Minnesota Prairie Conservation Plan 2010

A habitat plan for native prairie, grassland, and wetlands in the Prairie Region of western Minnesota

STEVE CHAPLIN
MINNESOTA PRAIRIE PLAN WORKING GROUP
JUNE 7, 2011
New Funding for Prairie Conservation

• In 2008, the citizens of Minnesota passed a constitutional amendment increasing the state sales tax by 3/8¢

• One third of the increase ($70-100 M per year) is to restore, protect, and enhance prairies, forests, wetlands, and habitat for fish, game and wildlife
Minnesota Prairie Plan
Working Group

Core group:

Marissa Ahlering, TNC
Steve Chaplin, TNC
Carmen Converse, DNR
Meredith Cornett, TNC
Ryan Drum, USFWS
Neal Feeken, TNC
Jason Garms, DNR
Diane Granfors, USFWS
Fred Harris, DNR
Greg Hoch, MPCS
John Jaschke, BWSR
Matt Holland, PF

Tom Landwehr, TNC (facilitator)
Tom Larson, USFWS
Jim Leach, USFWS
Kevin Lines, BWSR
Clint Miller, TCF
Mary Mitchell, USFWS
Darby Nelson, LSOHC
Ray Norrgard, DNR
Mark Oja, NRCS
Bill Penning, DNR
Minnesota’s Prairie Region

- 24.9 million acres
- Includes the Prairie and Forest-Prairie Transition Planning Sections employed by the Lessard-Sams Outdoors Heritage Council
Minnesota Native Prairie

Of 18 million original prairie acres, less than 2% remain (235,000 acres)

~ 114,000 acres are legally unprotected

Even if we protect every acre of remaining native prairie, we cannot maintain viable prairie animal species or many ecosystem functions.
Functional Prairie Systems

“A native prairie ecosystem that is of sufficient size, habitat condition, and landscape composition to maintain natural ecological processes and viable populations of nearly all of the native animals and plants that would naturally be found there”
Size Matters

Pyramid of Life
Tallgrass Prairie Ecosystem

- LARGE CARNIVORES
  - Wolf
- MEDIUM CARNIVORES
  - Badger
- LARGE GRAZERS
  - Bison
- PREDATORY BIRDS
  - Hawks
- MEDIUM GRAZERS
  - Plains Pocket Gopher
- LARGE PRAIRIE BIRDS
  - Upland Plover
- SMALL PRAIRIE MAMMALS
  - Ground Squirrels
- SMALL PRAIRIE BIRDS
  - Meadowlark
- BUTTERFLIES
  - Regal Fritillary
- PRAIRIE MOTHS
  - Wild Indigo Borer
- CONSERVATIVE PRAIRIE PLANTS
  - Prairie Fringed Orchid
- PRAIRIE INSECTS
  - Prairie Katydid
- SMALL PRAIRIE MAMMALS
  - Short-tailed Shrew
- PRAIRIE GRASSES AND FORBS
  - Big Bluestem
- PRAIRIE ANTS
  - 1 - 10
- SOIL ORGANISMS
  - .1 - 1

Acres of continuous liveable habitat needed to survive for generations:

- 1,000,000 - 10,000,000
- 100,000 - 1,000,000
- 10,000 - 100,000
- 1,000 - 10,000
- 100 - 1,000
- 10 - 100
- 1 - 10
- .1 - 1
Conservation Vision for the Prairie Region

“In strategic locations, large areas of prairie, grassland, and associated habitats will be protected and restored to create functioning prairie systems that provide major opportunities for sustainable grass-based agriculture such as grazing and haying. These functioning landscapes will also contribute clean water, fish and wildlife habitat complexes, high quality recreational opportunities, and thriving rural communities where Minnesota’s citizens will want to live and visit.”
Multifunctional Landscapes

Can grass-based economic uses provide a sufficient return on labor and investment to sustain rural families and communities?

