Managing Agricultural Landscapes for Water Quality and Wildlife

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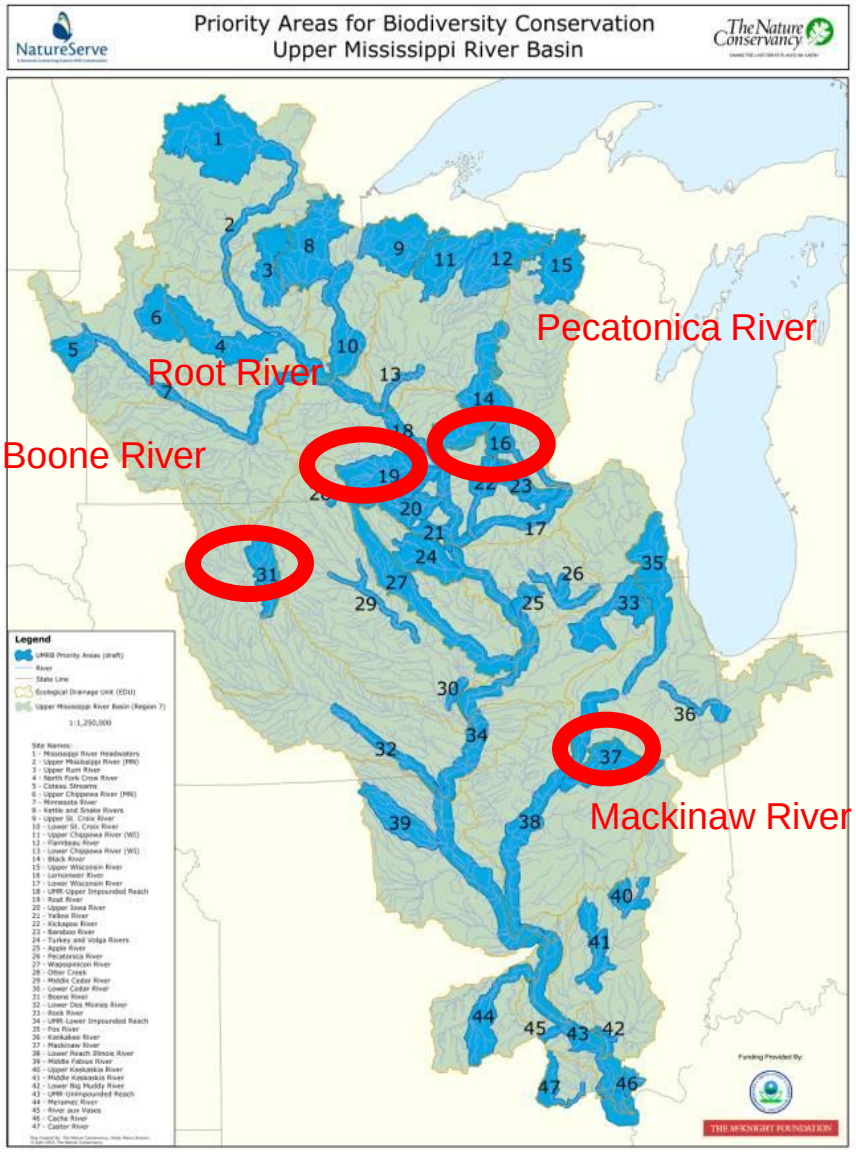
TNC's Aquatic Conservation Plan for the Upper Mississippi River w/ highlighted Proof of Concept Watersheds



Pecatonica River Wisconsin Buffer Initiative (WBI) Pilot Project

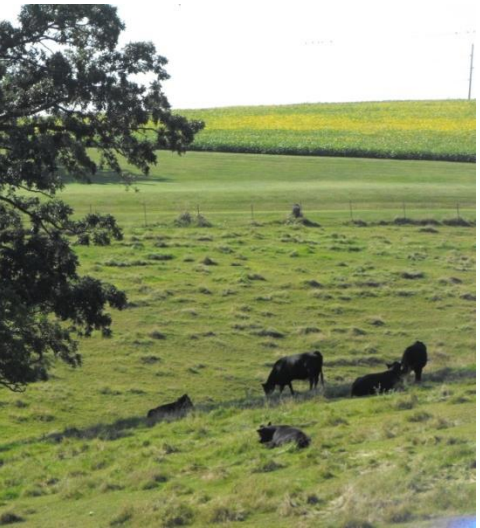


Photo credits: (Top) Gerald H. Emmerich, Jr.; (Bottom) Timothy Lindenbaum/TNC; Flickr Creative Commons; (Left) Dane County LWRD

