State of Wisconsin
Land and Water Conservation Board

PO Box 8911
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Advisory Committee on Research
Agenda

May 6, 2025

The Advisory Committee on Research (Committee) to the Land and Water Conservation Board (LWCB) will meet on May 6, 2025 at 9:00 am via Microsoft Teams. To attend the meeting, join by telephone at 608-571-2209 with Conference ID 221 649 410# or click the following Teams hyperlink. The agenda for the meeting is shown below.

AGENDA ITEMS AND TENTATIVE SCHEDULE:

9:00 AM	1	Meeting Called to Order – **Ron Grasshoff, Committee Chair** a. Roll Call b. Open meeting notice c. Approval of meeting agenda d. Approval of March 4, 2025 meeting minutes
9:05 AM	2	Reflect on Previous Presentation, Jeff Hadachek (slides provided) **Ron Grasshoff/Committee Members**
9:25 AM	3	Discuss the Focus and Engagement Strategy for Future Presentations **Ron Grasshoff, Committee Chair**
9:45 AM	4	Review Workplan **Ron Grasshoff LWCB**
9:55 AM	5	Member updates with possible discussion
10:00 AM	6	Planning for the next Advisory Committee Meeting - **Ron Grasshoff, LWCB**
10:05 AM	7	Adjourn

LAND AND WATER CONSERVATION BOARD
ADVISORY COMMITTEE ON RESEARCH
MEETING MINUTES

March 4, 2025
Microsoft Teams Meeting

Item #1 Call to Order – Roll call, open meeting notice, approval of agenda, approval of January 7, 2025 Committee meeting minutes.

Call to Order

The Advisory Committee on Research ("Committee") to the Land and Water Conservation Board ("LWCB" or "Board") met via videoconference on March 4, 2025. The meeting was preceded by public notice as required by Wis. Stat. § 19.84. The meeting was called to order by Committee Chair Ron Grasshoff at **9:03 am**.

Committee Members Present

Members: Ron Grasshoff, Brian McGraw, Monte Osterman, and Katy Smith (on behalf of Tim Anderson till 9:22am), Tim Anderson (after 9:22am). A quorum was present.

Committee Advisors Present

Advisors: Dr. Francisco Arriaga and Amber Radatz.

Approval of Agenda

Motion
Brian McGraw motioned to approve the agenda as presented, seconded by Katy Smith, and the motion carried unanimously.

Approval of Minutes

Motion
Monte Osterman motioned to approve the draft minutes of the January 7, 2025 meeting minutes as presented, seconded by Brian McGraw, and the motion carried unanimously. The approved minutes shall be posted as the official meeting record for publication on the LWCB website.

Item #2 Reflection of Wisconsin's Green Fire Farm Sustainability Rewards Presentation

Ron Grasshoff, Chair, provided an overview of Wisconsin's Green Fire Farm Sustainability Rewards Project and opened the floor for discussion. It is a rewards program instead of a typical cost-share programs. Producers can decide at what level or tier to participate. Each tier is designed to improve on the outcome from Nutrient Management Plans (NMPs). There are three tiers of reward based practices related to environmental standards as follows:

- Developing and implementing a NMP
- Soil loss reduction
- Nitrate Leaching calculations

- Phosphorus Index numerical values
- Green House Gas (GHG) assessment

The tiers continue upward with a greater allotment of dollars awarded per year for meeting more stringent environmental standards.

Dr. Arriaga discussed Nitrate leaching with UWSP Assistant Professor Kevin Masarik from the Center for Watershed Science and Education and they agreed that the Nitrate Leaching Calculator works well in sandy soils but may need refinement to accurately calculate nitrate leaching for silt loam or heavier soils.

Amber Radatz had talked with the presenter, Ben Becker about the presentation. While there is a lot of foundation for the metrics related to soil loss and phosphorus loss, there is still a lack of confidence in how currently available leaching models calculate nitrate leaching. It is a much more complex process than measuring phosphorus with biological and physical processes, as well as how differently it can interact in various soil types.

There was discussion on how dollar amounts per tier were established and how they might be paid out. It is likely an incentive payment instead of a tax credit as the project is run by a non-profit. There was questions as how they determined the amount for payment per tier and wondering how they walked the line of paying them enough vs too much for environmentally-helpful practices.

Monte Osterman shared a concern over how they are gathering data and verifying participation in the Farm Sustainability Rewards Project. Amber Radatz noted that it seems participation is based on individuals who share their nutrient management plans in order to quantify how they meet various tiers and projecting outcomes, instead of verifying them onsite. The grant appears to be only for two years, which will be difficult to evaluate its overall effectiveness, as well as an issue on whether the funding will remain available for the program.

The thread that ties this presentation to Chelsea Zegler's and Jeff Hadachek's upcoming presentation is reviewing approaches to promoting water conservation efforts and soil quality and reviewing current methods and differing perspectives of using funds to encourage farmers to use conservation practices.

Item #3 Discuss preparation for the April LWCB Meeting, Jeff Hadachek, UW-Madison

Ron Grasshoff, Chair, opened the floor to discuss Jeff Hadadchek's upcoming presentation to the LWCB on April 1. Jeff Hadachek will speak on analysis of farmer-led watershed groups and effectiveness of that structure.

Brian McGraw was interested to know Jeff Hadachek's perspective on how to get farmers excited to participate when trying to set up/maintain farmer-led group and what attracts farmers to be involved. It was noted by the advisors that it may be beyond Hadachek's research as the question is more feared towards social science, and could be a larger discussion to have with agencies involved with LWCB that have more of cross-group connections such as DATCP.

The committee discussed the value in farmer-led groups in how they can normalize sustainability practices that were once new and made farmers hesitant. The committee would like to see a greater discussion on how the social aspect of farmer-led groups work, and how new strategies will be more

likely to be implemented in a way that allows similar success like what has been seen with cover crops, on how intrinsic value could be developed for a resource such as soil and water quality over all.

Kirsten Biefeld will reach out to Jeff Hadachek to make him aware of the committee interested in the social science aspect of his work, to see if there can be a greater discussion on this after his presentation. It was noted by Dr. Francisco Arriaga and Amber Radatz did qualify to the committee this may beyond what Hadachek's current research covers.

Item #4 Discuss the Focus and Engagement Strategy for Future Presentations

Ron Grasshoff, Chair, lead the discussion for focusing future engagement strategies for the LWCB. This was a brief discussion, verifying that the committee was agreeing with the current approach to educational presentations to the board.

