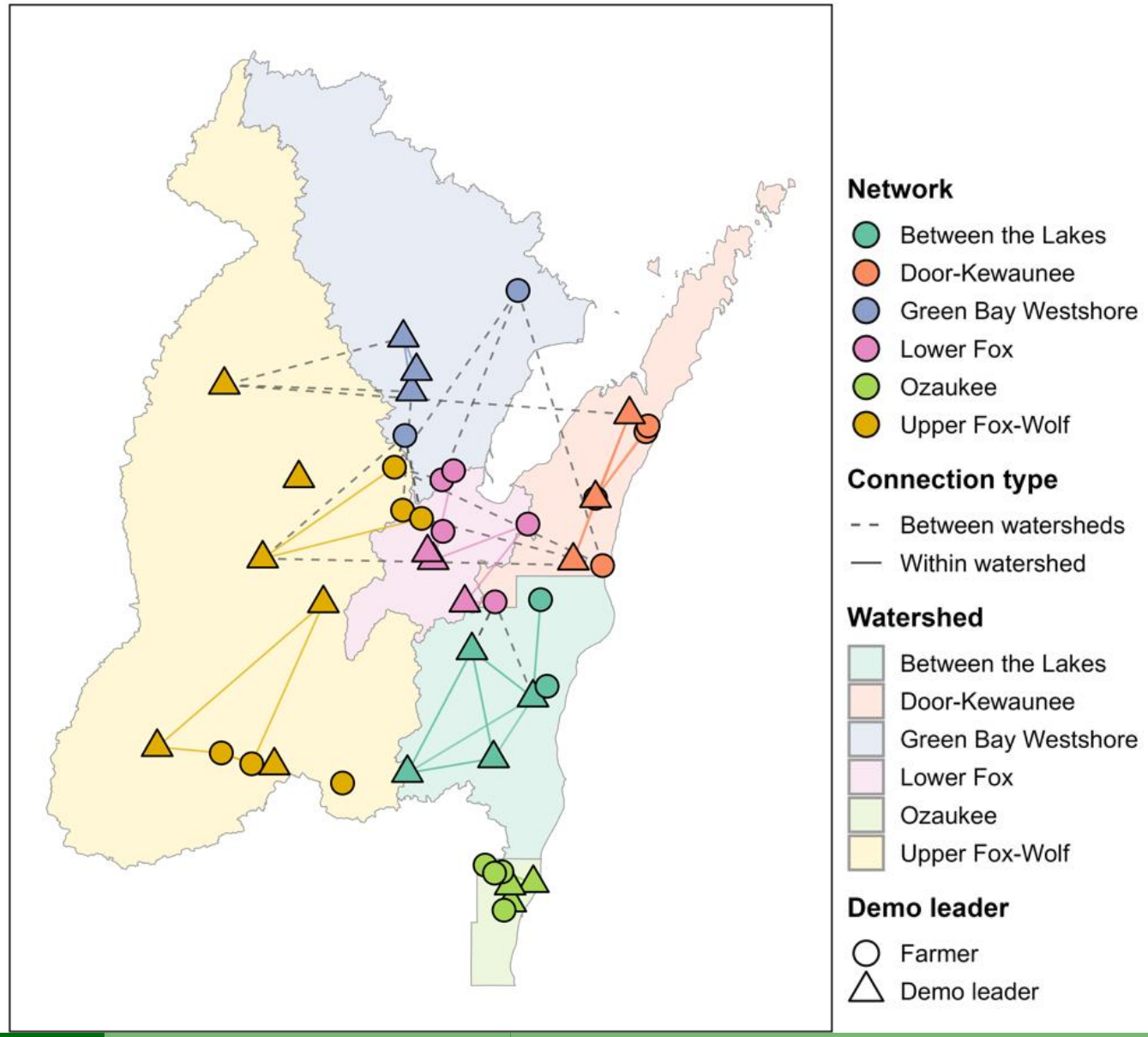
Results

- Program managers are most connected compared to demo and non-demo farmers (sig. diff.)



