

PERFORMANCE-BASED CONSERVATION TO ADVANCE CLIMATE-SMART AGRICULTURE

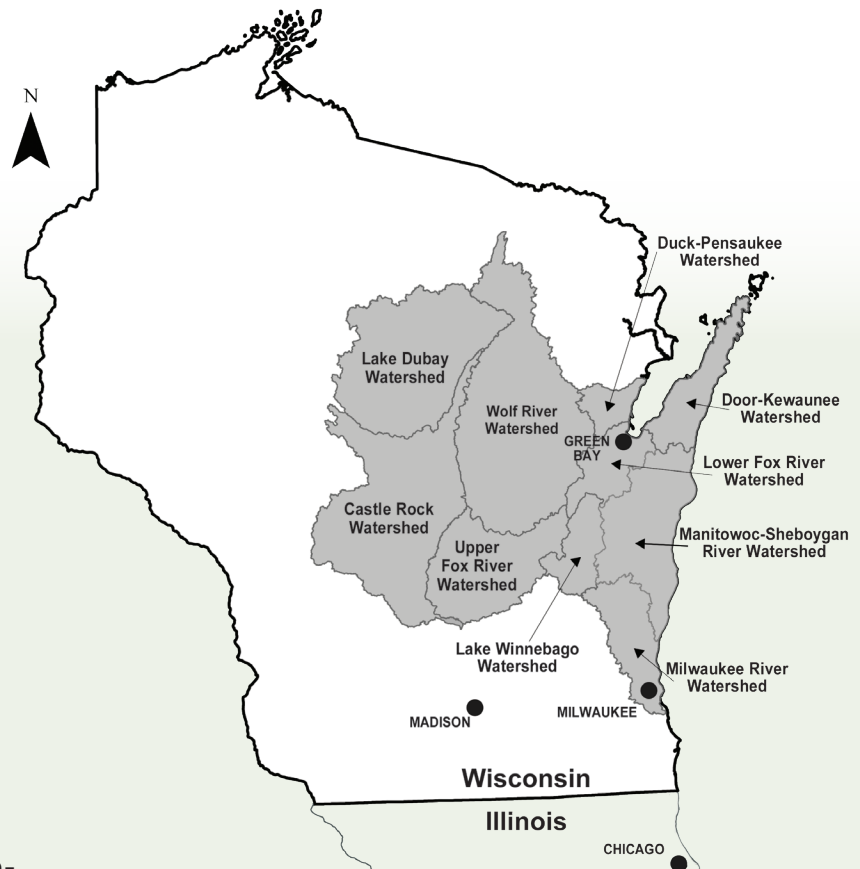


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Adjusting Farm Management to Reduce Water Quality Impacts

Performance-based conservation is an approach to agricultural conservation delivery based on planning and modeling whole farm systems to identify land management changes that can result in the largest environmental benefit. Although this requires planning upfront to understand each farmer's goals, the conservation scenarios are presented with modeled data so farmers can be confident about their choices. This approach to conservation delivery can help scale-up adoption of climate-smart management, while also opening up opportunities for environmental incentive payments. Climate-smart management improves soil resiliency, which influences physical and biological processes that help sequester carbon, increase infiltration, decrease soil erosion, improve water holding capacity, and reduce nutrient runoff and leachate.

The overarching project goal is to launch a three-year, targeted, performance-based conservation incentive approach to encourage beginning farmers, as well as late-adopters and non-operating landowners (NOLOs), to integrate climate-smart (i.e., soil health) management into their operations. The project could have a long-term impact by reaching private landowners who have not participated in other federally-funded programs.



Sand County Foundation will work with at least 20 farmers to incorporate agricultural practices such as reduced tillage, cover crops, conservation crop rotations, rotational grazing, and 4R nutrient stewardship over 2,000 acres of crop land. Additionally, perennial cover through buffers and prairie strips will be incorporated onto at least two (2) farms.



As much as 13 dump trucks worth of soil saved



125 tons of wet algae avoided¹

Achieving these targets will prevent 250 pounds of nitrogen, 500 pounds of phosphorus, and 200 tons of sediment runoff from entering the Lake Michigan and Mississippi River Basins.

Our focus areas are defined in the map included, with specific efforts within Ozaukee County, Cedar Creek watershed, and Big Green Lake watershed (Both HUC12).

Performance-based conservation provides farmers with practice implementation scenarios, created from their own farm data (i.e., rainfall, soil type, topography, crop rotation, fertilizer input, tillage), and summarized with the potential environmental benefits. Farmers can shift management with more confidence knowing that their conservation investment will result in the greatest environmental improvement.

Incentive Payments

Rather than receiving an incentive payment for implementing a new practice, regardless of the benefit, performance-based conservation applies a direct value to the farmer for the environmental response of the system that has been adopted (i.e., price paid per pound of phosphorus or sediment loss prevented by the practice added). SnapPlus is a tool supported in Wisconsin to quantify and track nutrient and soil loss, as well as the water quality benefits from implementing conservation.

By modeling scenarios using SnapPlus, water quality benefits resulting from management changes can be estimated, and incentive payments can be made to the farmer based on how effective the new practice is at reducing field losses (i.e., pounds of phosphorus or sediment) as well as compensation for time to collect data for model input.

Although this approach may require more planning up-front to understand each farmer's goals, the management solutions adopted can be scaled to build up comfort and experience,

case-by-case. This builds trust, confidence, and longer-term adoption.

Long-term funding for incentives can come from different sources, which allows for creative collaborations. For example, a current performance-based conservation effort in the Milwaukee River Watershed is providing compliance offset credits for a municipality operating on a Wisconsin Pollution Discharge Elimination System (WPDES) permit. Municipalities benefit by reducing, avoiding, or delaying the need for expensive wastewater treatment infrastructure upgrades.

Partnership Opportunities

Collaborative outreach with municipalities, private industry, county conservation staff, and farmer-led groups will be key to sharing innovation and advancing climate-smart agriculture across Wisconsin. Sand County Foundation is looking for organizations and companies interested in learning how they can support performance-based conservation efforts in their regions to achieve water quality goals.

Sand County Foundation is also seeking farmers who are interested in exploring how adjusting land management practices could improve water quality and hold soil on farms. Farmers will receive modeling results, technical assistance, and monetary incentives.

¹Vallentyne, J.R. 1974. The Algal Bowl, Lakes and Man. Ottawa, Department of the Environment.

To learn more please contact:

Tricia Verville | (920) 980-1971
tverville@sandcountyfoundation.org



Natural Resources Conservation Service

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Sand County Foundation inspires and empowers a growing number of land owners and managers to ethically care for the land to sustain water resources, build healthy soil, enhance wildlife habitat, and support outdoor recreation.

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