

Nutrient Reduction for the Great Lakes: Dialogues on Solutions

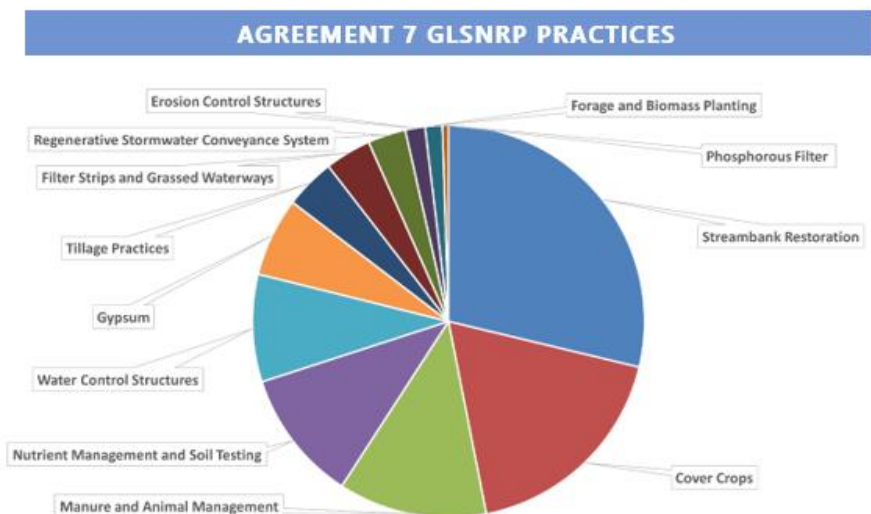
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Insights from the 2022 GLSNRP Dialogues

The Great Lakes Sediment and Nutrient Reduction Program is a state and federal partnership managed by the Great Lakes Commission in cooperation with the USDA's Natural Resource Conservation Service (NRCS), U.S. EPA, and the eight Great Lakes states. Through this program, the GLC has provided grants to nonfederal units of government and watershed organizations to install erosion and sediment control practices in the Great Lakes basin for over 30 years.

Since 2010, funding for the program has been provided by the Great Lakes Restoration Initiative. The funding has been directed to innovative projects that help address sources of nutrient and sediment losses within the basin. The program is directed by a task force that includes representatives from the states, NRCS, and U.S. EPA; the task force identifies priorities for funding and reviews proposals to award funding each year. Eight awardees for 2022 will be announced in early October. An example from the most recently completed agreement (2017 grantees) depicts the wide array of practices funded by the GLSNRP.

In August 2022, current and past grantees were brought together, along with state and federal partners engaged in nutrient reduction around the Great Lakes basin, to discuss what's working, opportunities to do more, and how efforts might adapt in the face of a changing climate. Here is what Great Lakes Commission staff heard from over 50 attendees.



Under Agreement 7 the Great Lakes Sediment & Nutrient Reduction Program funded a variety of best management practices.

Dialogue #1: solutions brainstorm

Participants were given seating assignments to encourage networking across state boundaries and assure that grantees and partners were matched based on their expertise and experiences with GLSNRP. Tables were asked to identify key factors that lead to successful sediment and nutrient control efforts along with remaining obstacles, including knowledge gaps.

Solutions identified by agriculture-focused tables

- Farmer-to-farmer groups, such as Demonstration Farm networks, allow farmers to learn from one another while receiving support from local technicians and other experts.
- Highly coordinated programs allow for local delivery of services to farmers through funding of local technicians and other conservation district staff. New York was specifically identified as a state with a strong history of supporting local soil and water conservation districts through the state's budget process.
- Dedicated personnel can build relationships with farmers and agricultural retailers. Ohio's House Bill 7 was identified as a solution that added staffing capacity through the creation of Watershed Coordinators.
- Speaking the "same language" is important so that agricultural partners and community groups can better understand one another. The Fox-Wolf Watershed Alliance in Wisconsin publishes its popular Basin Buzz newsletter communicating local information on soil health and conservation agriculture.
- Partnerships and strategic plans to guide funding are helpful, as is strong leadership across the political, administrative, and agency sectors. H2Ohio programs were repeatedly held up as an example.
- Local technicians that understand (and appreciate) farm economics have been successful in communicating the value of reduced tillage and soil health.
- Thinking about stormwater management in rural areas is leading to more creativity. In addition, wetlands may be combined with grassed waterways or to build a "treatment train" slowing the flow of water and reducing sediment and nutrient loads.
- Sharing information beyond phosphorus (i.e., discussing nitrogen and suspended sediment) encourages a more complete understanding with farmers.
- Participants shared a general belief that conservation practices are working on many fields, but noted that consistency is important, especially for annual practices such as cover cropping and reduced till systems.

Obstacles and opportunities for improvement

- Participants viewed a video presentation from Dr. Robyn Wilson from the Ohio State University that suggested that up to 65% of farmers surveyed in her work on farmer behavior identify themselves as conservationists. However, finding and motivating those conservation-minded farmers to act remains a key obstacle.
- Conservation districts noted the challenge of retaining staff, which compounds the difficulty in building trust with farmers by cutting off opportunities for longer-term relationships between interested farmers and conservation professionals.
- A shortage of agricultural engineers hinders conservation practice implementation in many districts across the basin. Participants noted that university students seem to overlook the potential of an engineering career in agriculture in favor of specialties perceived as more lucrative. One participant suggested lobbying private engineering firms for "pro bono" assistance similar to what is done in some law firms.

