

# Blueprint for Minnesota Bird Conservation

## Recommendations for Minnesota's Prairie Parkland Region

*Spring 2014*



The *Blueprint for Minnesota Bird Conservation* is a project of Audubon Minnesota written by Lee A. Pfannmuller ([leefann@msn.com](mailto:leefann@msn.com)) and funded by the Environment and Natural Resources Trust Fund. For further information please contact Mark Martell at [mmartell@audubon.org](mailto:mmartell@audubon.org) (651-739-9332).

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## ***An Implementation Blueprint for Minnesota Bird Conservation***

### **Why is a Conservation Blueprint Needed?**

Numerous national, regional, and state conservation plans that broadly address Minnesota birds and the landscapes they inhabit have been produced over the past 10-15 years. Most of these plans are strategic in nature, establishing very broad conservation and management goals. Although they compile and summarize important resource information, they rarely provide managers with specific, on-the-ground targets and management tools. Most plans also address such a large number of species that it can be challenging to know which species are the highest priorities, which species, if targeted, can provide the most conservation benefits for other species, and which species can be addressed most effectively.

This effort is designed to build on these previous planning initiatives, not replace them. The goal is to achieve a common bird conservation agenda for Minnesota conservation organizations, agencies, and citizens by creating one clear *operational blueprint that provides specific guidance for Minnesota bird conservation*. It builds upon existing efforts by: identifying the highest priorities in each ecological region using select conservation focal species; synthesizing the best proven conservation practices for each species; establishing measurable goals for species' population targets; and identifying key sites for conservation work in the next decade.

Designed to push conservation beyond broad habitat protection goals, the blueprint will enable everyone interested in the conservation of Minnesota's avifauna to assess whether we are implementing the correct actions to sustain these species as integral components of Minnesota's landscape for years to come.

### **Data Sources**

A wealth of information is available about Minnesota birds, their distribution, breeding biology, population trends, and habitat requirements. Primary data sources used for Audubon's initiative included the Minnesota Ornithologists' Union, the North American Bird Conservation Initiative, Joint Ventures, the Minnesota Department of Natural Resources, National Audubon and the U.S. Geological Survey. A list of primary data sources can be found at the end of the plan. After reviewing these documents, data were placed into an Excel database designed to summarize relevant information on all Minnesota birds, including 314 regular species, 42 casual species and 78 accidental species. Over 640 fields of data were compiled and provided the basis for all subsequent analysis summarized in this document. Copies of the database are available upon request from Audubon Minnesota.

### **Blueprint's Organization**

This document, a *Conservation Blueprint* for Minnesota's Prairie Parklands Bird Conservation Region, represents one of four major products produced by Audubon's Conservation Blueprint:

1. A Brochure on Minnesota's Stewardship Species;
2. Species Accounts for 78 Priority Species;
3. Conservation Blueprints for nine Target Conservation Species; and
4. Conservation Blueprints for Minnesota's four Bird Conservation Regions

The Blueprint for the Prairie Parklands Region is not written like a typical planning document. Instead, it is designed to provide key information and tools that address three primary questions:

1. Which birds are we going to focus on?
2. How are we going to protect these species?
3. Where are we going to work?

Information is provided primarily in tables, brief descriptions about how priorities were selected and short vignettes that summarize species priorities and goals. The Blueprint includes the following:

- A descriptive overview of the region including its avifauna, landscape features, and management issues and opportunities;
- A list of Highest, High and Moderate Priority birds in the region;
- Identification of Target Conservation Species in the region;
- Identification of Stewardship Species that should be primary targets in the region;
- Assessment of the monitoring efforts currently underway for the highest priority species and recommendations for future monitoring;
- Identification of priority habitats to focus conservation actions on;
- Identification of habitat protection and restoration goals in the region;
- Identification of habitat management considerations for the highest priority species; and
- Identification of Important Bird Areas that are a target for future work by Audubon and its conservation partners.

