



Lower Fox Demonstration Farms Network

Purpose

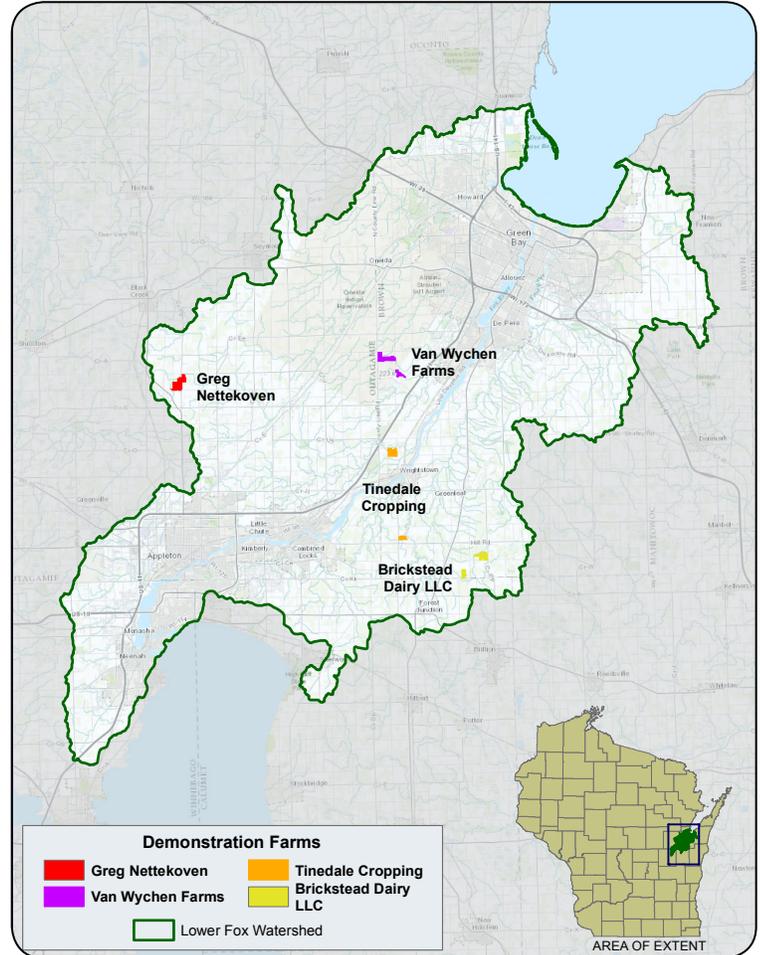
The Lower Fox River Watershed, just south of Green Bay, is home to a network of farms that demonstrate the best, leading-edge conservation practices to reduce phosphorus entering Green Bay and Lake Michigan to improve Great Lakes water quality. The USDA Natural Resources Conservation Service (NRCS) and the Great Lakes Commission (GLC) partnered to establish a Great Lakes Demonstration Farm Network, the first of its kind, in Wisconsin. Other partners include the Brown County Land & Water Conservation Department and Outagamie County Land Conservation Department.

The Great Lakes basin has diverse geology, climate, topography, and soils that provide challenges to controlling erosion and nonpoint source pollution. The diversity of the region creates challenges for managers to develop conservation practice systems that function in a predictable manner while addressing the region's conservation priorities.

The Network is working to provide better information on the effectiveness of conservation systems used to improve water quality. The participating farms demonstrate effectiveness and adaptability of conservation practice systems to reduce erosion and sedimentation, control phosphorus runoff, and address other nonpoint source pollution issues. The Network also provides educational technology transfer opportunities for the public, farmers, land managers, agribusiness, environmental, and natural resource agencies, and research entities and their partners.

Objectives

- The Demonstration Farm Network objectives are to:
- establish demonstration farms within the Lower Fox Watershed to test new and standard conservation systems in reducing phosphorus and sediment;
 - establish an efficient mechanism to share this technology and information with farmers, agribusiness, conservation agencies and the public;
 - create opportunities for others to test their research, technical and program ideas at the demonstration farms; and
 - share information and lessons learned from the Lower Fox Watershed throughout the Great Lakes basin.



Demonstration Farms

The four farms participating in the Network are Brickstead Dairy, operated by Dan Brick; Nettekoven Farms, operated by Greg and Karon Nettekoven; Tinedale Cropping, operated by Scott Theunis and family; and Van Wychen Farms, operated by George Van Wychen and his son Nick. Each of these farms have played an intricate role in trying, demonstrating, and information sharing of leading-edge practices and technologies applied on their farms. Farmers and landowners, partners, government officials, Universities, and many other groups have toured these innovative farms, and participated in demonstration farm days. From cover crops that reduce runoff of soil and nutrients, to water quality monitoring, below are practices applied, updates, and successes on each farm participating in the Lower Fox Demonstration Farm Network.



Left: Red clover cover crop seeded between rows of corn is seen below the corn silage canopy and will continue to grow after corn silage harvest. Middle: Dan Brick, of Brickstead Dairy, on his farm. Right: Construction of a concrete manure storage structure on Brick's land.

