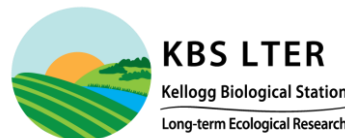


# What Incentives Are Needed to Encourage Farmers to Plant Biodiversity-Promoting Prairie Strips?

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Michigan State University

*Presented at the 2019 Heartland Environmental and Resource Economics Workshop at Illinois on 09/28/19.*



Michigan State University  
**AgBioResearch**

# Prairie Strips Can Improve Environmental Quality



Photos courtesy of Iowa State University

# Prairie Strips Can Improve Environmental Quality



- Schulte et al, 2017:
  - ↓ Soil Erosion
  - ↓ Nutrient Pollution
  - ↑ Habitat



- Helmers et al, 2012:
  - Sediment Removal

Photos courtesy of Iowa State University

# Prairie Strips: Costs and Benefits

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Benefits

↑ Environmental  
Quality

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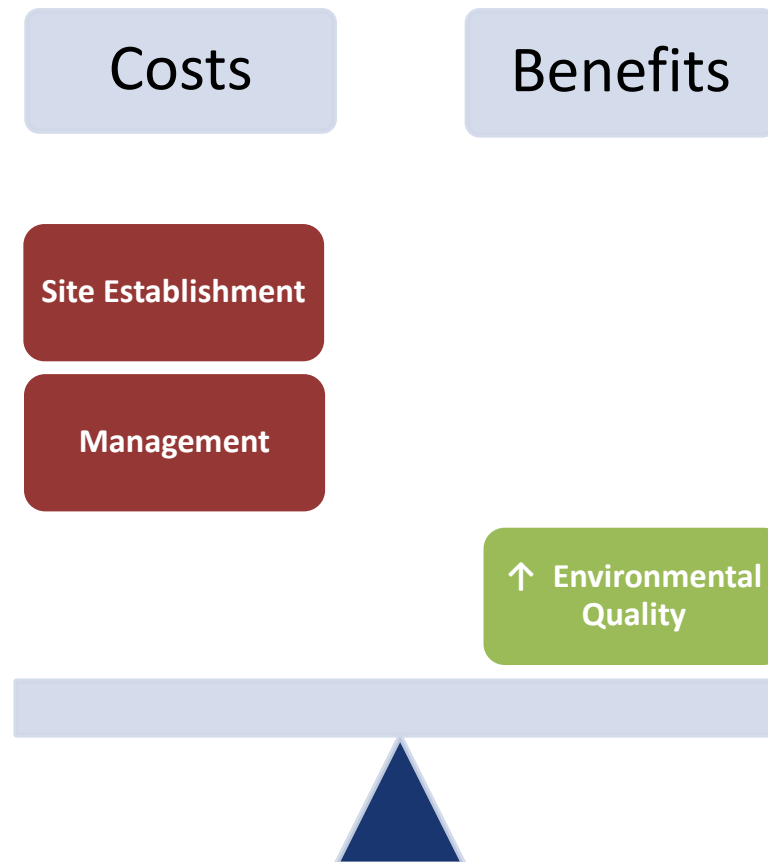
Costs