Results

- Geographic distance associated with connection
  - And vice versa (Upper Fox-Wolf)
- Farmers in same program region nearly 5 times more likely to be connected
- Shorter distance associated with communication frequency



Results

Social connectivity is related to conservation behavior

Clusters	n	n demo	% Cover crop	% Cons. Tillage	Prestige score	Clustering	In-degree (followers)
Conservation leaders	13	10	81	72	.28	.11	3.3
Conservation curious	32	12	32***	66	<.001***	.05***	1.0***

Demo farmers evenly split between groups, indicating they are not all the most connected or most conservation-oriented farmers in the sample

Social Network Summary

- Program managers were most cited info sources
- Spatial proximity matters
  - Denser networks have more communication
- More social ties associated with conservation adoption
  - (finding not causal)

Social Norms Study

- Norms are unwritten rules of society
- Dimensions of norms
  - **Descriptive norms**—perceptions of what others are doing
  - **Injunctive norms**—perceptions of what behaviors are socially acceptable
- These norms describe static perceptions

(Bicchieri, 2006; Cialdini, 1991; Sparkman and Walton, 2017; 2019)

Chung & Lapinski, 2024

Social Norms Study

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- These norms describe static perceptions
- ***Dynamic* norms**—perceptions of how behavioral trends are changing
  - Promising research is showing that perceptions of changes in behavior increase adoption of pro-environmental behaviors

(Bicchieri, 2006; Cialdini, 1991; Sparkman and Walton, 2017; 2019)

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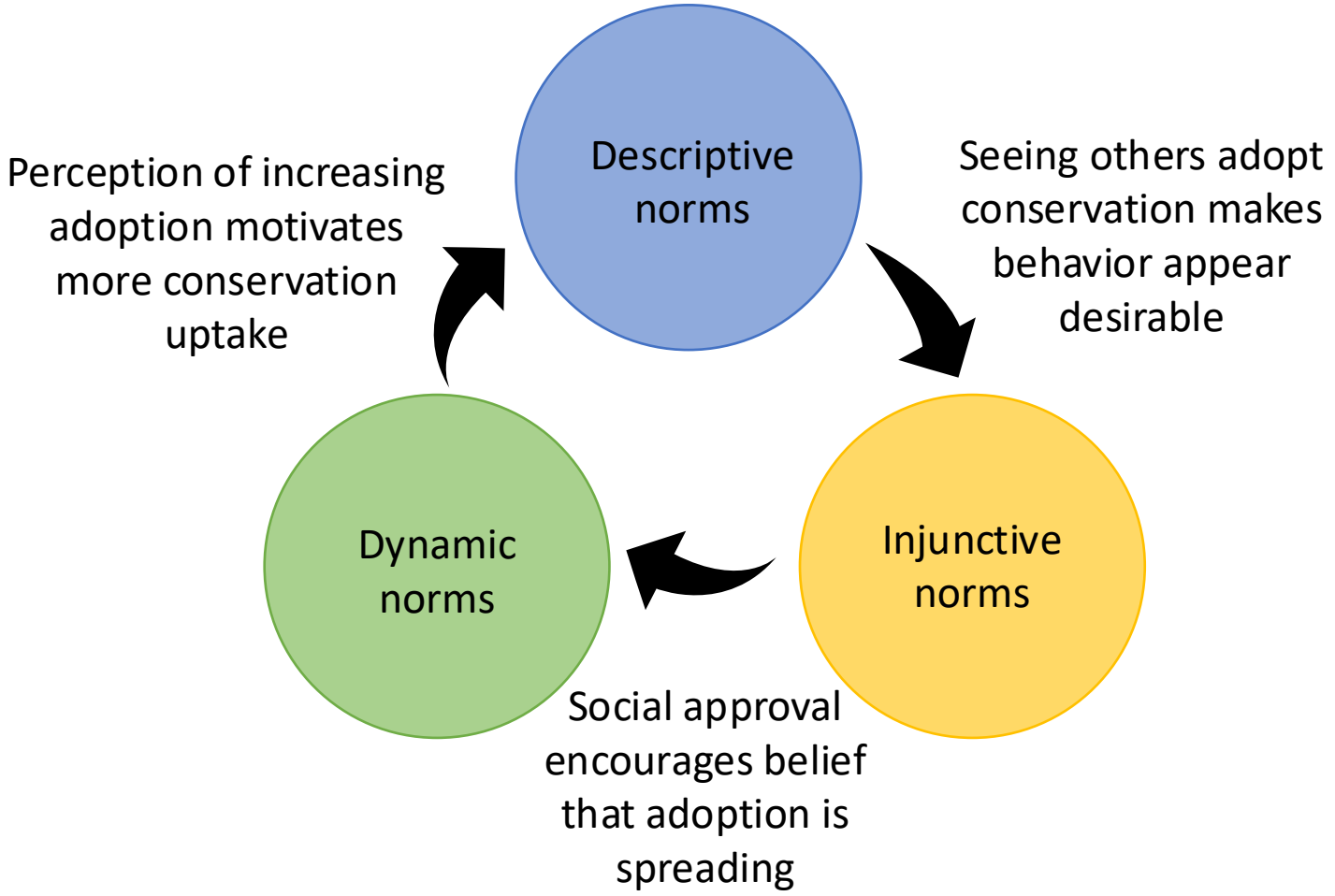
Social Norms Study



