

# PRAIRIE STRIPS: THE TROENDLE-MEHEEN FARM

Case Study 06 The Tallgrass Prairie Center



Tallgrass Prairie  
CENTER

UNI / University of Northern Iowa



## THE TROENDLE-MEHEEN FAMILY FARM

The Troendle-Meheen Farm is located in Allamakee County, Iowa, near Harper's Ferry. Jeff Troendle, Mary Meehan-Strub, and Richard Meheen share ownership of the family farm. Morgan Troendle, Jeff's son, manages the farm. The farm consists of 110 acres of tilled farm ground and is interspersed with grass waterways, prairie strips, pasture, as well as a pollinator habitat planting. Both Jeff and Morgan are professional farm managers for Hertz Farm Management.

The farm was purchased by Jeff and Mary's grandfather in the 1950s. Jeff fondly remembers spending his summers on the farm as a kid. He moved to the farm to help operate it full-time during high-school and. Eventually, the farm passed down to himself, Mary, and Richard. Today, all three live off the farm but remain invested in its success. Morgan's management of the farm through Hertz Farm Management has brought the next generation of the family into the fold as well. A trusted farm operator conducts the field operations.



## COMBATING EROSION

Located in the Driftless region of northwest Iowa, hills and trees are more prevalent in this section of the state, which can offer challenges when it comes to farming, namely, erosion. Jeff's grandfather used buffer terraces and pasture to combat erosion on the farm. However, the preponderance of more severe rainstorms over the last half-decade or so convinced the family that additional tools would be necessary to combat erosion. The big rains in 2018 and 2019, specifically, spurred action.

Morgan has worked with prairie strips on another farm he manages and suggested it as an option. They can be planted both in-field and edge-of-field to target the most likely places erosion could occur. They also don't need to

be planted on the contour, a placement that often makes it difficult to farm around. By combining prairie strips, pasture, and grassed waterways, the Troendle Farm is a mosaic of different conservation practices that work well together. Overall, taking these acres out of production allows them to continue planting and harvesting corn and beans on the other acres, maximizing profitability on the farm. Both Morgan and Jeff cite the ability to turn around on strips for field operations as a big plus compared to other CRP programs, a step in the right direction when it comes to government conservation programs and how a farm functions.



According to a study conducted by Iowa State University at the Neal Smith National Wildlife Refuge, converting 10% of a row-cropped field to perennial prairie can reduce sediment loss by 95%, phosphorus by 90%, and nitrogen loss by nearly 85%.

## IMPLEMENTATION

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Morgan reached out to Tim Youngquist, a Farmer Liaison with Iowa State University's STRIPS team, to help with designing the layout of the prairie strips. It's important to design on-farm prairie plantings to fit both the field and the farming equipment, making sure the size and shape of the strips don't make it difficult to plant, spray, or harvest crops. Talking with the farm operator is essential to avoiding issues down the road.

The designs were then taken to the local Farm Service Agency (FSA) and Natural Resources Conservation (NRCS) offices to enroll the acres into the Conservation Reserve Program (CRP).

Cost share helped pay for establishment costs such as seed and planting, while an annual payment is offered to offset the cost of taking farm ground out of production. Prairie strips (CP43) are a part of the continuous sign-up, meaning you can apply for those practices all throughout the year. The county office also created a seed mix for the project. Seeding was done by a contractor in the Spring of 2021. They used a native seed-drill and planted into no-till corn and bean stubble.

## MANAGEMENT

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Spot mowing was conducted in the Spring of 2022 and a full-establishment mowing took place in late Summer of the same year. It's important in those first couple of years to mow so that the natives aren't pressured out by annual and bi-annual weeds. How often to mow depends on site conditions and weather. The general rule of thumb is to mow to a height of 4 to 6 inches whenever the vegetation grows 12 to 18 inches high in the first growing season. Morgan figures they will mow at least once in the spring of 2023.

Jeff and Morgan both have experience with using prescribed fire as a management tool, both as professional farm managers and on other acres.

Jeff and Morgan both have experience with using prescribed fire as a management tool, both as professional farm managers and on other acres. Similar to planting, they plan on hiring a prairie service contractor to burn the prairie strips when the times comes for required maintenance. Burning is a best management practice, but does require preparation and expertise. Due to the farm being no-till, leftover residue remaining on the field could be an issue. One thing Morgan will do in the future is to plan on planting beans in the fields next to the strips they plan on burning that year, which will have less fuel via residue than corn stubble.

## A NOTE ON SEED MIXES

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The cost of native seed is largely influenced by species composition and availability. In particular, abundance of forb seeds in the mix is typically responsible for most of the price.

There are many seed mixes marketed for CRP practices at the time of this publication that are significantly lower in price than the listed range of costs. The range of costs provided are based on field tested seed mix designs that result in multifunctional, diverse stands of tallgrass prairie. Use of low-cost seed mixes may not result in outcomes similar to this case study, though more research is

needed on cost-minimizing rather than ecosystem service maximizing seed mix designs. For more TPC research regarding the importance of seed mix design, see Meissen et al. 2020<sup>5</sup>.

