

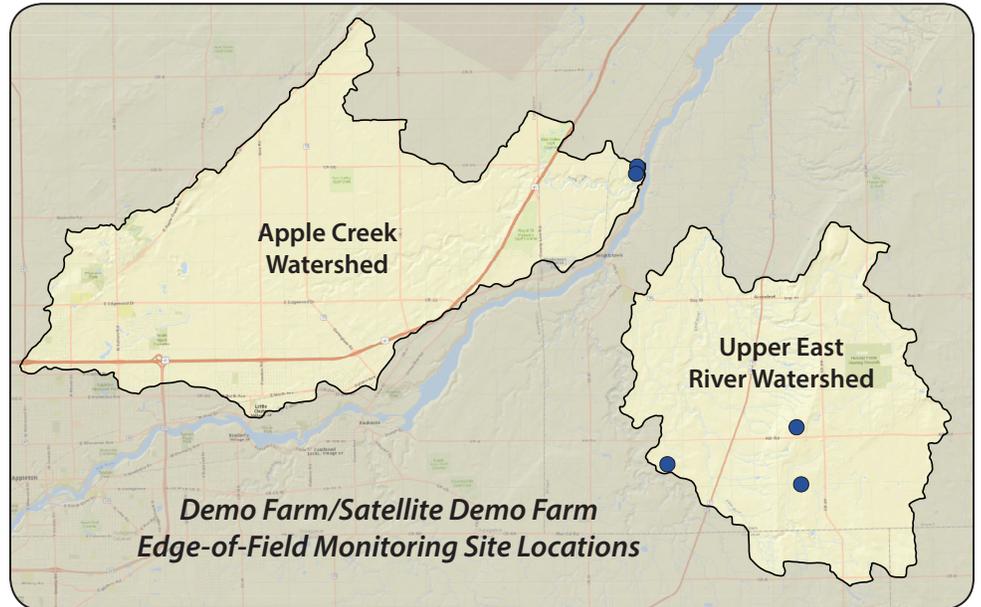


Lower Fox Demonstration Farms Network

Edge-of-Field Monitoring

Purpose

The Lower Fox River Watershed, just south of Green Bay, is home to a network of farms that demonstrate the best, leading-edge conservation practices to reduce phosphorus entering Green Bay and Lake Michigan to improve Great Lakes water quality. The Lower Fox Demonstration Farms Network is an extension of the Great Lakes Restoration Initiative (GLRI) Priority Watershed project to address water quality issues from nonpoint source pollution, as well as promote innovative conservation practices, improve soil health, and establish farmer participation through peer-to-peer data sharing. As part of this effort, documentation of potential improvement in water quality and soil health is being addressed through edge-of-field monitoring.



program. Four of those farms house five edge-of-field monitoring stations: Brickstead Dairy, Vande Wettering Farms, New Horizons Dairy, and Mark Wall's Farm.

Edge-of-Field

Edge-of-field monitoring is an effort to help farmers improve and verify the effectiveness of agricultural conservation practices and systems installed on their farm. Monitoring equipment is installed at the edge of a farm field to evaluate the quality of water draining from the field. Collaboration with producers in edge-of-field monitoring demonstrates the effectiveness of system-wide conservation approaches and their effect on overall water quality.

Monitoring Stations on the Farms

The Lower Fox Demonstration Farms Network has seven demo/satellite demo farms total participating in the



Farming in action next to an active edge-of-field monitoring station.

Focus on Goals

The primary goal of the GLRI Priority Watershed project is to improve water quality by concentrating conservation practices or best management practices in areas known to have water quality issues, primarily due to phosphorus. An attempt is being made to document the improvement through monitoring water quality at the edge of a field with installed conservation practices that are widely being adopted. Further monitoring efforts are taking place, looking at the adoption of grassed waterways and cover crops in a before and after study design.

The Network's focus on soil health improvement through conservation practices like cover crops and producer involvement lead to the installation of a paired basin evaluation of cover crops on one site. Two edge-of-field surface water sites (one treatment and one control) were established on the participating producer's farm fields. These sites were established with the same equipment and operational abilities as the existing GLRI Priority Watershed edge-of-field monitoring platforms.



Edge-of-field monitoring site with newly installed waterway and runoff occurring.

“Edge-of-field monitoring data helps us know the impact of conservation systems such as cover crops, nutrient management, and irrigation water management.”

*~ Jimmy Bramblett,
Wisconsin State Conservationist*

Monitoring began in spring 2015 and will continue for three years to evaluate the effect of cover crops on water quality results. Sites are monitored year-round with autosamplers used to characterize individual storm runoff events and data is combined to produce annual loads. Field data is collected by conservation staff partners to help identify field activities and explain water quality results.

Runoff water quality will be analyzed for suspended sediment, chloride, nitrate+nitrite, TKN, Ammonium, Ortho-phosphate, and total phosphorus to be consistent with the current GLRI Priority Watershed project.

The Great Lakes National Program Office (GLNPO) and U.S. Geological Survey (USGS) are responsible for procurement and establishment of the monitoring equipment, while also maintaining the sampling equipment and providing data storage and processing. NRCS and county conservation staff are responsible for collecting samples and providing site maintenance work, while also providing on-farm data collection and storage. Runoff water quantity and quality data will be combined with on-farm data to identify potential improvements due to the application of cover crops. At the end of the monitoring period, a collaborative evaluation and results publication will be released.

Contact Us

For more information about the Lower Fox Demonstration Farms Network, visit <http://glc.org/projects/water-quality/foxdemo/> or to be notified when the next field day is being held, contact Barry Bubolz, Area GLRI Coordinator, Barry.Bubolz@wi.usda.gov, 715-524-8520 or Brent Petersen, Brown County Land Conservation Department, Petersen_BA@co.brown.wi.us, 920-391-4643.

Thanks to GLNPO and USGS for assisting in edge-of-field monitoring efforts and to our Lower Fox Demonstration Farms Network partners for making this project possible: The Great Lakes Commission, Brown County Land Conservation Department, and Outagamie County Land Conservation Department.



Brown County, Wisconsin, edge-of-field monitoring site installation.



Natural Resources Conservation Service

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