Prairie Seed Harvest at Glacial Ridge
Prairie Restorations Inc.
Prairie Conservation Overview

1. Core Areas

2. Corridors
   a) Prairie/Grassland Complexes
   b) Remainder of Corridors

3. Agricultural Matrix
Minnesota Prairie Core Areas

36 landscapes, 1.5 million acres, ranging from 5,000 - 300,000 acres

Captures 71% of native prairie

~ 10% of landscapes are native prairie

Goal: 40% grassland, 20% wetland, 50% permanent protection
<table>
<thead>
<tr>
<th>Description</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Area Acreage</td>
<td>169,305</td>
</tr>
<tr>
<td>Native Prairie (NP)</td>
<td>7,223</td>
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<tr>
<td>Other Grassland</td>
<td>55,362</td>
</tr>
<tr>
<td>Grassland Habitat Shortfall from 40% Goal</td>
<td>5,137</td>
</tr>
<tr>
<td>Wetland</td>
<td>36,326</td>
</tr>
<tr>
<td>Wetland Habitat Shortfall from 20% Goal</td>
<td>0</td>
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<tr>
<td>Protected NP</td>
<td>2,813</td>
</tr>
<tr>
<td>NP Protection Shortfall</td>
<td>4,410</td>
</tr>
<tr>
<td>Protected Other Grassland</td>
<td>8,227</td>
</tr>
<tr>
<td>Grassland Protection Shortfall</td>
<td>18,411</td>
</tr>
<tr>
<td>Grassland in CRP</td>
<td>14,224</td>
</tr>
<tr>
<td>Protected Wetland</td>
<td>8,170</td>
</tr>
<tr>
<td>Wetland Protection Shortfall</td>
<td>8,760</td>
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</tbody>
</table>
Habitat Suitability Analysis based on 28 species of waterfowl, marsh birds, grassland passerines, shorebirds, and game birds.
• Five major corridors along geomorphological features

• Corridors 6 miles wide

• 1.6 million acres total
Habitat Complexes within Corridors

1. 9 square miles

2. Every 6 miles

3. 40% grassland, 20% wetland, 50% of grassland and wetland protected

4. Outside of complexes, at least 10% of each section
The Agricultural Matrix – The rest of the Prairie Region

• 21.7 million acres total

• 104 Landtype associations

• Goal: 10% of each LTA in perennial cover protected permanently or under 10-15 year contract
Prioritization within the Agricultural Matrix

1. Proximity to native prairie
2. Areas of High or Outstanding Biodiversity Significance
3. Bordering public conservation land
4. Containing restorable wetlands
5. Priority basins or basins with portfolio lakes
6. Proximity to high priority shallow lakes
7. Adjacent to high priority warm-water streams
8. Adjacent to other watercourse or water body
9. Within a Grassland Bird Conservation Area or an Important Bird Area
10. Highly erodible soils
## Native Prairie Protection Goals (Acres)

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Core</th>
<th>Corridor Complex</th>
<th>General Corridor</th>
<th>Agricultural Matrix</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fee Acquisition</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>($2,700 / acre)</td>
<td>31,486</td>
<td>21,932</td>
<td>645</td>
<td>1,782</td>
<td>7,127</td>
<td>31,486</td>
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<tr>
<td><strong>Easement</strong></td>
<td>73,468</td>
<td>51,176</td>
<td>1,506</td>
<td>4,157</td>
<td>16,629</td>
<td>73,468</td>
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<tr>
<td>($2,340 / acre)</td>
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<tr>
<td><strong>Total</strong></td>
<td>104,954</td>
<td>73,108</td>
<td>2,151</td>
<td>5,939</td>
<td>23,756</td>
<td>104,954</td>
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$256 M
### Grassland and Wetland Protection Goals (Acres)

