



FARMING SAGINAW VALLEY

SOIL, WATER, RESILIENCE

HOW WELL DO YOU KNOW YOUR SOIL?

Healthy soil is fundamental to a productive farm. Across the Midwest, an increasing number of farmers are applying soil health practices like nutrient management, reduced tillage and cover crops. These practices, especially when used in tandem, build rich, healthy soil and improve infiltration—helping to insulate yield and profitability from drought, unexpected frosts and storms year after year. They support a more regenerative food system, and even protect clean water.

Saginaw Valley farmers are helping to lead the way. There's a good reason why: this watershed features Michigan's highest concentration of prime farmland, allowing for more diverse crop rotations and higher yields than many other areas of the Midwest.

The Nature Conservancy (TNC) shares a common goal with farmers: a thriving and resilient Saginaw Valley. TNC partners with local **champions of soil health**, connecting them with tools, resources and partnerships that set us all up for success—working together to protect the lands and waters on which we all depend.

ABOVE: The Shiawassee River winds through agricultural fields in the Saginaw Bay Watershed. © Jason Whalen/Fauna Creative



Saginaw Valley farmer Mike Milligan check his corn crop. © Fauna Creative



Farmer Aron Buechler examines the health of the soil in his no-till field. © Fauna Creative

SOIL HEALTH PRACTICES IN THE SAGINAW VALLEY

COVER CROPS



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Crops planted between rotations of production crops grown for market. Numerous possibilities for combining different species and methods make cover crops highly customizable to each operation.

BENEFITS: Cover crops protect the surface of fields with vegetative cover, reducing soil loss and compaction between harvest and planting the following spring. Their roots also support a more stable soil structure. Cover crops capture and use carbon and nutrients, which are subsequently reincorporated into the soil to replenish lost organic matter.

FROM THE FIELD:

Once you start down that path and start seeing the results, you might say, **'Gosh, why didn't I do this a long time ago?'** I'm using way less

commercial fertilizer, way fewer inputs as far as fuel and time."

—Dan Ritter, Saginaw Valley farmer, Elkton, MI



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STRIP TILLAGE



© Dave Begeus/TNC

Like no-till, strip tillage dramatically reduces the amount and intensity of soil tillage on a field and leaves a majority of plant residue intact. The difference is that strip tillage includes cultivation of a thin strip of soil, impacting only 10-30% of the field surface.

BENEFITS: The cultivated strip allows for early planting, as it helps soil warm up faster in the spring. Strip tillage can be repeated along the same row locations for many consecutive years, helping to control traffic and reduce compaction, while the uncultivated part of the field replenishes the soil's natural function and structure and stores carbon.

FROM THE FIELD:

"Because strip (or zone) tillage has allowed us to prepare well-formed seed beds and deliver optimally-placed nutrients right to the areas

the plants need, **our sugar beets and other crops have grown very well and uniformly.** It's like they never run out of steam.

"Other benefits we've noticed is that there's been less weed pressure in the strip-till fields and a big savings in fuel cost as well. Because only a portion of the field is tilled, weeds have been less likely to grow in the undisturbed areas that are covered with residue. Saving fuel and time has given us more opportunity to look at what each field needs individually. **We're able to take care of the land and get more out of it.**"

—Ryan Shaw, SKS Farm, Snover, MI

NO-TILL



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A method of planting crops with little or no soil tillage, drilling seeds directly into otherwise undisturbed soil surfaces. All crops can be successfully grown through no-till methods, though it requires specialized planting equipment and other adjustments—such as cover crops—to reduce competition from weeds.

BENEFITS: By disturbing the soil as little as possible, farmers can reduce—and nearly eliminate—soil loss by erosion. No-till also preserves more carbon in the soil—which is captured and stored by crops and covers—than conventional tillage. No-till farming still allows for growing conventional and large-scale row crops.

FROM THE FIELD:

"The costs are minimal and there are tons of cost savings from not having to till your field, work your field and buy heavy equipment..."

I want to build organic matter, build a healthier soil that will regenerate, **not be dependent on commercial fertilizer** for everything. I feel that our soil is going to be available in the future if we're doing all the right things now."

—Steve Tait, Saginaw Valley farmer, Caseville, MI



© Isaac Shaw

FILTER STRIPS



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Strips of perennial vegetation planted between a crop production field and an ecologically vulnerable area, such as a stream. Filter strips are considered permanent, usually lasting 10 years or more before they need to be replaced.

BENEFITS: Filter strips slow water flow, trap sediment and allow nutrients to absorb back into the soil and vegetation rather than enter waterways. These filtering capabilities are impacted by the width of the strips, as well as plant density and species. Often, the areas where filter strips have the most beneficial applications are already low-producing areas for farmers.