Social Norms Study

- Five interview questions to explore norms and future conservation plans

Norm dimension	Theme	Question
Descriptive	*Peer influence on conservation adoption*	Have your observations of what other farmers are doing in your network region influenced your own decision-making related to conservation on your farm? Why or why not?
Descriptive	*Effects of program on conservation*	Are there any differences in adoption of conservation practices between those you know who are participating in the Network versus those who are not?
Injunctive	*Peer perceptions of conservation adoption*	Based on interactions you've had with your peers or patterns you've observed on nearby farms, how do you think your peers feel about your use of conservation practices?
Dynamic	*Perceptions of changes in conservation*	Have you noticed any differences in adoption of conservation practices in your community since the start of the Demo Farm Network?
Outcome	*Future land use practices*	Do you plan to reduce, maintain, or expand your usage of these practices in the future? Please explain your answer and what influenced your decision-making.

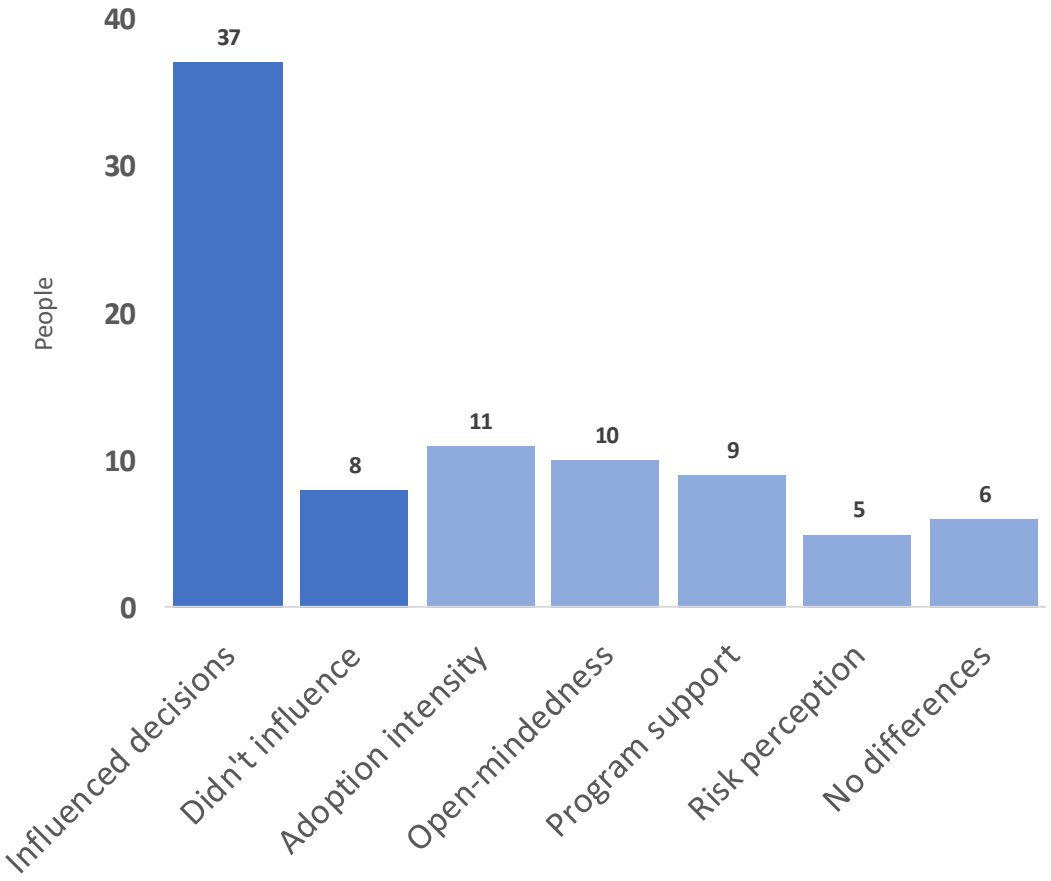
Results: Descriptive norms

- 37 of 45 farmers were influenced by peers' perceptions and behaviors
- 8 who weren't influenced were already engaged in conservation

Specific themes

Open-mindedness: "I think the guys that are in the network are more eager to try things." (NL20)

Risk perception: "The guys in it are willing to try something that has a chance of failing. And the others don't want to fail." (DG08)



