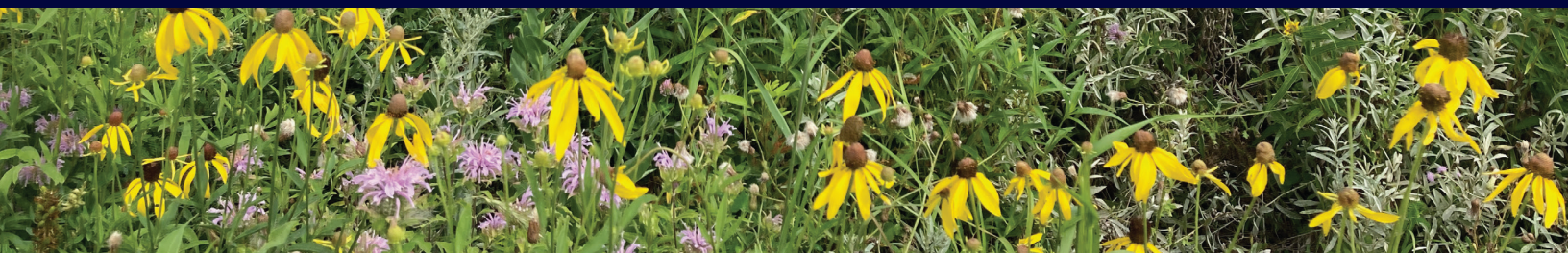
PRAIRIE STRIPS: THE LOCKIE FARM

Case Study 07 The Tallgrass Prairie Center

Tallgrass Prairie CENTER

UNI University of Northern Iowa



THE LOCKIE FARM

The Lockie Family Farm is located in Bremer County, Iowa, with several tracts of land around Waverly. Currently, the farm is operated by Sarah Lockie, her father, and two uncles. The approximately 1,500 acres of ground they currently farm was purchased in the 1950s. Wanting to be more involved in the farm, Sarah and her family built a new home on a portion of the family's land that wasn't very agriculturally productive.

The farm is a conventional grain operation, employing perennial vegetation, conservation tillage and cover crops to accomplish conservationgoals and keep the farm profitable and sustainable for the future generations.

THE RURAL/URBAN INTERFACE

The area surrounding the Lockie Family Farm is representative of the growing suburbanization of Iowa's landscape over the last 20 years. Expanding businesses, new homes, and even a golf course have gradually moved from downtown Waverly towards the land where the Lockies built their home. Other ground had been purchased by the state with the expansion of state highway 218. Remaining ground borders the highway as well. Between 2001 and 2006, the United States lost or compromised an average of 2,000 acres of agricultural land a day to urban development.

One way to minimize the impact of growing urbanization on farm ground is to build on land that performs poorly and has a bad return on investment. Soils with low CSR-2 ratings, poorly drained soils, and hilly terrain are prime candidates for removal from agricultural production. In the Lockies case, they chose an area of less productive land to build a new home.

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%.

PLANNING AHEAD

The least productive portion of the farm ground, a hill with poor soil and where they've found fossils from the Devonian Period, wasn't suitable to build a house on, either. Instead, they decided to pursue enrolling this ground into the Conservation Reserve Program (CRP), primarily to create habitat for pollinators and other animals. This also serves to protect the hillside from erosion along with providing a better return on investment via the yearly payments rather than continuing to farm it.

Planning ahead is key for any form or prairie planting projects. This is especially true for seeking funds through the CRP or other federal and state governmental programs. Land must have been cropped for four out of six years be eligible, along with meeting the other standards of the program, such as being classified as "highly erodible". One thing to note is that for land to be enrolled in CRP, it must have a certain cropping history, meaning that had they left the hill fallow or planted it to turf for a few years this ground would be ineligible for enrollment.

Because one of their primary goals for this prairie planting was its potential to serve as habitat, especially for pollinators like the Monarch butterfly, Lockie sought out more information on how to successfully implement prairie from others. Her local NRCS and FSA offices provided guidance and got the ground enrolled into CRP. Additionally, she became connected to the Tallgrass Prairie Center through their Botany Beginners Class, where she learned basic prairie restoration and plant identification. The Tallgrass Prairie Center would later work with Lockie to design a seed mix for her land.