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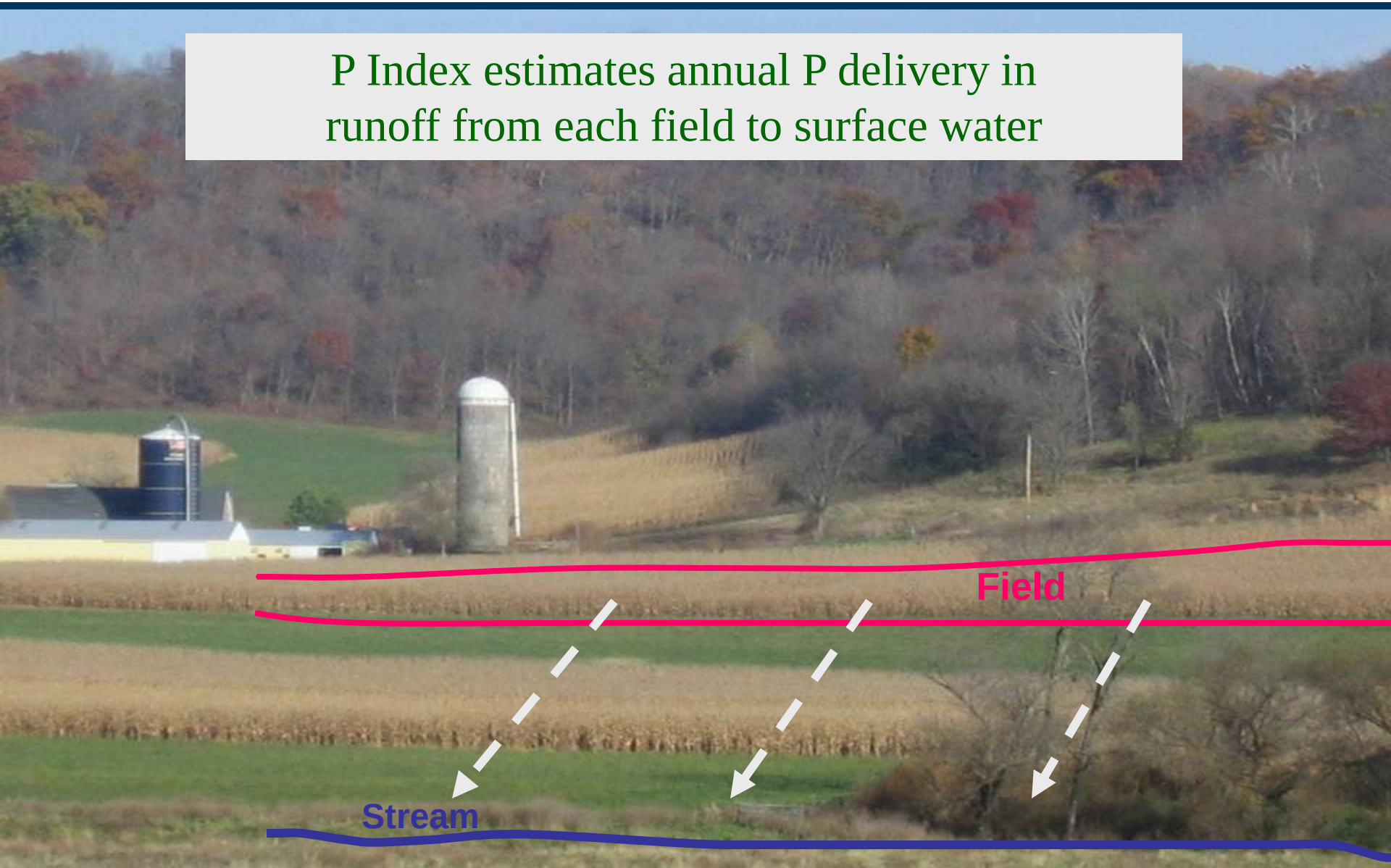
