ENHANCING GRASSLAND BIRD HABITAT IN A SEMI-URBAN SETTING:
A Conservation Agency Perspective

Native Prairie Restoration and Reclamation Workshop 2018
Saskatoon, SK
February 7, 2018

Renny W. Grilz, P. Ag.
Resource Management Officer
Financial support from:

Environment Canada and Climate Change: Habitat Stewardship Program – Species at Risk

Participating Party support from:

City of Saskatoon
University of Saskatchewan
Government of Saskatchewan
Northeast Swale Extent

Figure A-1. The Meewasin Northeast Swale Extent

Source: 1 (Stantec 2012)
Northeast Swale - 1965
Northeast Swale - 2017
Species at Risk and Rare Species at the Meewasin Northeast Swale

**Birds**
- Burrowing Owl* (S2, Endangered)
- Common Nighthawk (Threatened)
- Loggerhead Shrike (S2, Threatened)
- Sprague’s Pipit (S3, Threatened)
- Barn Swallow (Threatened)
- Baird’s Sparrow (Special Concern)
- Horned Grebe (Special Concern)
- Short-eared Owl (S3, Special Concern)
- Western Grebe (S3, Special Concern)
- Yellow Rail (S3, Special Concern)

**Amphibians**
- Northern Leopard Frog (S3, Special Concern)

**Mammals**
- Little Brown Bat (Endangered)
- Badger (S3, Special Concern)

**Plants**
- Crowfoot Violet (S3)
- Narrow-leaved Water Plantain (S3)
- Plains Rough Fescue (S3)
Sharp-tailed Grouse Lek
<table>
<thead>
<tr>
<th>Species</th>
<th># Observations</th>
<th>Species</th>
<th># Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada Goose</td>
<td>93</td>
<td>Northern Harrier</td>
<td>1</td>
</tr>
<tr>
<td>Mallard Duck</td>
<td>18</td>
<td>Common Raven</td>
<td>2</td>
</tr>
<tr>
<td>Blue-winged Teal</td>
<td>23</td>
<td>American Crow</td>
<td>5</td>
</tr>
<tr>
<td>Northern Shoveler</td>
<td>6</td>
<td>Black Billed Magpie</td>
<td>2</td>
</tr>
<tr>
<td>American Widgeon</td>
<td>7</td>
<td>Eastern Kingbird</td>
<td>2</td>
</tr>
<tr>
<td>Green-winged Teal</td>
<td>11</td>
<td>Meadow Lark</td>
<td>28</td>
</tr>
<tr>
<td>Northern Pintail</td>
<td>10</td>
<td>Tree Swallow</td>
<td>4</td>
</tr>
<tr>
<td>Canvasback</td>
<td>6</td>
<td>Brown Thrasher</td>
<td>1</td>
</tr>
<tr>
<td>Lesser/Greater Scaup</td>
<td>8</td>
<td>Yellow Warbler</td>
<td>3</td>
</tr>
<tr>
<td>Ring Billed Gull</td>
<td>8</td>
<td>Chipping Sparrow</td>
<td>18</td>
</tr>
<tr>
<td>Great Blue Heron</td>
<td>1</td>
<td>Clay-coloured Sparrow</td>
<td>46</td>
</tr>
<tr>
<td>Sora</td>
<td>1</td>
<td>Song Sparrow</td>
<td>5</td>
</tr>
<tr>
<td>American Avocet</td>
<td>2</td>
<td>Savannah Sparrow</td>
<td>17</td>
</tr>
<tr>
<td>Killdeer</td>
<td>6</td>
<td>Common Grackle</td>
<td>57</td>
</tr>
<tr>
<td>Spotted Sandpiper</td>
<td>1</td>
<td>Red-winged Blackbird</td>
<td>20</td>
</tr>
<tr>
<td>Willet</td>
<td>4</td>
<td>Yellow-headed Blackbird</td>
<td>12</td>
</tr>
</tbody>
</table>

* Visual and Vocalization Observations recorded on May 29, June 9, and June 23, 2017
### Species Composition - Permanent Monitoring Plot #4
Meewasin Northeast Swale 2017

