

Agriculture Water Quality Partnership Forum

Meeting Minutes

Wednesday, June 15, 2022 10:00 a.m. – Noon



Meeting Summary

Welcome *Michael Woods, Illinois Department of Agriculture*

Michael Woods welcomed everyone to the virtual meeting. Layne Knoche, Lisa Merrifield, and Joan Cox from University of Illinois Extension facilitated the technology, chat, and meeting minutes. Michael expressed a desire to move forward to meet agricultural practice implementation goals through voluntary efforts. He expressed appreciation for members' preparations and sharing answers to primer questions provided in the agenda.

Partner Sharing Session *AWQPF Non-Governmental Organization members*

All non-government AWQPF Members were invited to share ideas and approaches to advance agriculture's volunteer efforts toward meeting NLRs goals in Illinois. The Steering Committee asked them to prepare and share responses to the primer questions:

1. If you provide technical assistance, describe it, identify gaps and what is working or not working.
2. If you provide cost-share assistance, describe it, identify gaps and what is working or not working.
3. Based on NLRs ag implementation scenarios, we know we need to increase the pace and scale of practice adoption. Describe resources and partnerships for programs are you planning to implement in the next 3 years.
4. Looking on smaller scales, how can you catalyze practice adoption?
5. How can you engage the middle- to late-adopters to implement practices?

The following organizations shared information during the call:

1. *American Farmland Trust, Kris Reynolds*
2. *Illinois Corn Growers Association, Greg Goodwin*
3. *Illinois Farm Bureau, Lauren Lurkins*
4. *Illinois Fertilizer & Chemical Association, Kevin Johnson*
5. *Illinois Sustainable Ag Partnership, Jean Brokish*
6. *Nutrient Research and Education Council, Shani Golovay*
7. *Prairie Rivers Network, Catie Gregg*
8. *The Nature Conservancy, Adrienne Marino*
9. *Illinois Soybean Association, Megan Miller*
10. *Metropolitan Water Reclamation District of Greater Chicago, Guanglong Tian*

Biennial Report agriculture data sources update *Trevor Sample, Illinois Environmental Protection Agency*

Trevor discussed of the AWQPF member survey solicited by the Steering Committee in April.

IL Climate-Smart Agriculture *Michael Woods, IDOA*

Michael provided background on Illinois climate change and its impact on agriculture. He discussed funded and proposed Climate-Smart programs initiated by IDOA and AWQPF partners.

Meeting Minutes

In attendance: Avi Bernard-Donals, Illinois Scholar at Illinois Department of Agriculture; Dennis Bowman, University of Illinois Extension; Jean Brokish, American Farmland Trust; Howard Brown, Illini FS; Laura Christianson, University of Illinois Extension; Emily Conover, U.S.D.A. Farm Service Agency; Joan Cox, University of Illinois Extension; Rachel Curry, University of Illinois Extension; Christine Davis, Illinois Environmental Protection Agency; Angie Doucette, American Farmland Trust; Shani Golovay, Nutrient Research and Education Council; Greg Goodwin, Illinois Corn Growers Association; Catie Gregg, Prairie Rivers Network; Guanglong Tian, Metropolitan Water Reclamation District of Greater Chicago; Robert Hirschfeld, Prairie Rivers Network; Kevin Johnson, Illinois Fertilizer & Chemical Association; Layne Knoche, University of Illinois Extension; Elliot Lagacy, Illinois Department of Agriculture; Lauren Lurkins, Illinois Farm Bureau; Adrienne Marino, The Nature Conservancy; Anna Marshall, University of Illinois; Lisa Martin, Illinois Certified Crop Advisor Program; Lisa Merrifield, University of Illinois Extension; Megan Miller, Illinois Soybean Association; Wendy Mueller, U.S. Department of Agriculture - Farm Service Agency; Bailey Mullen, Illinois Farm Bureau Intern; Oluwaseun Ojo, University of Illinois Illini Science Policy Program Fellow; Raelynn Parmely, Illinois Farm Bureau; Emily Perone Hall, Illinois Farm Bureau; Kris Reynolds, American Farmland Trust; Trevor Sample, Illinois Environmental Protection Agency; Dan Schaefer, Illinois Fertilizer & Chemical Association; Mark Schleusener, U.S. Department of Agriculture – National Agriculture Statistics Service; Max Webster, American Farmland Trust; Michael Woods, Illinois Department of Agriculture

Partner Sharing Session, *Non-Governmental Organization members*

1. American Farmland Trust, Kris Reynolds

AFT is focused on protecting most important ag lands, promoting environmentally sound farming practices, and keeping farmers on the land. AFT has continued efforts as project coordinators for Upper Macoupin Creek Watershed Partnership and the Vermillion Headwaters Watershed Partnership, high priority watersheds for nonpoint nutrient loss. These efforts are increasing implementing of practices which promote nutrient loss reduction, such as reduced tillage, nutrient management, and cover crops. Since 2015, \$4.6 million has been invested in conservation practices in these watersheds, plus \$2 million from AFT and other partners. Enabling local work is the most important thing we can do to increase the pace of nutrient loss reduction practice adoption.