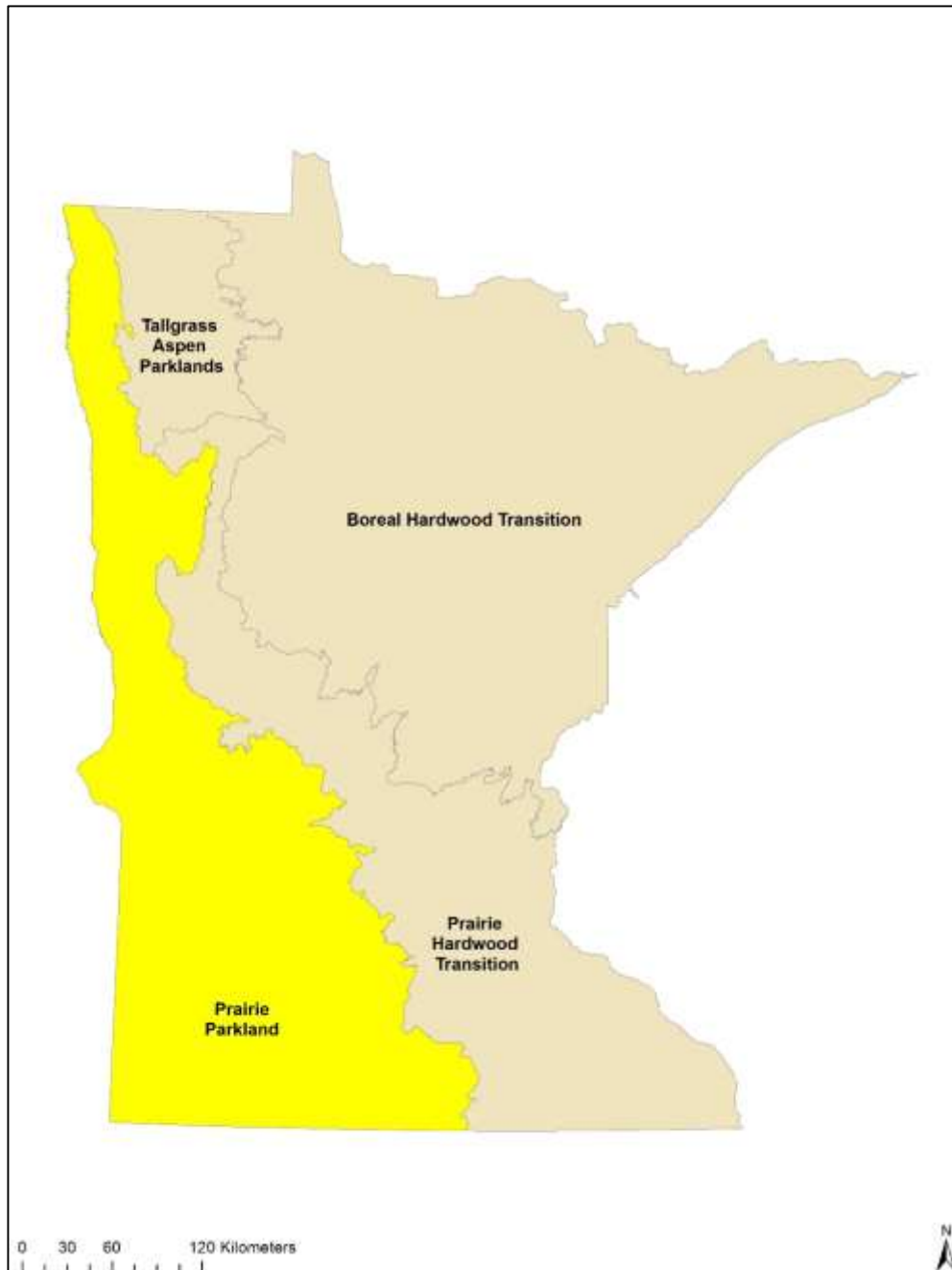
More detailed information on those species that were selected as Target Conservation Species is provided in conservation blueprints for each species. An Executive Summary also provides an overall description of the entire Implementation Blueprint. All these documents are available on the Audubon Minnesota website ([mn.audubon.org](http://mn.audubon.org)).

## *The Prairie Parkland Region*

### **Administrative Boundaries and Issues**

The boundary of Audubon Minnesota's Prairie Parkland Bird Conservation Region is identical to the Ecological Classification System boundary for the Prairie Parkland Province in Minnesota (*Minnesota Department of Natural Resources 2005*) (Figure 1).

