

Strategies for Withstanding Low-Profitability Years



Precision Conservation Management

farmdoc



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Topics

1. What is Precision Conservation Management?
2. Setting the stages
3. Six strategies



What is PCM?



Precision Conservation Management



Precision Conservation Management

Understand how conservation practices impact farm net returns.

Address water quality concerns.
Prevent agricultural regulation.

Position farmers to benefit from positive conservation outcomes.

Farmers get access to:

- 1-on-1 technical support
- Data collection platform
- Agronomy resources and expertise

Provide farmers individualized yearly RAAP report featuring:

- **Financial and Sustainability benchmarking**
- **Economic cost tables**
- **Environmental assessments**

How we work with Farmers:

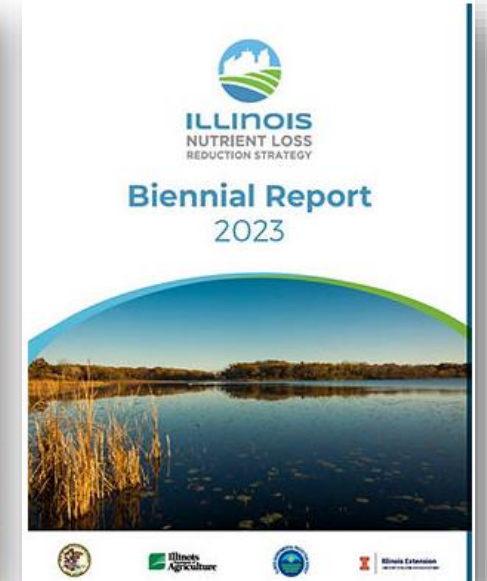
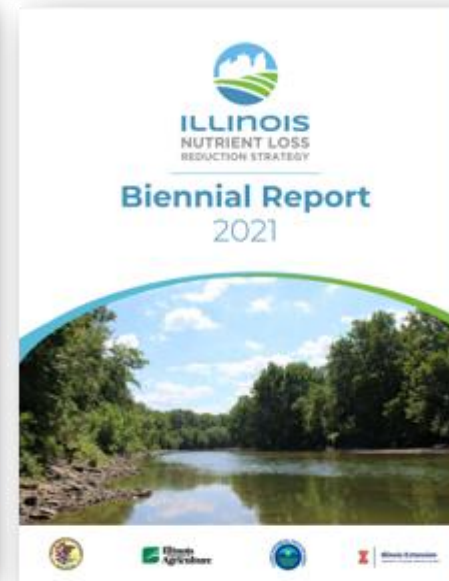
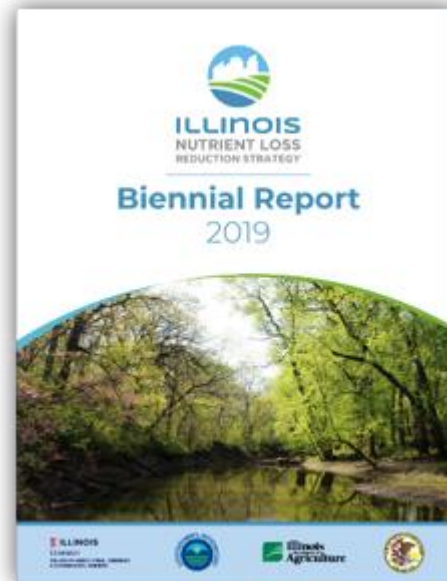
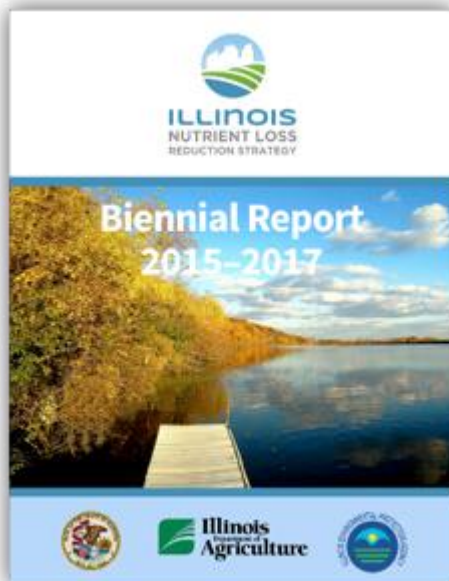
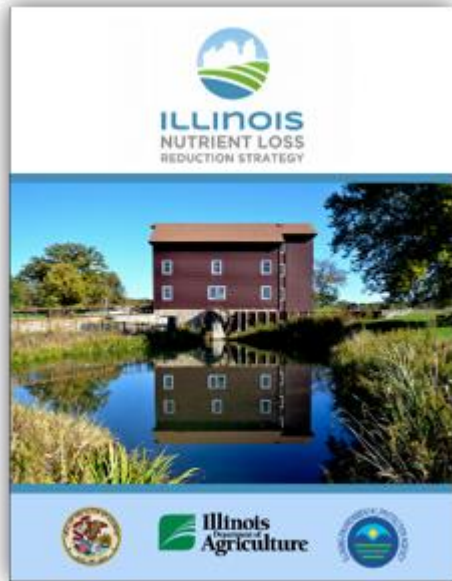
- \$750 participation payment
- Exclusive program offers **cost share, other practice assistance**
- Peer to Peer education & networking opportunities