It continues to be a challenge to move federal funding into the states. Illinois is operating at low levels of funding of EQIP and RCCP. We must be as effective as we can be with limited resources. Illinois relies on SWCDs, watershed planning, and Extension as local partners that are necessary to leveraging RCPP support and conservation program delivery. Illinois NLRS has identified a continued need, but the funding hasn't followed, which has slowed the efforts of hiring, project planning, and partner coordination. Strong local networks are needed for expanding awareness of watershed issues and for maintaining trust. The financial resources are crucial, especially for middle and late adopters.

AFT has facilitated programming such as Fall Covers for Spring Savings and the Pandemic Cover Crop Program, giving premium discounts to farmers with minimal capacity. A new partnership among AFT, NRCS, and NFWF, will work with ADM to reduce scope 3 emissions by offering a new incentive program for cover crop adoption on 75K acres in Illinois. Cover Crop seed retailers, AISWCD, and SWCDs partner with AFT to provide outreach to enroll farmers in Illinois Cover Crop Initiative. Participants are also encouraged to enroll in NRCS programs and stack program dollars.

AFT introduced Senate Bill 3471, Partners for Nutrient Loss Reduction to build on NLRS recommendations and Policy Working Group efforts to scale up NLRS work at local levels. The Bill focused on new guidance for organizing state and local data and outcome tracking, determination of cost-share needs, and expanded

outreach and stakeholder coordination with locally led efforts. AFT would like AWQPF group to dig into the elements of the Bill and collaborate on long-term solutions to reach the NLRs goals. They hope conversations will continue to build on Bill's foundational concepts, as sustainable solutions are necessary to protecting and enhancing Illinois' conservation infrastructure due to the real and high stakes from climate, weed, and pest pressures.

Question (Michael Woods): Regarding the new initiatives to advance 75k acres of cover crops, what are barriers we should consider when scaling up cover crop adoption?

Answer (Kris): Seed supply could be a challenge, but if we continue to see incremental increases, it is currently manageable. Also, our [AWQPF] group needs to do a good job of messaging to farmers about the ability to stack various programs, such as NRCS contracts, plus the Fall Covers for Spring Savings program. The ability to stack programs allows significant incentives to those looking for cover crop adoption assistance. Therefore, our communication about what can/can't be stacked is very important.

Comment (Michael Woods): Illinois' northern producers may have a time crunch, while others may have a seed capacity issue. Educating farmers in their ability to stack programs is very important.

2. Illinois Corn Growers Association, Greg Goodwin

Greg is new director of PCM program funded by IL Corn and ISA. He stands in for Megan Dwyer today.

ICGA recently mailed out its booklet, *2015-2021 Prairie Farmer: The business case for conservation*. AWQPF Members may request a digital version if desired. ICGA partnered on several USDA Climate Smart Commodity fund proposals and thus has been evaluating PCM and its ability to partner in promoting conservation practice adoption.

ICGA is hiring a PCM position in Paris, IL and welcomes applicants.

ICGA partnered with ISA, who is hosting a Water Testing Program as a competition offered to IL FFA chapters. The program provides test kits that students use to sample field runoff from different crops. They use the data and do their own research to create recommendations for BMP solutions. Ten will be awarded a cash prize.

Through ICGA, farmers can activate a cover crop coupon to get a rebate on cover crop seed. ICGA is working with cover crop seed dealers and looking to partner with additional dealers.

ICGA is exploring an idea with a private partner to offer an incentive payment to adopt cover crops. There may be a price structure that provides one payment amount for previously implemented cover crop acres and another payment amount for adopting new acres. Details will be forthcoming. The Federal Pandemic program and Fall Covers for Spring Savings program popularity demonstrated that additional people want to participate in cover crop incentive payment programs.

ICGA is celebrating its 50th anniversary on August 8. Details will be forthcoming.

Regarding the primer questions for this session, PCM is unique type of technical assistance and is growing. Farmers participate in PCM for various reasons. PCM breaks down farm financials for the producer and clarifies how conservation impacts farm financials. Some producers participate due to PCM's ability to compute field-to-market sustainability metrics, while others need help navigating cost-share opportunities. Since there are a variety of farmer perspectives on conservation, it may take different offerings to reach all of them. PCM tries to operate from the farmer's perspective and sees constant challenges with regards to cost-share and pricing. Program stacking and our ability to help farmers navigate how to set this up critical.

Questions (Michael Woods): ICGA's PCM partnered on proposals for the USDA Climate Smart Commodities funding. Can you clarify what is meant by PCM expansion? Is this number of producers or program aspects?

Answer (Greg Goodwin): This would be mostly geographical expansion and offering PCM to growers in new areas. It would also include adding capacity in areas that are not full. PCM programming is always looking for additional incentive packages to offer farmers. In reference to the *Prairie Farmer* booklet, we want farmers to see how conservation can be profitable. We pair them with incentive packages that make business sense. To date, PCM uses state-aggregated costs for farm management practices and we will evaluate if they can provide exact costs as well. The deeper dive into the financials using exact costs is another way the program can expand.

Question (Michael Woods): There were over 500 proposals submitted for the billion-dollar Partnership for Climate Smart Commodities RFP. If not funded, what is PCM's plan forward?