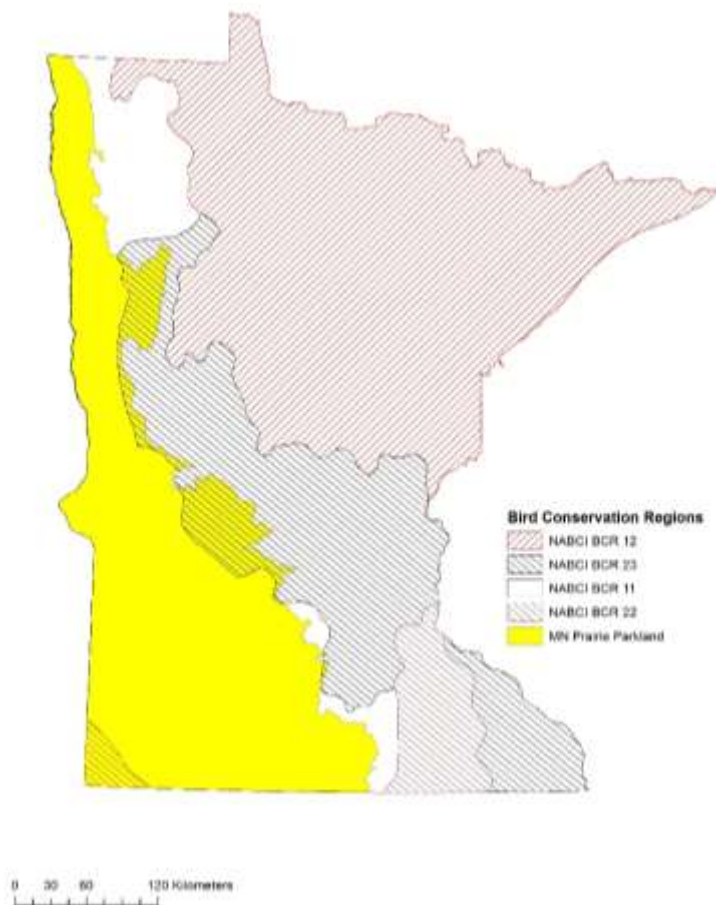
**Figure 1. Audubon Minnesota's Prairie Parkland Region** from Minnesota's Ecological Classification System



Nearly all the quantitative data for this document originate from an assortment of plans developed by partners working under the umbrella of the North American Bird Conservation Initiative (NABCI) (see Selected Resources). Specifically this includes the U.S. Shorebird Conservation Plan, the North American Waterfowl Management Plan, the North American Waterbird Conservation Plan and Partners in Flight, also known as the North American Landbird Conservation Plan. Minnesota also includes portions of two Joint Ventures, the Prairie Potholes and the Upper Mississippi River/Great Lakes. Each Joint Venture also has prepared conservation plans for waterfowl, waterbirds, landbirds and shorebirds and these documents were integral to Audubon's *Conservation Blueprint*.

For planning purposes, NABCI delineated bird conservation regions using the Commission for Environmental Cooperation's (1997) hierarchical framework of nested ecological regions. Although the boundaries are very similar to the boundaries that have been delineated for Minnesota's native vegetation, they are not identical. The NABCI region that most closely corresponds with the Prairie Parkland Region in Minnesota is Bird Conservation Region (BCR) 11, the Prairie Potholes Region, and the southwest section of Bird Conservation Region 22, the Eastern Tallgrass Prairie (Figure 2). The major difference between BCR11 and the Prairie Parkland Region shown in Figure 1 is that the latter does not include the Tallgrass Aspen Parklands.

**Figure 2. NABCI Boundaries for the Prairie Pothole Bird Conservation Region compared to the boundaries of Audubon Minnesota's Prairie Parkland Region (shades of yellow/brown)**



An analysis of the birds that occur in Audubon Minnesota's Prairie Parkland Region and Tallgrass Aspen Parklands Region, conducted for Audubon's *Conservation Blueprint*, clarified that the avifauna of the two regions were distinct enough to warrant delineation of the Aspen Parklands as a separate bird region. The same analysis



was conducted for the southwestern corner of the Eastern Tallgrass Prairie. In this case there were no substantial differences between the avifauna in this region and the rest of the Prairie Parkland, warranting including this small region with the entire Prairie Parkland Region. Furthermore, because Minnesota’s Ecological Classification System boundaries have become a standard reference for land managers throughout the state, *Minnesota’s Conservation Blueprint* adopts those boundaries. They are similar enough to the NABCI boundaries to allow a reasonable extension of the NABCI data for the Prairie Potholes Region (BCR11) to all of the Prairie Parklands Region.