Benefits

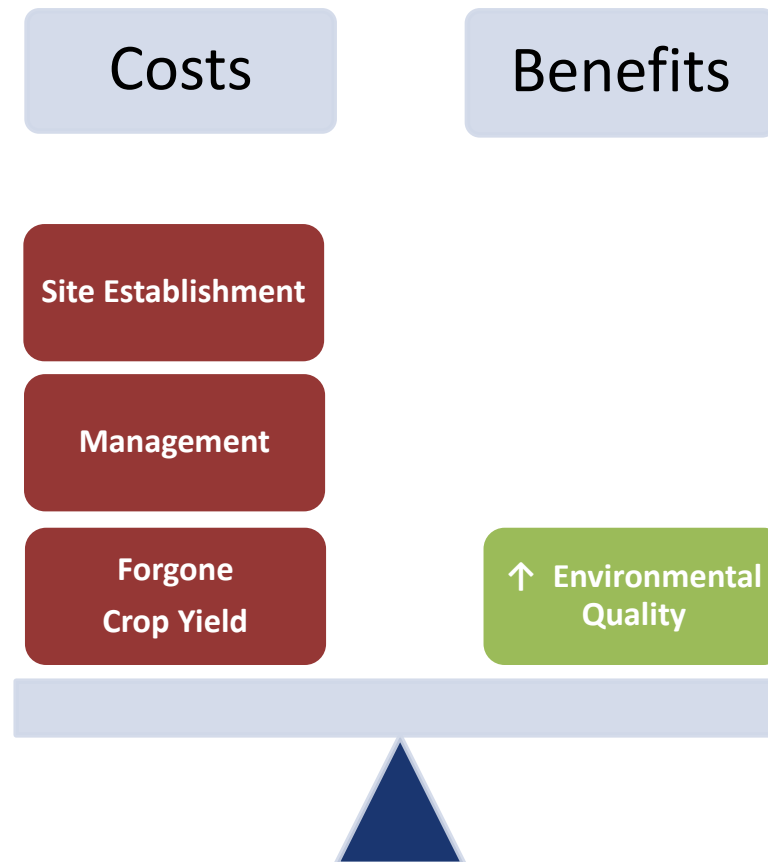
Site Establishment

↑ Environmental  
Quality

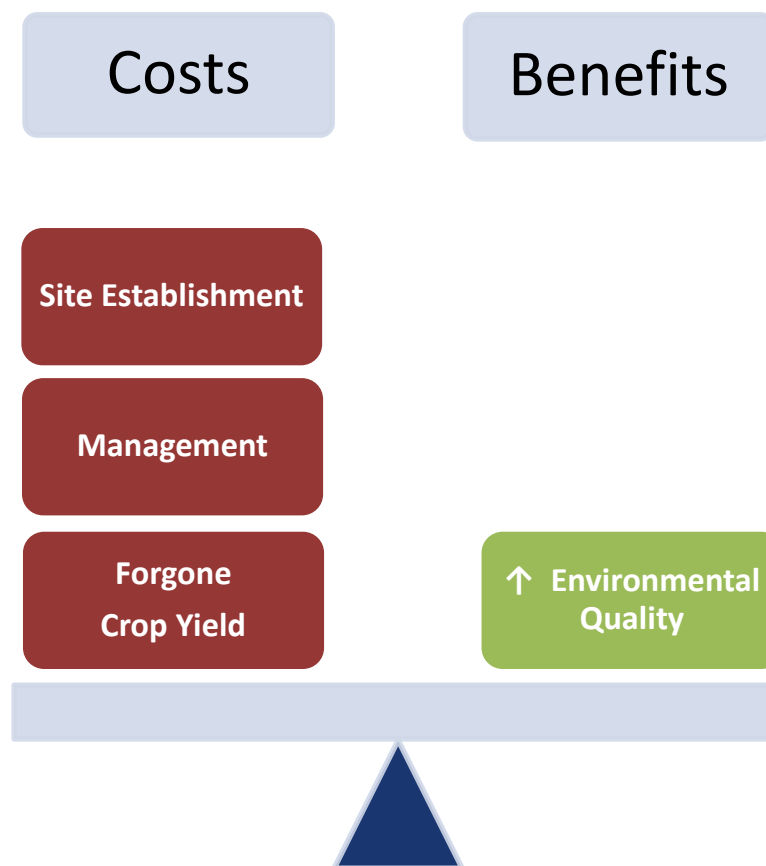
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