Answer (Greg Goodwin): ICGA/ISA PCM program will look to private partners to get this funded. The funding announcement caused us to think about how to shape the PCM program. As such, PCM expansion may continue. PCM is trying to help farmers review what is best for their operations and management. Another challenge of trying to move farmers along toward conservation practice adoption is not knowing what is on the horizon of the carbon market ecosystem. While it is an interesting incentive opportunity, it has also facilitated a deeper look to its impacts on enrollment of new acres. Some growers are approaching this more cautiously due to issues of 'additionality', and folks are hesitant to commit to something if the playing field is going to change.

3. Illinois Farm Bureau, Lauren Lurkins

Over time IFB has hired many staff members to support the NLRS efforts. Austin Omer is IFB's PhD Hydrologist, Raelynn Parmley organizes work across county FBs, and Bailey Mullen is a summer intern.

IFB works on NLRS at the state and federal level. Lauren is currently President for the Ag Nutrient Policy Council, which operates at a federal level and includes forty ag organizations. Soon Lauren will travel to meet with individuals at the U.S. EPA Office of Water and at USDA NRCS in Washington, D.C. to tell the collective Illinois story. IFB want to continue to share Illinois information broadly.

Since 2015 IFB has invested \$2.4 across four areas of work: 1) education and outreach, 2) research, 3) conservation practice implementation, and 4) progress showcasing. IFB combines technical assistance and cost share by offering a Nutrient Stewardship Grant Program across Illinois' ninety-five county FBs. Each county may apply, and applications undergo internal review. Funds have grown over the years, now reaching seventy counties on 100 projects. These are featured on IFB's [website](#), which includes a map. There is variety in the projects awarded, with some lasting one year while others continue to build over time. Some projects, especially those focusing on researcher-farmer-policy maker collaborations, lend themselves easily to a field day event. IFB does not favor a certain NLRS conservation practice but showcases practices at seasonal times. For example, IFB hosted three spring field days this year focusing on cover crops. Summertime field days will feature other practices. At the MWRDGC Fulton County research site last week, eighty people visited three showcase spots. This IFB-sponsored field day featured research among university partners and others on AWQPF. At these events, IFB extends food and Certified Crop Advisor credits to those in attendance.

For the past several years, IFB has worked with several partners on woodchip bioreactors and saturated buffers since these practices are highly engineered and site-specific. Partners include Illinois Land Improvement Contractors of America, USDA-NRCS, University of Illinois, and Southern Illinois University. IFB addresses producers' needs for clarity on the costs and functionality of these practices.

IFB communication efforts include FarmWeek and RFD radio publicizing research projects, field days, and published research findings. They also share state/federal conservation programs offerings and farmer eligibility information. IFB tracks its communications and shares them with NLRS facilitators.

Within watersheds that use 319 or RCCP funding, IFB comes not as applicant, but with cost-share and in-kind support. Over time, IFB conversations with IEPA and IDOA has catalyzed this type of participation in these programs. Thus, IFB has participated in efforts for the Embarrass and Mississippi North Central NLRS priority watersheds, and in efforts for drinking water supplies at Lakes Springfield, Vermilion, Bloomington, and Decatur. IFB partners in various capacities, such as planning, implementation, and communications with farmers. Furthermore, they work with MWRD and they prioritize midstate and downstate work with the major wastewater treatment plants which face nutrient loss reduction challenges.

IFB is a named partner in IDOA's Climate-Smart RCPP project and was a named partner in three proposals submitted to USDA for the most recent round of RCPP funding.

IFB recently partnered on proposal to USDA for funding under the Partnerships for Climate-Smart Commodities with University of Illinois, GROWMARK and other partners to investigate delivery of a premium payment on grain at three grain operations across Illinois. While IFB supports carbon markets in concept, they are receiving feedback from farmers who have several concerns about the carbon market programs. Therefore, this additional solution involving grain payments is proposed.

IFB continues to prioritize work with the research community. It folds NREC and other NLRS-related research into its science updates. In 2021 alone, IFB helped with letters of support and financial matches on twenty-five projects involving sixty-five researchers, bringing \$35 million to Illinois.

IFB has 74,000 individual farmer members and is a melting pot of early-, mid-, and late-adopters of NLRS conservation practices. Farmers from all backgrounds and locations can share ideas at IFB.

4. Illinois Fertilizer & Chemical Association, Kevin Johnson

This year, IFCA has been working on coordinating an Illinois Retailer Survey. This effort will include hiring liaisons to collect nutrient loss data from 1500 sites across Illinois. IFCA is modeling the program after Iowa State University and Iowa NREC retailer survey and working with both entities on budgeting and logistics planning. The data will be gathered through 25 to 30 questions about nutrient loss reduction practice implementation and will be conducted directly with the individuals who implement the practices on the ground. This voluntary program will not include individual identifying information linked to the data. Data collection is being planned for January through March of 2023, with data possibly being available for sharing by late summer. Data may be analyzed and presented by HUC 8. IFCA is hoping to include this program and its results in the next NLRS Biennial Report.

Dan Schaefer continues to work on several NLRS projects in the Lakes Decatur and Springfield watersheds. He has also been working on adding practices Eric Miller's farm, a demonstration site in Piatt County. Practices include strip till, bioreactors, and cover crops.