FROM THE FIELD:

*“There’s a certain way I want to see my land managed. I try to fit in filter strips where I can and where it makes sense to. **In some marginal***

areas, the filter strips pay better than crop production!

—John Schultz, (ret.) farmer and crop advisor, Unionville, MI



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NUTRIENT MANAGEMENT



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Applying nutrient sources using the “4R” principles: “right rate” (based on actual soil and crop needs), “right place” (applied as close to roots as possible and away from surface water), “right time” (avoiding periods when the risk of runoff is increased) and “right source” (using natural nutrient sources such as manure or cover crops whenever feasible).

BENEFITS: While reductions vary depending on the practices used, nutrient management overall is regarded as the most effective method for reducing unintended nutrient runoff and leaching from agricultural fields. It’s a way to promote crop productivity while maximizing efficiency and minimizing resource needs.

FROM THE FIELD:

*“Because of my soil type here, I found I was losing a lot of nutrients through leaching. I don’t like doing that because **it’s like flushing***

***money down the drain.** Now I try to do all I can to keep it in the field and available for the plants.”*

—Steve Gayari, Saginaw Valley farmer, Pigeon, MI



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DRAINAGE WATER MANAGEMENT



© TNC

Using a permanent water control structure to manage a field’s water table by choosing how much water is retained. This structure is installed on the end of a main or sub-main on a tile drainage system, and includes panels that can be raised or lowered to control water flow.

BENEFITS: When water stays in the root zone longer, crops thrive and fewer nutrients are lost into nearby streams. This is especially beneficial to crop resilience during periods of dry weather. However, it also slows the flow of runoff during storms, which protects water quality and reduces flood risk.

FROM THE FIELD:

*“For me, soil moisture management was the most important objective. That’s why I had the structures installed so I could control how fast or slow the water was leaving this field. **Now, it’s kind of like I can manipulate the water table level in the field at different times through the year.** We’re still learning but it’s worked out pretty well so far.”*

—Robert Haag, Saginaw Valley farmer, Sebewaing, MI



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HOW TNC WORKS WITH FARMERS



Are you interested in taking strategic regenerative steps on your own farm? TNC is committed to connecting farmers with opportunities to build soil health.

This is not a complete list of opportunities to partner with TNC. Visit www.soilsavings.com for the latest information.

INCENTIVES PROGRAMS

Accessing Subsidized Strip-Till Equipment Trial (ASSET)

With **Michigan Sugar Company**, **Environmental Tillage Systems** and **Blue Water Conservation District**, TNC is piloting a program to help farmers access the equipment and the financial and technical support necessary to transition sugar beet acres to strip tillage. This program is supported by a USDA Regional Conservation Partnership Program grant. TNC aims to enroll 10 farms over the next five years (2022-2026).

To learn more, contact Ben Wickerham, TNC, (517) 316-2286.

Sustainable Options: Wheat

With **Star of the West**, TNC is piloting a new initiative to improve resilience, biodiversity and soil health on wheat ground located within the Saginaw Bay Watershed. This wheat incentives program, and its associated “nature-based bonuses,” will be available on a first-come, first-serve basis to 5-15 farmers for the next three years (2022-2024).

To learn more, contact Joel Leland, TNC, (989) 277-4697, or Lisa Woodke, Star of the West, (517) 648-9166.

Dairy Feed-in-Focus

With the **Michigan Milk Producers Association**, TNC is developing a three-year Michigan incentives program that will work with 10 Michigan farmers a year to implement on-farm feed management strategies and feed crop production practices that reduce dairy cattle methane emissions and support soil health. This program is being piloted in Michigan and Wisconsin, in partnership with the U.S. dairy industry, as part of their Net Zero Initiative.

To learn more, contact Joel Leland, TNC, (989) 277-4697.

BE A LEADER FOR SOIL HEALTH

Start your soil health journey today with your local **Farmer-Led Watershed Group**! Be part of a movement happening across the Midwest, and join other like-minded farmers in collaboration and conversation around shared concerns and opportunities in your own area. To find your nearest group—or to start one—contact Joel Leland at **(989) 277-4697** or check out the “Farmer Resources” tab on www.soilsavings.com.

LEFT: A field of sugar beets in the Saginaw River Watershed. © Jason Whalen/Fauna Creative

RESOURCES & CONTACTS

Subscribe to our newsletter for events and updates! Email rebecca.mcnitt@tnc.org.

We want to hear from you! To learn more about emerging opportunities and resources, TNC’s work in the Saginaw Valley, or how to nominate a local Soil Health Hero, please contact **Rebecca McNitt** at rebecca.mcnitt@tnc.org or visit www.soilsavings.com.



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Visit our website to learn more at soilsavings.com

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