About PCM



Precision Conservation Management

Created as a response to the Illinois Nutrient Loss Reduction Strategy



Goal: 45% Reduction in Total N & Total P Losses by 2035

Interim: 15% Reduction in NO₃-N & 25% Reduction in Total P by 2025

Illinois



Precision Conservation Management



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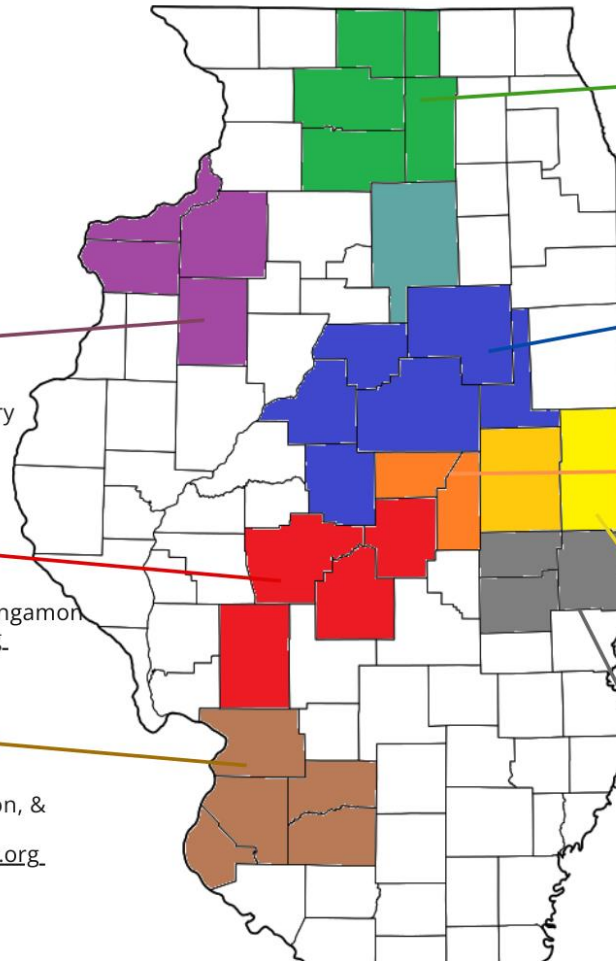
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Kentucky



Precision Conservation Management



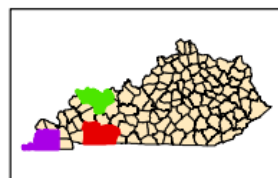
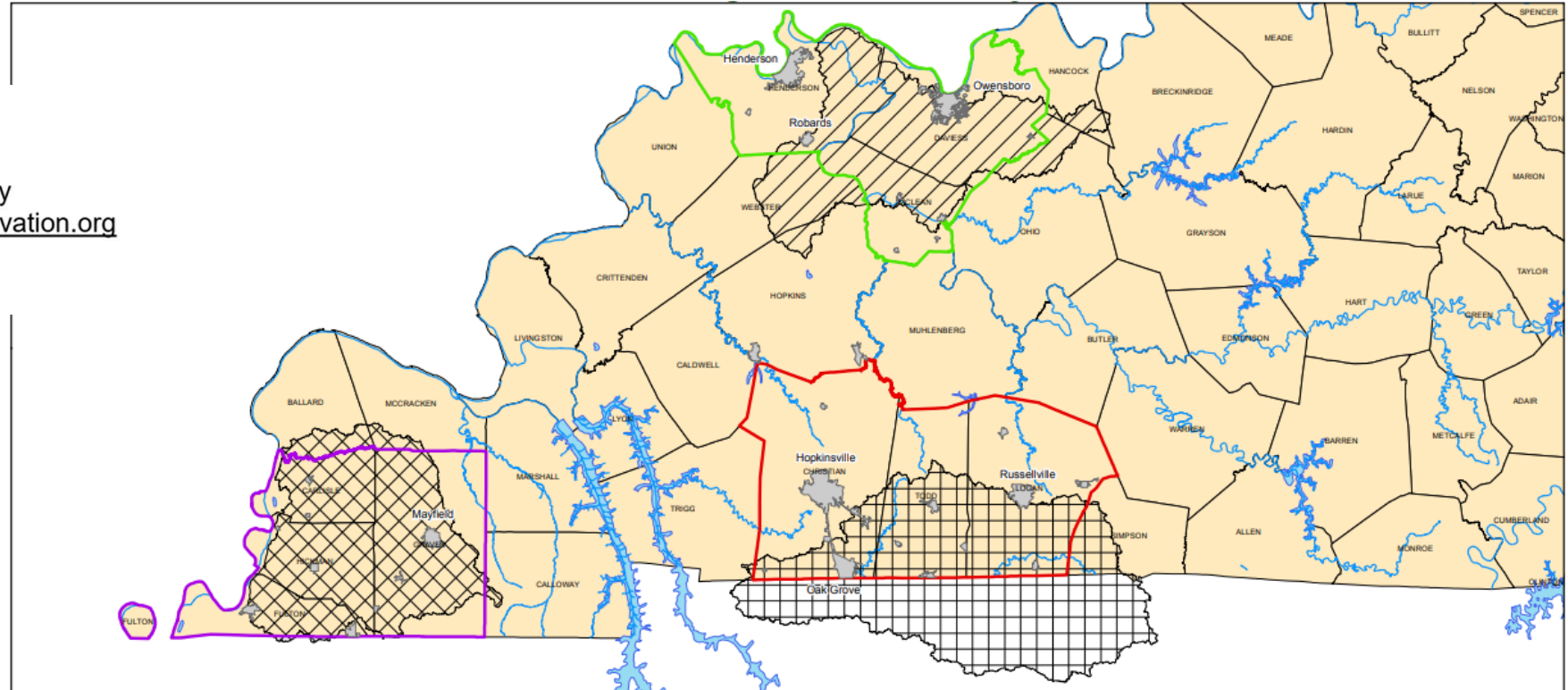
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	Total Acres	Total Ag Acres	# of Farms
Lower Cumberland	1,061,327	817,113	2,842
Lower Green	767,272	537,527	1,715
Purchase	793,407	614,946	2,243