IFCA will host a 4R Field Day at Eric Miller's farm in Piatt County on September 15. Look for announcements coming in the mail. IFCA would appreciate additional marketing assistance on this event. The field day will showcase wheat, strip till, cover crops, and a bioreactor. The event will offer food as well.

5. Illinois Sustainable Ag Partnership (Jean Brokish)

ISAP is a coalition of fifteen members representing public and private entities, commodity groups, NGOs, and service providers across Illinois. Its members collaborate to improve soil health and reduce nutrient loss. It was founded in 2015 as a response to NLRS, and its primary focus is meeting the IL NLRS goals.

Mirroring the AWQPF charge, ISAPs guiding principles include collaboration, data sharing, resource sharing, and prioritization of issues and resources. ISAP aims to serve as a clearinghouse of trusted information for farmers. It can share information and event marketing from AWQPF members via a newsletter. Any topics around soil health, water quality, or NLRs initiatives in Illinois may be sent to Jean.

ISAP is developing a conservation story map on county and HUC8 levels and is wanting to partner as it builds a directory of case studies and service providers.

ISAP is focused on prioritizing the existing resources in Illinois. It is seeking out data and facilitating data sharing and transparency among ag groups. It continues to be interested in communicating to public in different ways. Jean proposes that a dashboard may better communicate NLRs issues and efforts to the public. ISAP believes that climate is and will continue to have an impact on soil health, water quality, and NLRs initiatives, and that partners should collaborate to highlight the existing NLRs practices' climate co-benefits, as well as their production and community co-benefits.

Since increased conservation practice implementation is key to achieving NLRs goals, ISAP members have identified Drainage Water Management as a practice deserving attention. Efforts are underway to propose this as an NLRs-recommended practice.

Prioritizing and coordinating state and federal dollars for practice implementation, communicating opportunities to stack practice implementation incentives, and facilitating the collective identification of innovations remains important to ISAP members, as it is to the AWQPF members. This is essential in moving toward the NLRs goals for Illinois.

6. Nutrient Research and Education Council, Shani Golovay

Dr. Shani Golovay emphasized that NREC answers the need for research and science to specific NLRs questions. Shani touched on several of the current projects funded by NREC (<https://www.illinoisnrec.org/2022-current-projects/>).

Several projects are dedicated to 4R strategy:

- Dr. Below is investigating nitrogen placement impact on crop growth.
- The University of Illinois Dept. of Ag. Engineering is partnering with Lowell Gentry at Eric Miller's farm to study impacts of tile depth and spacing on nutrient losses. Other 4R research at this site by Lowell and partners includes tillage, cover crop, soil loss, and bioreactor studies with nitrogen. See this demonstration site during the upcoming September 15 Field Day.
- NREC is funding basic science research with Dr. Kent investigating how nitrogen is used in the microbiome. This will assist in a better understanding of nitrogen retention in soils.
- Dr. Yu is conducting nitrogen isotope research to better understand nitrogen movement and cycling in the soil and in crop rotations in tile-drained fields.
- At Southern Illinois University, Dr. Sadeghpour is researching precision nitrogen and he has a valuable partnership with Kentucky.

Several projects are dedicated to cover crop research:

- Dr. Armstrong is at Purdue, but he is conducting research in Illinois in the Lexington and Bloomington area. This project is a watershed-scale study investigating N loss from half of the watershed treated with aerial-applied cover crops compared to the half of the watershed not treated. Preliminary data show approximately 40% reduction in nutrient losses in the treated watershed. This research is also useful in

answering questions about the watershed-scale timing of the N loss effect and the impact of scale on overall N loss reduction.

- Dr. Bernards at Western Illinois University is conducting a cover crop grazing study.
- Lowell Gentry is conducting cover crop research in longer rotations that include a bioreactor on Eric Miller's farm.
- At SIU Dr. Williard, Dr. Schoonover, and Dr. Sadeghpour are investigating benefits of cover crop systems and their abilities to minimize N and P loss.
- NREC is also funding an insect study in cover crops with Dr. Seiter.

Several projects are dedicated to edge of field practice research:

- Shani emphasized that it has been nice to see the partnerships at University of Illinois among the Department of Ag. Engineering (Dr. Cook and Dr. Bhattarai), Crop Sciences (Drs. Reid and Laura Christianson and Dr. Margenot), and NRES (Dr. Yu and Lowell Gentry) as they investigate some of the edge of field practices. They are conducting a watershed scale project on drainage water management (DWM). Results of such projects are needed for future proposal of DWM as a proposed NLRs-recommended practice.
- Dr. L. Christianson's investigation on the impact of bioreactors and saturated buffers on N loss reduction is finishing up.
- Dr. Cook and Dr. Bhattarai are researching drainage water management and recycling of the drainage water.

