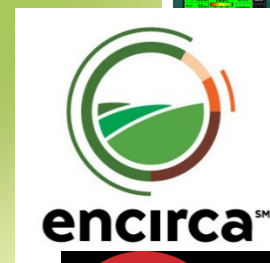


Precision Business Planning and Integrated Bioenergy Landscapes

June 8th 2016

Emerging Ag Information Services

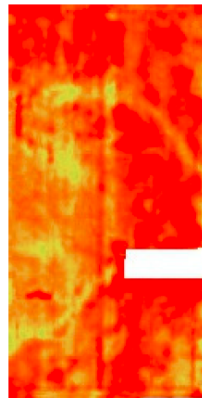
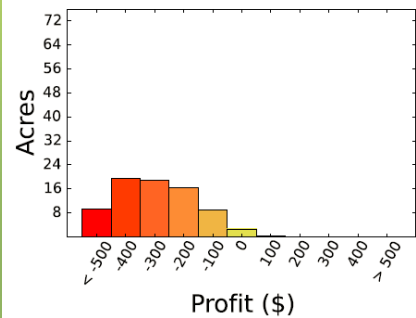
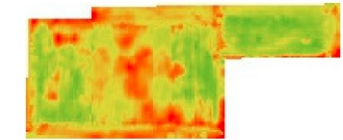
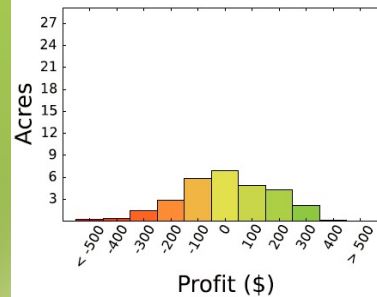
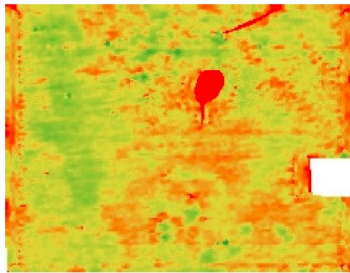
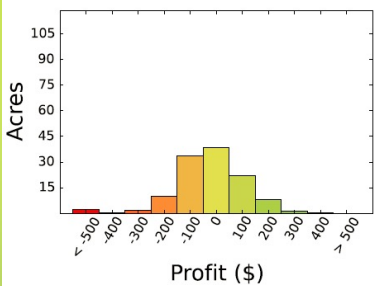
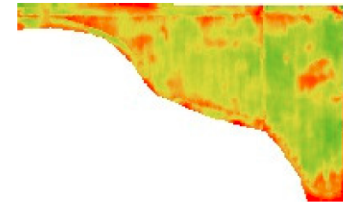
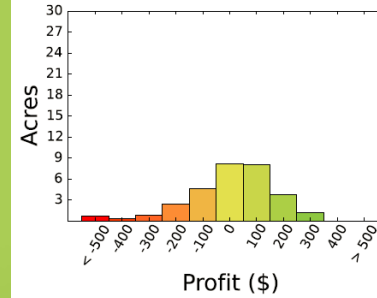
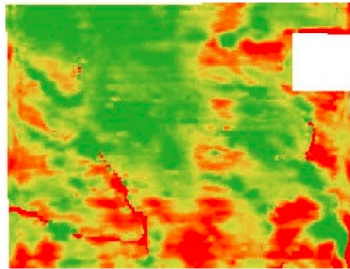
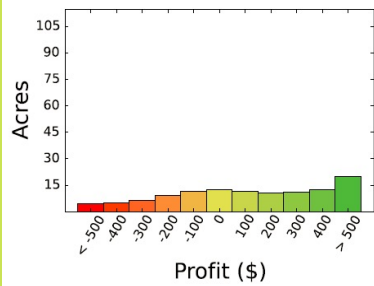


turning data into decisions for agricultureTM

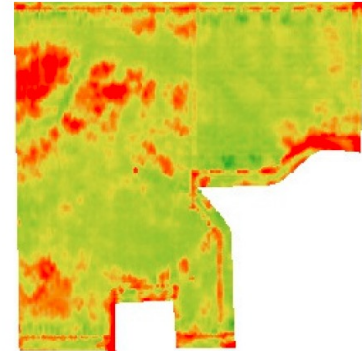
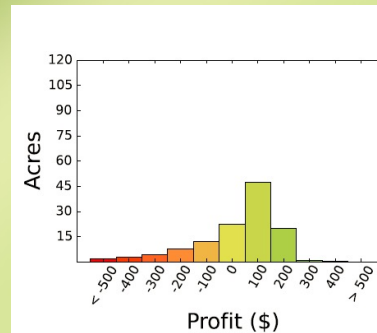
Precision Business Planning