Source: NRCS, NHD, NASS
Map Produced November 2015

Legend

- Lower Cumberland
- Lower Green
- Purchase

Map created by:
 Hearland
HIS

Nebraska



Precision Conservation Management



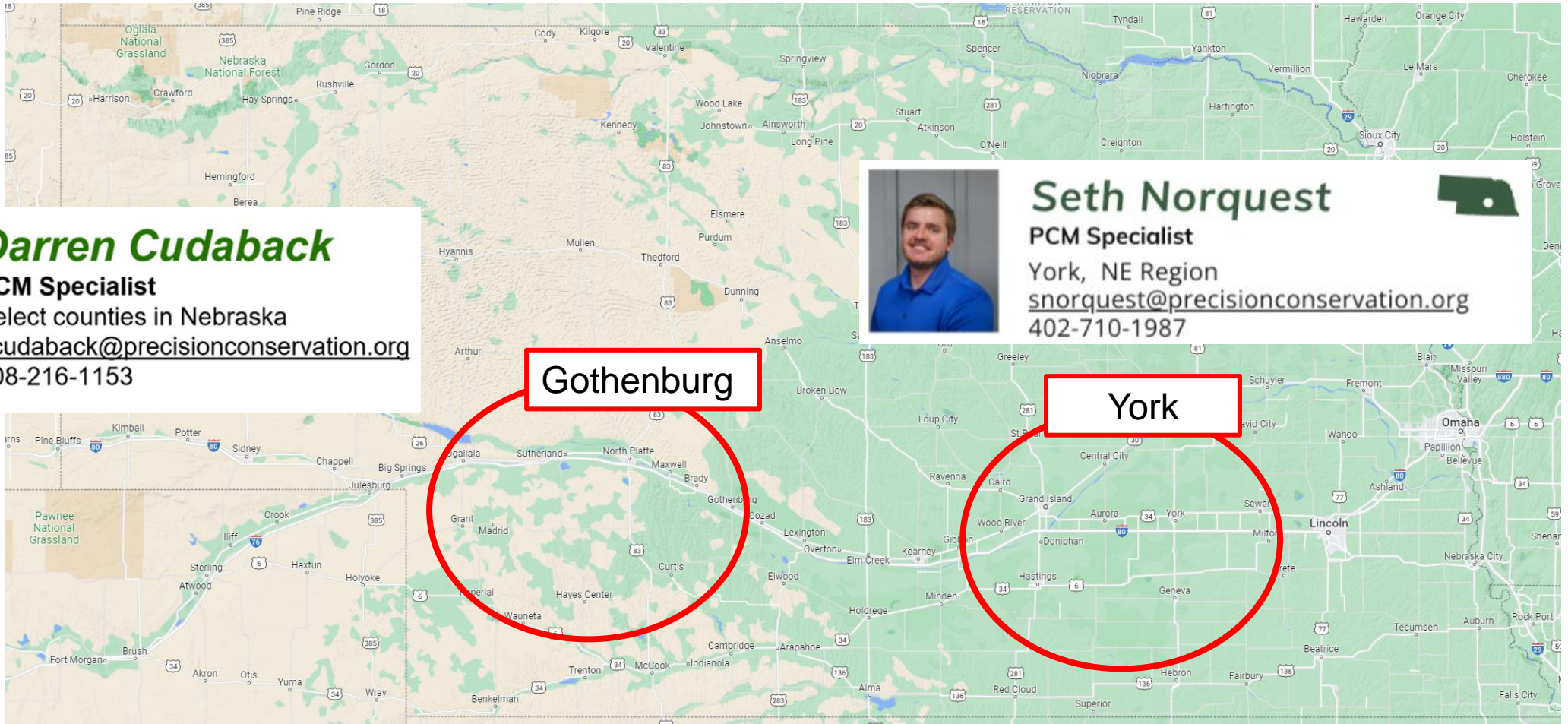
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Participation Stats



Precision Conservation Management



PCM – Growing Stronger Every Day

 519+

FARMERS

 8,573+

FIELDS

 513,893+

ACRES

 30+

PARTNERS

www.precisionconservation.org

Partners



Precision Conservation Management



Check us out online: www.precisionconservation.org

PCM: Data Analysis Agenda

Use aggregated, anonymized PCM data to provide meaningful analysis to support:

1. PCM Participants

Annual Report –

Resource Analysis and Assessment Plan

2. Farmers across the Midwest

3. Academics and Researchers



PCM: Data Analysis Agenda

Use aggregated, anonymized PCM data to provide meaningful analysis to support:

- **Farmers across the Midwest**

- **University of Illinois Extension farmdoc**

- **Articles**

- **Webinars**

- **PCM educational farmer events**

- **PCM Publications:**

- Business Case for Conservation & Special Supplements**

- **Academics and Researchers**

Farmer-First



Precision Conservation Management

- Access to experts
- Exclusive cost-share opportunities
- Data security
- Personalized data analysis
- No practice change required



