



# Improving & Protecting Soil Health & Water Quality within the Fenwood Creek Watershed

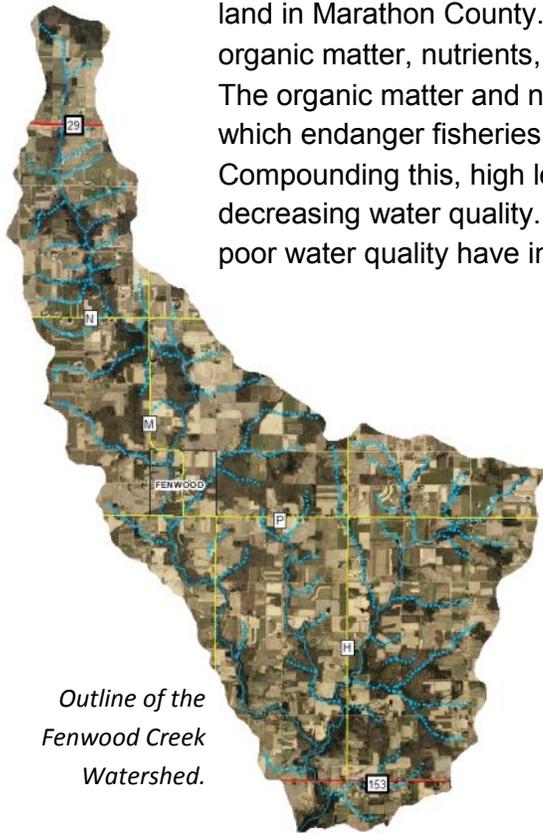
2017–2018 Project Report



# PROJECT BACKGROUND & IMPACT

The Fenwood Creek Watershed drains roughly 39 square miles of predominantly agricultural land in Marathon County. This drainage contributes runoff to Fenwood Creek, which carries organic matter, nutrients, and sediment downstream to the Big Eau Pleine Reservoir.

The organic matter and nutrients carried to the reservoir **fuel excessive algae blooms**, which endanger fisheries as they decompose and consume the water's dissolved oxygen. Compounding this, high levels of suspended sediment **cloud the surface waters**, further decreasing water quality. As agricultural runoff has increased, the resulting fish kills and poor water quality have impacted the livelihoods, well-being, and recreational opportunities



Outline of the Fenwood Creek Watershed.

of those who utilize these waters.

The Marathon County Conservation, Planning, and Zoning Department (CPZ) has worked to improve soil health and to protect water quality within the Fenwood Creek Watershed by **promoting the adoption of several conservation-based best management practices, such as managed grazing, no-tillage planting, and cover crops**. These best management practices mitigate pastures and croplands losing soil and nutrients, which can enter surface water as agricultural runoff. They protect both the productivity of agricultural soils and the quality of surface water. **CPZ has promoted the adoption of best management practices by organizing**

**educational events and by providing landowners with technical assistance and cost-sharing opportunities.**

For the past 2 years, the B.A. and Esther Greenheck Foundation grant *Improving and Protecting Soil Health and Water Quality within the Fenwood Creek Watershed* has financed CPZ's conservation efforts in this watershed. **Funds were used to reduce phosphorus and sediment runoff to the Fenwood Creek and to build the capacity of the local community to advance conservation within the watershed.** CPZ has used this project to redefine how it delivers conservation services. In addition to educational events, technical assistance, and cost-sharing opportunities, CPZ has sought



2018 Big Eau Pleine Reservoir algae bloom.



Soil erosion in the Fenwood Creek Watershed.

to cultivate new partnerships with a diversity of individuals and organizations that have a stake in the Fenwood Creek Watershed.

Despite the challenges of a depressed farm economy and an often skeptical farming community, **CPZ has made significant progress in improving and protecting soil health and water quality in the Fenwood Creek Watershed.** Phosphorus and sediment runoff has been reduced through the implementation of newly introduced best management practices and an improved capacity of producers to manage existing practices. Furthermore,

# GRANT-SPONSORED EVENTS

The B.A. and Esther Greenheck grant — *Improving and Protecting Soil Health and Water Quality within the Fenwood Creek Watershed* — helped CPZ advance its conservation efforts in Marathon County.