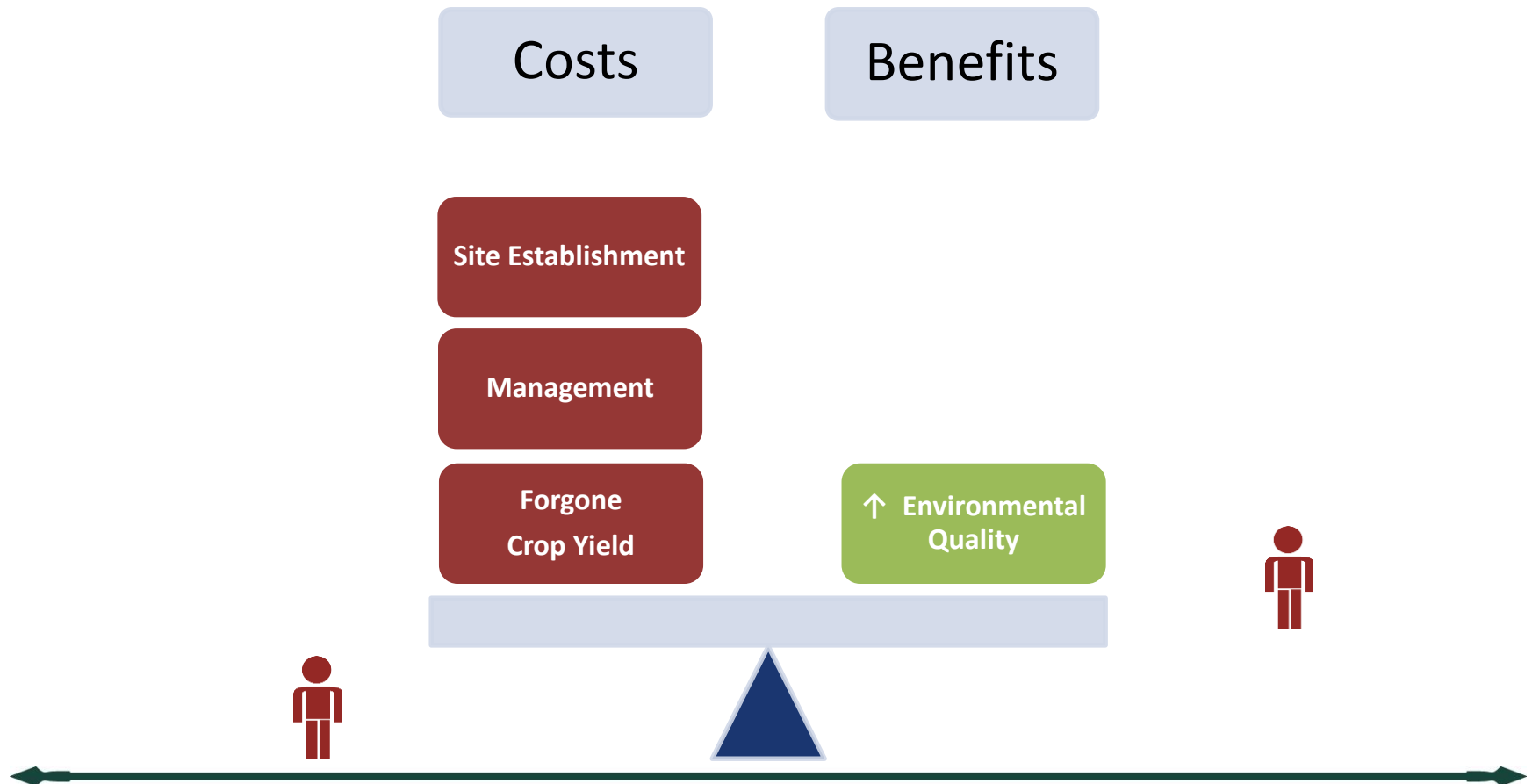
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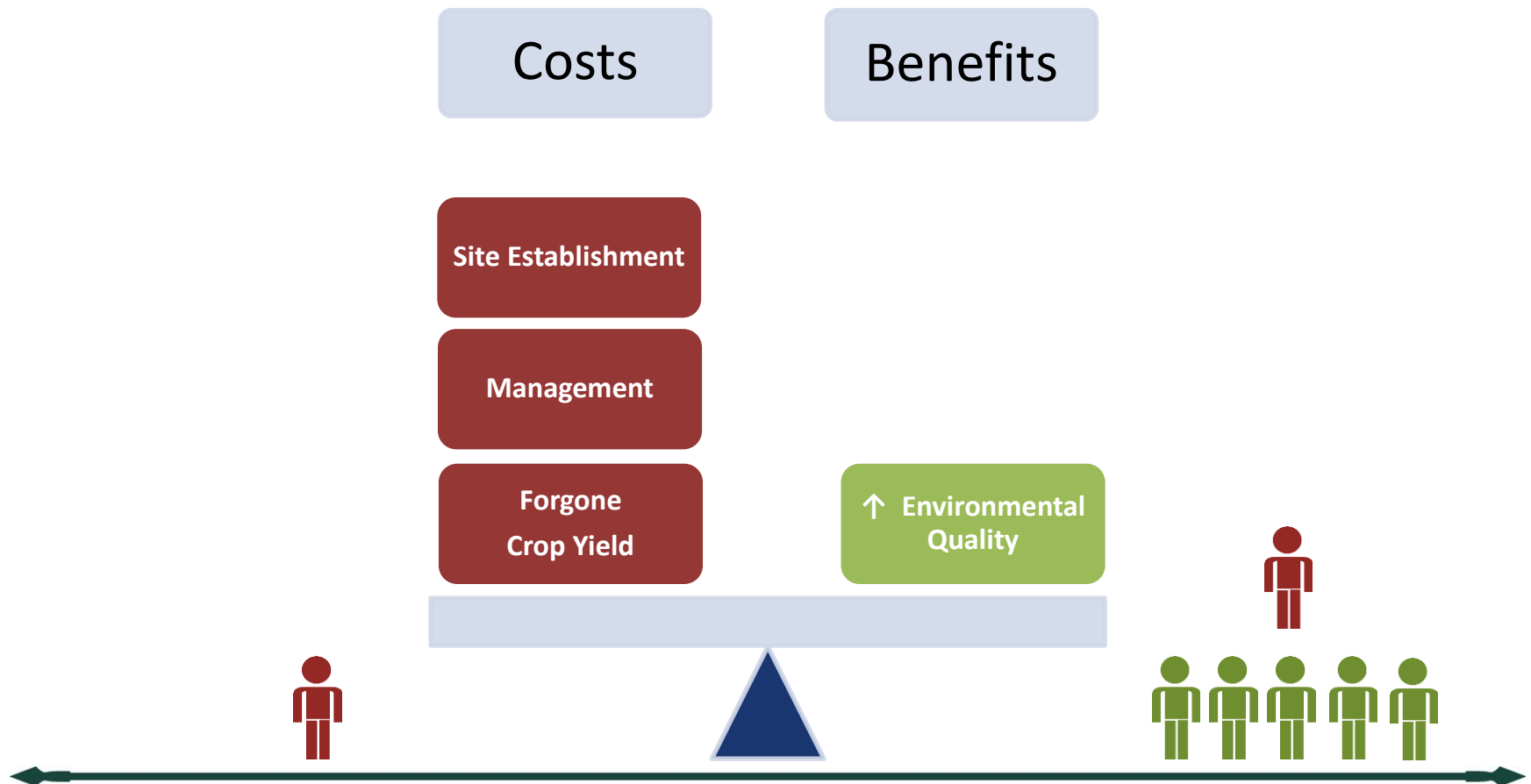
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