<table>
<thead>
<tr>
<th>Species</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Invasive Forbs</td>
<td>39.6%</td>
</tr>
<tr>
<td>Invasive Grasses (other than KGB)</td>
<td>4.7%</td>
</tr>
<tr>
<td>Rose Species</td>
<td>1.8%</td>
</tr>
<tr>
<td>Wolfwillow</td>
<td>1.8%</td>
</tr>
<tr>
<td>Western Snowberry</td>
<td>18.0%</td>
</tr>
<tr>
<td>Native Wildflower Species</td>
<td>18.0%</td>
</tr>
<tr>
<td>Sedge Species</td>
<td>18.0%</td>
</tr>
<tr>
<td>Native Grasses Species</td>
<td>1.8%</td>
</tr>
<tr>
<td>Plains Rough Fescue</td>
<td>1.8%</td>
</tr>
<tr>
<td>Kentucky Bluegrass</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Sollosy, 2017 (unpublished data)
Saskatoon Natural Grasslands - 2015

Change in % Species Cover in Mixed Grassland Communities from 1993 to 2003

<table>
<thead>
<tr>
<th>Species</th>
<th>1993</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Snowberry</td>
<td>18.7</td>
<td>30.4</td>
</tr>
<tr>
<td>Kentucky Bluegrass</td>
<td>0.7</td>
<td>23.0</td>
</tr>
</tbody>
</table>

Modified from Godwin and Thorpe, 2004

Change in % Species Cover in All Vegetation Communities from 1993 to 2003

<table>
<thead>
<tr>
<th>Species</th>
<th>1993</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plains Rough Fescue</td>
<td>8.3</td>
<td>3.0</td>
</tr>
<tr>
<td>Kentucky Bluegrass</td>
<td>17.3</td>
<td>43.2</td>
</tr>
<tr>
<td>Western Porcupine Grass</td>
<td>10.3</td>
<td>6.7</td>
</tr>
<tr>
<td>Wolf Willow</td>
<td>9.3</td>
<td>17.2</td>
</tr>
</tbody>
</table>

Modified from Godwin and Thorpe, 2004
Aspen Parkland: Loam Ecosite
Drier Microsites

AP-LM-A
Plains Rough Fescue – Northern Wheat-grass – Western Porcupine-grass
(reference community)

heavy grazing ↓↑ less grazing

AP-LM-B
Western Porcupine-grass - Northern Wheat-grass – Sedge – Pasture Sage
(moderate alteration)

heavy grazing ↓↑ less grazing

AP-LM-C
Sedge – Pasture Sage – Western Porcupine-grass
(moderate alteration)

AP-LM-D
Needle-and-thread – Wheat-grass – Pasture Sage
(significant alteration)

exotic invasion →
mgmt. to control exotics

[smooth brome – native grasses]
(not yet described)

AP-LM-E
Kentucky Blue-grass – Sedge
(severe alteration)

no fire ←
 frequent fire

??

Thorpe, 2014
Toombs et al., 2010  Modified from Knopf, 1996
Sprague's Pipit on the Landscape: Preferences and Avoidances
(Note: Sprague's Pipit is shown much larger than scale)

- Avoids trees, shrubs, and other woody vegetation
- Prefers medium height (20-30 cm), medium density vegetation
- Prefers large areas (160 Ac) of native prairie or perennial forage
- Avoids tall, dense vegetation
- Avoids bare ground
- Avoids vegetation with heavy litter
- Avoids raised roadbeds

Invasive Species Control

Common Tansy
*(Tanacetum vulgare)*

Absinthe
*(Artemisia absinthium)*

Leafy Spurge
*(Euphorbia esula)*
Prescribed Burning: Creating Spatial Patchiness
Prescribed Burning: Creating Temporal Patchiness
Targeted Conservation Grazing: Creating Spatial Patchiness
Targeted Conservation Grazing:
Creating Temporal Patchiness
Management Implications

- Grassland bird species require specific habitat requirements
- Patchiness on the landscape may provide the best suite of habitats for multiple grassland bird species
- Grazing and fire can create spatial and temporal habitat patches
  - Integration of techniques
  - Multi-species grazing
Renny W. Grilz, P.Ag.
Resource Management Officer
Meewasin Valley Authority
Email: rgrilz@meewasin.com
Office: (306)665-6887    Cell: (306)262-4970