SCALING-UP REGENERATIVE AGRICULTURE WITH PERFORMANCE-BASED CONSERVATION

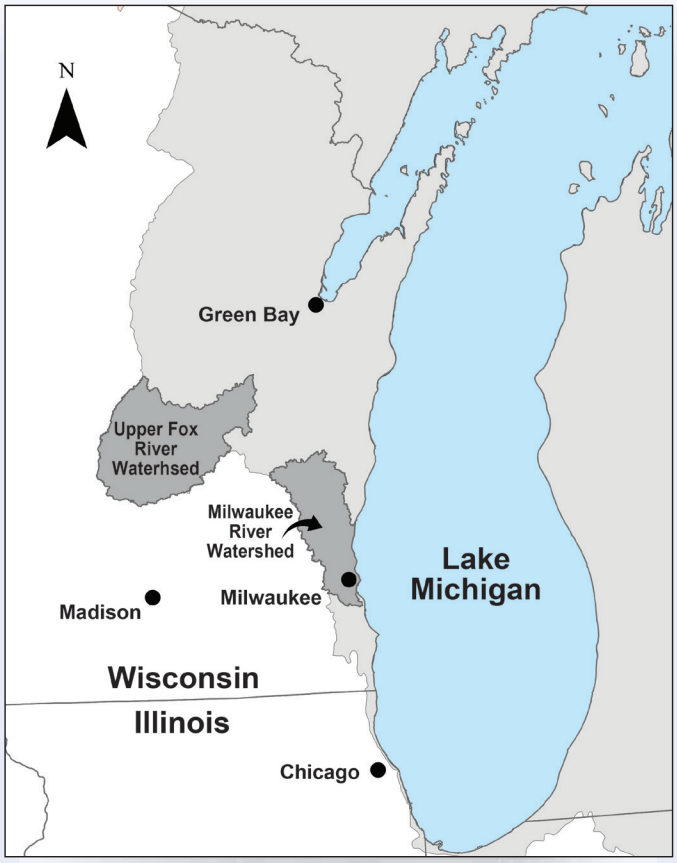
MAY 2022

An approach to improve water quality within our Great Lakes

Soil health and regenerative agriculture management can improve climate resiliency by increasing the soil's water holding capacity and infiltration rate. This helps reduce crop stress during drought conditions and also decrease soil erosion and nutrient runoff from impacting waterways during excessive rainfall events.

Sand County Foundation is leading a three-year project to increase the adoption of regenerative agriculture within the Milwaukee River and Upper Fox River Watersheds, which are both located within the Lake Michigan Basin. By applying a performance-based approach to conservation planning, participating farmers will receive tailored nutrient management and practice implementation options that fit within their production goals while also reducing sediment and nutrient runoff from their fields. This translates to widespread environmental benefits that extend beyond water quality, including improved ecological biodiversity and wildlife habitat within the Lake Michigan Basin.

Sand County Foundation's goal is to work with at least 25 farmers to implement agricultural practices such as reduced tillage, cover crops, conservation crop rotations, rotational grazing, and 4R nutrient stewardship over 15,000 acres of row crop land over the project duration. Additionally, perennial cover through buffers and prairie strips will be incorporated onto five (5) farms.



Wisconsin's Lake Michigan Basin shaded in light grey and the project's two focus watersheds, Milwaukee River and Upper Fox, shaded darker.

This adoption of regenerative management will prevent 1,250 pounds of nitrogen, 2,500 pounds of phosphorus, and 1,500 tons of sediment runoff from entering the Lake Michigan basin.

translates to

97 dump trucks worth of soil saved

$2,400 worth of fertilizer saved

625 tons of wet algae avoided

Performance-Based Conservation

Performance-based conservation (PBC) is a system for agricultural conservation delivery that is predicated on planning and modeling whole farm systems to look for management and practice changes or additions that create the highest response to resource concern(s). For example, evaluating several scenarios to reduce soil phosphorus losses that are practical for each farmer, based on their site-specific field conditions (i.e., rainfall, soil type, topography, crop).

Rather than receiving an incentive payment for implementing a new practice, regardless of the benefit, (i.e., paid based on the practice that is added), PBC 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 and STEPL are tools supported in Wisconsin to quantify, track, and verify nutrient and soil losses and water quality benefits from agricultural practices.

PBC provides farmers with options that are summarized with data so farmers can shift their management with more confidence knowing that the practice adopted is resulting in the greatest environmental improvement. This leads to better planning and improved agronomics.

Resources

[1]Dehlinger, K. 2021. DTN Retail Fertilizer Trends, Nitrogen Fertilizer Prices Shatter Records as Anhydrous Hits $1,113 Per Ton. Retrieved From https://www.dtnpf.com/agriculture/web/ag/crops/article/2021/11/10/nitrogen-fertilizer-prices-shatter-1

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

Sand County Foundation is seeking collaborations with organizations, municipalities, and private companies interested in supporting alternative funding sources to advance regenerative agriculture within the Lake Michigan Basin.

NFWF

USDA United States Department of Agriculture
Natural Resources Conservation Service

General Mills

This project is supported by a public-private partnership between General Mills, NRCS and NFWF and is designed to sustain, restore and protect fish, wildlife and habitat by leveraging funding, building conservation capacity, and focusing partners and resources toward key ecological issues utilizing the leveraged resources. The views and conclusions contained in this document are those of the authors and should not be interpreted as representing the opinions or policies of the U.S. Government or the National Fish and Wildlife Foundation and its funding sources. Mention of trade names or commercial products does not constitute their endorsement by the U.S. Government, or the National Fish and Wildlife Foundation or its funding sources.

Sand County Foundation inspires and empowers a growing number of private landowners to ethically manage natural resources in their care, so future generations have clean and abundant water, healthy soil to support agriculture and forestry, plentiful habitat for wildlife and opportunities for outdoor recreation.