Kirsten Biefeld noted that Mark Cupp shared an interest in a presentation about a potential wakeboarding and environmental impacts presentation for one of the summer meetings. Ron Grasshoff mentioned that he knew that Wisconsin's Greenfire has developed presentations on this topic in the past. Additionally, Erik Olson from UW-SP may be a good source for references regarding this topic.

Item #5 Review Workplan

Ron Grasshoff, Chair, lead the discussion reviewing the working workplan document. There were no changes or updates to be made.

Item #6 Member Updates with Possible Discussion

Monte Osterman shared that he recently attended meeting in Salt Lake City, Utah with federal partners who shared some insights on the changing situation with federal staff reductions and federal funding.

Osterman mentioned that on February 28, 2025, the new U.S. Secretary of Agriculture Secretary Brooke Rollins announced that they will honor funding for programs that are already committed, but will likely will not extend funding to anything new like funding Inflation Reduction Act programs or climate-smart commodities. Overall there has been a massive reduction, and Osterman specifically noted how he has seen a lot of reductions in NRCS staff locally, in Racine County.

Osterman requests that the Committee starts considering how we recommend topics that revolve around sustainability for county departments and how to help stabilize them during uncertain times. He re-enforced working with state and municipal partners more strongly.

Monte shared information about the upcoming Annual Land & Water Conference March 5-7 and will send a link to the committee for a virtual option to attend the partner's meeting on March 5th.

Item #7 Planning for the next Advisory Committee meeting

The Committee should expect the following at the next meeting: May 6, 2025

- Discuss Jeff Hadachek's presentation

Item #8 Adjourn

Motion

Osterman motioned to adjourn, seconded by Anderson, and the motion carried unanimously. The meeting was adjourned at 10:30.

Respectfully submitted by,

Kirsten Biefeld, Bureau of Land and Water Resources
Division of Agricultural Resource Management
WI Department of Agriculture, Trade and Consumer Protection

Balancing on-farm economic incentives with water quality benefits

Jeffrey Hadachek, Ph.D.
Agricultural and Applied Economics Department
University of Wisconsin-Madison

Balancing tradeoffs:

1. Equilibrium/Efficiency: Marginal benefits = Marginal Costs

2. Often this is financially determined, but not always.

3. Benefits/costs are not always priced or easily quantified

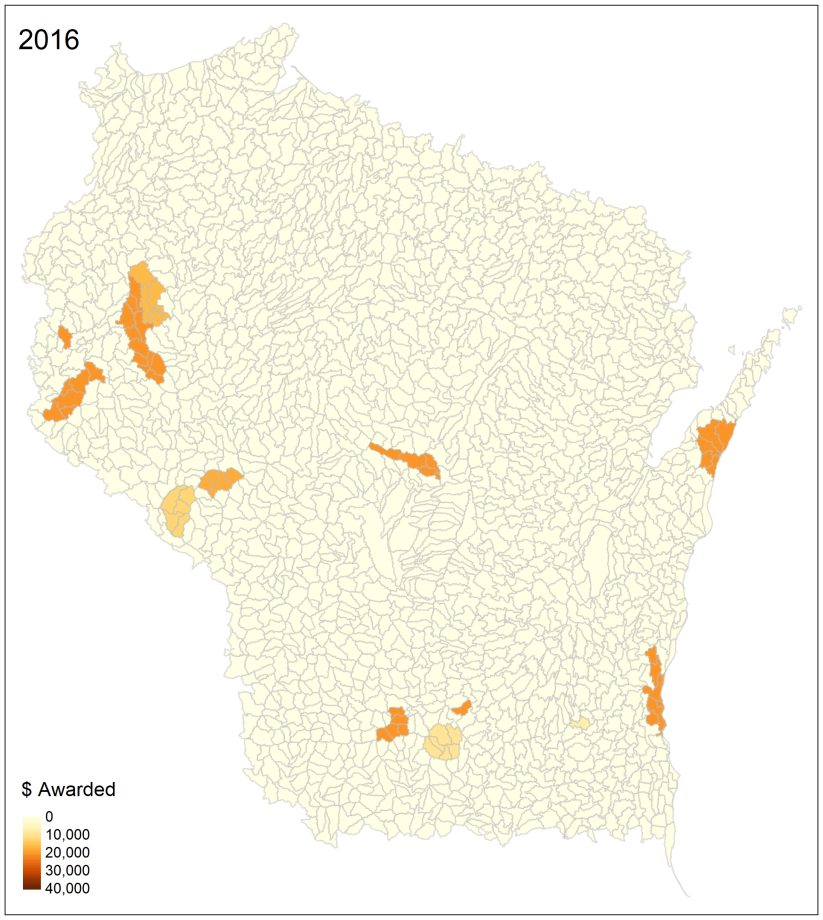
In the context of agriculture & natural resources:

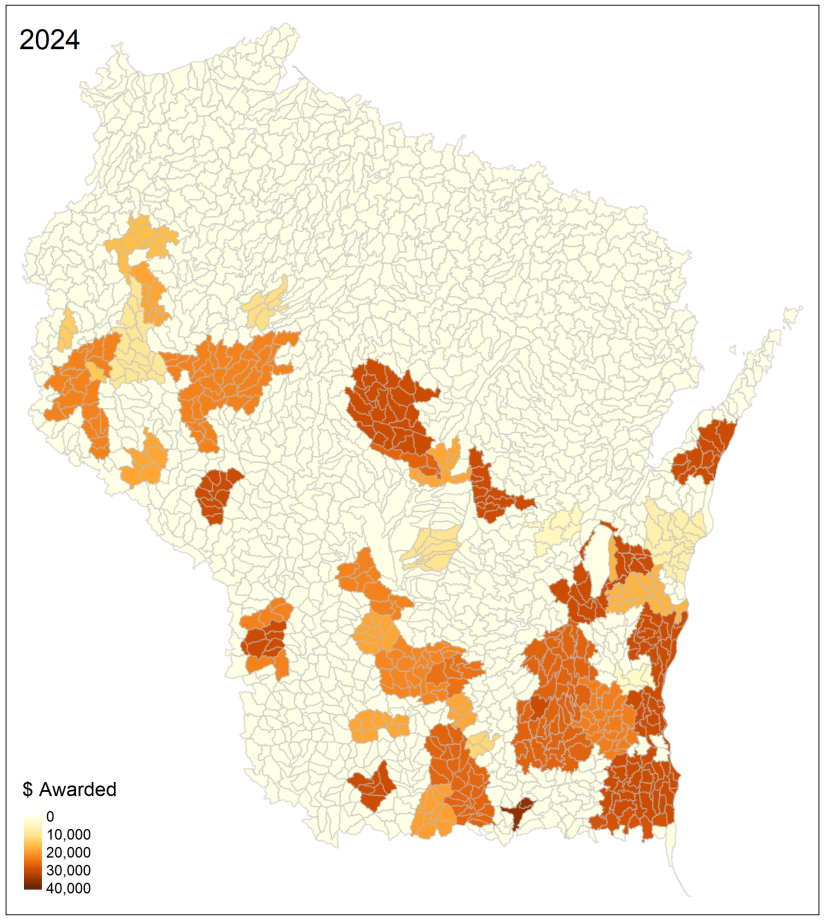
1. Equilibrium/Efficiency: Marginal benefits = Marginal Costs
   - Benefits/costs are not always borne by the decision maker (i.e. externalities)