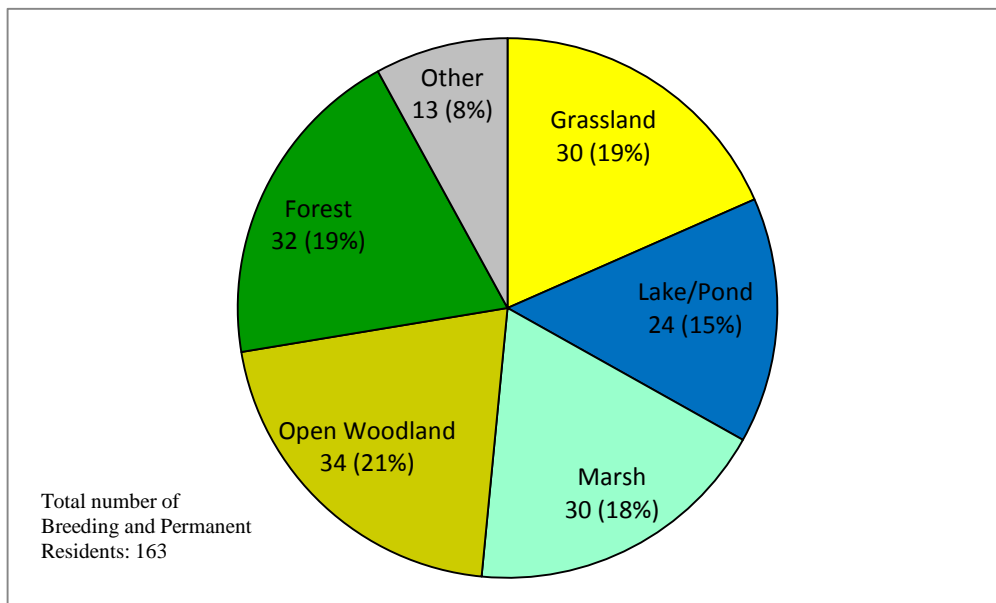
### Vegetation/Landscape Features

The Prairie Parkland Region is broadly described as the state’s tallgrass prairie region. Originally dominated by a mosaic of dry, mesic and wet prairies that graded into wetlands and shallow lakes, the native vegetation has been largely converted to row crops and hayfields. Less than 1/10<sup>th</sup> of 1% of the original prairie vegetation remains. Detailed descriptions of the region can be found in “A Field Guide to the Native Plant Communities of Minnesota: The Prairie Parkland and Tallgrass Aspen Parklands Provinces” (*Minnesota Department of Natural Resources 2005*), in “Tomorrow’s Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife” (*Minnesota Department of Natural Resources 2006a*), and in “Minnesota’s Prairie Landscape Conservation Plan” (*Minnesota Prairie Plan Working Group 2010*).

### Bird Community

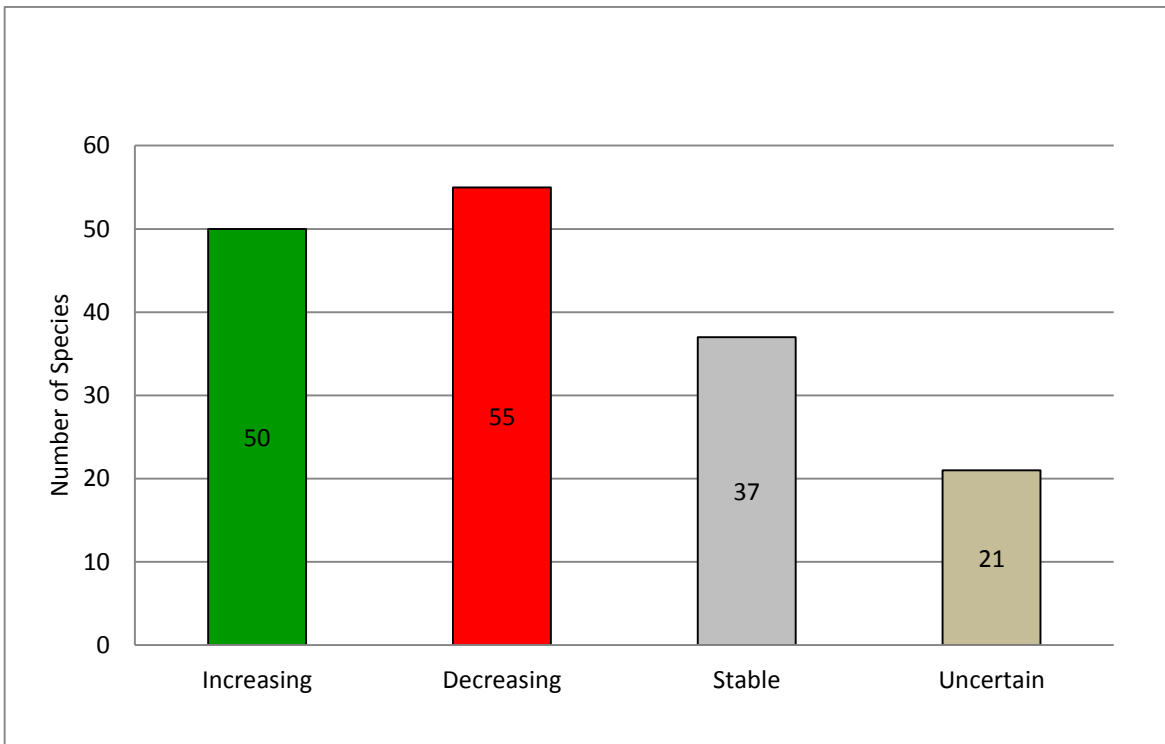
Minnesota’s Prairie Parkland Region supports 140 regular breeding species, 23 permanent residents, and over 115 species that do not breed in the region but depend on critical habitats for migration. Over 50% of the 163 regular nesting species are found in the grasslands, shallow lakes and wetlands of the region (Figure 3). A surprisingly high percentage of the species (40%) occur in open woodlands and forest, which are common in such areas as shelterbelts around farmsteads and in riparian corridors along streams, rivers and lakeshores.

