

# Precision Prairie Project

## Integration of Precision Prairie Applications with Business and Conservation Planning



### Project Description

This case study describes two closely aligned efforts on the integration of precision prairie application with business and conservation planning. Many of the project partners are involved in both projects.

The projects are intended to assist private landowners meet their production and conservation goals while improving profitability and demonstrate the importance and effectiveness of voluntary conservation efforts.

In the Croplife Precision Prairie (CPP) Project, the Crop Life Foundation is partnering with the Iowa Soybean Association, Iowa State University, Iowa Agriculture Water Alliance (IAWA) and others to scale up pairing prairie strips with subfield scale profitability analysis. Key activities include technology development and outreach to farmers with an added focus on the design and management of prairie strips for integration with crop protection strategies to optimize production, while continuing to evaluate the effectiveness of this method in improving water quality and pollinator habitat.

The IAWA project, 'Accelerating Habitat-Water Quality Conservation and Enhancing Agricultural Return on Investment' (Ag-ROI), works with EFC Systems and their Profit Zone Manager platform (PZM) to determine which acres are consistently unprofitable and better suited for conservation practices such as prairie strips. Conservation planning and application of practices are then focused on these unprofitable areas. The project will include an evaluation of different methods of delivering these services.

### Problems and Opportunities

While extensive agricultural production is an essential component of the Midwestern region's economy, an important contributor to the world's food supply, there are recognized environmental concerns including soil erosion, water quality, and habitat loss for pollinators, other insects, and bird species associated with

this scale of row crop production. Moreover, farmers are squeezed by ever higher input prices and periods where commodity prices fall below the cost of production. Emerging opportunities to address many of these concerns simultaneously include precision business planning to improve their return on investment (ROI) and strategic placement of zones of native prairie species.

Iowa State University has led development of Prairie strips technology as a practical, low-cost means of providing substantial reductions in soil erosion, improvements in water quality, and an expansion of pollinator and wildlife habitat. In this approach, narrow strips of native grasses and wildflowers are planted within row crops.

Subfield-scale profitability analysis enables farmers to determine the profitability of every acre in their fields to optimize their ROI. Taking unprofitable acres out of production and putting them into prairie strips releases capital that can be invested in the remaining parts of the field that more consistently generate revenue.

The CropLife Foundation and IAWA are coordinating efforts on the CPP and Ag-ROI projects to advance these approaches.

### Project Goals

Overarching goals of both the CPP and Ag-ROI projects include improved water quality, pollinator habitat, and soil conservation while intensifying yields and increasing capacity for voluntary conservation in the Corn Belt.

The CPP project seeks to advance sustainable intensification on working landscapes by focusing on the most productive and profitable acres coupled with strategic placement of prairie strips in areas of lower profit potential. Displacing lower profit potential cropland with prairie may free-up resources helping farmers to optimize crop production on remaining cropland and maintain or improve soil quality such that agricultural yield goals can continue to be met.

### Project Partners

CropLife Foundation  
USDA-Natural Resources  
Conservation Service  
Iowa Agriculture Water  
Alliance (IAWA)  
Iowa State University  
Iowa Soybean  
Association/  
Environmental Programs  
& Services (ISA/EPS)  
EFC Systems  
Pheasants Forever  
Heartland Co-op

### Partnership Dates

2015 to 2020  
Croplife Precision Prairie  
(CPP)  
2016 to 2018  
Agriculture Return on  
Investment (Ag-ROI)

The Ag-ROI project looks to change the paradigm for conservation discussions with producers by improving farm economics. This includes evaluating alternative methods of project delivery and supporting and developing the capabilities of private sector conservation planning resources.

## Measures of Success

### CPP

- Prairie STRIPS program now has 40 sites in Iowa and additional sites in Missouri, Michigan, and Wisconsin.
- Approximately \$5M in prairie strips research funded at ISU.
- 32 peer-reviewed journal papers supporting prairie strips and a summary paper in top-tier scientific journal, PNAS.
- Conducted 5 CCA/TSP training sessions in Iowa in 2017 with a total of 62 attendees.