2. Often this is financially determined, but not always.
   - Farmer behavior is not *purely* profit-maximizing

3. Benefits/costs are not always priced or easily quantified
   - What is the value of clean water?

Wisconsin's Producer Led Watershed Program





Research Questions:

1. Has the program accomplished its goals?
   a) Do the social benefits outweigh the costs?

2. How has the PL Watershed Grant Program affected local ambient water quality?
   a) Phosphorus in local streams and rivers

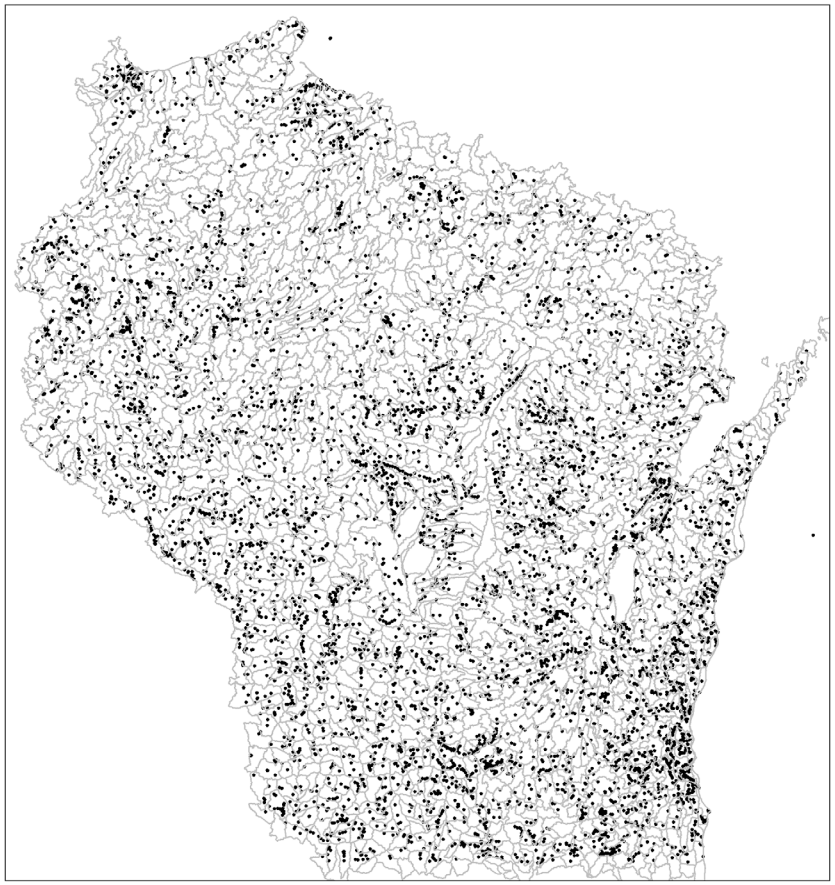
3. How has the program influenced conservation practice adoption?
   a) Cover crop, reduced tillage, and diversified crop rotations

Research strategy:

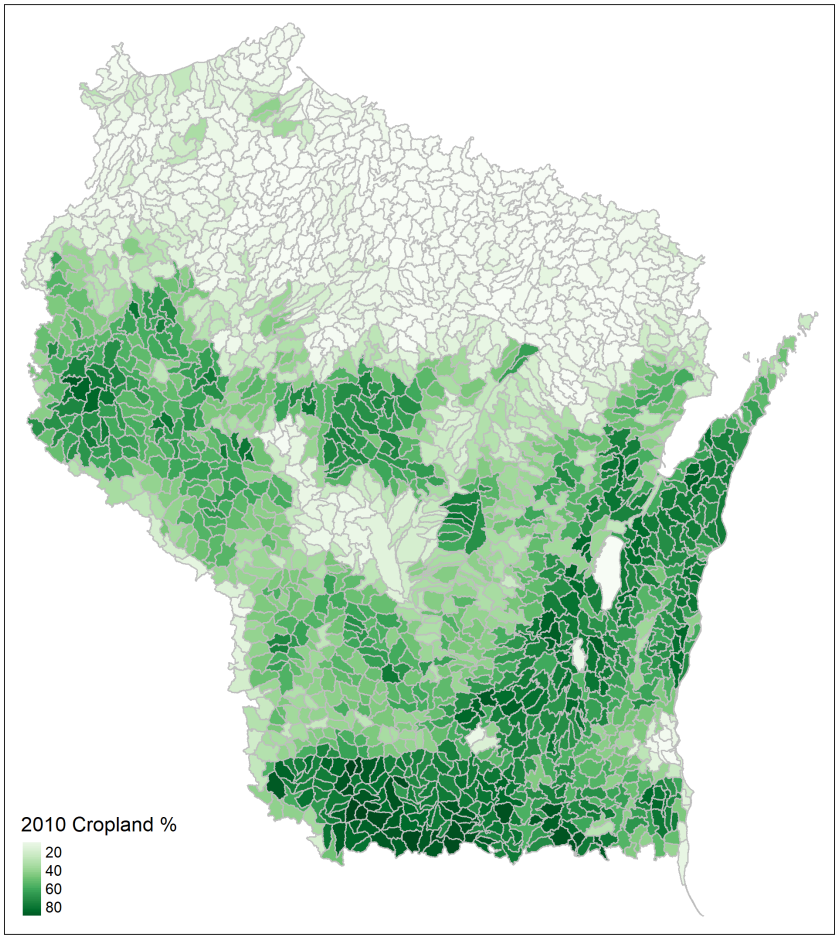
1. Data on each PL group
   a) Start date and watershed
   b) # of reported acres
   c) $ per participating acre