These organizations were resources for the Lockies as they learned more about CRP and Tallgrass Prairie, but one of her best experiences came from attending a Pollinator Learning Circle led by Dr. Jean Ealls. Through this she was able to visit one on one with Allie Rath, a farmbill biologist from Pheasants Forever and the NRCS. She provided a detailed timeline, step by step instructions, and maps to help make the process for planting prairie more clear.

PRAIRIE IN PRACTICE

The prairie was planted in the Fall of 2022 during the dormant seeding season with a broadcast spreader by USE . The planting was mowed during the summer months of 2023 to keep the weed pressure as low as possible and to give the slower starting native plants an opportunity to compete. One thing to watch out for when planting prairie on hillier slopes is to make sure you have adequate cover while the seeds remain dormant.

One way to accomplish this is via a nurse crop, with a common choice being oats. Additionally, the seed mix in this case was mixed with winter wheat to provide additional cover and to bulk up the seed mix for the broadcast seeder.

OUTCOMES AND CONSIDERATIONS

While the environmental benefits of prairie strips are clear, their economic impact is more nuanced. The initial establishment of prairie strips involves costs related to planting and maintenance. However, these costs can be offset by the long-term benefits of improved soil health, reduced erosion control expenses, and potential financial incentives from conservation programs. The Lockies look forward to continuing to work with prairie on their farm.

FARM FACTS

Location – Bremer County, IA

Owners – Lockie Family

Total Acres – 1,500

Crops – Corn, soybeans, seed corn, seed beans

Acres in Conservation – 130

Conservation Practices – Prairie strips; Pollinator habitat; Grass waterways

Area Near Lockie Farm 1990

Area Near Lockie Farm 2021

COSTS OF ESTABLISHING PRAIRIE STRIPS

Installation costs	Actual Costs — Roadman Farm	Estimated Costs — Roadman Farm
Tillage	Done by self	$9.00-$20.00/acre[4]
Herbicide	Done by self	$16.00-$45.00/acre[4]
Cover Crop Seed	N/A	$5.00-$50.00[1]
Cover Crop Seeding	N/A	$10.00-$30.00/acre
Native Seed	$505	$312.00-$1,000+/acre[3]
Native Seed Broadcast	Done by self	$43.00-$62.00[5]
Establishment Mowings (2x)	Done by self	$10.00-50.00/acre[4]
Spot Mowings (2x)	Done by self	$50.00-140.00/hr[4]
Prescribed Burn	Not yet done	$50.00-$94.00/acre[5]
Opportunity Costs (cash rent)	$290	Cash rent, $248-$346/ac[3]

[1]USDA SARE, "Creating a Baseline for Cover Crop Costs and Returns," 2019.

[2]Tallgrass Prairie Seed Calculator, University of Northern Iowa, http://tallgrassprairieseedcalculator.com/

[3]"Cash Rental Rates for Iowa 2023 Survey," Iowa State University.

[4]"2023 Custom Rate Survey," Iowa State University.

[5]"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 Bremer county in 2023 was $287/acre. (USDA, Farm Service Agency, "Public CRP 2023 County Average SRRs").

See your County Office for details.

This material is based upon work that is supported by the National Institute of Food and Agriculture, U.S. Department of Agriculture, under agreement number 2019-38640-29879 through the North Central Region SARE program under project number LNC19-425. USDA is an equal opportunity employer and service provider. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.

NORTH CENTRAL SARE Sustainable Agriculture Research & Education

USDA United States Department of Agriculture National Institute of Food and Agriculture

Tallgrass Prairie CENTER

UNI University of Northern Iowa

PRAIRIE STRIPS CASE STUDIES

For more information, contact Andy Olson Tallgrass Prairie Center at 319-273- 3828 or visit tallgrassprairiecenter.org