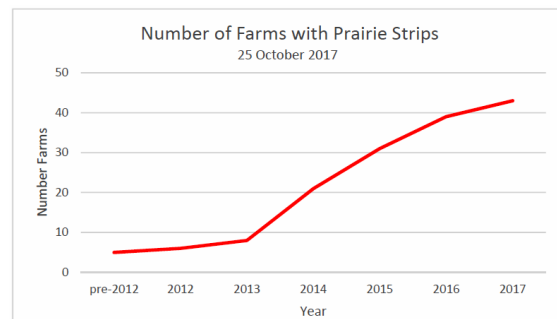
### Ag-ROI

- Combined, ISA-EPS and Heartland Co-op reached 42 producers and conducted 18 PZM scenarios.
- ISA-EPS CCAs now able to conduct PZM analysis independently of EFC Systems.
- Reached approximately 850 farmers/landowners about project.
- Collaboration and financial support of two ISU CCA/TSP training sessions.

## Best Practices

### CPP

- Provocative and rock-solid data have been key to farmer/farmland owner interests in prairie strips.
- Farmer champions provide another kind of essential credibility.
- Soil conservation message particularly resonates with farmer audiences. Multiple,

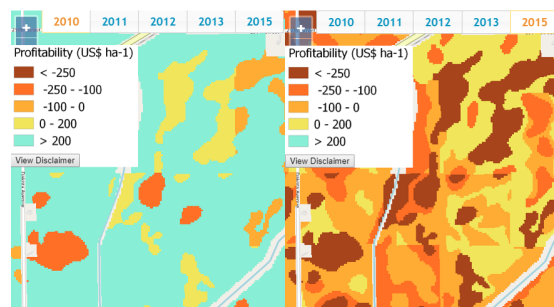


disproportionate benefits of prairie strips are also very appealing.

### Ag-ROI

- Plan for a significant challenge in helping producers understand the economic opportunity associated with subfield profitability analysis such that they are motivated to fully engage and invest in the approach.
- Multiple contacts and strong relationships based on trust are required to conduct subfield profitability analysis and to link this with conservation planning and practice implementation.
- Private sector business models and structure change often, and potentially multiple times during project development and delivery. Projects including public-private partnerships need to be flexible and adaptable to these changes.
- Incorporate prairie strips as a distinct practice in EQIP based on the design standards established by the Prairie strips program at ISU (i.e., distinct from contour buffer strips and filter strips).
- Integrate economic tools including subfield economic analysis in conservation planning.
- Develop and conduct training for staff on subfield profitability analysis (awareness, not necessarily proficiency) and prairie strips as tools in conservation planning.

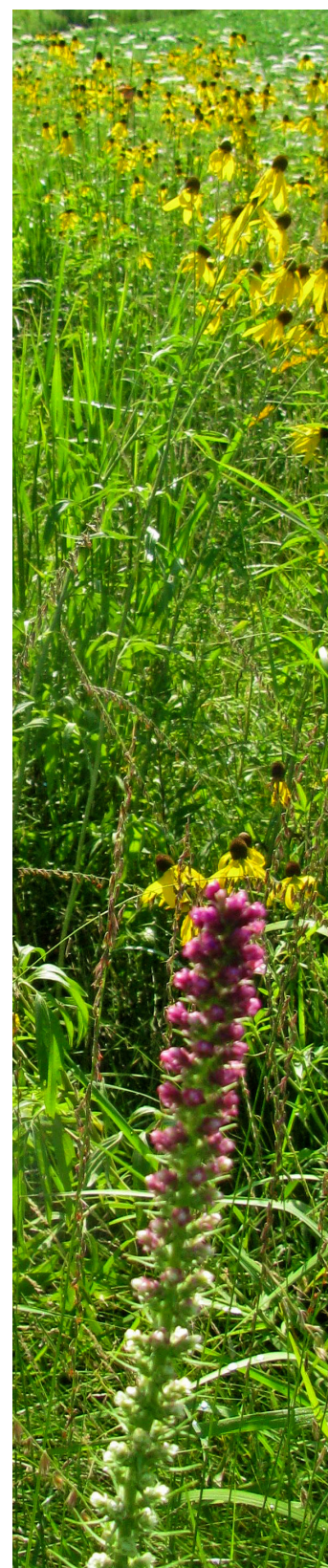
### Example Profitability Data



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