

Policy Working Group

Meeting Minutes

Thursday, November 7, 2024

1 – 4 PM



Meeting Summary

The Conservation Effects Assessment Project (CEAP) Cropland Assessment in Illinois

Brianna Henry, USDA Natural Resources Conservation Service

Brianna Henry from USDA NRCS discussed the CEAP Cropland Assessment, highlighting CEAP I and II conservation adoption and effects comparisons, and the need for farmer survey participation and data collection for CEAP III.

Continuous Gage Statewide Nutrient Loads

Luis Garcia, United States Geological Survey

Luis Garcia from USGS reported on water year 2023, showing significant reductions in nutrient loads showing increases in recent 5-year average TP loads and streamflow compared with baseline, and a 30% decrease in recent 3-year N-N load compared to baseline.

HUC 8 Loads and Yields

Jenny Murphy, United States Geological Survey

Jenny Murphy presented updated annual nutrient loads and yields for Illinois' HUC 8 watersheds, highlighting geographic and temporal trends and future analysis plans.

Illinois Nutrient Research & Education Council Update

Julie Hewitt, Illinois Nutrient Research & Education Council

Julie Hewitt discussed the Illinois Nutrient Research & Education Council's commitment of \$43 million to nutrient loss research and plans to increase the assessed fertilizer tax investment in 2025.

Ag Retail Survey Update

KJ Johnson, Illinois Fertilizer & Chemical Association

KJ Johnson reported that 2023 Ag Retail Survey confirms farmer adherence to recommended fertilizer rates.

NLRS Dashboard Status Update

Joan Cox, University of Illinois Extension

Joan Cox provided an update on the Illinois NLRS Portal, set to launch in December 2025 with both static narrative data summaries and interactive map features.

Partner Updates or Open Discussion

Rachel Curry highlighted Extension's new Nutrient Loss Reduction Newsletter. Partners are welcome to submit their news and events and subscribe. Albert Ettinger discussed collaboration on NARPs with the Sierra Club and IEPA.

Meeting Minutes

In attendance: Megan Baskerville, The Nature Conservancy; Aubree Basso, American Bottoms Regional Wastewater Treatment Facility; Erin Bauer, Illinois State Water Survey; Libby Brasel, Illinois Extension; Eliana Brown, University of Illinois Extension; Travis Burke, University of Illinois Extension ; Ameilia Gooding Cheek, Illinois Farm Bureau; Amanda Christenson, University of Illinois Extension; Albert Cox, Metropolitan Water Reclamation District of Greater Chicago; Joan Cox, University of Illinois Extension; Rachel Curry, University of Illinois Extension; Chris Davis, Illinois Environmental Protection Agency; Megan Dwyer, Illinois Corn Growers Association; Albert Ettinger, Mississippi River Collaborative; Luis Garcia, U.S. Geological Survey; Lowell Gentry, University of Illinois; Eric Gerth, USDA Natural Resources Conservation Service; Nicole Haverback, University of Illinois Extension; Brianna Henry, USDA Natural Resources Conservation Service; Julie Hewitt, Nutrient Research and Education Council; Robert Hirschfeld, Prairie Rivers Network; Liz Hobart, GROWMARK; Brandon Janes, Village of Deerfield Public Works & Engineering; KJ Johnson, Illinois Fertilizer and Chemical Association; Layne Knoche, University of Illinois Extension; Heather Krempa, U.S. Geological Survey; Richard Lyons, Illinois Association of Drainage Districts; Rick Manner, Urbana and Champaign Sanitary District; Andrew Margenot, University of Illinois Crop Sciences; Adrienne Marino , The Nature Conservancy; Mila Marshall, Sierra Club; Jenny Murphy, U.S. Geological Survey; MJ Oviatt, The Savanna Institute; Hannah Podzorski, U.S. Geological Survey; Kristen Ragusa, Illinois Department of Natural Resources; Ashley Rice-Haddon, Illinois Soybean Association; Amy Russell, U.S. Geological Survey; Trevor Sample, Illinois Environmental Protection Agency; Dan Schaefer, Illinois Fertilizer and Chemical Association; Lindsay Schafer, ; Sanjay Sofat, Illinois Farm Bureau; Jason Solberg, Illinois Fertilizer and Chemical Association; Amy Underwood, Downers Grove Sanitary District; Helen VanBeck, American Farmland Trust; Marissa Wesley, Illinois Environmental Regulatory Group.