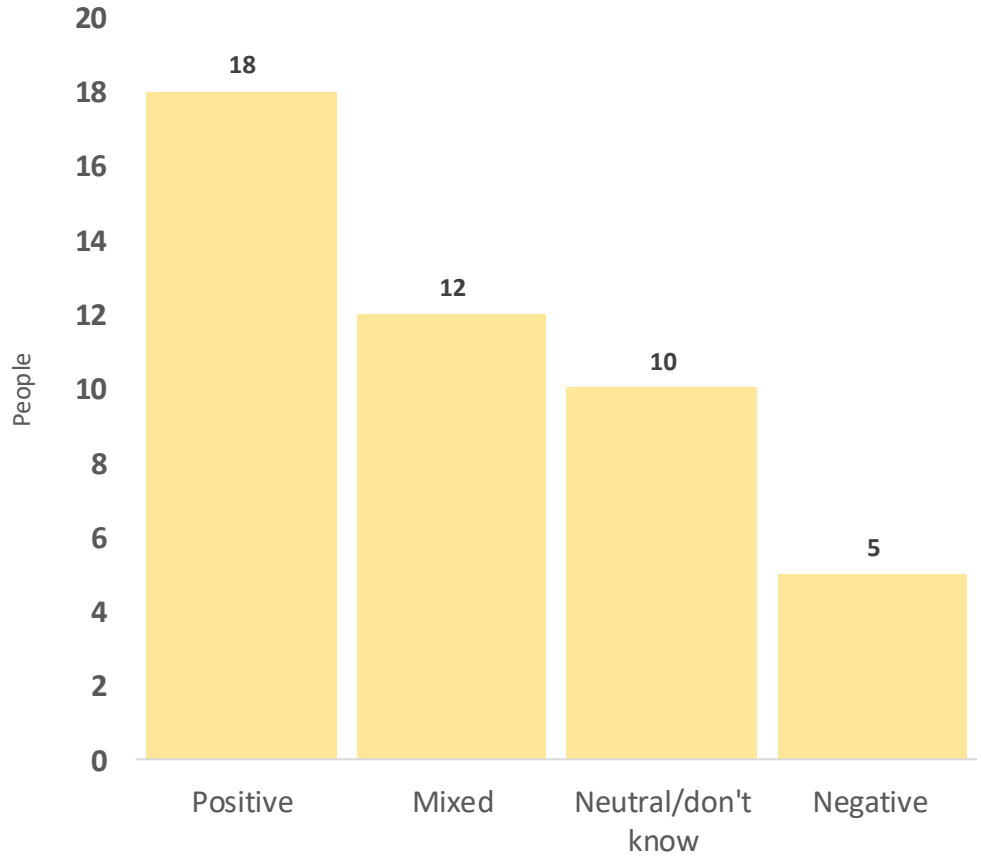
Results: Injunctive norms

Positive: "Conservation is accepted now." (DD04)

Mixed: "I think most see it as beneficial…I'm sure some look at it as boo hockey." (DB10)