Understanding Subfield Profit and ROI



Profit (\$/ac)

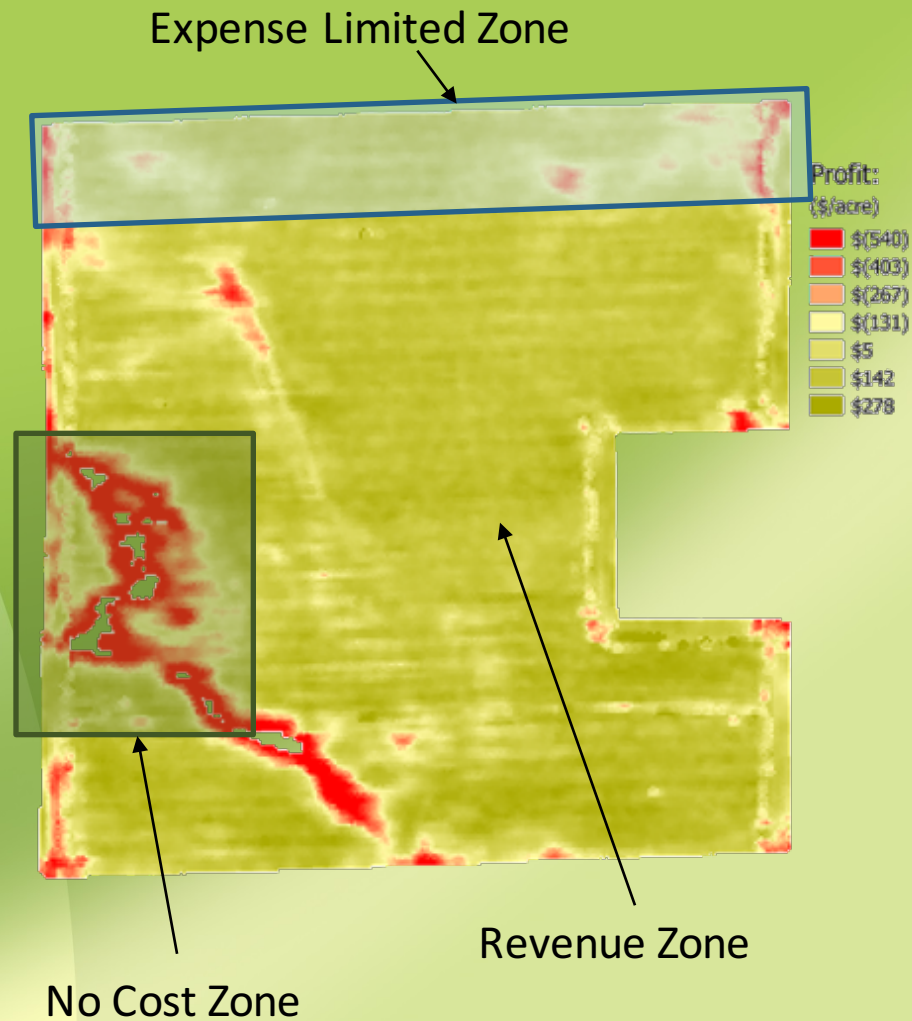


Environmental Performance and Economic Performance are driven by the same goal:

Maximize the output per unit of input



ROI Focused Agronomic Management



Precision Business Planning Workflow – Business Performance Review



Intelligence
Gathering

Business
Performance
Review

Opportunity
Ratio Analysis

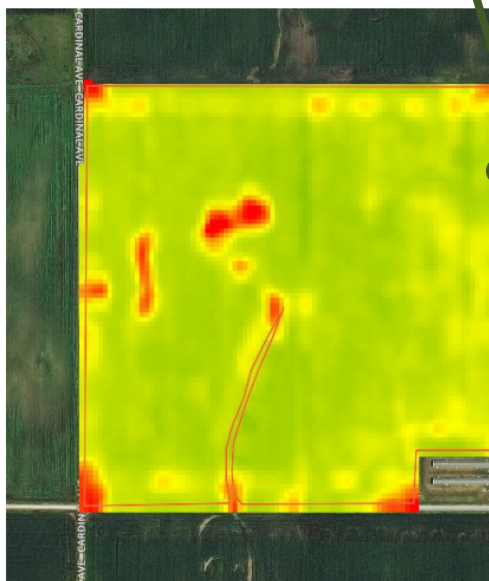
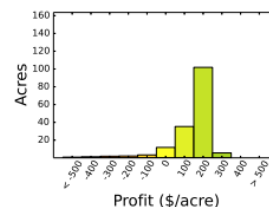
Negative Return
Assessment

