Managing Agricultural Landscapes for Water Quality and Wildlife

Dave De Geus, Associate Director, Ag and Watersheds, North American Freshwater Program
June 25, 2014
TNC’s Aquatic Conservation Plan for the Upper Mississippi River w/ highlighted Proof of Concept Watersheds
Pecatonica River
Wisconsin Buffer Initiative (WBI) Pilot Project
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.

<table>
<thead>
<tr>
<th>Landuse</th>
<th>Total Pounds Of P</th>
<th>Percent Of Total Phosphorous</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cropland</td>
<td>1328</td>
<td>73.4</td>
</tr>
<tr>
<td>Pasture</td>
<td>273</td>
<td>15.1</td>
</tr>
<tr>
<td>Dry Lot</td>
<td>81</td>
<td>4.5</td>
</tr>
<tr>
<td>Barnyard</td>
<td>128</td>
<td>7.1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1810</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
“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
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.
http://www.fieldtomarket.org/fieldprint-calculator/
http://www.greatriverspartnership.org/en-us/NorthAmerica/Mississippi/Pages/Proof-of-ConceptProjects.aspx

www.ctic.org/WIIN
Grassland Conservation:
Grand River Grasslands
Many prairie remnants still exist in agricultural landscapes
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
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
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 prairie, 1000 acres of cool season grasslands

• Ultimately found that market would not support
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 perennial monocultures