Several projects are dedicated to phosphorus research:

- Shani reiterated a question NREC is addressing, "Are WASCoBs preventing dissolved reactive P loss in Illinois?" This question is posed by farmers, researchers, and by the NLRs workgroups. WASCoB, short for Water And Sediment Control Basin, research from 1970s did not evaluate dissolved reactive P, and NREC wanted to answer this question. Therefore, the NREC board put this focus in the RFP and it now has two Illinois-specific projects investigating WASCoB impact on DRP.
- Dr. R. Christianson concluding a P loss study that investigated tillage, cover crops and edge of field practice impact on P loss reduction.
- Dr. Fraterrigo is investigating phosphorous hotspots and efficient management of these sub-field areas in Northern Illinois, with some research on Eric Miller's farm.
- Dr. Margenot is reviewing 150 years of soil samples available through the University of Illinois. He is investigating phosphorus data in these samples and comparing them with modern P data at the same sample locations in Illinois.
- Another example of NREC addressing producers' research questions manifests as a wheat research project. Southern IL wheat growers asked why wheat is not included in the NLRs strategy. The NLRs needed data about the N and P loss reduction benefits of wheat. Now NREC is working with Dr. Sadeghpour on a couple of studies to investigate this.
- Southern IL foresters presented NREC with data which showed high in-stream P loss not seeming related to forestry practices. These data in combination with research in Iowa lead NREC to develop research RFPs about stream bank erosion as a source of legacy P. Now Dr. Margenot at University of Illinois and Dr. Willard's hydrology team in Southern Illinois University are investing in-stream erosion and sediment as a P loss source.

Shani concluded that as producers, researchers, NLRs working groups and others have research questions, the NREC Board is responsive and open. It has issued RFPs to address the questions, and the research and answers follow.

Comment (Michael Woods): NREC provides dynamic financial support to research across the state. As Shani outlines, we see the initiatives that assure the discovery and adoption of practices that address environmental concerns, optimize nutrient use efficacy, and ensure soil fertility.

7. *Prairie Rivers Network, Catie Gregg*

Prairie Rivers Network is a statewide water advocacy group based in Champaign. PRN's efforts include understanding rural water issues and particularly rural drinking water quality.

In considering NLRS education and outreach approaches to middle and late adopters, rural drinking water could play a bigger role than it has in the past. It could engage farmers and landowners who may not otherwise be connecting to nutrient pollution and nutrient loss issue. Some may come to see nutrient pollution not only as a Gulf of Mexico issue, but a local issue through a concern of drinking water pollution. We have worked to connect people to nutrient pollution and nutrient loss through education and outreach about soil health, climate change, and economics. Drinking water should not fall to the background and may reach farmers and landowners who may not otherwise be motivated to connect or act on this issue. Drinking water should be a bigger part of the conversation than it has before.

Catie cited data from an FM3 2020 Illinois Nutrient Pollution Issues Survey asking Illinois voters how they viewed nutrient pollution. According to this research, 57% of respondents listed very concerned or extremely concerned when nutrient pollution related to "farm fertilizer contaminating local drinking water." Catie suggested these data indicate drinking water is an area of focus that could engage people around this issue. Catie asks whether outreach around nutrient pollution addresses the residents' concerns about drinking water?

A USGS study published in 2000 shows that the Illinois River is a very high contributor of nitrate compared with other rivers in the Mississippi River basin and that nitrate is a drinking water contaminant, with private wells being a concern. In Illinois, we don't have a complete picture. However, in some areas, data suggest very high nitrate levels in glacial aquifers wells. Data from the USGS National Water Quality Assessment program, which measured nitrates in glacial aquifers from 1995-2005, found Illinois had the highest single sample from any aquifer tested. Also, the lower IL River Basin of west-central Illinois, was determined to be the area of the highest predicted mean nitrate concentration for an area of wells in the glacial aquifer system. Commonly the average was shown to be low, between 0.1 – 1.0 mg/L, but the data range included spots near 80 mg/L. Catie suggests that since private wells are not regulated, many are not aware to test for nitrates. This connects to the NLRS in that identifying and communicating hotspots data could be a way to connect with those who have not connected with nutrient pollution otherwise. She suggests it may be a way to connect with watershed constituents in the priority NLRS watersheds of Illinois. Catie pointed out some variables that are correlated with hotspot contamination, including proximity to agriculture, depth to groundwater surface, soil type, and well construction type.

A statewide pilot study investigating ag chemicals in rural wells looked at ISWS well network of 240 wells over 5 counties. This study was conducted in the 1980s. It concluded areas of Kankakee and Mason County containing high nitrates in rural wells. In Effingham County, 40% of the wells tested were over the safe drinking water standard of 10 mg/L Nitrate-N. Often, stakeholders think of nitrates as a northern issue, but there are many shallow wells in southern Illinois that have been found to have high nitrate levels, and could link farmers and landowners to watershed and NLRS projects.

PRN is partnering and hoping to fund a study to complete an updated statewide survey of rural wells. She advocates that locating hotspots of Nitrate-N in rural wells may help connect farmers to safe drinking water efforts and to the nutrient loss issue.

Question (Michael Woods): Regarding your citation of the published 2000 USGS nitrogen study in aquifers, have you seen a significant change in the past 22 years? Has there been documented shifts in hotspot locations following efforts of stakeholder groups across Illinois?