Return Ratio
Business
Planning

In-season Plan
Adjustments

Preston Hog Building: Actual Production: 2015

Parameter	Value
Field Acreage	152.55ac
Average Yield	200.73bu/ac
Profit	\$150.43/acre
ROI	18.28 %
Total Field Expenses	\$125,562.41
Total Field Revenue	\$148,510.81
Total Field Profit	\$22,948.39



< 2015 Enterprise Performance

Field	Acreage	Revenue	Expenses	Profit	Profit/Acre	ROI
Total	2055.36	\$ 1,820,431.49	\$ 1,623,926.08	\$ 196,505.41	\$ 95.61	12.10 %
Preston Hog Building	152.55	\$ 148,511.96	\$ 125,563.39	\$ 22,948.57	\$ 150.43	18.28 %
Lakin Fox East	41.14	\$ 39,946.07	\$ 33,858.96	\$ 6,087.11	\$ 147.98	17.98 %
Preston 60	54.58	\$ 52,915.95	\$ 44,922.72	\$ 7,993.23	\$ 146.46	17.79 %
Building Site	71.28	\$ 67,697.71	\$ 58,667.19	\$ 9,030.52	\$ 126.70	15.39 %
Preston Wright 80	79.22	\$ 51,050.86	\$ 44,269.65	\$ 6,781.21	\$ 85.60	15.32 %
Preston Porterfield	149.30	\$ 141,559.81	\$ 122,886.84	\$ 18,672.96	\$ 125.07	15.20 %
Lakin Franke	396.31	\$ 348,556.89	\$ 304,443.16	\$ 44,113.73	\$ 111.31	14.49 %
Hanson West	30.61	\$ 19,523.86	\$ 17,107.60	\$ 2,416.26	\$ 78.92	14.12 %
West 40	44.14	\$ 41,282.68	\$ 36,334.93	\$ 4,947.76	\$ 112.08	13.62 %
Lakin Sieple North	32.78	\$ 30,525.73	\$ 26,982.18	\$ 3,543.55	\$ 108.10	13.13 %
Brandt West	69.24	\$ 64,178.59	\$ 56,994.24	\$ 7,184.35	\$ 103.76	12.61 %
Freverts	37.59	\$ 34,338.45	\$ 30,943.81	\$ 3,394.64	\$ 90.30	10.97 %
Preston Home	71.90	\$ 65,638.76	\$ 59,177.30	\$ 6,461.46	\$ 89.87	10.92 %