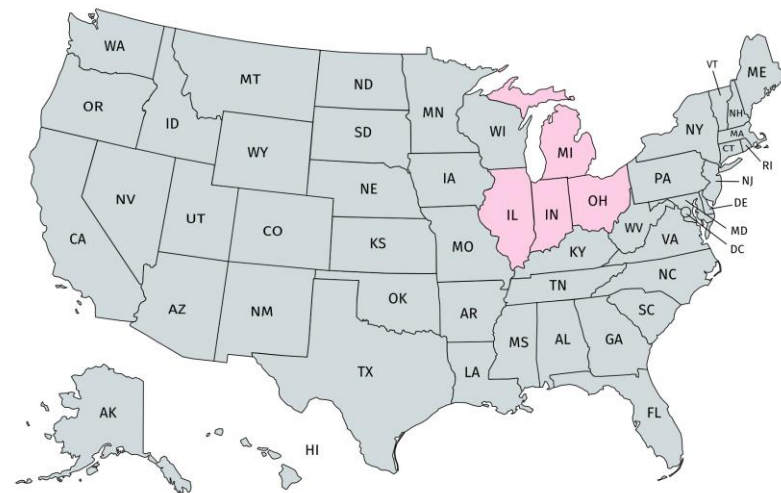
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# RQ: What Incentives are Needed for Farmers to Adopt Society-Benefiting Prairie Strips?