**Figure 3. Number and Percentage of Breeding and Permanent Resident Birds in Major Habitats of the Prairie Parkland Region**

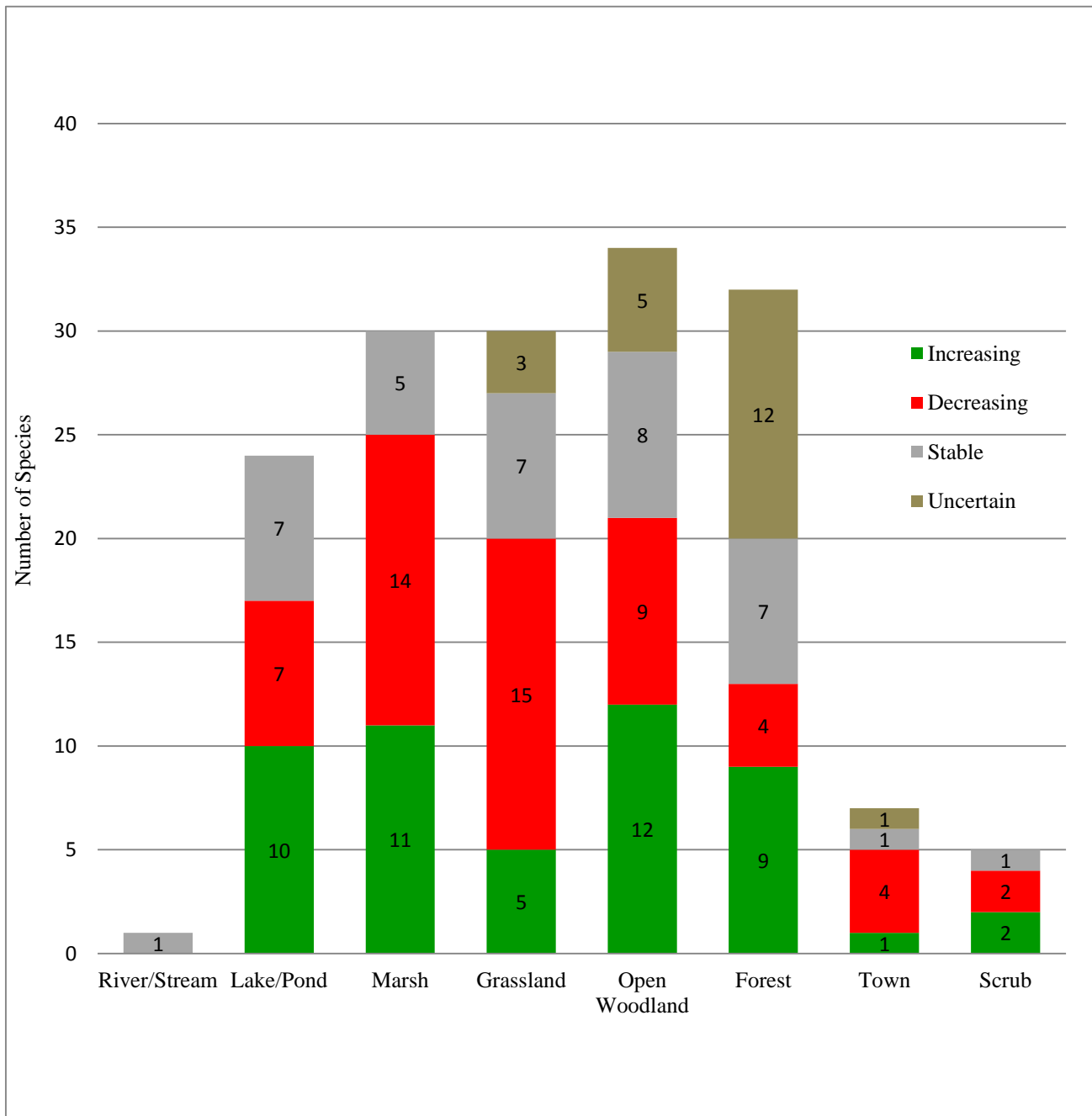


Data from a variety of sources, including the federal Breeding Bird Survey (*Sauer et al. 2014*), the North American Bird Conservation Initiative (see Selected Resources) and the Minnesota Waterfowl Survey (*Dexter 2012*), were used to assess the population trend of all breeding species specifically within