Answer (Catie Gregg): Mostly, there is a lack of data. PRN released a report, [What's in Your Well?: The Hidden Dangers of Nitrates in Rural Drinking Water](#) last year that had to use proxies of private wells, such as shallow public wells of state parks, rural restaurants, and places of workshop. There appeared to be a trend of high nitrate levels in wells along the IL River and in the NW corner of the state, but this conclusion is based on a limited dataset. There is not a comprehensive data set, and these earlier data are not being updated. A study is needed to answer these questions. In reviewing the ISWS datasets there is an observable pattern of generally low Nitrate-N levels with hotspots of very high 80-90 mg/L Nitrate-N levels. Currently, customers who go to ISWS for water testing are concerned because they are educated about the issue. PRN would like to work with NASS on a statistically significant, robust survey that could answer questions about current levels of Nitrate-N in rural wells and could also serve as a need assessment for education and outreach around this issue.

Comment (Michael Woods): IDOA has the groundwater monitoring network with more than 130 well locations across Illinois. He would like to connect with PRN about nitrate testing.

Comment (Catie Gregg): Monitoring wells tend to be drilled wells which decreases possibilities of contamination compared with driven or dug wells. This is an important variable to consider when designing the research. The IDOA monitoring well data appeared to have some similar trends. Monitoring ceased in 2016.

8. The Nature Conservancy, Adrienne Marino

Adrienne explained that TNC sees several actions as critical to increasing the pace and scale of conservation practice implementation in the next few years. First, TNC believes consistent and coordinated messaging should be a high priority for partners across the state when communicating details and benefits of all NLRs practices. Second, identifying and filling science gaps and communicating results in clear language is key. Third, refining metrics and building dashboards to track progress will help with prioritization of funding and will impact how stakeholders learn and communicate about successes. Last, TNC concludes that program and policy administration may be aligned and tweaked in ways that promote acceptance and cooperation among partners.

TNC's mission is to conserve all land and waters on which life depends. Its 2030 goals guide work on local, regional, national, and global programs. It engages in the agricultural space because it is critical to its freshwater and climate goals. In IL, TNC uses a collaborative model to connect its ag and research programs, and it uses research results to inform additional studies and engage in policy and management solutions. They study and evaluate ag conservation practices on field and farm scales, through small watershed studies, and on landscape scale studies. At the Franklin Research Farm, TNC studies impacts of constructed wetlands, bundled with cover crops and spring N application. In 2021 they [published a long-term study](#) showing just 3% of a watershed's drainage area installed as constructed wetlands reduced N loss by 15-38% and dissolved P loss by 53-81% over a 12-year period. In addition, TNC conducts tours and outreach on the farm.

TNC's small watershed studies determine the amount of conservation implementation needed to measure an impact on water quality. In a 20+ year, paired watershed study in Mackinaw basin, two ten-thousand-acre watersheds, are being frequently monitored and compared. The treatment watershed includes constructed wetlands and more recently added cover crops. Data from this work is currently being analyzed.

At the landscape scale, TNC has begun using the [Agricultural Conservation Planning Framework \(ACPF\)](#) to prioritize practice placement in a watershed. TNC works with ISAP and established an ACPF working group that is

open to ACPF users and potential users statewide. In addition to watershed scale work, TNC engages in floodplain protection and restoration.

Other TNC Illinois Chapter ag work is nested in its Soil Health and Nutrient Strategy, which involves leadership and/or participation in several initiatives including Advanced Soil Health Training, soil health retailer programs, participation in the Midwest Row Crop Collaborative, education and outreach in watershed initiatives, IL Sustainable Ag Partnership (ISAP), Saving Tomorrow's Ag Resources ([STAR](#)), Advanced Conservation Drainage Training, and conducting science, evaluation, and outreach, including at the Franklin Farm and in the Mackinaw Watershed as previously discussed. Some outputs of TNC's work include clear, science-based, information and resources, such as the [Illinois' Climate Assessment](#) and the [Leading at the Edge Roadmap to Advance Edge of Field Practices in Agriculture](#)

Regarding cost share and technical assistance, TNC notes that local partners with human capacity and program flexibility for funding distributions lead to local conservation successes. Furthermore, simple application and reimbursement processes, as well as promoting applicants' abilities to stack benefits and payments are showing good outcomes. Alternatively, TNC notes Illinois lacks a strong catalyst to drive adoption of practices at present. Even at 100% cost-share, they are seeing limited producer/landowner engagement, especially for edge of field and conservation drainage practices barriers include the amount of effort and the length of time involved in practice implementation, as well as mixed and inconsistent messaging from partners.

TNC recommends that federal down to local levels should communicate a greater sense of urgency to adopt conservation practices on smaller scales. The SWCDs and technical service providers capacities are paramount to local successes.

Engaging middle to late adopters, TNC advocates that partners should align their learnings, coordinate their messaging, and highlight the multiple benefits of in field and edge of field practices. The in field production payoffs and the edge of field return on investment of lower producing acreage should be communicated. Furthermore, TNC agrees that stacking of benefits and payments, and consistent communication of these stacking strategies, will be very valuable going forward.

9. Illinois Soybean Association, Megan Miller

Megan is an agronomy manager with ISA. ISA has added three agronomy team members to focus on conservation, water quality, and sustainable soybean production. They are currently searching for an Agronomic Program Coordinator and welcome applications.