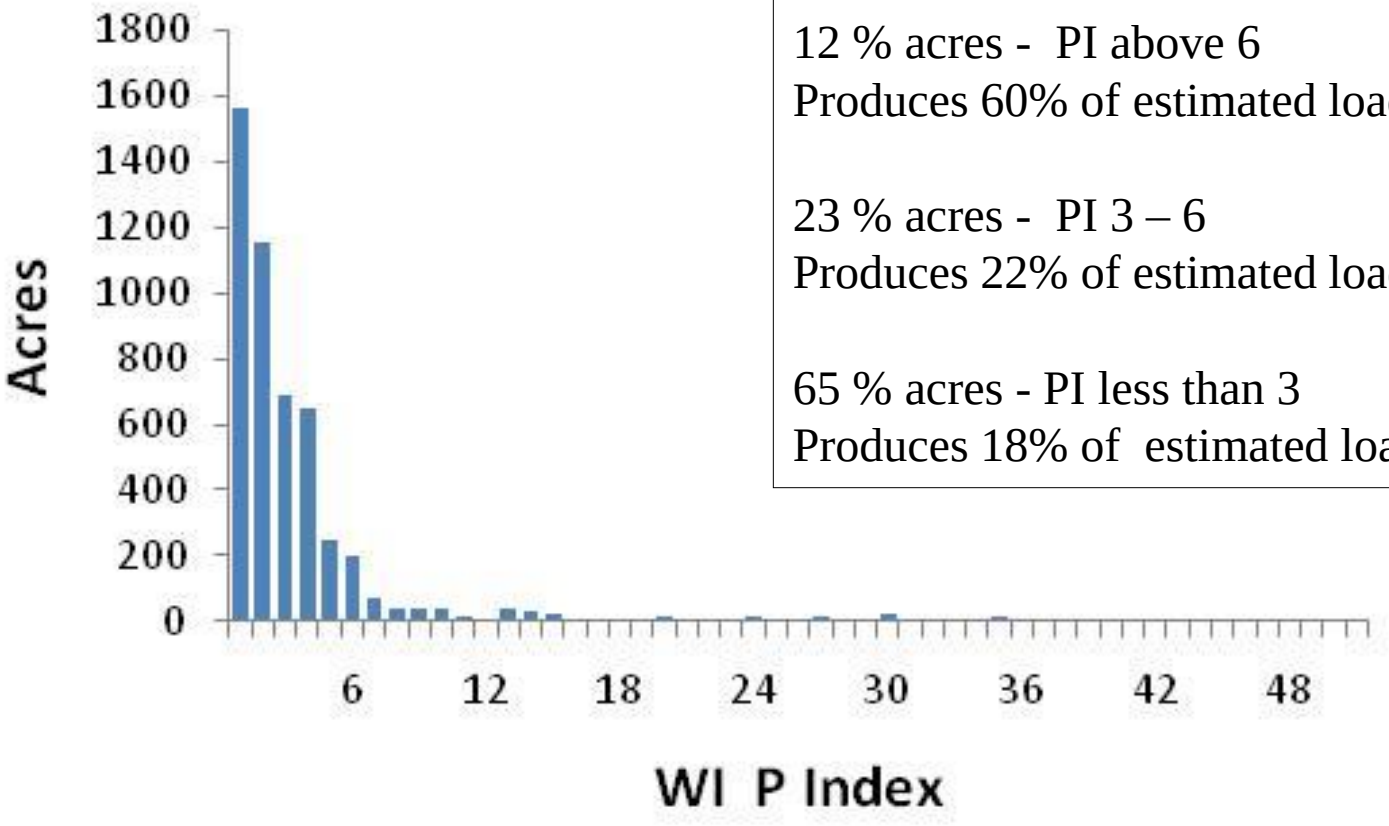
WBI Strategy: Use WI P Index to target high P loss areas within watersheds