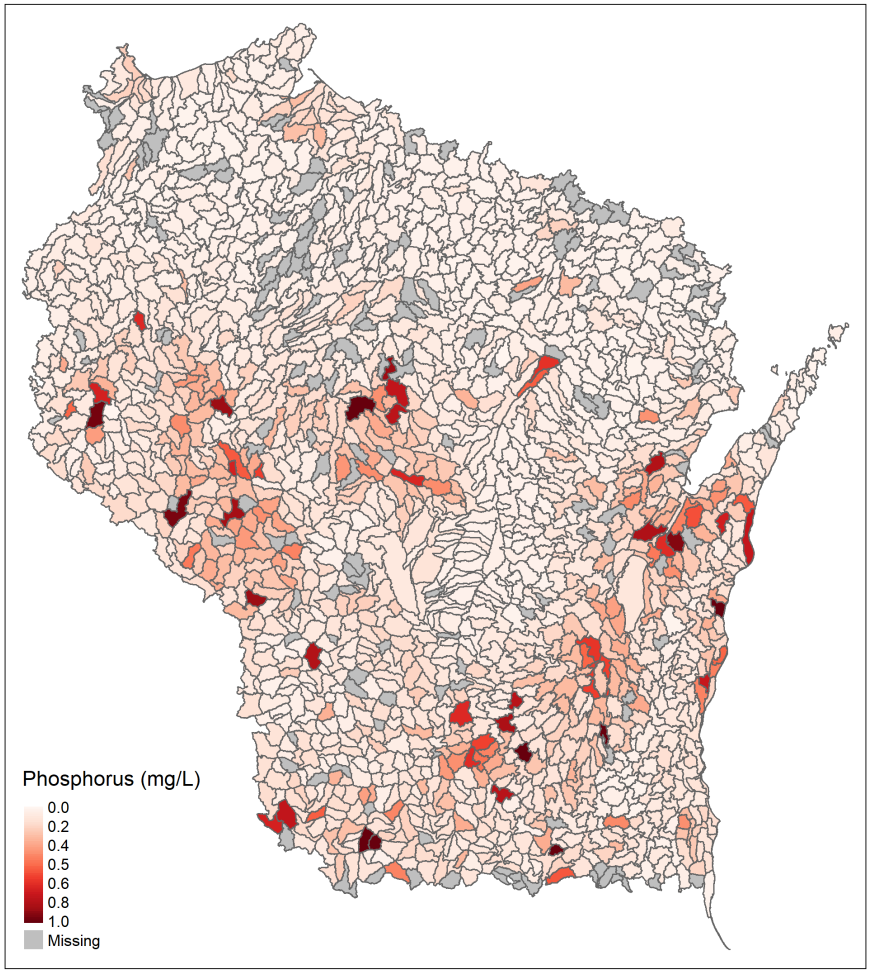
2. Ambient water quality data from monitors in Wisconsin

3. Remotely sensed Regrow Cover Crop and Tillage data



Research strategy:





Research strategy:

Lake Country Pride Farm Starts

Pecatonica Pride Starts

Farmers of the Sugar River Starts

"Control" Watershed:

Research strategy:

Lake Country Pride Farm Starts

Pecatonica Pride Starts

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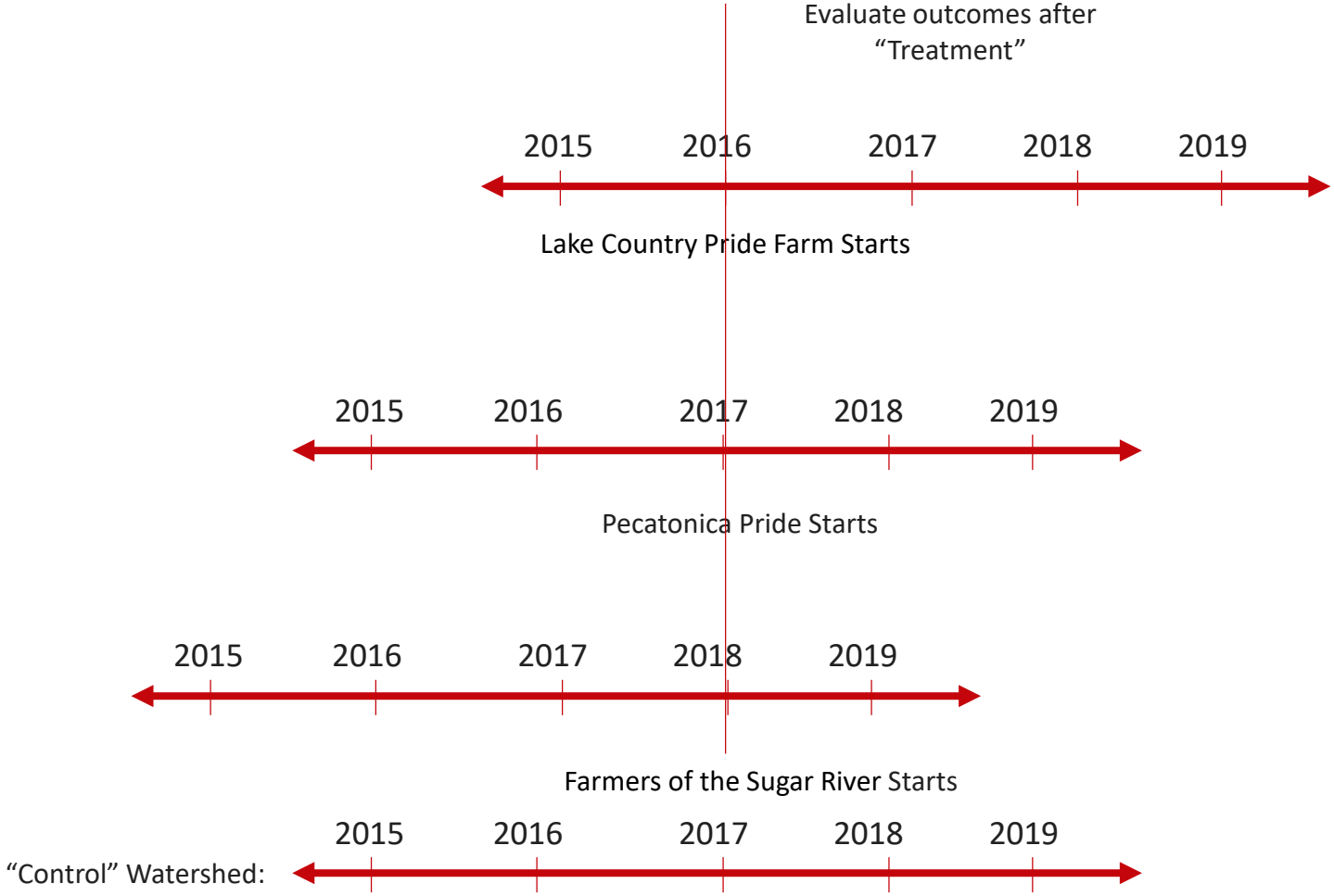
Research strategy:



Primary challenges:

1. Groups vary in representativeness and coverage
   a) Solution: “Treatment” will vary in intensity based on the size of groups

2. Watershed grants are not randomly distributed
   a) E.g. more ‘conservationally minded’ farmers may apply and changes would have occurred in the absence of program
      i. Lead to <u>overestimating</u> the program’s impact on practice adoption.
      ii. In order for the program to be effective, practices must be *additional*.

   b) E.g. watersheds with worse water quality may be incentivized to join
      1. Lead to <u>underestimating</u> water quality impacts.