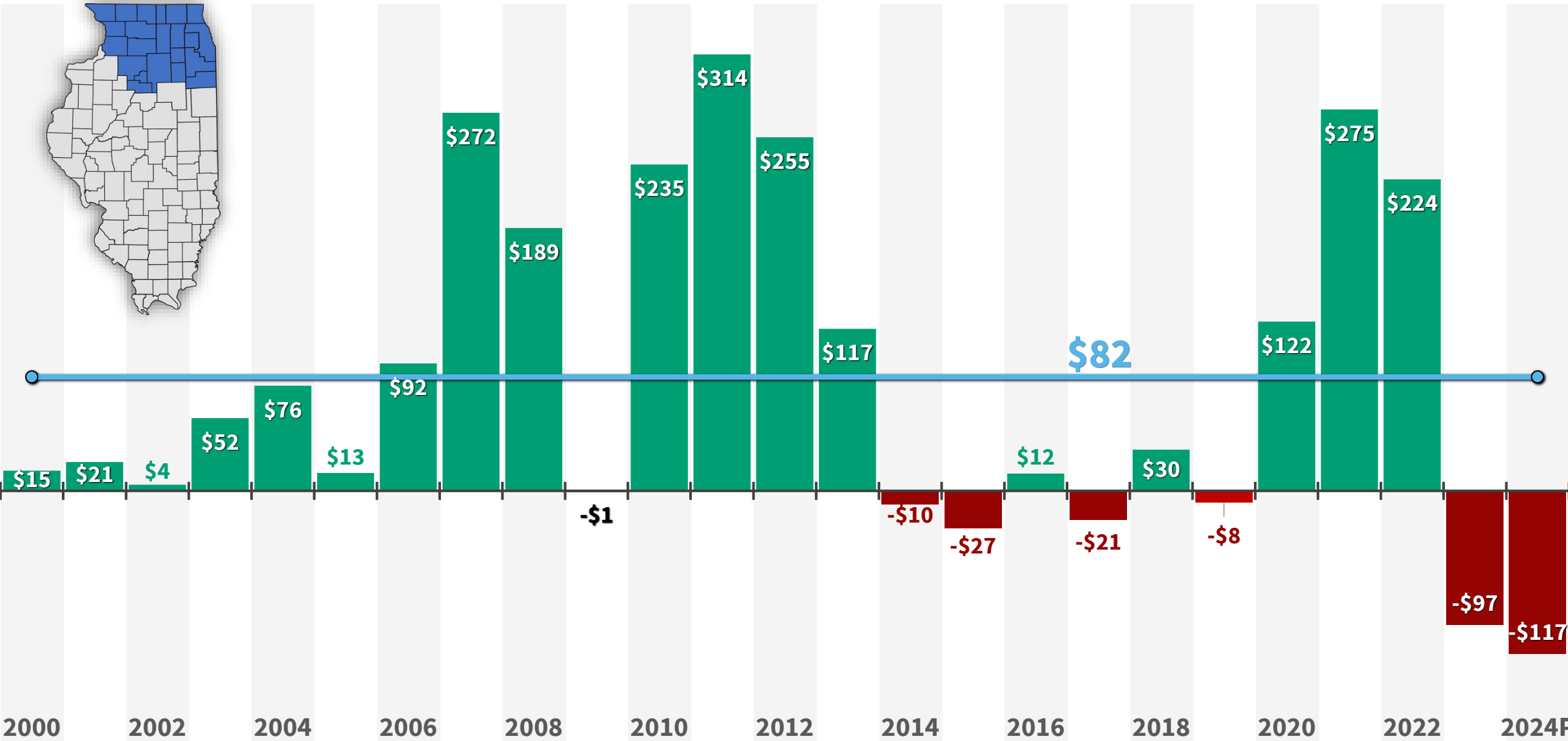
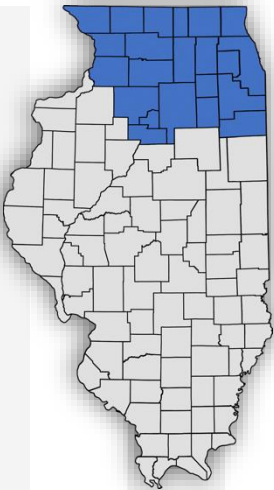
One of the most important parts of PCM that I appreciate is the ability to use it as a resource. If I have a question about a new tillage practice or whether I could get some funding to adopt a new practice, I can call Leyton to direct me.

Darrin Tate, Champaign County, Illinois

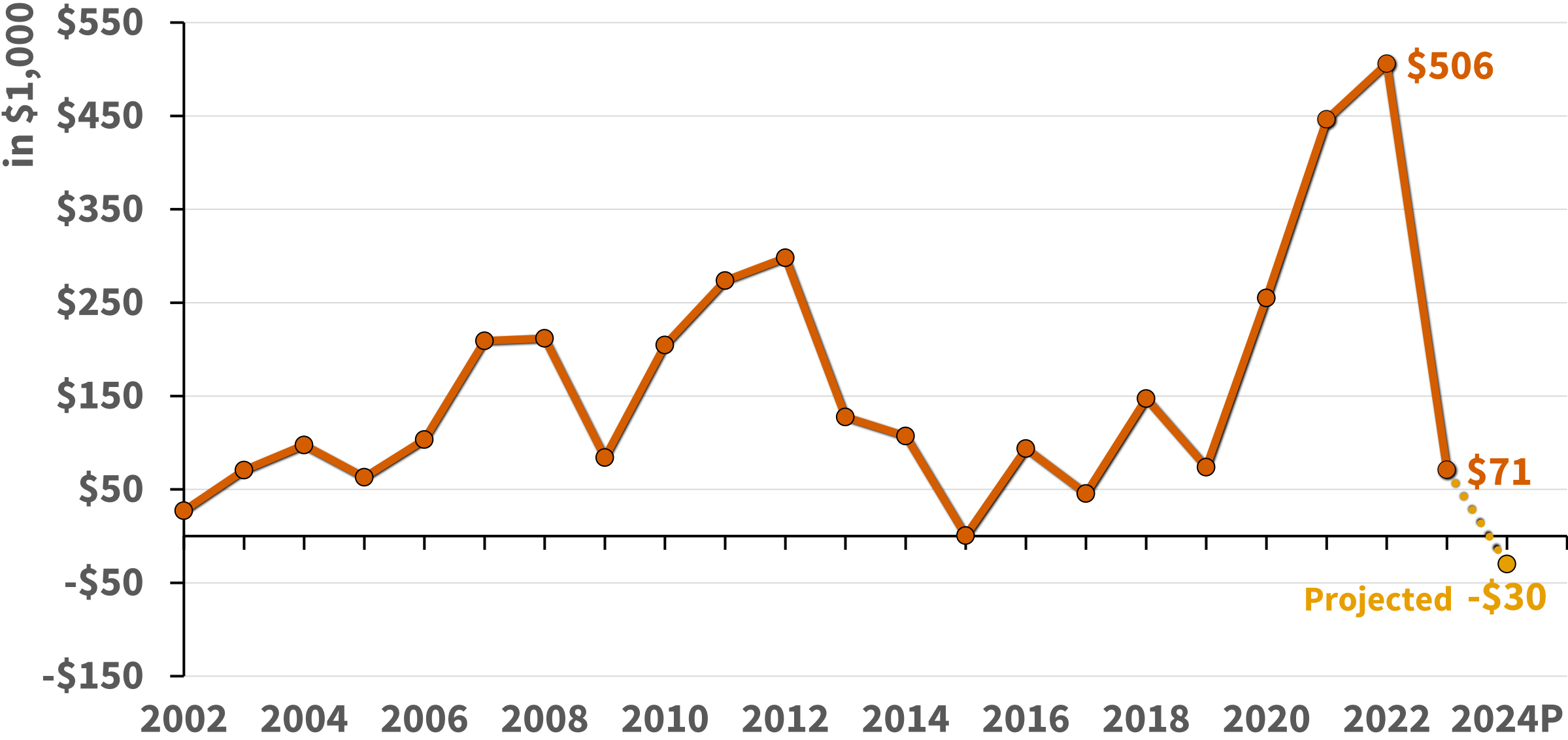
Setting the Stage



Returns to a 60% Corn – 40% Soybean Rotation in \$ per acre on Northern Illinois, Cash Rent Farmland