<sup>5</sup>Meissen JC, Glidden AJ, Sherrard ME, Elgersma KJ, Jackson LL. 2020. Seed mix design and first year management influence multifunctionality and cost-effectiveness in prairie reconstruction. *Restoration Ecology*. 28:807–816. doi: <https://doi.org/10.1111/rec.13013>

## FARM FACTS

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Location – Allamakee County, IA

Owners – Jeff Troendle, Mary Meehan-Strub, and Richard Meheen

Professional Farm Manager – Hertz Farm Management, Inc., Cedar Falls, IA

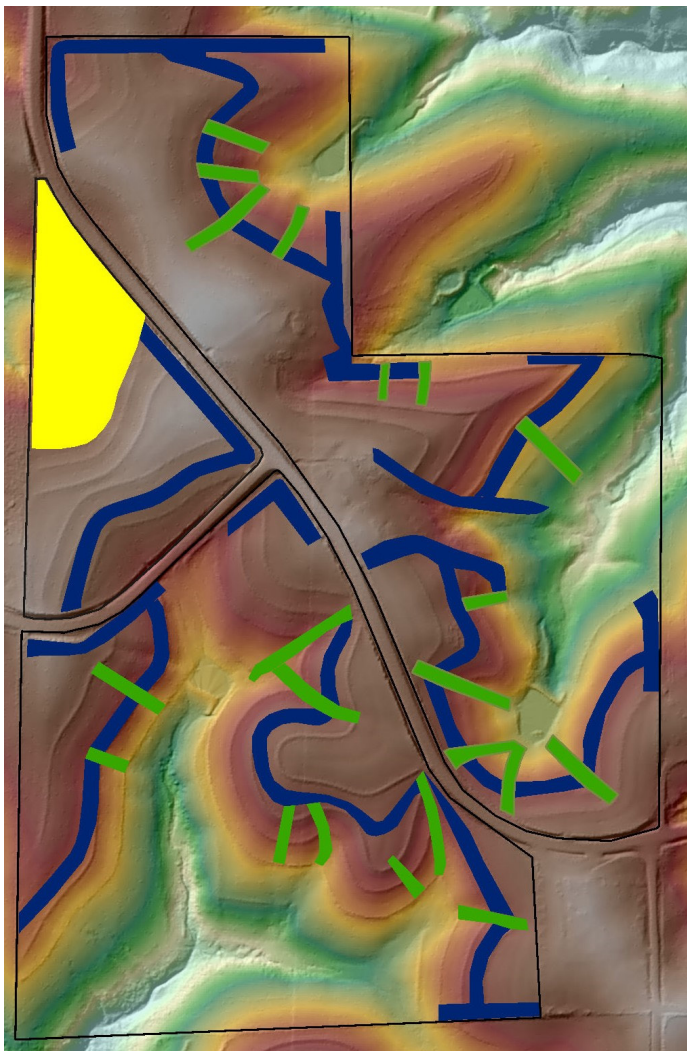
Total Acres – 110

Crops – Corn, soybeans, seed corn, seed beans

Acres in Conservation – 20

Conservation Practices – Prairie strips; Pollinator habitat; Grass waterways

LiDAR of Farm



Aerial of Farm



Most installation costs are eligible for up to 50% cost share through the USDA's Conservation Reserve Program. CRP annual rental payments can be 85-90% of cash rental rates. The average CRP payment for Allamakee county in 2023 was \$238/acre. (USDA, Farm Service Agency, "Public CRP 2023 County Average SRRs"). See your County Office for details.

Prairie Strip



Grass Waterway



Pollinator Planting



## COSTS OF ESTABLISHING PRAIRIE STRIPS

Installation costs	Actual Costs — Roadman Farm	Estimated Costs — Roadman Farm
Tillage	None required on soybean stubble	\$9.00-\$20.00/acre <sup>4</sup>
Herbicide	Covered in crop-share agreement	\$16.00-\$45.00/acre <sup>4</sup>
Cover Crop Seed	Covered in crop-share agreement	\$5.00-\$50.00 <sup>1</sup>
Cover Crop Seeding	Covered in crop-share agreement	\$10.00-\$30.00/acre
Native Seed	\$462.24	\$312.00-\$1,000+/acre <sup>3</sup>
Native Seed Drilling	Done by contractor	\$43.00-\$62.00 <sup>5</sup>
Establishment Mowings (2x)	Done by contractor	\$10.00-50.00/acre <sup>4</sup>
Spot Mowings (2x)	Done by contractor	\$50.00-140.00/hr <sup>4</sup>
Prescribed Burn	Not yet done	\$50.00-\$94.00/acre <sup>5</sup>
Opportunity Costs (cash rent)		Cash rent, \$248-\$346/ac <sup>3</sup>

<sup>1</sup>USDA SARE, “Creating a Baseline for Cover Crop Costs and Returns,” 2019.

<sup>2</sup>Tallgrass Prairie Seed Calculator, University of Northern Iowa, <http://tallgrassprairieseedcalculator.com/>

<sup>3</sup>Cash Rental Rates for Iowa 2023 Survey,” Iowa State University.

<sup>4</sup>“2023 Custom Rate Survey,” Iowa State University.

<sup>5</sup>“2022 Prairie Services Custom Rate Survey”, Tallgrass Prairie Center.

## FINANCIAL INFORMATION

Costs can vary considerably due to contractor and machinery availability, site conditions (size, shape, crops), geographic location, and timing. Please note that prescribed burns

are especially variable in cost. While burning is a best management practice, mowing and haying prairie is a legitimate alternative.

## Assistance for Prairie Strips

Most installation costs are eligible for up to 50% cost share through the USDA’s Conservation Reserve Program. CRP annual rental payments can be 85-90% of cash rental rates. The average CRP payment for Black Hawk county

in 2023 was \$290/acre. (USDA, Farm Service Agency, “Public CRP 2021 County Average SRRs”).

*See your County Office for details.*

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United States Department of Agriculture  
National Institute of Food and Agriculture



## PRAIRIE STRIPS CASE STUDIES

For more information, contact Andy Olson Tallgrass Prairie Center at 319-273- 3828 or visit [tallgrassprairiecenter.org](http://tallgrassprairiecenter.org)