Measuring Causal Effects:

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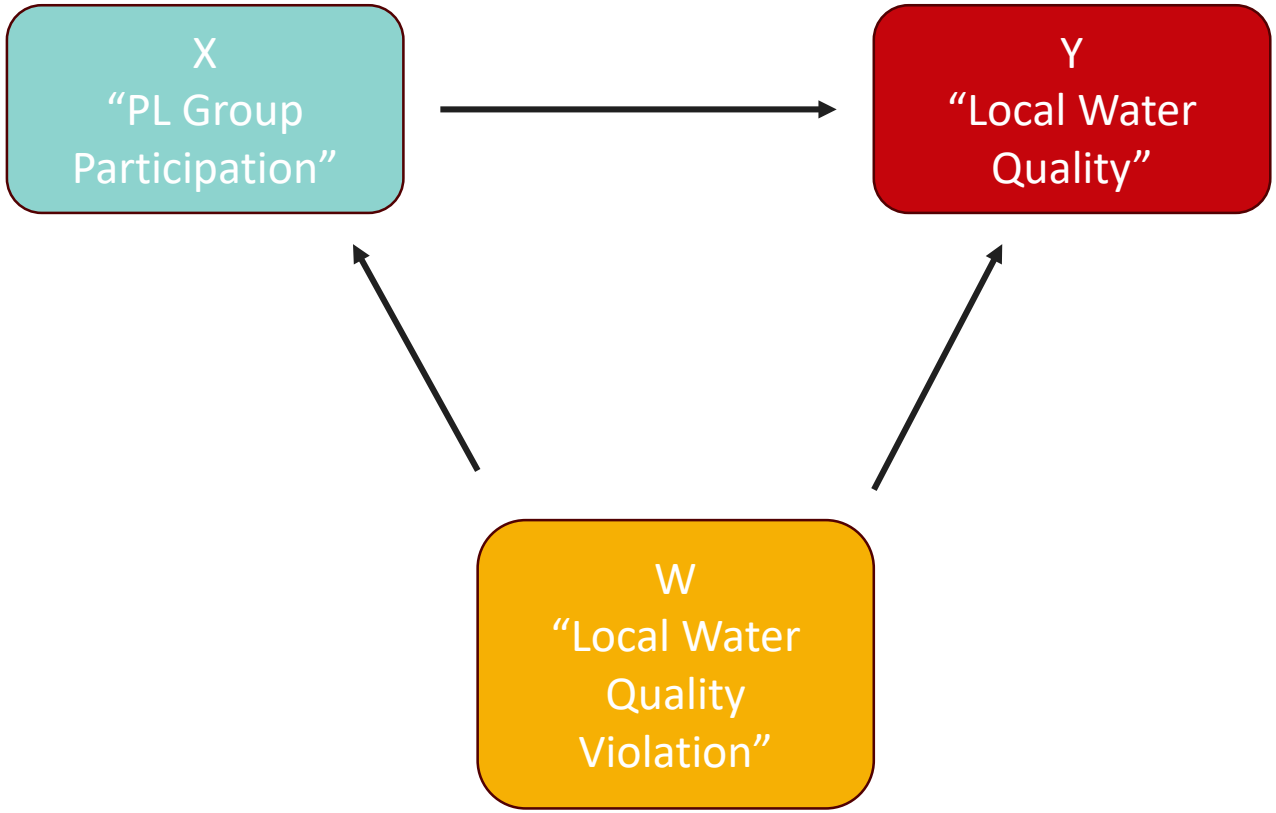

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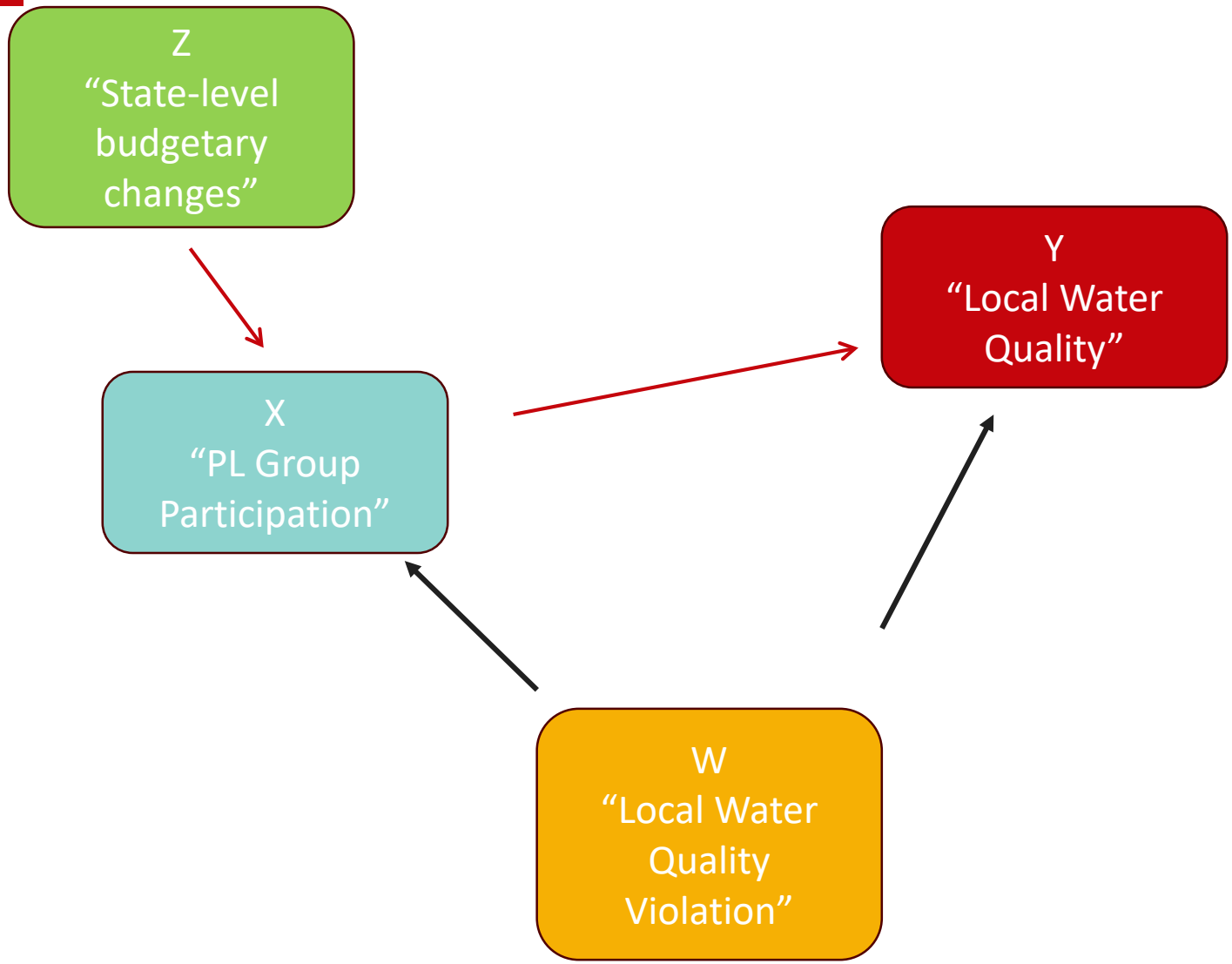