Net Farm Income on Grain Farms Enrolled in Illinois Farm Business Farm Management



Corn and Soybeans

Commodity-based business with little ways of differentiating oneself

- Commodity-based business with attributes
 - Easy in and out: Non-GMO soybeans, Food grade corn
 - Marketing with on-farm storage
 - More difficult in and out: Organic
- Low-cost producer has the advantage
- **Land strategies:** What are you going to do about cash rents?
- **Growth strategies:** An operation needs to grow if it plans on being in business for more than ten years

Strategies

1. Be a low-cost producer

2. Reduce fuel and input costs with fewer passes

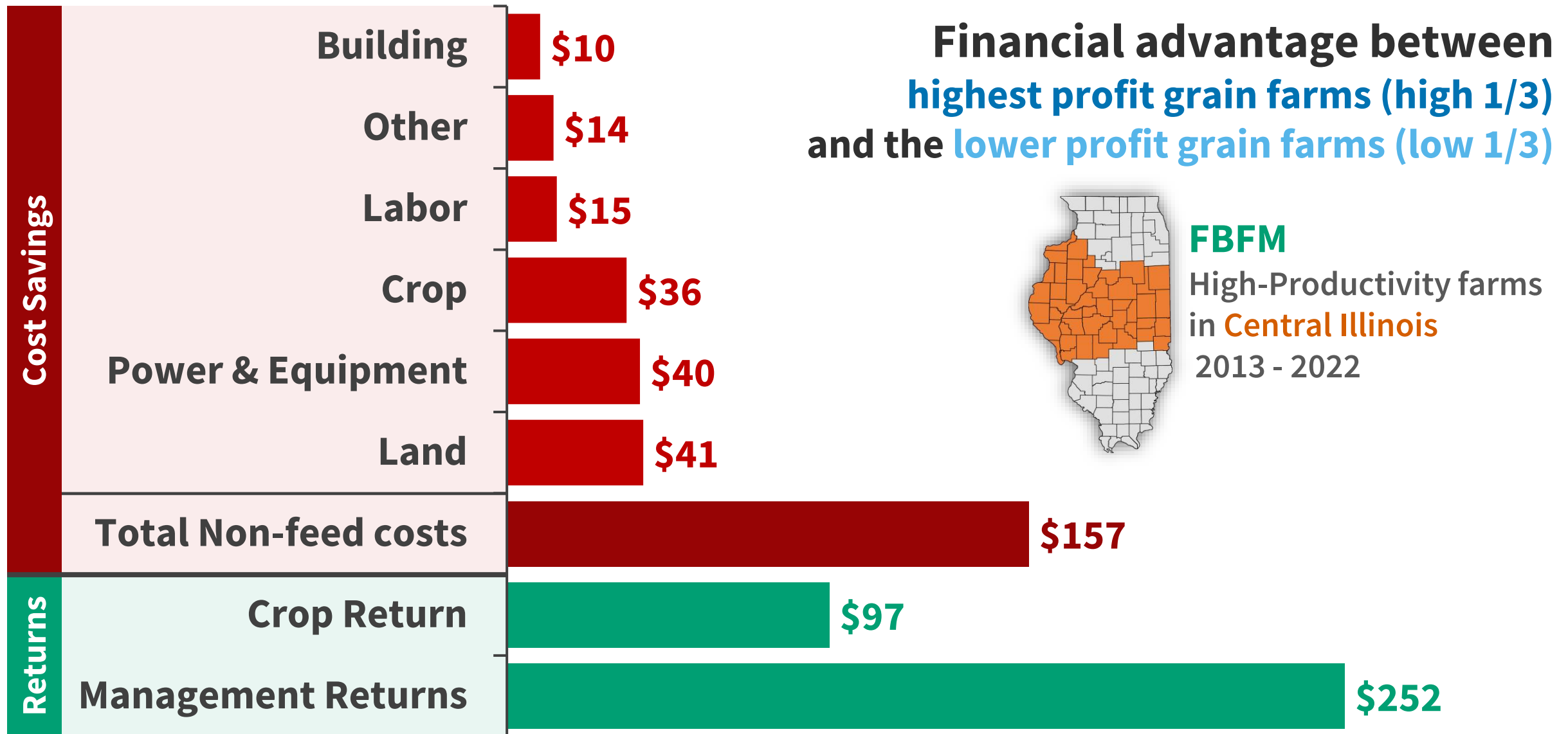
3. Reassess land rental strategies

4. Plant early

5. Focus on ROI

6. Take advantage of available government programs