To address water quality and carbon sequestration, ISA partnered with the Soil and Water Outcomes Fund, an ecosystem services market to provide water quality and carbon credits to growers for conservation practices. This partnership was initiated by the Iowa Soybean Association, and Illinois SA partnered with Iowa SA on an RCCP grant in 2020 to bring the program to Illinois. In this program a private partner issues carbon credits, with Pepsico and other companies purchasing carbon credits. A government entity typically issues water quality credits. In Illinois NRCS is providing those. In 2021 ISA enrolled 117 fields (just under 15,000 acres) from Bureau County toward the NE part of Illinois. These enrollments reduced 8k metric tons of carbon, and included N- and P-loss reducing benefits through 11,000 acre of cover crops, 4,500 ac of reduced tillage, and 2,800 acres of no-tillage. ISA is in negotiations with USDA NRCS for another RCPP AFA award which will be housed within ISA and used toward program expansion of 50,000 acres in Illinois, with some expansion into Indiana and Missouri. An email will come from ISA or directly from Soil and Water Outcomes Fund to announce the opening of the enrollment period. Through this programming, growers will receive technical assistance by agronomists and funding via water quality and carbon credit payments expected to range from \$25 to \$40 per acre depending on conservation practices existing in their operations and on practices growers plan to adopt into their operations.

To facilitate the expansion into Illinois, Soil and Water Outcomes Fund hired Kevin Schabacker, a Conservation Agronomist. He has history as an IL farmer, a seed salesman, and a crop protection researcher. He is the point of contact for grower enrollment.

Starting in 2020, ISA became an equal partner with ICGA on PCM. The partnership provided three new technical assistance providers for the state, added wheat to the double crop acres in the PCM dataset, and enhanced technical assistance on soil health systems. The partnership has funded online soil health data tools to increase the availability of PCM data to the public, farmers, and research communities. In 2021, ISA provided 3,550 acres in cover crop cost-share and technical assistance through PCM. This effort was partially funded by TNC to enable expansion of the cost-share availability.

ISA provides grower and agronomist outreach and education on the carbon markets. Webinars are available at <https://www.ilsoyadvisor.com/>. To guide growers on data requirements, a website and a guidebook for carbon market enrollment are available.

As an ISAP partner, ISA assists with the Advance soil health training for Retailers and with BMP educational materials.

ISA collaborates with University of Illinois' Dr. Margenot to conduct research aimed at refining the 4Rs for phosphorus to improve soybean yield and water quality. His lab is testing four sources of phosphorus, with variations on rates and timing to understand impacts on soybean yield and water quality.

The ISA Board is moving toward expansion of the Retailer Training and toward research projects that include cover crop management, nutrient management, and cover crop systems. They are also seeking to better understand climate smart conservation practices' impacts on corn and soybean production of Illinois farms.

ISA observes challenges to practice adoption as a result of the necessary ties of technical assistance to cost-share programming. ISA believes more 3rd party technical assistance providers are necessary to build grower enrollment and adoption of conservation practices. They believe simplification is necessary, as practice adoption is slowed by complicated requirements of financial assistance programs.

10. Metropolitan Water Reclamation District of Greater Chicago, Guanglong Tian

Guanglong spoke about the MWRDGC's NLRs program at its Fulton County site, where it partners to conduct research and demonstration of best management practices. MWRDGC collaborates with ag groups, including IFB, Fulton Co. FB, UIUC, IL NREC, and other universities across the state. Research includes cover crop inter-seeding, water management with subirrigation, and bioreactor-biochar system ability to remove both nitrogen and phosphorus from tile drainage. MWRDGC is currently partnering on a new project to investigate the use of struvite, which is recovered from wastewater treatment, as slow release phosphorus fertilizer. Researchers are also investigating nutrient movement in buffer strips. The results may support reducing buffer widths, which would reduce loss of land in production while still maintaining water quality benefits to adjacent streams and waterbodies.

MWRDGC recently [published research](#) exploring agricultural runoff irrigation's role in reducing N and P fertilizer inputs as another possible way to reduce nutrient losses.

Earlier this June, a [field day demonstration](#) hosted by IFB, Fulton Co. FB, University of Illinois researchers, and NREC was successful in gathering a large group to view the practices and research.

General Comments

Michael Woods solicited general member feedback or questions.

Comment (Howard Brown): Currently the community colleges are gearing up. If we want to lead, we not only need the work we are doing on practice implementation, but we should partner with Richland, Parkland, Heartland, and/or Lincoln Land and initiate a Midwest Institute of Sustainable Production Ag. This could help educating the next generation to lead as we continue the path of sustainable, high yielding agriculture.

Response (Michael Woods): IDOA agrees. We need to emphasize the building of the next generation capacity. IDOA has been working with the Illinois Community College Board which includes 23 community colleges across Illinois with agricultural programming. Members should consider how we could continue to partner with them and other traditional academic institutions across the state. IDOA has included next generation initiatives in grant proposals and in the pending RCPP proposal as well.

Biennial Report agriculture data sources update, Trevor Sample, IEPA

In April the NLRs Steering Committee surveyed the AWQPF members to solicit feedback on the data sources to be used in the next report. Comments were received from seven organizations.