The Conservation Effects Assessment Project (CEAP) Cropland Assessment in Illinois

Brianna Henry, USDA Natural Resources Conservation Service

The Conservation Effects Assessment Project (CEAP) is a collaborative initiative led by the Natural Resources Conservation Service (NRCS) that aims to quantify the benefits of conservation practices and programs on agricultural lands while enhancing environmental quality and wildlife habitats. The project uses natural resource and farmer survey data and physical process modeling to estimate the environmental effects of conservation practices. It has undergone several phases, with different assessments focusing primarily on cropland. The datasets make it possible to estimate shifts in conservation adoption and effects. Notably, in the North Central and Midwest region, a comparison of CEAP I (2003-2006) to CEAP II (2013-2016) results reveals “acres exceeding loss thresholds” have increased by 29% for subsurface N (>25 lb/ac/y) and by 17% for soluble P (>0.5lb/ac/yr). Brianna shared the methodology and phases of the CEAP Projects and encouraged the group to read the new [North Central and Midwest Regional Report](#) and [summary](#), plus the [Illinois one-page report](#) (attached as Appendix A). She ended by sharing that farmer survey participation is voluntary but crucial for capturing conservation success stories, informing policy, and ensuring accountability for taxpayer investments. Data collection for CEAP III will take place from 2024 to 2026, with resources and toolkits provided to support outreach efforts by the NRCS.

Discussion summary:

- Question (Megan Dwyer): Question on the increase of application rates. Are you also considering the increase in yield? What is the overall use efficiency of those nutrients or is it just a general statement that there was more applied?
- Answer (Brianna): We're looking. This is just based on what's reported for applications. This 10% increase is just the applications. It doesn't consider the use efficiency. I'll say that one challenge that we have with our modeling is overall crop efficiency. We don't have the most up-to-date

genetics incorporated into our modeling to be able to show how much crop efficiencies have improved. Often our model will underreport yields compared to what the farmers report. That's a space that we're working to improve but these data are based on the survey report.

- Question (Albert Ettinger): When you say soluble phosphorus losses, was that measured in the tile drains or how did you get that?
- Answer (Brianna): These are all estimates based on what we're seeing in those farmer surveys. The soluble losses are a combination of leaching losses through percolation and tile drains.
- Question (Adrienne Marino): How many farmer interviews were conducted as part of this process?
- Answer (Brianna): I'm sure we conducted more interviews than this, but we ended up with 11,948 points for CEAP II and almost 19,000 points for CEAP I. We're hoping to get 20,000 usable points nationwide in the future. Therefore, our overall interview pool is at least two to three times that because we will get refusals and non-participation.
- Question (Luis Garcia): Is this data publicly available?
- Answer (Brianna): It is not yet. Some of the data will be publicly available in the CEAP II dashboard in the coming months and we'll have a webinar launching it in February. I'll be sure to share any new resources with this group as they become available.

Continuous Gage Statewide Nutrient Loads

Luis Garcia, United States Geological Survey

Luis highlighted updates from water year 2023, indicating reductions in total phosphorus and nitrate loads and streamflow compared to the 1980-96 baseline. He noted that, compared with the baseline, the 2019-2023 5-year average shows a 33% increase for TP loads, and a 4% decrease for N-N loads, with streamflow 18% higher, influenced by the wet period of 2019-20. Over the last three years, N-N loads averaged 30% below the baseline, achieving well above Illinois' 15% interim reduction goal. During this three-year period, streamflow decreased 10% and TP loads increased 6% compared to baseline. Luis went on to discuss flow-normalized loads, which are outputs from the EGRET-WRTDS model. Flow varies over time due to rain, snowmelt, human activity, etc. This change in flow changes the values of concentration and makes comparing concentrations from different locations and years difficult. The Bayesian model is currently used to compute state loads, but it does not output flow-normalized values. How current and flow normalized values would compare is unknown.

Discussion summary:

- Question (Albert): Didn't you drop monitoring at Joslin on the Rock and at New Athens on Kaskaskia? Big Muddy was dropped and recently restored. Some of these key stations lost a lot of data in 2021.
- Answer (Luis): Correct. In 2021, the number of parameters was decreased, and we do use those parameters to inform the current model that we're using. Phosphate data is especially tricky. The more data that we have, the better we can model those values. So yeah, we're using the data that we have available. We find that turbidity makes a good surrogate for those values. Yes, there have been sites that lost monitoring.
- Question (Helen VanBeck): Do you have a timeline for when this information will be publicly available? I am also curious about the three-year mean loads and thinking about stream flow

being down 10%. Do we have modeling of expected stream flow over the next 10 or 20 years and how accurate is that modeling?

- Answer (Luis): February is the hard deadline, but I hope to have it earlier. We just use the baseline from 1980-96 as the typical stream flow for Illinois. As far as streamflow modeling, I'm not sure if Sparrow does future modeling.
- Comment (Jenny Murphy): I know that the National Hydrologic Model and a couple of other modeling efforts have been trying to predict or forecast future flows. I am not sure what they look like, but I know that consensus with changing climate is more extremes in the hydrologic cycle. I don't have anything specific I could share now.