1. Be a low-cost producer



Main Cost Factors

Direct

Seed, fertilizer,
pesticide, drying and storage

Power

Machinery depreciation, hire, and repair;
fuel and oil, utilities, light vehicle

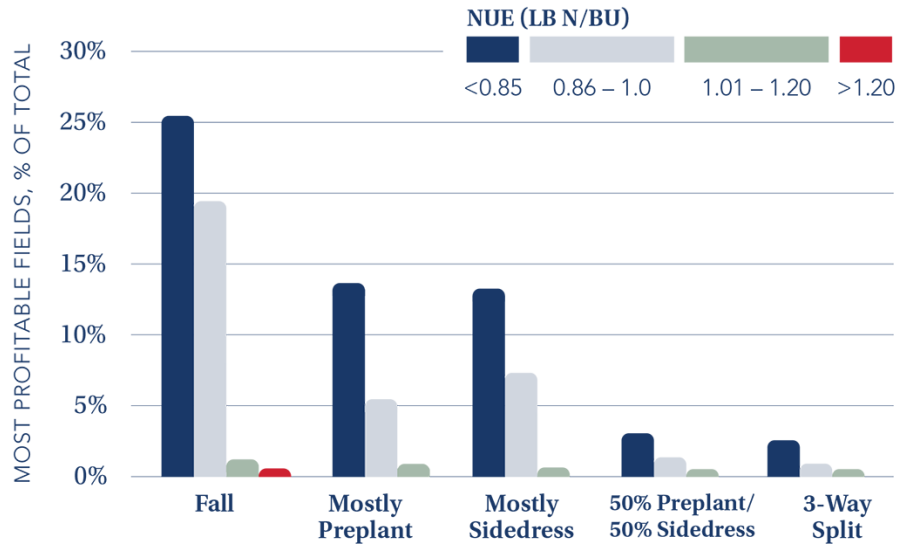
Overhead

Hired labor,
building, insurance, misc, non-land interest

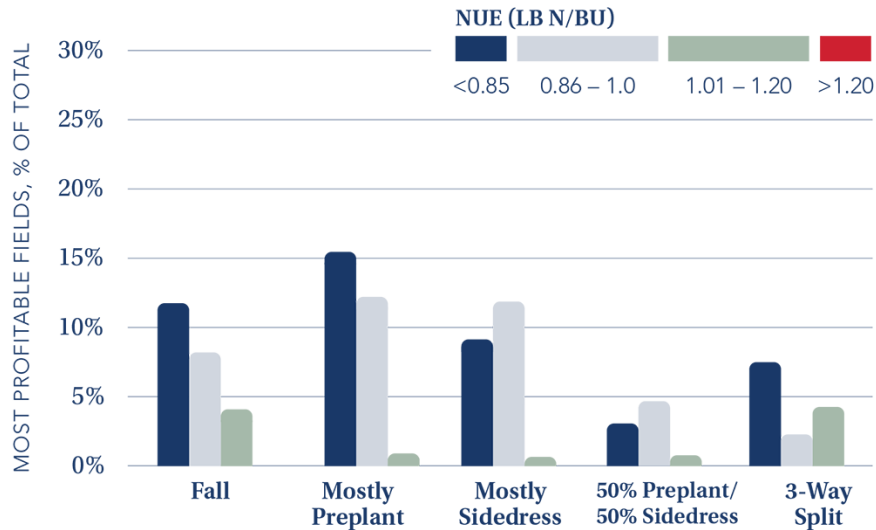
Apply nitrogen at university recommended rates

Corn N RATE, HIGH SPR, LBS PER ACRE 2015-23 AVG VALUES	<150	151-175	176-200	201-225	>225
# fields	181	599	1,854	2,558	1,430
AVG Corn Yield (bu/a) 2015-23	208	218	220	223	229
OPERATOR & LAND RETURN	\$361	\$371	\$365	\$354	\$346
GHG emissions (metric tons CO2e/a)	0.38	0.61	0.66	0.74	0.9

GOOD YEARS = "MORE PROFITABLE YEARS"



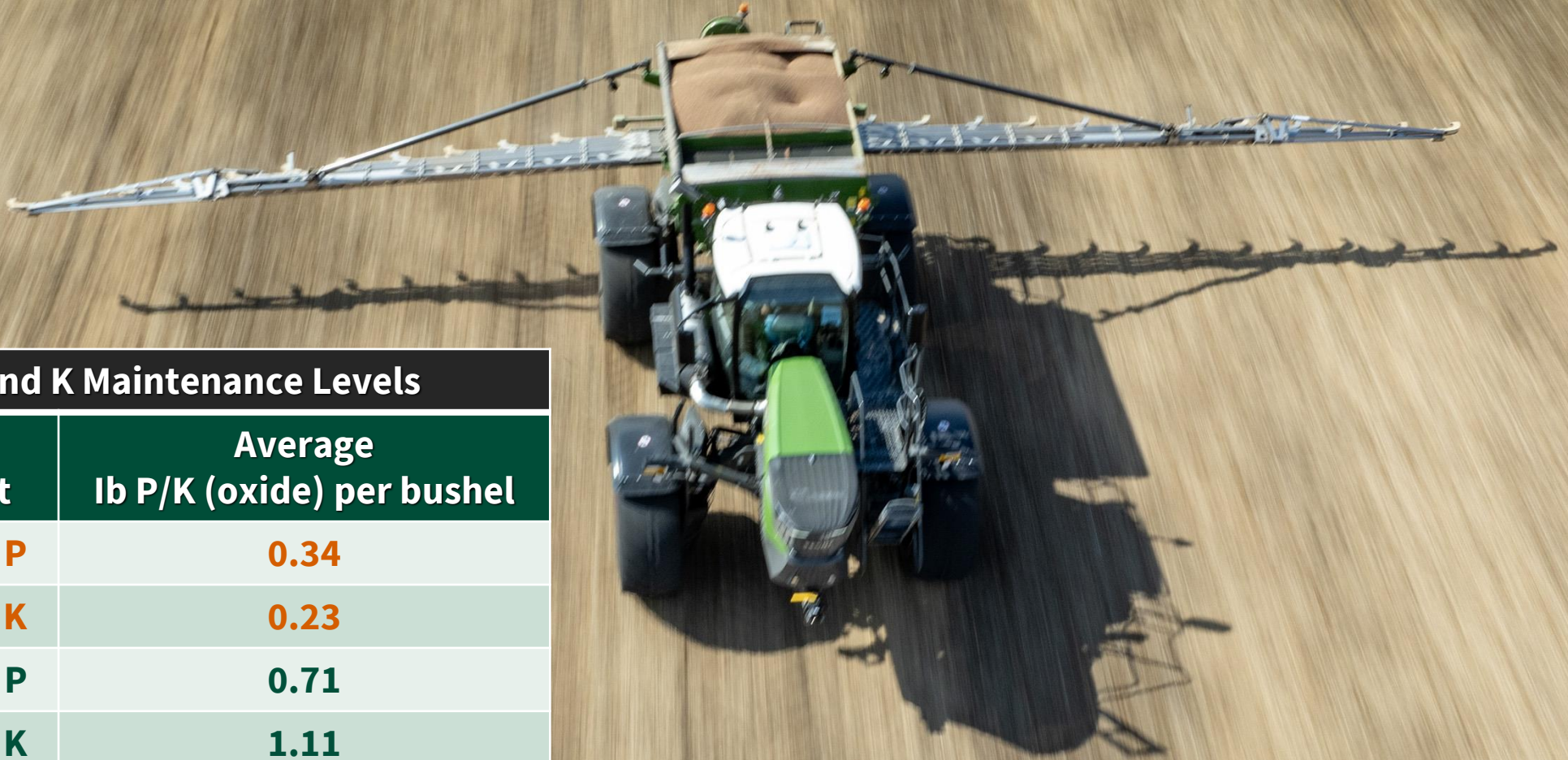
BAD YEARS = "AVERAGE TO LESS PROFITABLE YEARS"