## 2017–2018 HIGHLIGHTS

- CPZ staff organized pasture walks and field days during which producers could see firsthand examples of successfully implemented conservation-based management practices, including:
  - ◆ **Riehle Farm pasture walk:** *Successful Dairy Grazing = Healthy Soils and Streams* — Showcased how managed grazing can conserve natural resources *and* maximize farm profitability. (June 2017)
  - ◆ **Van Langen Farm pasture walk:** *Rotational Grazing, Utilizing Robotic Milking* — Demonstrated how robotic milking can be used in conjunction with managed grazing. (July 2017)
  - ◆ **Socha Farm field day:** *Finding Success with No-Till and Incorporating Cover Crops: Saving Time, Cost, and Improving Soil Health* — Demonstrated conservation practices that can be incorporated into a profitable cropping system. (July 2017)
  - ◆ **Fahey Farm pasture walk:** *Organic Dairying and Balancing the Soil* — Showcased how managed grazing benefits the economic and environmental resilience of organic dairy. (June 2018)



No-till soybeans at the Socha Farm field day.

- In late 2017, CPZ organized a community-led group to champion grassroots conservation in western Marathon County. **From these efforts, the Eau Pleine Partnership for Integrated Conservation (EPPIC) was formed.** EPPIC includes a diverse group of stakeholders in the Eau Pleine Watershed, working to reverse the degradation of soil health and water quality. CPZ partnered with EPPIC to lead a number of events in 2018, including:



- ◆ **Common Ground** — The event brought together 70+ people from different backgrounds and perspectives to discuss soil health and water quality, conservation efforts undertaken in the Big Eau Pleine Watershed, and the role that the larger community plays in advancing conservation efforts in the watershed. (August 2018)
- ◆ **Two peer-learning groups** — Small groups of producers discussed their successes and challenges using several conservation practices, and they brainstormed better ways to implement the practices. The Socha Farm hosted a group meeting to discuss cover-crop economics (August 2018), and The Planter Shop hosted a meeting to review the importance of no-till planter setup. (November 2018)



Farm tour at the Common Ground event.

- ◆ **Farmers Learning from Farmers** — Producers and conservation professionals asked a panel of producers about the successes and the struggles they had experienced while implementing conservation practices. (March 2018)

# PROJECT RUNOFF REDUCTIONS

During 2018, CPZ continued to implement a **Targeted Runoff Management program** within the Fenwood Creek Watershed to:

- **Reduce phosphorus runoff from participating fields by one half**
- **Raise awareness of soil health**

CPZ provides monetary incentives and technical assistance to farmers who adopt specified best management practices. In an effort to reduce runoff on a total of 1,266 cropland acres within the Fenwood Creek Watershed, CPZ partnered with landowners to develop **30 contracts for best management practices** like:

Reduced Tillage | No-Tillage | Cover Crops | Grassed Waterways

Additionally, CPZ staff have worked with landowners to update and maintain conservation plans intended to track nutrient applications and manage erosion on roughly 6,500 acres of farmland within the Fenwood Creek Watershed. **Our CPZ team helps farmers keep their phosphorus runoff and cropland erosion meeting — or exceeding — Wisconsin State conservation requirements.** CPZ estimates these management practices have reduced phosphorus runoff by 5,111 pounds per year and have reduced soil loss by 7,738 tons per year (see table below).

## Reductions to Cropland Phosphorus & Soil Loss

Management Practice	Installed	Total P* Reduction (pounds/year)	Total T** Reduction (tons/year)
Reduced Tillage	1,009 acres	404	605
No-Tillage	177 acres	531	443
Cover Crops	80 acres	80	96
Nutrient Management Plans	6,500 acres	3,250	6,500
Grassed Waterways	3,720 linear feet	846	94
<b>Total</b>		<b>5,111</b>	<b>7,738</b>

\*P = Phosphorus runoff into surface waters \*\*T = Soil erosion loss

# PARTNERSHIPS FORMED

During the past 2 years, CPZ has collaborated with a variety of stakeholders and conservation organizations. Productive dialogues have helped people of different perspectives find common ground working to advance conservation efforts within the watershed.