Precision Business Planning Workflow – Return Ratio Analysis



Intelligence
Gathering

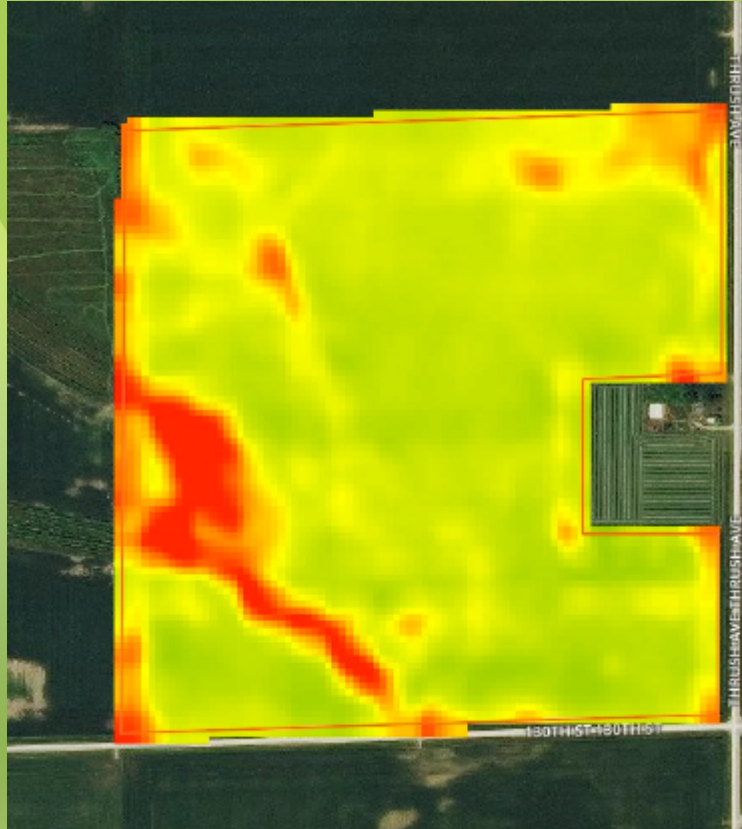
Business
Performance
Review

Opportunity
Ratio Analysis

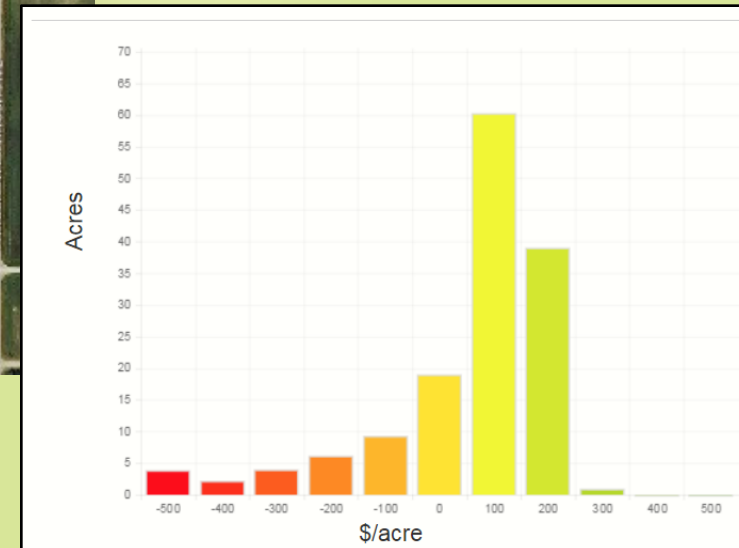
Negative Return
Assessment

Return Ratio
Business
Planning

In-season Plan
Adjustments



Parameter	Value
Field Acreage	143.26ac
Average Yield	170.94bu/ac
Profit	\$53.56/acre
ROI	6.69 %
Production Efficiency	213.37 bu/\$1000
Loss Ratio - Land	0.23
Loss Ratio - Capital	\$26,083.96
Total Field Expenses	\$114,766.44
Total Field Revenue	\$122,439.50
Total Field Profit	\$7,673.06



Precision Business Planning Workflow – Return Ratio Business Planning



Intelligence
Gathering

Business
Performance
Review

Opportunity
Ratio Analysis

Negative Return
Assessment

Return Ratio
Business
Planning

In-season Plan
Adjustments

Agronomic
Decisions

Land
Improvement

Precision
Management

Alternative
Low Cost
Revenue

Precision Business Planning Workflow – Opportunity Ratio Business Planning



Intelligence
Gathering

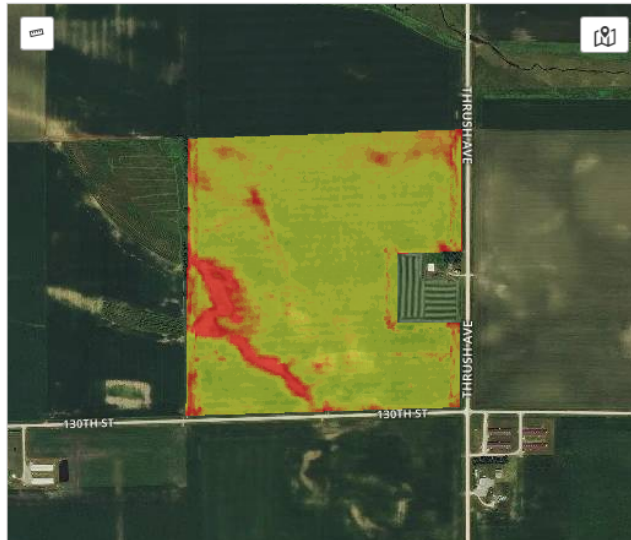
Business
Performance
Review

Opportunity
Ratio Analysis

Negative Return
Assessment

Return Ratio
Business
Planning

In-season Plan
Adjustments



Scenario: Actual Production

Parameter	Value
Field Acreage	143.3 ac
Average Yield	170.2 bu/ac
Profit	\$49.63/acre
ROI	6.2 %
Production Efficiency	212.4 bu/\$1000
Acreage Opportunity Ratio	23 %
Working Capital Opportunity	\$25,973.83
Total Field Expenses	\$114,800.50
Total Field Revenue	\$121,912.06
Total Field Profit	\$7,111.56