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- Mail survey
- March 2018
- Corn & soybean farmers
- 3534 addresses contacted
  - ~28% response rate



# Dichotomous Choice Contingent Valuation: Willingness to Plant Strips

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## PRAIRIE STRIP CONTRACT

<b>Length:</b>	10 years beginning after harvest in <u>2019</u> , ending after harvest in 2029
<b>Seed:</b>	Mix of perennial prairie grasses and wildflowers, provided by government
<b>Size:</b>	About 5% of the enrolled field
<b>Configuration:</b>	Designed by farmer with extension agent to maximize conservation benefits and accommodate field equipment
<b>Management responsibilities performed by farmer:</b>	
	<i>Autumn 2019:</i> Tillage and herbicide burndown, seed by broadcast or drill
	<i>Spring 2020 and Spring 2021:</i> Mow two or three times to control weeds
	<i>Remaining Years:</i> Mow and spot herbicide application as needed
<b>Payment to you:</b>	<b>\$PaymentOffer</b> per set-aside acre per year ( $10 * \$PaymentOffer$ per set-aside acre over ten years)

# Dichotomous Choice Contingent Valuation: Willingness to Plant Strips

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**F5. Would you enroll your field in the prairie strip program at \$PaymentOffer per acre per year?**

*Your answer may help shape future government conservation programs and policy.*

No    Yes

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0.5 x CRP

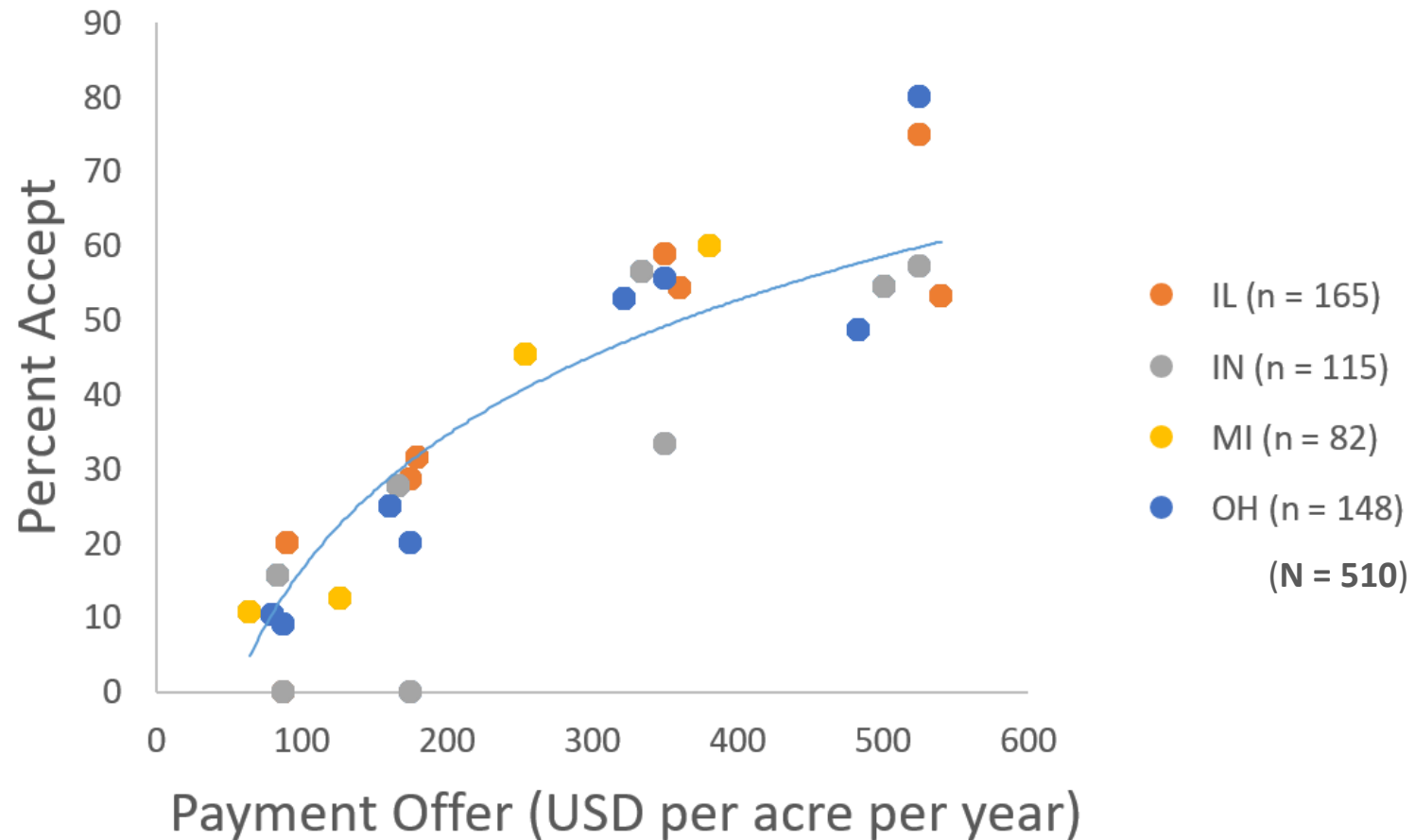
1 x CRP

2 x CRP

3 x CRP

# Tracing the Unconditional Supply Curve

# Tracing the Unconditional Supply Curve



## Next Steps

- Model farmers' decision rule to adopt prairie strips and factors affecting that decision:
  - Farmer objectives & motivations
  - Resource constraints, access to information
  - Farmer perceptions on prairie strips & the environment
- Create conditional supply curves
- Any advice appreciated!