<table>
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<tr>
<th></th>
<th>Core</th>
<th>Corridor Complex</th>
<th>General Corridor</th>
<th>Agricultural Matrix</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Fee Acquisition</td>
<td>41,514</td>
<td>9,960</td>
<td>8,885</td>
<td>149,426</td>
<td>209,785</td>
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<tr>
<td>($2,700 / acre)</td>
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<tr>
<td>Easement</td>
<td>53,224</td>
<td>12,048</td>
<td>17,769</td>
<td>298,852</td>
<td>381,893</td>
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<tr>
<td>($1,200 / acre)</td>
<td></td>
<td></td>
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<tr>
<td>Contract</td>
<td>22,359</td>
<td>0</td>
<td>62,193</td>
<td>1,045,983</td>
<td>1,129,403</td>
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<tr>
<td>($734*/acre)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>117,097</td>
<td>22,007</td>
<td>88,847</td>
<td>1,494,262</td>
<td>1,721,081</td>
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$1,854 M
## Grassland and Wetland Restoration Goals (Acres)

<table>
<thead>
<tr>
<th></th>
<th>Core</th>
<th>Corridor Complex</th>
<th>General Corridor</th>
<th>Agricultural Matrix</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>After fee acquisition</strong></td>
<td>18,095</td>
<td>5,785</td>
<td>2,627</td>
<td>25,095</td>
<td>51,602</td>
</tr>
<tr>
<td>($4,000 + $500 restoration/acre)</td>
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<td></td>
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<tr>
<td><strong>After easement</strong></td>
<td>36,189</td>
<td>11,570</td>
<td>5,254</td>
<td>50,190</td>
<td>103,204</td>
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<tr>
<td>($3,000 + $500 restoration / acre)</td>
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<tr>
<td><strong>After signing 10-15 year contract</strong></td>
<td>126,663</td>
<td>40,496</td>
<td>18,390</td>
<td>175,666</td>
<td>361,215</td>
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<tr>
<td>($734* + $500 restoration)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Total</strong></td>
<td>180,947</td>
<td>57,852</td>
<td>26,271</td>
<td>250,952</td>
<td>516,022</td>
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$1,039 M
## Annual Enhancement Goals on Protected Lands (Acres) – Costs over 25 Years

<table>
<thead>
<tr>
<th>Land Type</th>
<th>Core</th>
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<th>General Corridor</th>
<th>Agricultural Matrix</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td><strong>Native Prairie</strong></td>
<td>22,390</td>
<td>493</td>
<td>650</td>
<td>3,402</td>
<td>26,935</td>
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<tr>
<td>($20 / acre/ yr)</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td><strong>Other Grasslands</strong></td>
<td>25,831</td>
<td>2,867</td>
<td>4,964</td>
<td>47,194</td>
<td>80,856</td>
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<tr>
<td>($20 / acre/ yr)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wetlands</strong></td>
<td>31,277</td>
<td>2,098</td>
<td>4,246</td>
<td>69,673</td>
<td>107,292</td>
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<tr>
<td>($20 / acre/ yr)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>79,498</td>
<td>5,457</td>
<td>9,860</td>
<td>120,268</td>
<td>215,083</td>
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</table>

**$108 M**
### Annual Enhancement Goals on Unprotected Lands (Acres) – Costs over 25 Years

<table>
<thead>
<tr>
<th></th>
<th>Core</th>
<th>Corridor Complex</th>
<th>General Corridor</th>
<th>Agricultural Matrix</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Native Prairie</strong></td>
<td>8,935</td>
<td>289</td>
<td>567</td>
<td>2,265</td>
<td>12,056</td>
</tr>
<tr>
<td>($20 / acre/ yr)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Other Grasslands</strong></td>
<td>42,224</td>
<td>4,178</td>
<td>27,771</td>
<td>279,422</td>
<td>353,595</td>
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<tr>
<td>($20 / acre/ yr)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wetlands</strong></td>
<td>16,990</td>
<td>1,671</td>
<td>11,695</td>
<td>196,445</td>
<td>226,802</td>
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<tr>
<td>($20 / acre/ yr)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>68,150</td>
<td>6,138</td>
<td>40,034</td>
<td>478,132</td>
<td>592,453</td>
</tr>
</tbody>
</table>

**$296 M**
Take Home Message

Even with major new conservation funding, “grass-based” agriculture will be essential to drive the voluntary protection and restoration of grassland and wetland.

No other factor will play a greater role in the creation and maintenance of prairie landscapes than the profitability of private and leased public lands.