HUC 8 Loads and Yields

Jenny Murphy, United States Geological Survey

Jenny presented the average annual nutrient loads and yields across Illinois' HUC 8 watersheds for 2018-2022. Building upon earlier studies, this update included not only nitrogen-nitrogen and total phosphorus but also dissolved phosphorus, enhancing the analysis of particulate-to-total phosphorus ratios at these sites. She detailed the methodological approach used to estimate nutrient loads and yields, involving data collection from multiple sources, quality checks, and the integration of various datasets to ensure comprehensive coverage and accuracy.

Jenny highlighted geographic trends in nitrate and total phosphorus distribution. The top five watersheds for nitrate yields were identified as Chicago, Des Plaines, Upper Illinois, Kankakee, and Vermilion. The top five watersheds for total phosphorus yields were identified as Chicago, The Sny, Des Plaines, Cahokia-Joachim, and Upper Sangamon. She also shared a correlation analysis between some of the variables to understand why they're seeing some of these changes.

Looking ahead, USGS scientists plan to finalize their analysis by comparing dissolved and particulate phosphate numbers and by further analyzing water yields across the three studied periods, 1997-2011, 2012-2017, and 2018-2022. This comprehensive analysis is set to culminate in the release of detailed data on ambient loads and incremental loads for HUC 8s, alongside a report detailing the status and trends across Illinois watersheds, providing a crucial foundation for informed watershed management and policy decisions. That report is forthcoming in early 2025.

Discussion summary:

- Question (Albert Ettinger): Is this based on discharge monitoring reports?
- Answer (Jenny): Yes, the point sources are from monitoring major wastewater dischargers.
- Question (Erin Bauer): Do the boxes represent the middle 50% of the point sources?
- Answer (Jenny): It's the percent of the load for the HUC that is attributed to point sources.
- Comment (Erin): The line is computed using the 75th percentile. Some HUCS have no contribution.
- Answer (Jenny): Yes, that is correct.

Illinois Nutrient Research & Education Council Update

Julie Hewitt, Illinois Nutrient Research & Education Council

The Illinois Nutrient Research and Education Council has allocated \$43 million towards research since the organization's inception in 2012. Every year, \$4 million is dedicated to research, with collaboration among stakeholders, councils, and researchers to delineate priorities for the upcoming year. The current focus is on studying practices and products that combat nutrient loss from agricultural fields, considering agronomic, economic, and environmental factors. Current research initiatives include assessing nitrogen management systems, exploring the benefits of cover crop systems, and analyzing water quality issues, particularly concerning nitrate and phosphorus. Looking ahead, there are plans to increase the assessed fertilizer tax investment to \$1 per ton in 2025 to address inflation and rising research costs. This is projected to generate an additional \$1.3 million to further support research, education, and outreach efforts. Julie ended by inviting the group to attend the annual Investment Insights Event at the I Hotel in Champaign on Thursday, February 13, 2025.

Discussion Summary:

- Question (MJ): Has NREC funded any research on perennials or prairie strips?
- Answer (Julie): Yes, we have done some research on filter strips but not a lot on perennials. While filter strips have research, it is not necessarily prairie strips. A project on multifunctional buffers using ornamental plants was initiated but the researcher left the university, and no one picked up this research. Overall, not much of the IL NREC research has focused on perennials.
- Question (Albert): Is everything focused on corn and beans?
- Answer (Julie): Primarily the research has been done on corn and beans but there is increasing interest in wheat. For example, what is the value of using wheat in conservation cropping, and what does fertilization of wheat contribute to nutrient loss?

Ag Retail Survey Update

KJ Johnson, Illinois Fertilizer & Chemical Association

The Ag Retail Survey collected data utilizing regional liaisons meeting agricultural retailers. Following statistical sampling protocols from the Iowa State University Center for Survey Statistics & Methodology, the survey randomly selected 150 surveys, gathering information from 922 fields. This sample size exceeded the initial goal of 500. KJ shared details on methods and findings of the survey, concluding that the results verify that farmers are using fertilizer rates consistent with the recommendations in the University of Illinois Agronomy Handbook. Additionally, results indicate continued farmer adoption of conservation efforts such as cover cropping.