the Prairie Parkland Region (i.e. not their statewide trend). Status trend assessments are summarized below in Figure 4. Population trends for birds in each major habitat are further depicted in Figure 5.

**Figure 4. Population Trends of Breeding and Permanent Resident Birds in the Prairie Parklands Region**



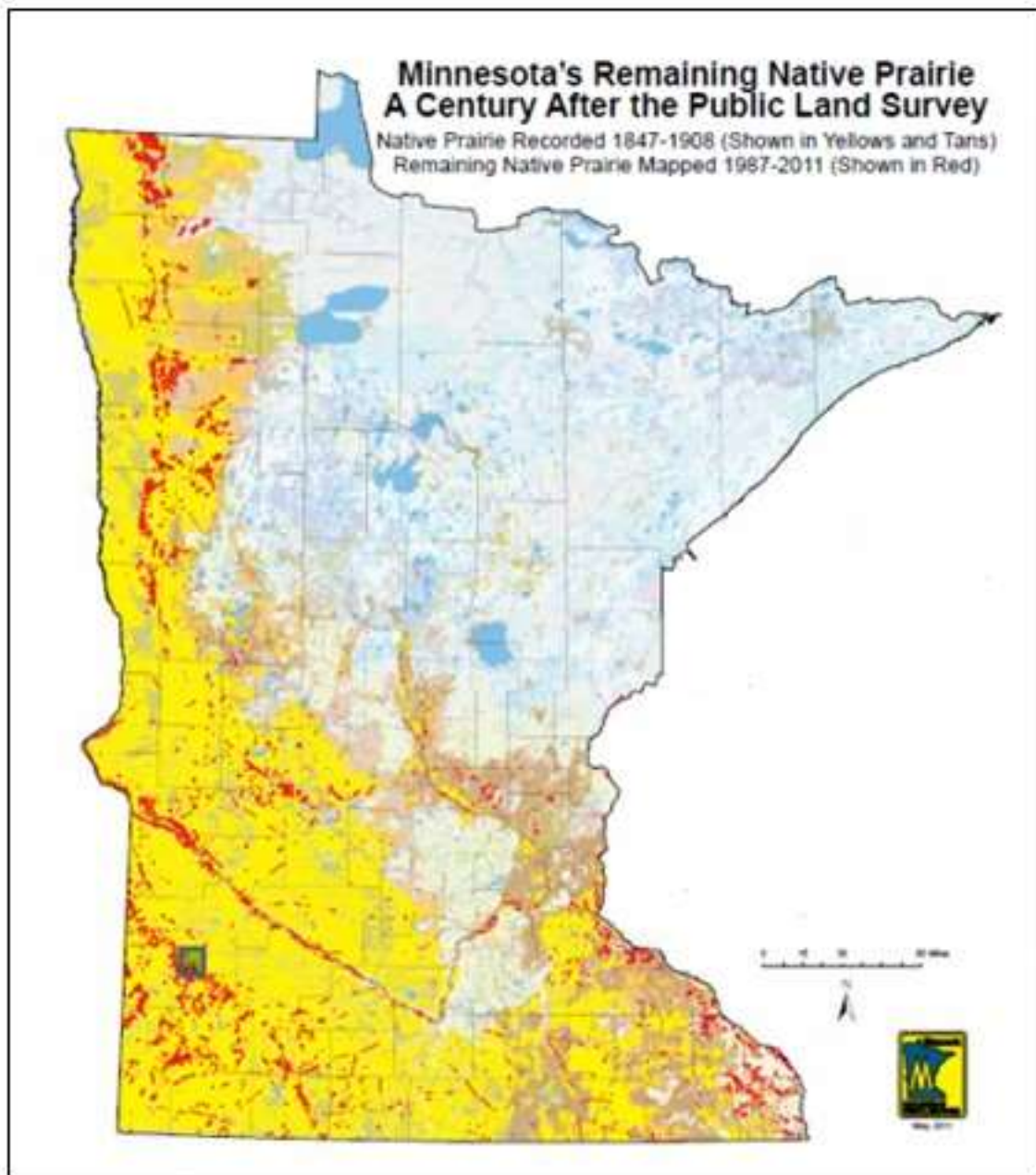
**Figure 5. Population Trends of Breeding Birds and Permanent Residents in the Prairie Parkland Region by Major Habitat**