Most Profitable Corn Acres, Parsed by Nitrogen Management

- Nitrogen application **RATE** is the most important N management decision for determining profitability
- Nitrogen application **TIMING** becomes more important in lower commodity price years
- Yields are less important than costs in low-return years.
 - * More Profitable Year was set as years when the average Non-land Operator and Land Return is greater than \$400/acre.
 - ** Average to Less Profitable Year was set as years when average Non-land Operator and Land Return is less than \$400/acre.

Keep P and K in soil test lines



P and K Maintenance Levels	
Nutrient	Average lb P/K (oxide) per bushel
Corn P	0.34
Corn K	0.23
Soybean P	0.71
Soybean K	1.11

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Tillage pass benchmark for corn

Corn HIGH SPR 2015-23 AVG VALUES	NO-TILL	STRIP TILL	1-PASS LIGHT	2-PASS LIGHT	2-PASS MODERATE	2+ TILLAGE PASSES
# of fields	1,262	1,628	1,964	708	889	112
Yield per acre	219	221	222	227	227	223
GROSS REVENUE	\$944	\$953	\$952	\$976	\$975	\$963
TOTAL DIRECT COSTS*	\$437	\$456	\$432	\$442	\$450	\$446
Field work	\$0	\$22	\$11	\$25	\$29	\$41
Other power costs	\$108	\$101	\$105	\$103	\$102	\$106
TOTAL POWER COSTS**	\$108	\$123	\$116	\$128	\$131	\$147
OVERHEAD COSTS	\$39	\$39	\$39	\$39	\$39	\$39
TOTAL NON-LAND COSTS	\$584	\$618	\$587	\$609	\$620	\$632
OPERATOR & LAND RETURN	\$360	\$335	\$365	\$367	\$355	\$331

2a. Delay capital purchases

- Particularly machinery
- Prioritize purchases that have the potential to increase revenue in the future (e.g., tile, farmland, on-farm storage)



Strategies

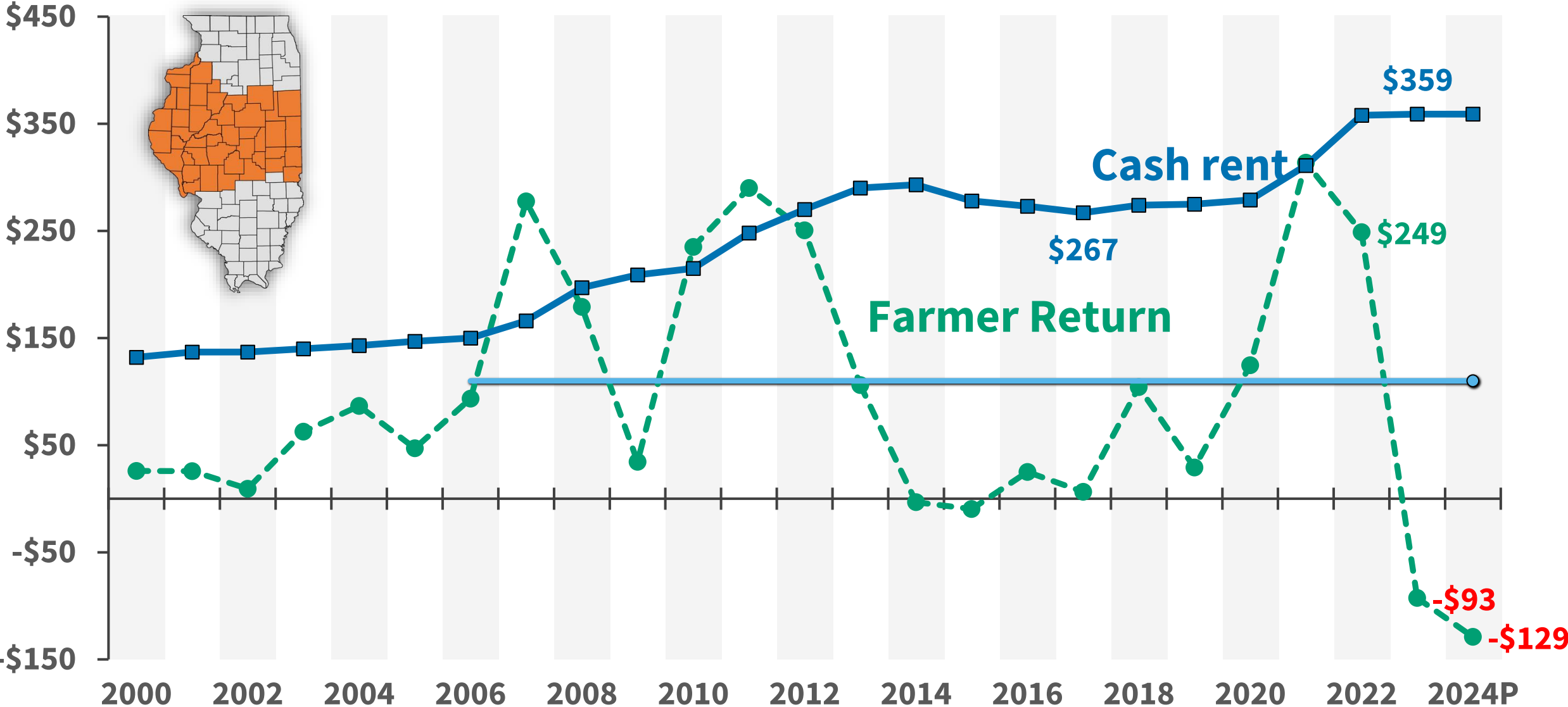
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Land Strategies

- Marketing approach:
How is the farm going to attract new landowners?
- Farm resume
and a sales pitch
- How much will the farmer pay for cash rent farmland?