NLRS Dashboard Status Update

Joan Cox, University of Illinois Extension

The Illinois NLRS Portal aims to replace traditional Biennial Reports with static data summaries and an interactive dashboard as part of the Great Lakes to Gulf Virtual Observatory website. Set to launch in December 2025, the dashboard will feature annual data updates. The Extension NLRS Team will continue collecting logic model data, as done in past years. They will also be collecting county, HUC 12, and HUC 8 spatial implementation data for the period 2011-2022, or, if available, through 2024. The Extension team will also be facilitating NLRS partner engagement in the website development processes using online surveys and focus groups. A recent brainstorming session with the Performance Benchmark Committee generated ideas for potential future uses and documented current uses of the report that will be

important to preserve or enhance as reporting shifts to the NLRs Portal. A dashboard survey is currently open online and all working group members were solicited for feedback. It is open February 4-14. Feedback gathered will further shape the dashboard's design and functionality, ensuring it meets the needs of users in various sectors.

Partner Updates or Open Discussion

Rachel Curry, Illinois Extension: Highlighted the new Nutrient Loss Reduction Newsletter and invited partners to submit their news and events, and subscribe.

Albert, Sierra Club: The Sierra Club and others are working with point source representatives and the IEPA to review the process regarding Nutrient Assessment and Reduction Plans. Additional information on this can be found in the Nutrient Monitoring Council Minutes from September 2024.

Illinois CEAP Cropland Report

USDA-NRCS

2024-05-16

Factor	Illinois	National
Overview (2013-2016)		
Acres of cultivated cropland (million acres)	22.7	315.3
Cover Crop Acres (million acres)	1.01	18.9
Vulnerability Factors (2013-2016)		
Average annual precipitation (inches)	40	36
Slopes >2% (% of cropped acres)	31	36
Highly erodible cropland (% of cropped acres)	20	27
Prone to wind erosion (% of cropped acres)	0	1
Prone to surface water runoff (% of cropped acres)	10	11
Prone to leaching (% of cropped acres)	44	29
Conservation Practice Use (2013-2016)		
Mulch till or no-till (% of cropped acres)	78	67
<i>Structural practices for water erosion control:</i>		
Percent of all cropped acres	57	44
Percent of HEL cropland	81	50
Reduced tillage or structural practices (% cropped acres)	89	81
Moderate or Low 590 Nitrogen Need (% cropped acres)	86	88
Moderate or Low 590 Phosphorus Need (% cropped acres)	59	76
N Load incorporated (%)	71	61
P Load incorporated (%)	41	56

* Values represent fewer than 30 points and cannot be used to draw reliable conclusions

† A blanked estimate represents a non-zero value that was suppressed due to a limited number of observations

Factor	Illinois	National
Sediment and nutrient losses, baseline (average annual) (2013-2016)		
Wind erosion (tons/acre)	0.13	1.62
Sediment due to water erosion (tons/acre)	0.9	0.8
Total nitrogen (pounds/acre)	24.3	29.1
Surface nitrogen (pounds/acre)	3.9	6.6
Subsurface nitrogen (pounds/acre)	20.4	22.5
Total phosphorus (pounds/acre)	1.5	1.8
Soluble phosphorus (pounds/acre)	0.59	0.44
Edge-of-Field Loss Changes Due to Conservation Practice Use: CEAP I (2003-2006) to CEAP II (2013-2016)		
Wind erosion losses per acre (% change)	-21	-16
Sediment loss due to water erosion per acre (% change)	-17	-23
Total nitrogen losses per acre (% change)	-2	8
Surface nitrogen losses per acre (% change)	-7	-4
Subsurface nitrogen losses per acre (% change)	-1	13
Total phosphorus losses per acre (% change)	-2	-3
Soluble phosphorus losses per acre (% change)	13	11
N Load incorporated (% change)	-11	-14
P Load incorporated (% change)	-23	-15
Conservation treatment needs (2013-2016)		
<i>Treatment need for one or more resource concerns:</i>		
Cropland with high need (% of cropped acres)	8	10
Cropland with moderate need (% of cropped acres)	51	47
High or moderate need (% of acres)	59	57

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Factor	Illinois	National
<i>Acres exceeding threshold by resource concern:</i>		
Sediment loss (>2 t/ac/y) (% of cropped acres)	11	9
Sheet and rill erosion (>T) (% of cropped acres)	13	10
Wind erosion (>T) (% of cropped acres)	0	10
Surface nitrogen loss (>15 lbs/ac/y) (% of cropped acres)	5	11
Subsurface nitrogen loss (>25 lbs/ac/y) (% of cropped acres)	24	28
Total phosphorus loss (>3 lbs/ac/y) (% of cropped acres)	10	13
Soluble phosphorus loss (>0.5 lbs/ac/y) (% of cropped acres)	41	27
Soil carbon (losing) (% of cropped acres)	6	15
Most extensive need:	Soluble phosphorus loss	Subsurface nitrogen loss

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