### Management Issues/Opportunities

The widespread conversion of Minnesota’s native tallgrass prairie to row crop agriculture is well-known. Originally covering approximately 18 million acres of our western landscape, the rich, deep prairie soils proved ideal for the development of a productive agricultural economy as European immigrants arrived. Today, over 150 years later, only 220,500 acres of the original 18 million acres remain and only half of these acres are protected (Figure 6). Wetlands in the region fared just as poorly, with a loss of nearly 92%.

**Figure 6. Minnesota’s Remaining Native Prairie (Minnesota Biological Survey; areas in red are remaining native prairie)**



Few prairie and wetland birds can adapt to such dramatic landscape changes. Species such as the Long-billed Curlew and Burrowing Owl no longer nest in the western prairies and migrants that were once common are absent or extremely rare, such as the Eskimo Curlew and Whooping Crane. Waterfowl and waterbird species have declined dramatically and some, such as the Northern Pintail and Horned Grebe, barely hang on. As shown in Figure 5, 50% of the region's grassland birds are declining and nearly 40% of the species dependent on shallow lakes or marshes are declining.

As a result of this loss, a tremendous amount of conservation work has focused on the region. As early as 1951 the state established a "Save the Wetlands" program that focused largely on wetlands in the western region of the state. This program grew to the present day Wildlife Management Area Program (WMA) which today protects over 1.3 million acres of habitat in 1,440 Wildlife Management Areas across the state. Many of these sites protect what remains of Minnesota's native prairie vegetation, or protect grasslands that have been restored on former agricultural lands.

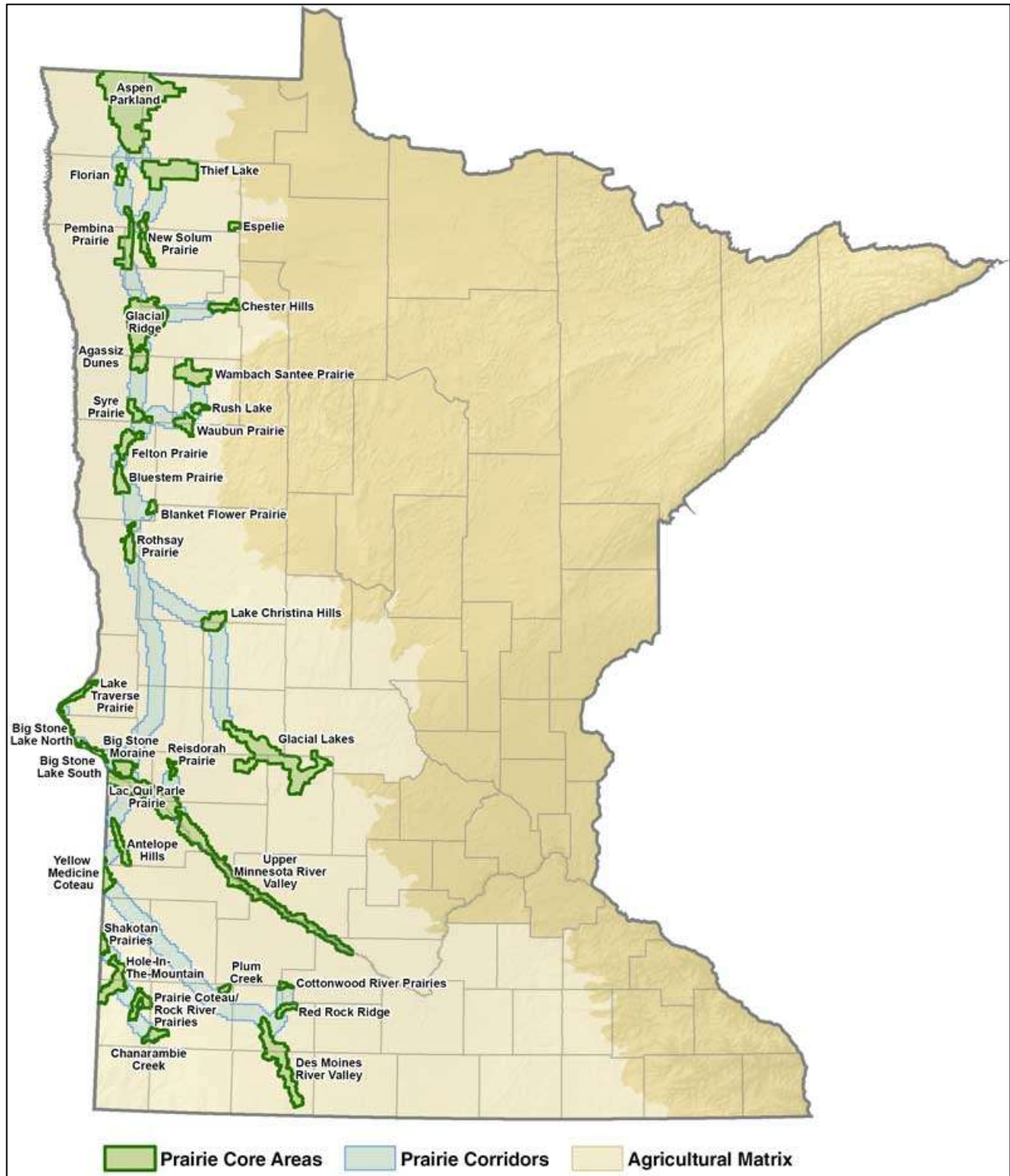
The WMA Program has been complemented by many other state and federal grassland and wetland conservation programs, including the Reinvest in Minnesota (RIM) Reserve Program, the Conservation Reserve Program (CRP), the Conservation Reserve Enhancement Program (CREP), the Wetland Reserve Program (WRP), the Grassland Reserve Program (GRP) and many others. Although all these efforts have made tremendous strides in protecting and restoring critical grasslands and wetlands throughout the Prairie Parkland Region, there remain significant challenges.