Saturated buffers – responses pointed out that Ag Drainage Management Coalition (ADMC), Illinois Association of Drainage Districts (IADD), tile retailers, and Illinois Sustainable Ag Partnership (ISAP) could possibly serve as data sources. Absent responses from these entities, state and federal cost-share program data may continue to be the only option. The 2023 Biennial Report will be the first one to feature saturated buffer data.

Terraces – responses included LiDAR or modeling, IDOA's Illinois Soil Conservation Transect Survey, and aerial imagery as possible sources. State and federal cost-share program data may continue to be the only option.

Wetlands – responses included aerial imagery and ISAP. NLRs has historically used NRCS data for wetlands reporting.

Bioreactors – responses included ADMC, IADD, tile retailers, ISAP, IDOA's Illinois Soil Conservation Transect Survey, and aerial imagery. Several responded that bioreactors should only be reported if less than 10 years old. One response stated the woodchip effect fades at 3-4 years. It remains undetermined how to track whether the practice has been recharged. Until now, the report has expressed the number of bioreactors and number of acres treated as cumulative since the inception of NLRs reporting of this practice.

Buffers/Filter Strips – responses mostly confirmed that CropGrower statewide GIS analysis should be used as the data source. One response noted U of I researchers should assist in gathering buffer/filter strip data along with tillage, cover crop, and terrace data. Another response expressed doubt at using imagery to identify practice functionality.

Cover Crops – responses expressed mixed sources, including NASS and FSA data. The State and Federal cost-share programs, NLRs NASS Survey, and FSA farmer-reported data will continue to be used in the Ag Chapter. These FSA data are sortable by state, county, watershed, cover crop type, which merit its use. Trevor clarified that the Steering Committee still invites feedback as to *which single source* of data should be used for the implementation scenarios in the adaptive management chapter. Previous reports used NASS data for that purpose. Members may direct insights to illinoisNLRs@gmail.com.

Additional comments were gathered in this member survey. They included interest in Iowa's dashboard system, a note about farmer privacy protection and potential data agreements that may be necessary for spatial imagery analyses, and the high accuracy of spatial imagery data for identifying overall practice populations. One

comment expressed the importance of aggregating data statewide to avoid privacy issues involved in the sharing of site-specific imagery and data analyses.

Trevor reminded members that the Biennial Report has continued to use the same data sources and that data inclusion has always depended on conduciveness of data format and timing of data availability. If members or organizations develop future sources of data, please keep the Steering Committee and this forum aware of developments. Please also recall the importance of format and timing for inclusion in a Biennial Report.

IL Climate-Smart Agriculture, *Michael Woods, IDOA*

Michael provided an overview of how global warming is contributing to Illinois climate change, citing increased average temperatures and increased occurrences of heat waves and extreme weather events. Illinois climatology shows significant changes including 48 extreme weather events between 2010-2022. These events cost Illinois up to \$50 billion in damages. High emissions scenarios predict conditions like the 2012 drought year as commonplace by 2050. Warmer temperatures and increased precipitation in winter/spring, with drier summers are already impacting Illinois crops and livestock. A National Climate Assessment Report predicts emissions increases may lead to a 15% average yield loss in 5-25 years, and likely a 73% average yield loss by the end of the century.

The term “Climate-Smart Agriculture” stems from a 2010 Food and Agriculture Organization of the United Nations report showing farming was adversely impacted by climate change. The report also showed GHG emissions from farming worsened climate change. Climate-Smart Agriculture was the terminology coined to describe the effort to address these two problems while maintaining food production yields. Climate-Smart Agriculture’s goals are to sustainably increase productivity, enhance resilience and adaptation to climate change, and reduce GHG emissions. Climate-Smart ag does not define any new practices. There are already several practices that reduce GHG emissions, including conservation tillage, cover crops, nutrient management, agroforestry, and others. They become “Climate-Smart” when initiatives steer the practices toward the three goals previously listed.

IDOA in partnership with many AWOPF members have sought to establish many Climate-Smart Ag initiatives. The goal of the RCPP recently awarded is to use partnerships to increase conservation cropping practices while reducing sediment, N, and P loading the MRB and raising awareness of carbon capturing or limiting ‘release carbon’. Elliot Legacy who negotiated the NRCS partnership hopes to provide an update on the RCPP initiative in the future.

IDOA also received funding from U.S. Climate Alliance to study barriers to implementing Climate-Smart Ag practices and policies. Contracts have been finalized and IDOA and partners are leading the first funded Natural and Working Lands initiative in Illinois since Gov. Pritzker joined the state to the U.S. Climate Alliance. The grant partnered with U of I’s Illini Science Policy Program, and hired a Fellowship Recipient, Oluwaseun Ojo. Oluwaseun who attended this call, recently graduated U of I with a Master of Environmental Law and previously completed a degree in Environmental Law in Nigeria. Due to the types of practices and policies being evaluated in this project a better understanding of barriers to NLRS practice adoption may follow.

Michael Wood’s presentation ended abruptly due to a power and internet outage at the IDOA building. The Climate-Smart Ag efforts and open discussion will continue at a member meeting in the future.

Trevor Sample thanked the members for their preparation efforts and participation in the meeting.