- Reduced tillage, interseeding of cover crops, and variable rate fertilizer applications are a few of the desired practices in the Great Lakes basin that require investment in new or updated equipment. The Outagamie County Land and Water Department in Wisconsin has an excellent example of a well-stocked equipment shed that allows local farmers to try out new equipment. This approach is most successful when staff are adept at both maintaining the equipment and teaching farmers how best to use it on their fields.
- Some districts identified missed opportunities for contractor outreach as a means of adding conservation practices at the time of ordinary earth change activities on a farm. One example of this is the opportunity to add drainage water management structures on fields at the time that drain tiles are installed.
- Participants recognized that while efforts continue to address nutrients on fields, significant legacy phosphorus may sit in ditches, streams, and lakebeds. Permitting requirements for removing sediment vary by state. It was noted that partnerships with local drain offices could be expanded to create new projects addressing legacy phosphorus in watercourses under the purview of local drainage officials.
- Stacking additional practices on top of existing federal conservation contracts could amplify water quality benefits.
- Benefits can also be maximized through additional payments coordinated with existing federal programs. Ohio is using H2Ohio funding for its Lake Erie Water Quality Incentive Program, which adds a bonus payment to Lake Erie Conservation Reserve Enhancement Program support that encourages farmers to take unproductive land out of service in favor of riparian plantings and wetlands.
- Several nutrient reduction models are in place across the basin. Coalescing support toward one common platform would ease burdens on conservation district staff and allow them to better communicate potential outcomes with farmers. The Nature Conservancy's Michigan chapter has used the Great Lakes Watershed Management System (maintained by the Institute of Water Research at Michigan State University) with great success in Michigan's Saginaw Bay watershed, but the system is not available across the entire Great Lakes basin.
- Participants identified the need for regional coordination and suggested a dedicated "ag coordinator" to fill that role.

Solutions identified by streambank restoration-focused tables

- Unique partnerships and maintenance of relationships was repeatedly identified by participants as the key to successful streambank restoration projects.
- Participants also noted opportunities to work with entities with more "flex" such as drainage districts or offices that may have unique authority in the management of stormwater.
- Deploying multiple stormwater management and streambank restoration approaches within a single, smaller watershed can yield impacts that entice additional investments and landowner interest.
- Nature-based designs have held up well through significant storm events.
- Projects that support neighbors learning from one another are often more successful than those that feel like "government."
- Look to root causes of streambank erosion and build storage capacity upstream. This may involve re-purposing of existing infrastructure in both urban and rural settings.
- Seek opportunities to add value to existing projects, such as road repairs or upland conservation projects.

Obstacles and opportunities for improvement

- Review past projects and identify opportunities for improvement to increase longevity as higher-intensity and more-frequent storm events continue to occur. Post-project monitoring is important, but rarely funded by grants.
- It is challenging to find willing landowners, especially when cost share is required. Poor public perception of government can further hinder recruitment.
- Organizational capacity is lacking for many conservation districts and watershed groups engaged in streambank restoration work. Many grants (including GLSNRP) focus on activities on the ground, rather than providing for staffing support.
- Communities trying to achieve the same goals are often disconnected, missing opportunities to leverage one another's success.
- Innovative approaches often receive more scrutiny during permitting, adding time (and expense) to projects. Permitting programs generally do not differentiate between projects that would enhance, rather than degrade, the resource.
- Supply chain problems and inflation have affected project budgets.

Dialogue #2: what are we talking about when we talk about “resilience?”

Participants were grouped based on shared experiences as the second dialogue focused on climate resiliency and opportunities for conservation professionals to help make a difference. The definition for climate resilience adopted by the Great Lakes Commission was shared to create a common point of reference:

A resilient Great Lakes basin is one in which communities, infrastructure, ecosystems, and the economy can withstand, adapt to, and recover from climate-related stressors and changing conditions to ensure equitable and inclusive social, economic, and environmental well-being across the basin.

Groups identified the following themes for continued conversation:

- New and innovative practices to support climate resiliency (or old ideas with a new purpose)
- Water retention, putting climate science into practice through prioritized, strategic implementation
- Beyond soil health, integrating climate and water quality goals
- Stream restoration techniques to withstand the storms to come
- Prioritizing effective practices in the most critical areas
- Communicating progress and motivating change
- Adapting rainfall-based design standards to mesh with climate projections
- Natural infrastructure - daylighting urban streams and restoring floodplains.

Key Takeaway

GLSNRP-supported work has long resulted in co-benefits that will become increasingly important as our region's climate changes. Whether sequestering carbon within riparian forest buffers or mitigating the impact of storms through nature-based detention systems, people involved with sediment and nutrient reduction activities in the basin will continue to be key partners in building a resilient Great Lakes basin.

Participant feedback

“I really enjoyed hearing how the range of watersheds across the basin are doing projects.”

“It was beneficial to talk and learn from others regarding similar challenges and successes.”

“As a new participant in GLSNRP, I have a much better understanding of the web of connections within this umbrella partnership.”

What's next?

Each year, GLC staff work with NRCS colleagues and the GLSNRP Task Force to develop a **Request for Proposals** seeking new sediment and nutrient reduction projects. The Request for Proposals is generally released by mid-February or early March, with awardees notified during the summer months so that contracts may be put in place prior to the start of the federal fiscal year (October 1).

GLC staff and the Task Force are looking forward to another round of **GLSNRP Dialogues**, tentatively planned for **spring or summer 2024**.