Scenario: Conservation-Final

Parameter	Value
Field Acreage	143.3 ac
Average Yield	179.2 bu/ac
Profit	\$93.85/acre
ROI	12.6 %
Production Efficiency	239.7 bu/\$1000
Acreage Opportunity Ratio	22 %
Working Capital Opportunity	\$19,494.23
Total Field Expenses	\$107,085.95
Total Field Revenue	\$120,534.99
Total Field Profit	\$13,449.04

Conservation Planning: Financial and Environmental Benefits



Nutrient Reduction Strategy Implications

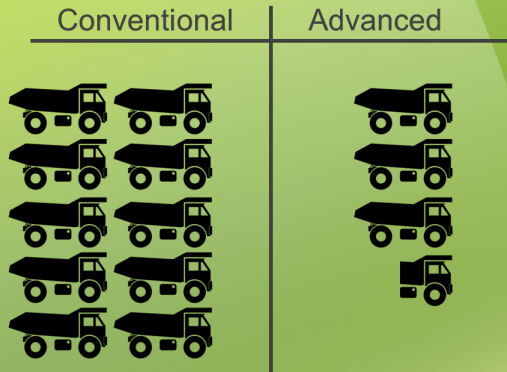
- First set of improvements through improved business performance
- Fast actions to slow down regulation
- Buffered production systems

Adding Context to Environmental Performance Impacts

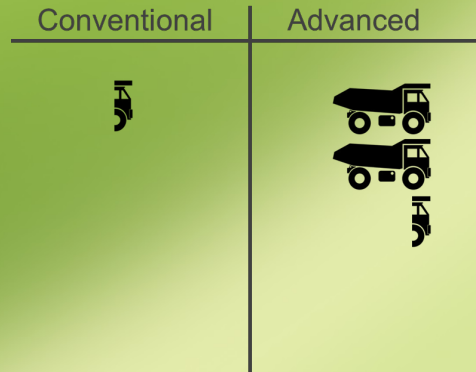


	Conventional Management	Advanced Management
Annual Soil Loss (tons of soil)	204	69
Annual Soil Carbon Change (lbs C)	8,137	44,341
Annual Nitrate Loss (lbs NO3)	7,779	3,442
Annual CO2 Loss (lbs CO2)	751,311	717,169