Neutral/don't know: "I mean, it's just a given. I don't necessarily think my peers really even notice." (NU16)

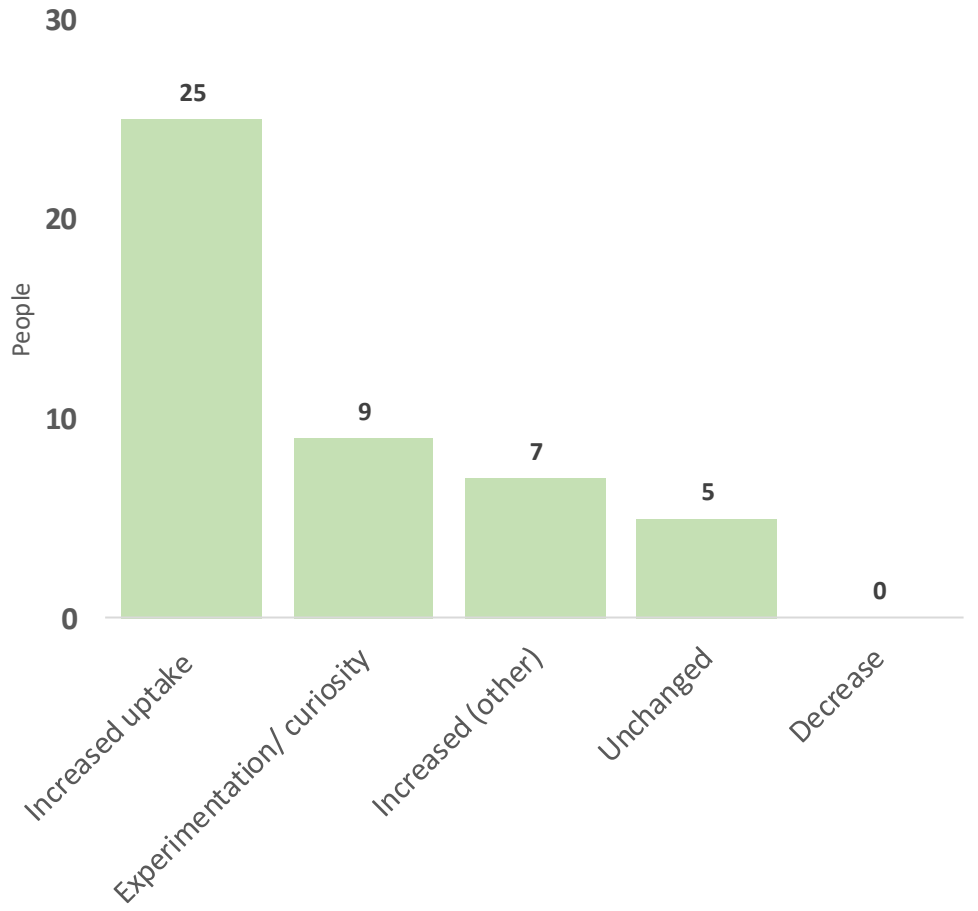
Negative: "They definitely think I'm crazy." (DN13)