P Index estimates annual P delivery in runoff from each field to surface water



Pleasant Valley P Index Distribution



Cropland, MIG, and dry lots

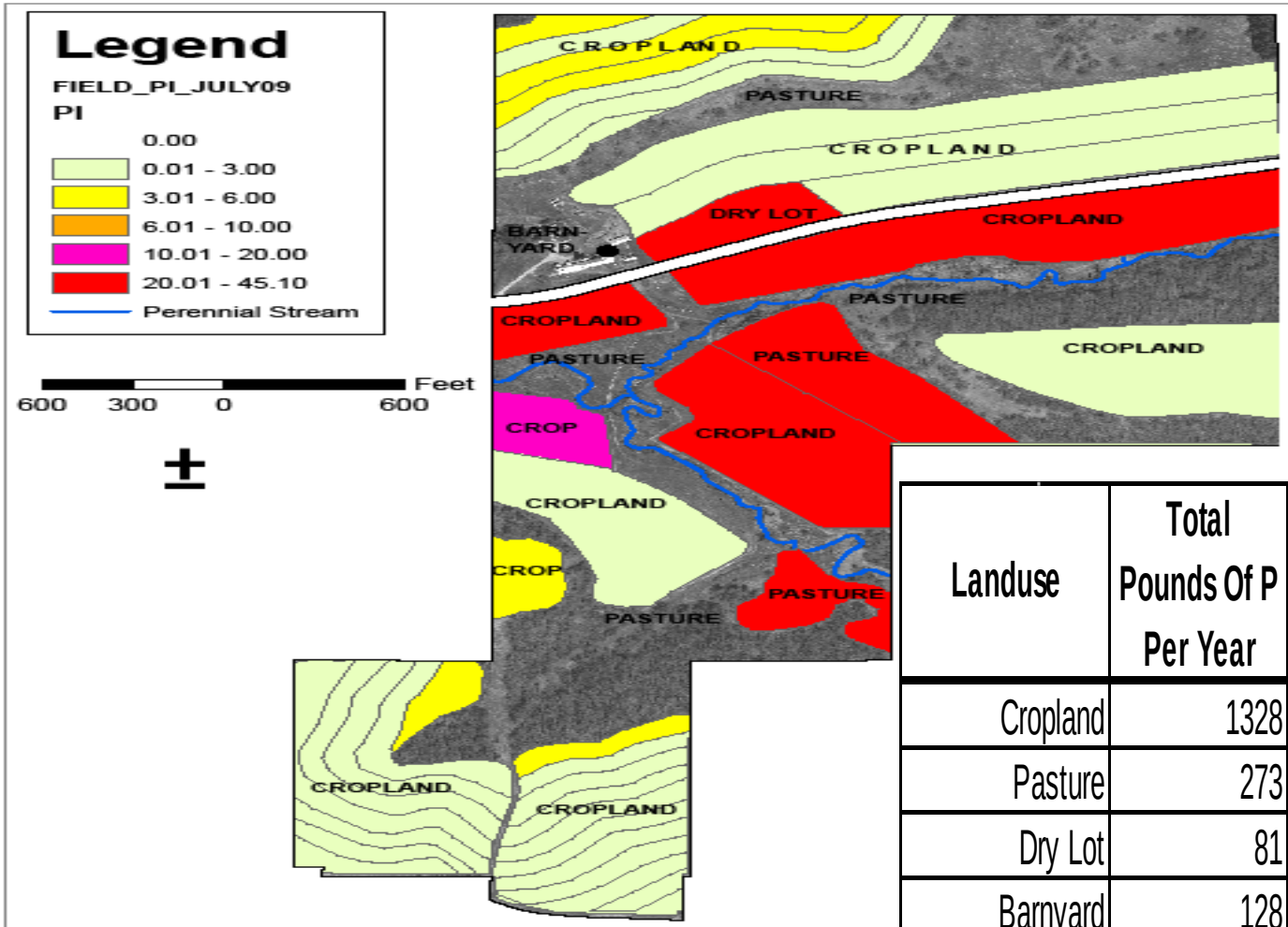
12 % acres - PI above 6
Produces 60% of estimated load

23 % acres - PI 3 – 6
Produces 22% of estimated load

65 % acres - PI less than 3
Produces 18% of estimated load

Barn yard was assumed to be the primary source of phosphorus

Field PI Values Example Farm



Landuse	Total Pounds Of P Per Year	Percent Of Total Phosphorous
Cropland	1328	73.4
Pasture	273	15.1
Dry Lot	81	4.5
Barnyard	128	7.1
Total	1810	100.0

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“Soft” practices targeting cropland much cheaper than “Hard” practices targeting barnyards and lots

No-till

Contour strips

Cover crops after silage

Nutrient management

Grassed filters

Rotation changes:

- Forage versus grain crop
- Corn as grain vs. silage
- Hay/grain in rotation

Harvestable filters

Preliminary Results: Precision Conservation

- Second year post-treatment showing downward trend in Phosphorus
- In the first year post implementation, there was a 37% decrease in phosphorus loads during storm events in the Pleasant Valley watershed.
- With 90% confidence, we can say the downward trend in phosphorus loads is because of the practices put into place on targeted fields and pastures. Sediment loads were down 25%.
- 30% of the sediment going by the gage each year has a source from the stream beds and 70% from the farm fields