Cash Rent and Farmer Returns to a 50% Corn – 50% Soybean Rotation in \$ per acre on Central Illinois, High-Productivity Farmland, Cash Rent Farmland



Source: Illinois FBFM

Philosophy

Farm for a break-even in most years,
waiting for the high returns in a minority of years
(high-income years 2007-2008, 2010-2012, 2020-2022)

Problem 1:

When will the high-income years happen again?
It could be next week or ten years from now

Problem 2:

Profits are extremely-low now

What are you going to do with high rent farmland

- Established farms with stable land base (a minority of high cash rent farmland):

Why do this?

- Younger operators with high cash rents:

How long can this go on?

Strategies

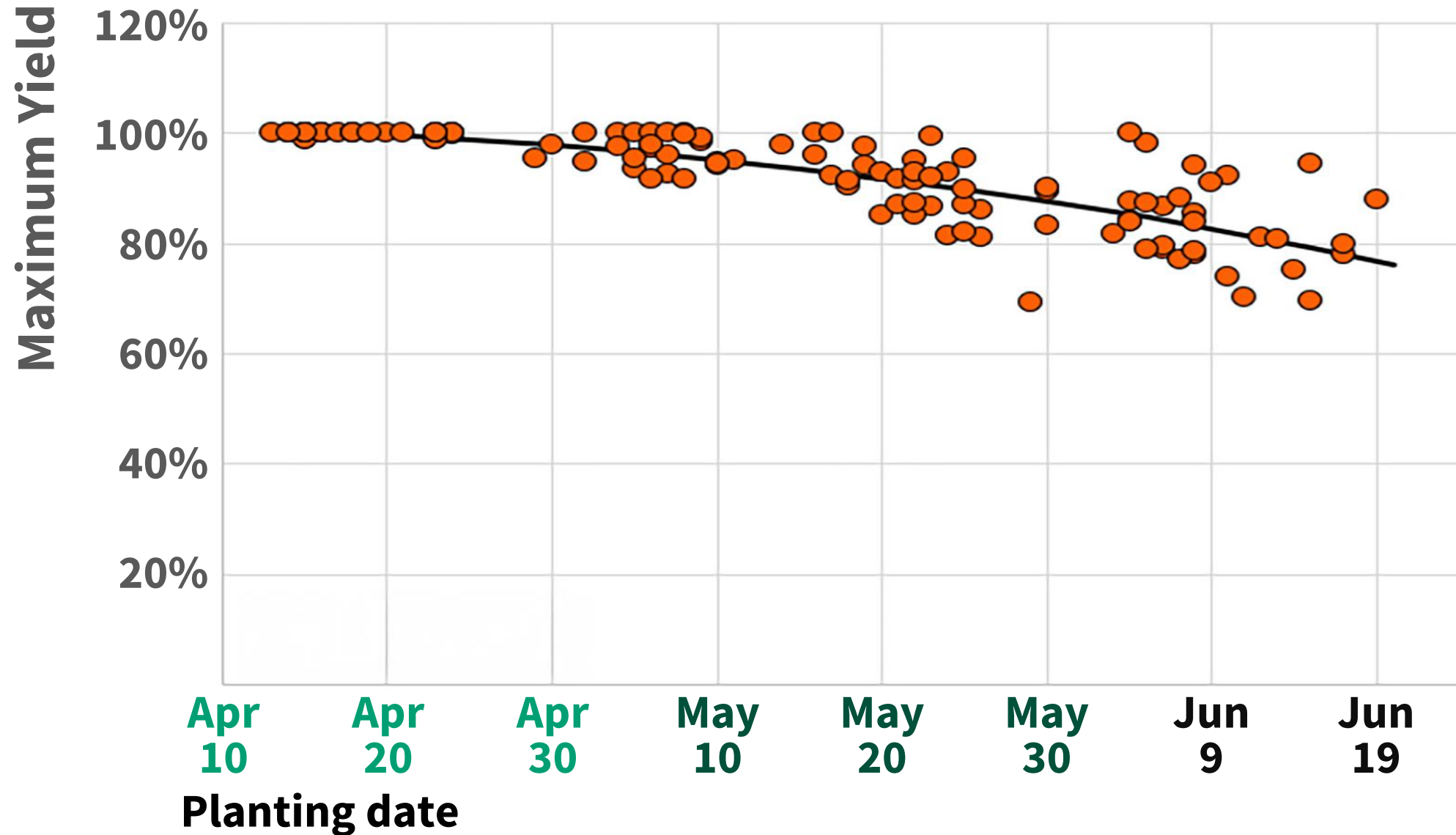
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Plant early



Soybean planting date response, Illinois

<https://farmdoc.illinois.edu/field-crop-production/early-season-soybean-management-in-2023.html>



Strategies

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Observation from PCM data

- **Producer orientation. Producers often have:**
 - Above university nitrogen rate
 - Higher pesticide costs
 - More tillage passes
- **High-yields is not the same as having the highest profitability**

Strategies

1. Be a low-cost producer
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Programs

- ARC/PLC
- Crop insurance – likely need high levels, stick with Federally subsidized products:
High-coverage level RP, maybe add ECO
- Ad Hoc federal payments
(e.g., Emergency Relief Program)
- Farming practice (Soil Health) payments

Incentives through Partnerships



Precision Conservation Management



Payments coming from USDA and PepsiCo/Walmart.

PepsiCo and Walmart share claim on the carbon asset.

Cover Crops	No-Till/Strip Till	MRTN/10% N Reduction
\$15/acre 1 st and 2 nd year	\$10/acre 1 st and 2 nd year	\$10/acre 1 st year
\$10/acre 3 rd year and beyond	\$5/acre 3 rd year and beyond	

Incentives through Partnerships



Statewide Cover Crop Incentive Program

- Payments available for new & existing cover crop acres
- Access to DTN's Digital Marketplace connecting you to other ecosystem service opportunities



Year 1	Year 2	Year 3
\$25/acre	\$15/acre	\$10/acre

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