Results: Dynamic norms

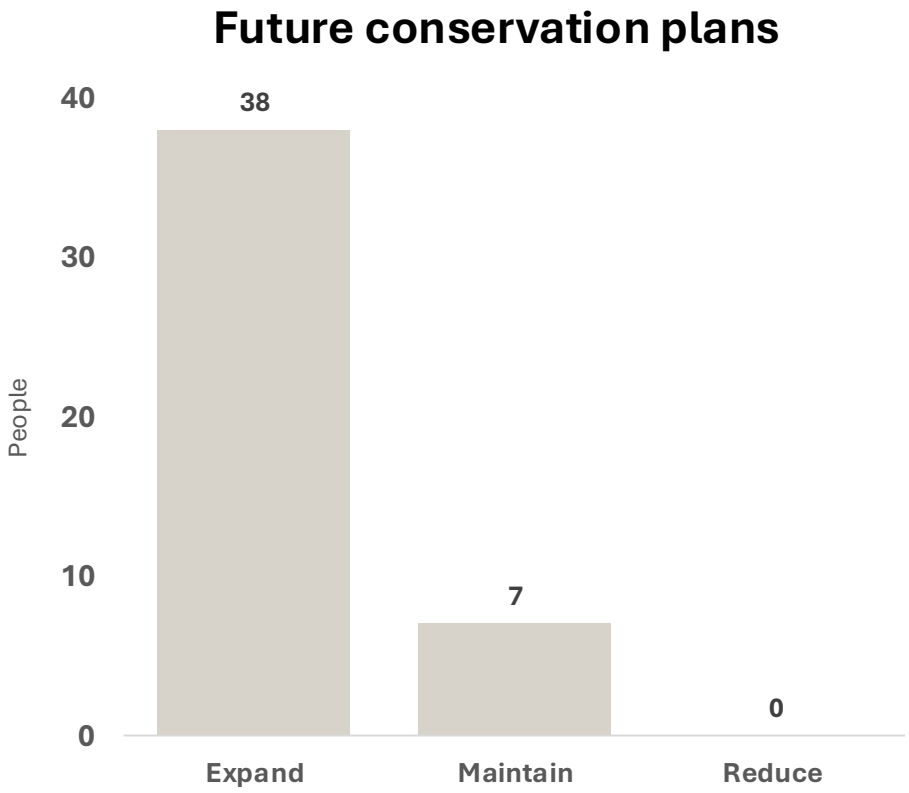
Increased uptake: “Five years ago, there was a lot more worked ground. It's all getting very common now.” (DB10)

Experimentation/curiosity: “There's a few of them that you can tell that they're adapting to it and they're thinking, hey…if it's been working for 10 years, maybe we should try it.” (ND13)



Social Norms Summary

- Conventional farming dominated when program began
- Over time, conservation adoption increased and perceived acceptability increased, which is partly attributed to the program by interviewees
- All interviewees plan to maintain or expand conservation practices in future