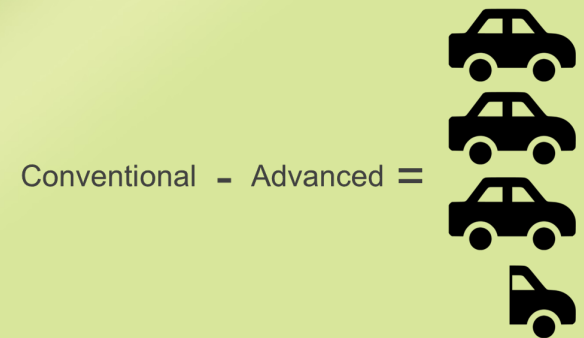
Soil Erosion



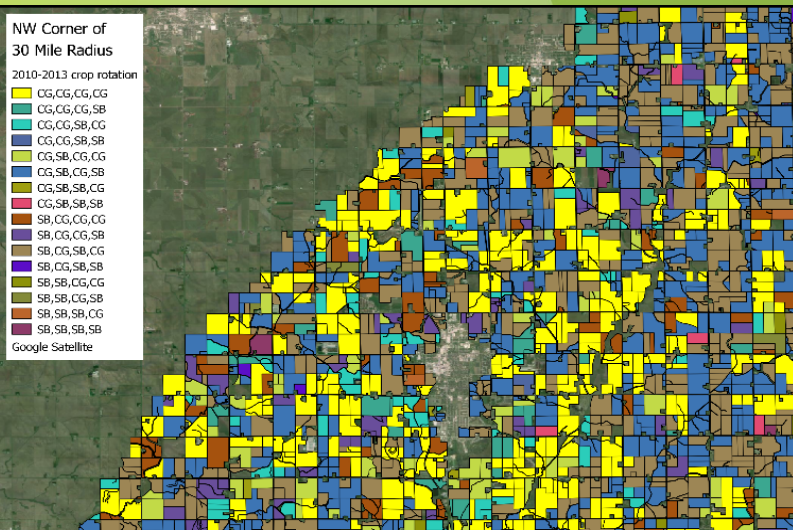
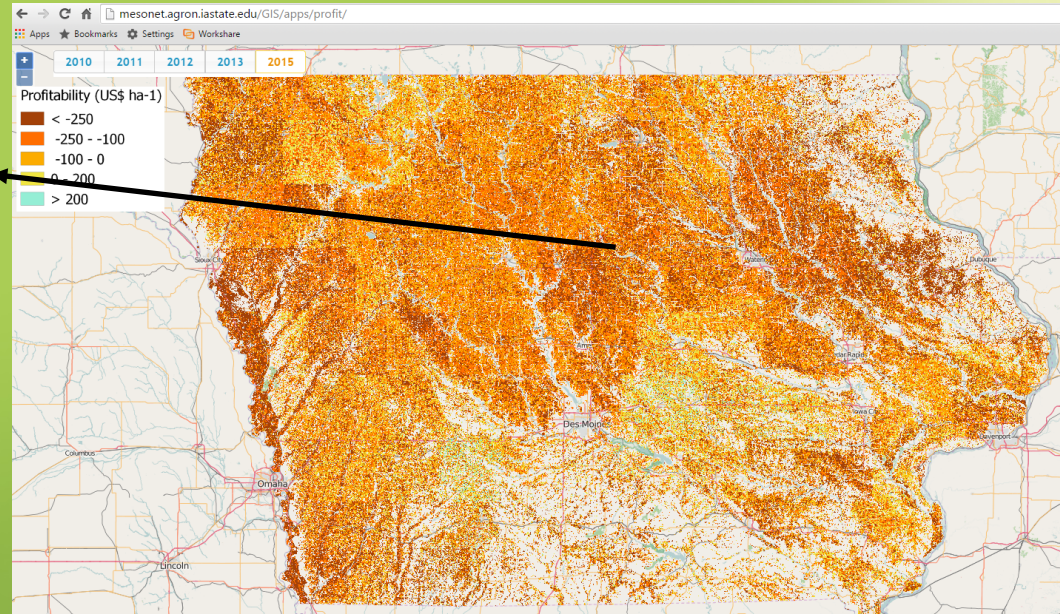
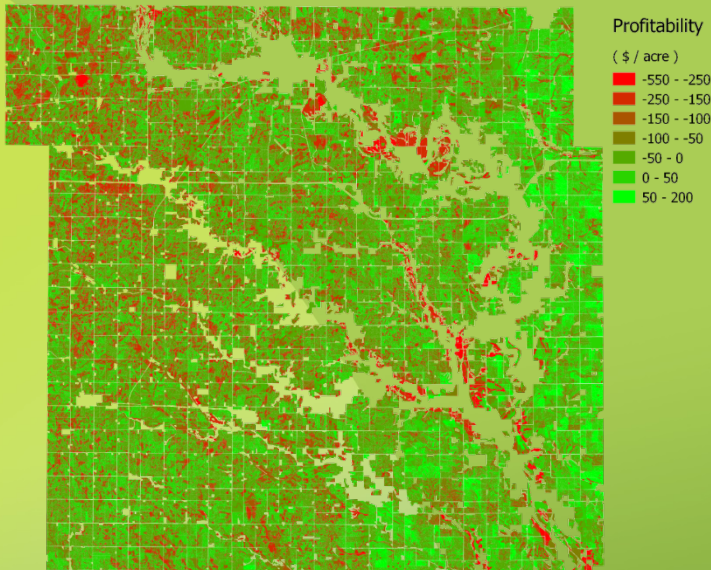
Soil Carbon



CO₂ Gas Flux



Identifying the Opportunities



- Between 2-3 million acres annually at an expected loss
- Over \$1B annually in misallocated working capital

Value Across the Supply Chain



Land Managers



Ag Retail/CCA's



Conservation Professionals



Policy Administrators



Financial Services/
Investment/
Farm Management

Questions?