Brickstead Dairy

- Utilization of cover crops (radish, red clover, barley, and other mixes) and timing of application.
- Committed a 35 acre field to cover crop and no-till for long term trials with five species of cover crop utilized.
- Addition of a concrete manure storage structure and grassed waterways.
- Addition of a water quality monitoring system measuring sediment and nutrient loss from a test field in surface water runoff, as well as nutrients coming off the field through a tile drainage system.
- Implementation of cover crop, reduced tillage, and reduced disturbance manure applications on the entire dairy operation.
- Experimentation and use of an interseeder prototype model; an innovative piece of equipment developed by Penn State that straddles corn rows to plant cover crops.



Left: Soybeans no-till planted into cover crops. Middle: Greg and Karon Nettekoven, of Nettekoven farms, on their acres. Right: Frost seeded red clover cover crop growing in winter wheat.

Nettekoven Farms

- Frost seeding of red clover into winter wheat has been very successful.
- Experimenting with planting in late summer after winter wheat harvest of summer no-till triticale, berseem clover, and radish has also been very successful and very favorable yields have been recorded in the first year. No-till of soybeans into winter cover crop mixture has also been successful with favorable yields.
- Gypsum and urea applications with cover crops are currently being tried as soil amendments.
- Actively working with an agronomist to ensure proper selection of herbicides in working with cover crops.
- Drift reduction strategies are being implemented for pesticides.
- Development and experimentation of co-op seed formulas to determine which cover crop seed mixtures work best on the operation.
- Experimentation and use of the Penn State interseeder prototype model to plant different cover crop mixes.



Left: NRCS Soil Conservationist Julia Hager (left) and Scott Theunis (right), of Tinedale Cropping, on his farm. Middle: Established radish cover crop. Right: Scott Theunis shows radish cover crop on his farm.

Tinedale Cropping

- Implementation of cover crop and reduced tillage.
- No-till with radish cover crop has been successful.
- Experimentation and use of the Penn State interseeder prototype model to plant different cover crop mixes.
- Actively working with an agronomist to ensure proper selection of herbicides in working with cover crops.
- Committed to planting 400 acres of cover crops on the farm in fall 2015.
- Addition of a concrete manure storage structure and grassed waterways.
- Integrated pest management working with a crop advisor.
- Collaborating on cover crops and dairy rotation.



Left: Red clover interseeded between corn rows, showing clover growth at the time of corn grain harvest. Middle: George Van Wychen (right) and his son, Nick, of Van Wychen Farms. Right: Multi species cover crop at the Van Wychens showing barley, radish, and winter peas.

Van Wychen Farms

- Experimenting with many different cover crop mixes; very proactive in trying different multi-species mixes.
- Experimentation and use of the Penn State interseeder prototype model to plant different cover crop mixes.
- Working to develop manure application strategies while maintaining cover crop with local dairy producers.
- Working to develop and design innovative equipment for interseeding cover crop.
- Experimenting with half fields of no-till or conventional tilled, with cover crop or no cover crop. Yield data for no till with cover crop has shown no adverse yield reduction with clover interseeding.
- Installation of stream crossings.

Contact Us

For more information about the demo farms, or to be notified when the next field day is being held, contact Brent Petersen at the Brown County Land and Water Conservation Department, Petersen_BA@co.brown.wi.us or 920-391-4643.



The Importance of Healthy Soil on our Lower Fox Demo Farms and Your Farm

Soil is a living and life-giving natural resource. As world population and food production demands rise, keeping our soil healthy and productive is of paramount importance. By farming using soil health principles and systems that include no-till, cover cropping and diverse rotations, more and more farmers are actually increasing their soil's organic matter and improving microbial activity. As a result, farmers are sequestering more carbon, increasing water infiltration, improving wildlife and pollinator habitat—all while harvesting better profits and often better yields.



The resources available on soil health from our website or by contacting your local service center are designed to help visitors understand the basics and benefits of soil health—and to learn about Soil Health Management Systems from farmers who are using those systems.

For more information on soil health, cover crops, or other practices mentioned in our Demo Farms update, visit <http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/soils/health/>.

Special thanks to our partners who help make this Demonstration Farms Network possible.

The Great Lakes Commission: An interstate compact agency that promotes the orderly, integrated and comprehensive development, use and conservation of the water and related natural resources of the Great Lakes basin and St. Lawrence River. Commission products and services focus on communication and education, information integration and reporting, facilitation and consensus building, and policy coordination and advocacy. Learn more about the Commission at <http://glc.org/>.

Brown County Land Conservation Department: Involved in a number of activities directed at water quality improvement, soil erosion control, wildlife damage, and public awareness of those actions. The department addresses water quality and state-mandated Agricultural Non-Point Performance Standards and Prohibitions through administration of a variety of programs. Learn more about the Brown County Land Conservation Department at <http://www.co.brown.wi.us/>.

Outagamie County Land Conservation Department: Works with landowners on protection strategies that best meet the landowners conservation and financial needs. The department places particular emphasis on soil conservation, water quality improvement, groundwater protection, flood control, nonpoint water pollution abatement, erosion control, wildlife habitat improvement, farmland preservation and animal waste management, striving to promote the awareness of natural resources and their value to the citizens. Learn more about the Outagamie County Land Conservation Department at <http://www.outagamie.org/>.