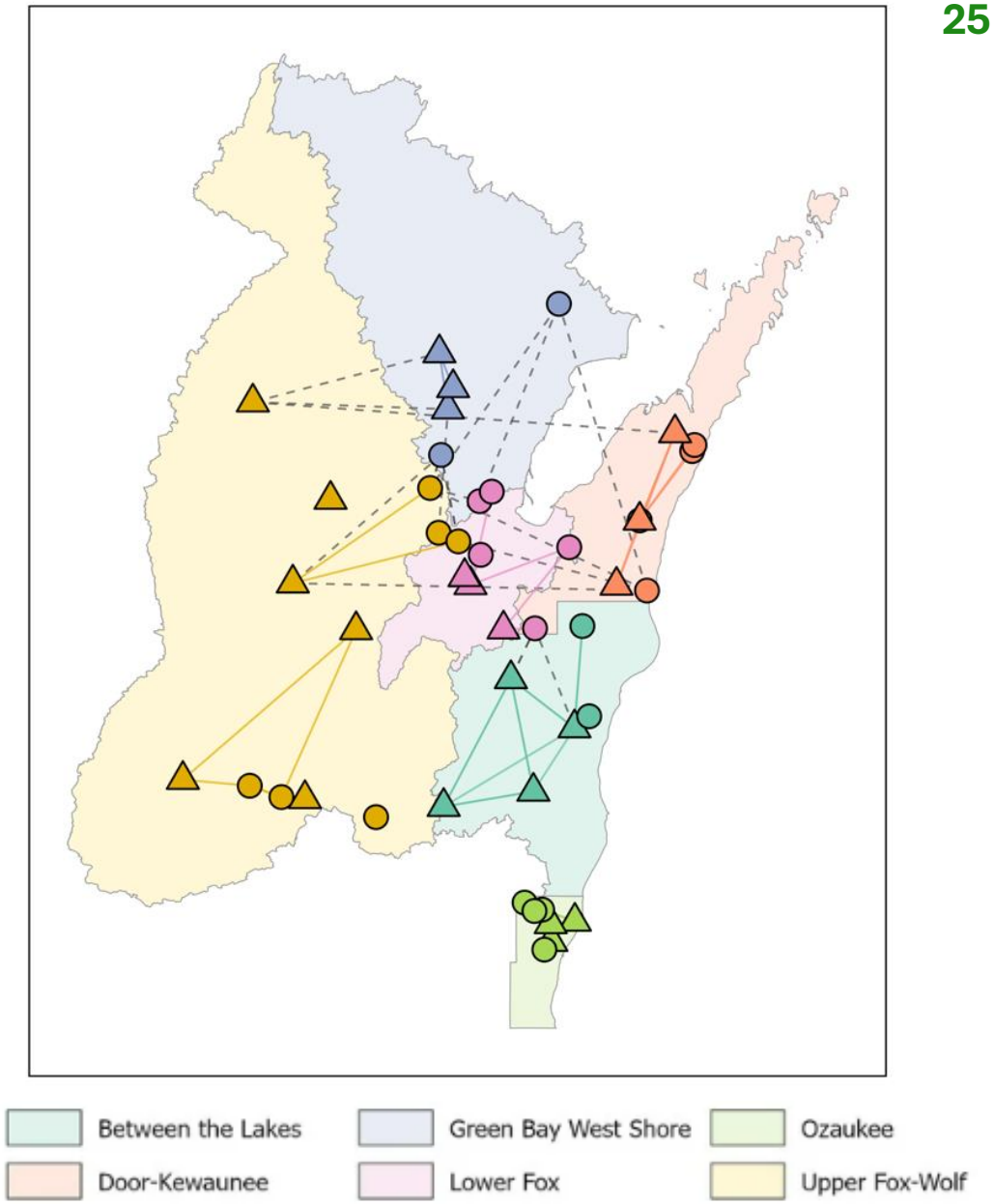


Research Summary

- Proximity to a demo farm and location within active program region predicted cover crop adoption
- Geographic proximity associated with conservation communication between farmers
- Program managers crucial information sources
- Social acceptability of conservation perceived to increase over time

Recommendations

- Program region design
  - Not too big
  - Understandable boundaries
- Strategically recruit demo farmers
  - Consider existing networks
- Leverage norms in messaging
  - Dynamic norms
- Support (and grow) program staff



Additional recommendations from farmers

- Increase staff for outreach and technical assistance
- More equipment sharing opportunities
- More frequent events + reminders
- Add opportunities for less traditional farmers (e.g., grazing)
- Leverage and support producer-led watershed groups

Thank you!

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