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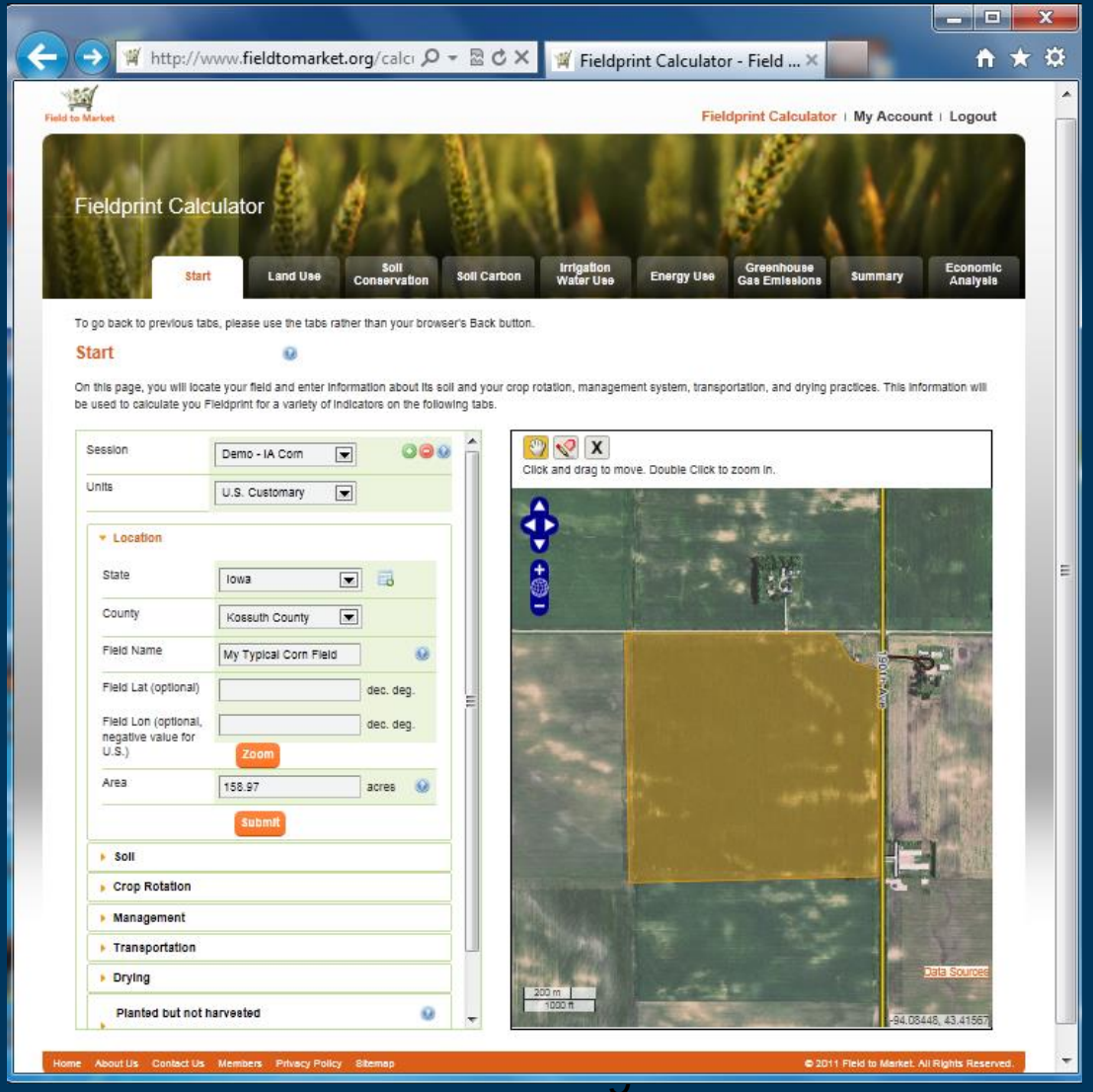
Fieldprint Calculator Start Page

http://www.fieldtomarket.org/fieldprint-calculator/



For More information

http://www.greatriverspartnership.org/en-us/NorthAmerica/Mississippi/Pages/Proof-of-ConceptProjects.aspx

www.ctic.org/WIIN

Grassland Conservation:

Grand River Grasslands

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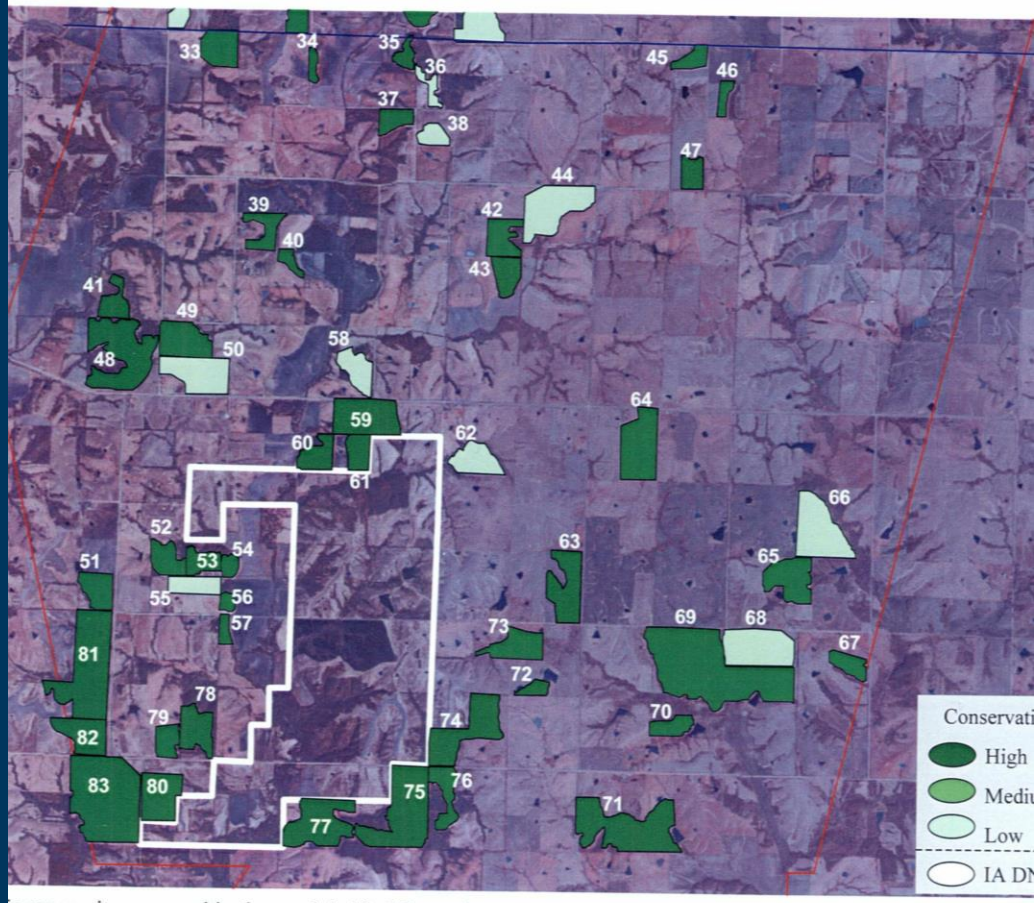
Many prairie remnants still exist in agricultural landscapes



...e macrosites mapped in the south half of the project area of southeast Ringgold County. Sites are classified t...value by shading of green and identified by their number. The project area boundary is shown in red.

Dunn Ranch by the Numbers

- 3,258: Number of acres
- 100: Percent planted with native seed
- 51: Number of bison
- 10,000: Pounds of seed harvested Annually

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Ecological Grazing: Patch-Burn Grazing

A Few Examples of Other TNC Midwestern Grassland Projects

Nachusa Grasslands – IL

Glacial Ridge – MN

Broken Kettle Grasslands – IA

Military Ridge – WI

For more information go to www.nature.org

- Check out various midwestern state program web sites on the TNC site

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TNC Bioenergy Project

Alliant/Walton Family Foundation Project

- Evaluated economics and ecological impacts of bioenergy opportunities in MN and WI
- Created lots of great habitat – 500 acres of prarie, 1000 acres of cool season grasslands
- Ultimately found that market would not support

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Bioenergy and Biodiversity

- May encourage more perennial cover which reduces sediment and nutrients entering nation's freshwater systems
- Some forms provide critical nesting cover for grassland birds, insects and other wildlife, esp. if some refuge areas are maintained
- Can result in "energy sprawl", e.g. conversion of some native landscapes to perenial monocultures