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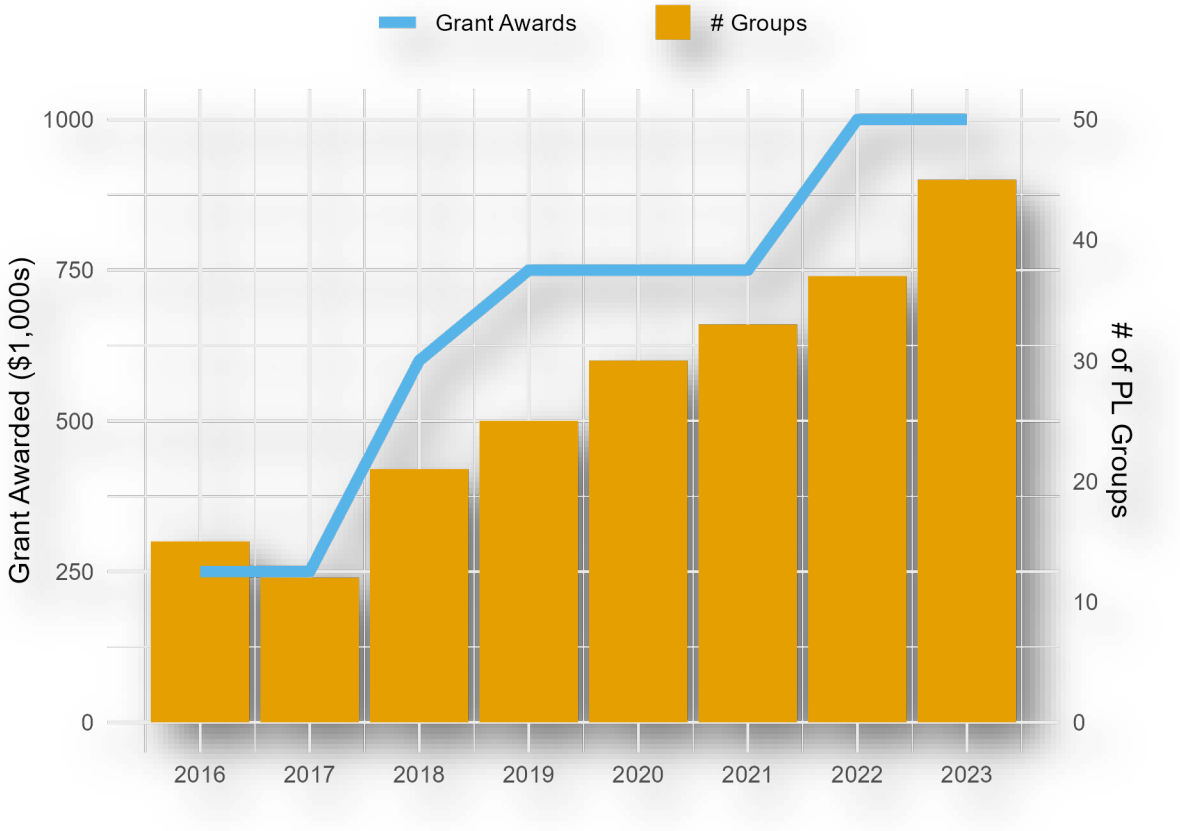


PL Groups Reduced P Concentrations:

Table 3: Effect of Producer-Led Groups on Phosphorus Concentrations

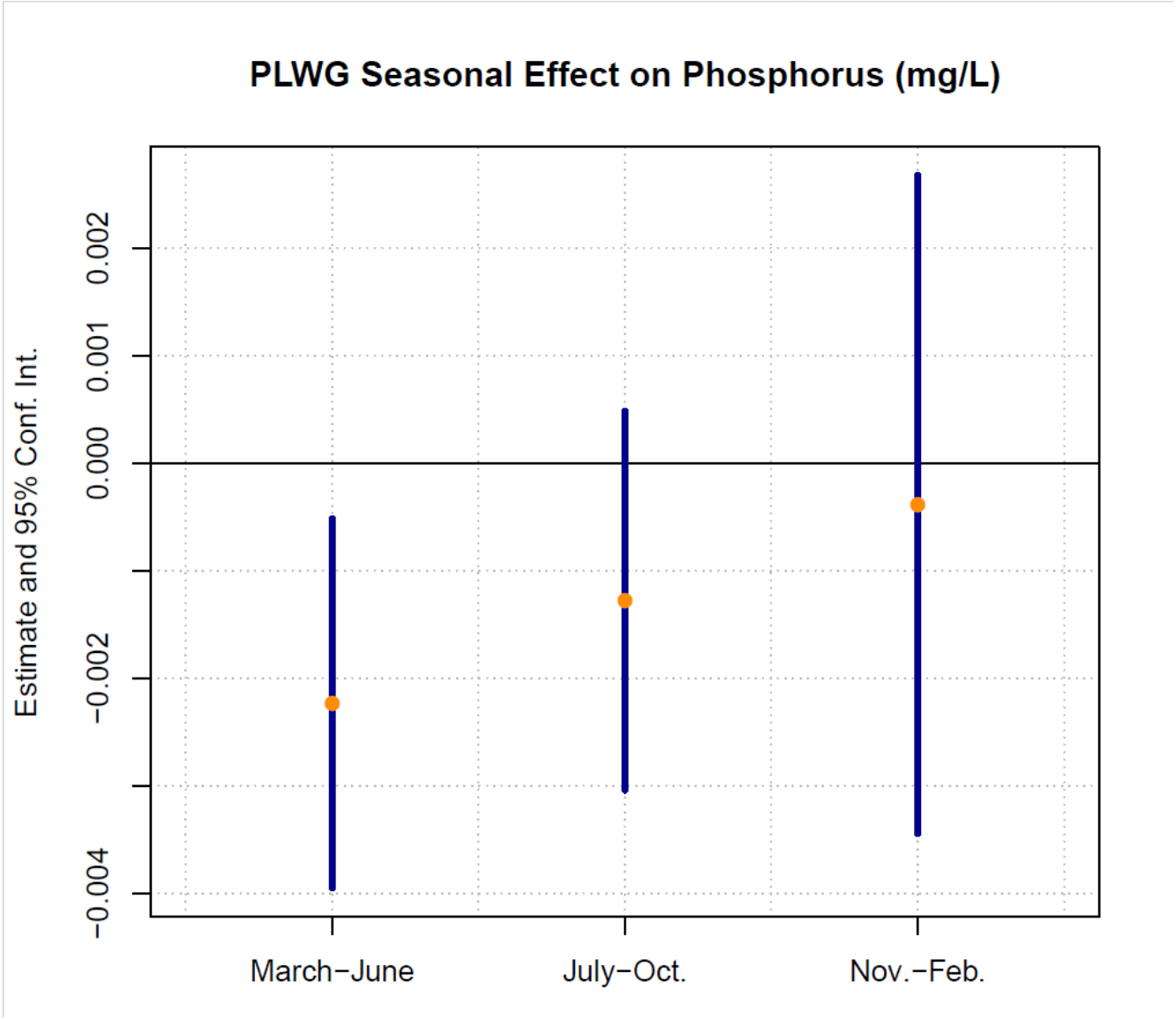
	Phosphorus (mg/L)				
	(1)	(2)	(3)	(4)	(5)
% PL Acres	−0.003**	−0.003**	−0.003**	−0.003**	−0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Dep. Var. Mean	0.21	0.21	0.21	0.21	0.21
Observations	38462	38462	38462	38462	38462
F Stat	1248.5	1273.0	1269.4	1206.6	1343.3
Monitor	X	X	X	X	
Year	X				
Month	X				
Year x Month		X	X		
Year x Day				X	X
Monitor x Month					X

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

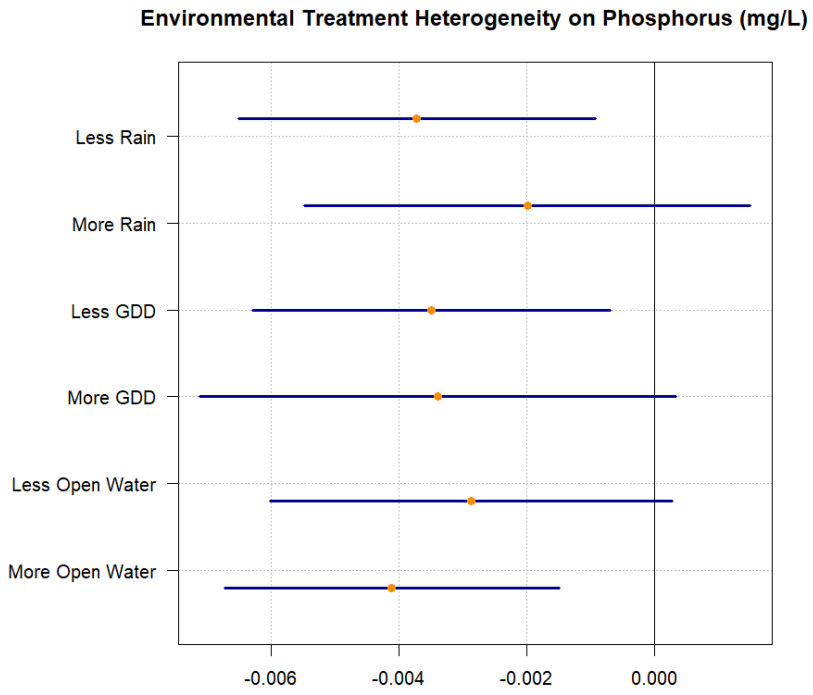
Standard errors are multi-clustered at the HUC10 and Year. Regressions are weighted by 2010 crop acres divided by the number of water quality monitors per watershed per month.

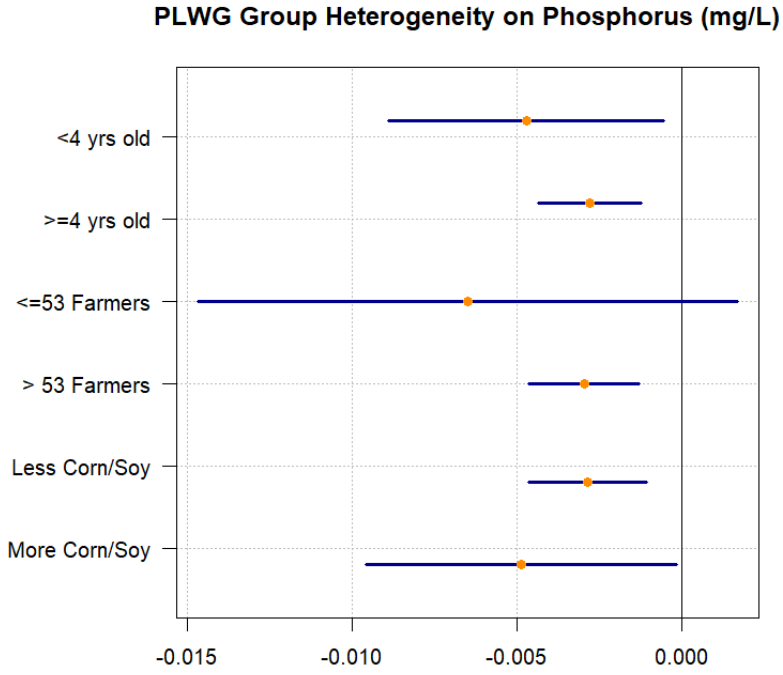
- A 1 percentage point increase in PL acres, leads to about 0.003 mg/L reduction in P (or 1.4%).
- Smaller and not statistically significant changes for Ammonia

Effects are driven from the Spring:



Few differences across group characteristics:



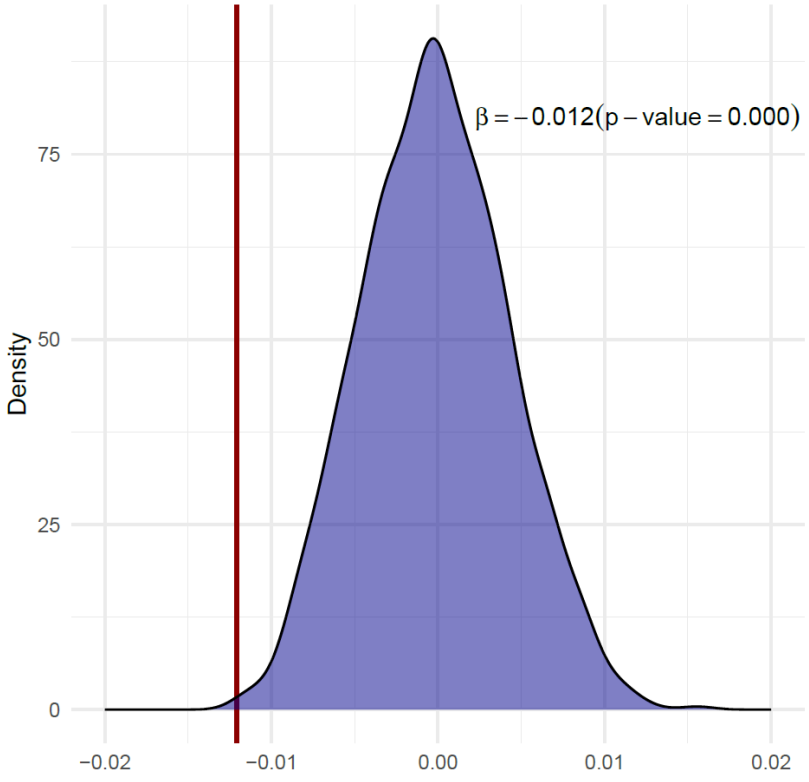


Comparison to other literature:

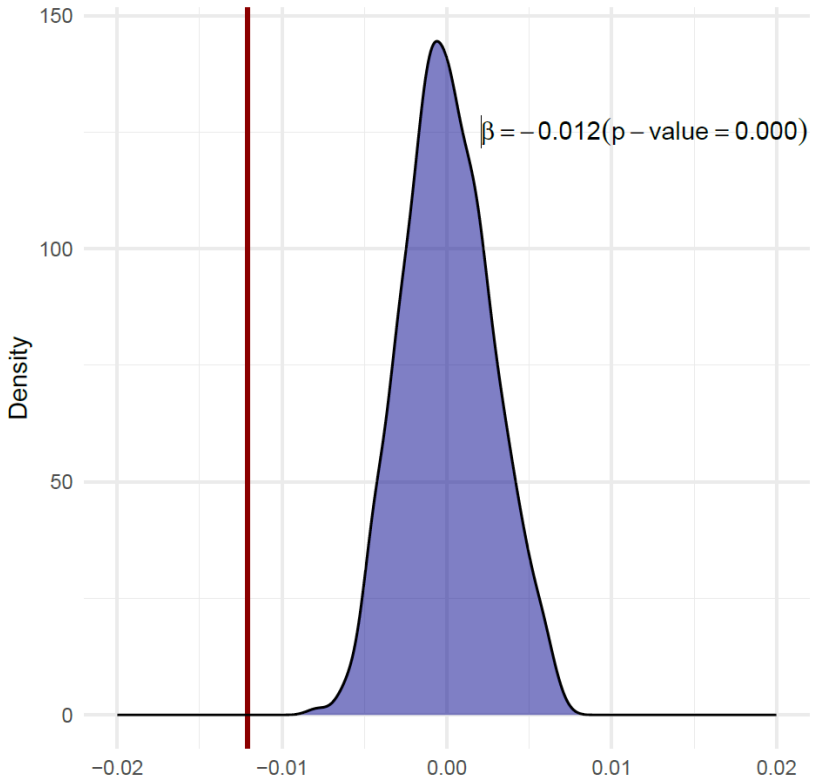
- A one pp increase in PLWG (approx. 122 acres) derives reductions in phosphorous equivalent to:
  - 1,000 acres in continuous CRP (Karwowski et al., 2024)
  - Removal of 1 CAFOs (Raff and Meyer, 2021)
  - Decreased fertilizer usage of 10% (Paudel and Crago, 2020)
  - 3x the effectiveness of required nutrient management planning (Skidmore et. al, 2023)

Placebo testing:

Randomized across years



Randomized across HUC12s



PL Groups increased conservation adoption:

Table 2: Effect of Producer Led Groups on Cropping Decisions

	Cover Crop %	Reduced Till %	Living Root	Corn %	Soy %	Small Grain %
% PL Acres	0.280**	0.774**	0.022*	−0.015	−0.025	0.075**
	(0.135)	(0.387)	(0.012)	(0.074)	(0.058)	(0.037)
Dep. Var. Mean	2.7	27.8	3.2	24.1	10.7	3.1
Observations	10591	10591	10344	34274	34274	34274
F Stat	145.6	145.6	147.7	652.3	652.3	652.3
HUC12	X	X	X	X	X	X
Year	X	X	X	X	X	X

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Standard Errors are clustered at the HUC10 level. Regressions are weighted by 2010 crop acres in the watershed.

- A 1 percentage point increase in PL acres, leads to about 0.28 percentage point increase in cover crop acres (or 10.3%).

PL Groups increased conservation adoption:

Cover cropping

- $100,000 invested into the program increases cover cropping by 8,700 acres, or $11.50 per acre.

- In WI, the NRCS pays farmers $42–$73 per acre of cover crop (2023).

Conservation tillage

- $100,000 invested into the program increases reduced till by 22,000 acres, or $4.91 per acre.

- In WI, the NRCS pays farmers $16–$43 per acre of reduced tillage (2023).

What is next?

1. Still thinking about other ways to subdivide groups in order to evaluate effectiveness

2. **These results are not yet peer reviewed**

3. White paper summary of findings available later this spring

What is next?

1. How do communities value the PLWG program?
   a) Measuring changes in home prices
   b) Opportunities for ag & non-ag entities to work together in conservation goals.

2. Are other peer-to-peer programs effective?
   a) Nitrogen Optimization Pilot Program

3. How do we best utilize public conservation spending in agriculture?
   a) Experiment with cost-share incentives
   b) Pay for performance vs. pay for practice

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