Commodity prices, land prices or changes in the Farm Bill can influence a farmer's decision to put land aside in conservation programs or to plow grasslands under for corn and soybeans. Unfortunately, in recent years the high commodity prices have led farmers to put as much land into production as possible. As a result, the state has lost 400,000 CRP acres from 2007 to 2012, thereby eliminating habitat for many grassland species (*McDonald 2013*); in 2007 a total of 1.8 million CRP acres existed in the state. The loss of CRP acres is considered the biggest threat to grassland bird conservation throughout the Midwest and Great Plains. Fewer dollars also are available for conservation programs in lieu of the federal budget cutbacks. Grasshopper Sparrows and Western Meadowlarks are not likely to benefit from these economic realities.

The dire status of Minnesota's native prairie was a call to action for conservation organizations, including Audubon Minnesota, when they prepared Minnesota's Prairie Landscape Conservation Plan in 2010 (*Minnesota Prairie Plan Working Group 2010*). The plan outlines a strategic approach to protecting the state's remaining prairie acres and establishing a sustainable grassland landscape amidst productive farmland in both the Prairie Parkland and the Tallgrass Aspen Parklands regions. The foundation of the plan is the delineation of three primary conservation approaches: 1) the identification of core prairie areas (see Figure 7); 2) the establishment of corridors that connect the cores; and 3) a goal to protect and restore wetlands and grasslands in the broader landscape surrounding the cores and corridors (i.e. the agricultural matrix). Specific protection and restoration goals have been established for each area. Throughout the prairie landscape, the plan's goal is to protect and restore a total of 204,000 acres of native prairie and 2.0 million acres of grassland and savanna along with a total of 1.3 million acres of wetlands and shallow lakes.

The Minnesota Prairie Landscape Conservation Plan provides a needed framework to guide the conservation actions of resource agencies and conservation organizations in their efforts to maximize the outcomes of their respective programs and ensure that Minnesota's grassland wildlife have a sustainable future. The new infusion of dollars through the Minnesota Clean Water, Land and Legacy Amendment provides the financial means to help accomplish this goal.

**Figure 7. Prairie Core Areas, Corridors and Agricultural Matrix from Minnesota's Prairie Landscape Conservation Plan**



## What Birds are we going to focus on?

### Priority Breeding Species

#### Identification of Priority Breeding Species

The purpose of the following table is to provide resource professionals with a rank order of breeding species priorities in the Prairie Parkland Region. It does not include **all** breeding bird species that are declining but rather focuses on those that have experienced significant declines in the region, are dependent on vulnerable habitat, and have been recognized as priorities by various resource agencies (see Appendix 1 for details on selection of priority species). Because the number of species in each category is still relatively large, and the purpose of this document is to be strategic about identifying a small number of species that should be the focus of conservation efforts in the short term, this plan goes further in identifying a select number of Target Conservation species (shown in red). The process for selecting these species is summarized in Appendix 2.

**Table 1. Priority Breeding Species in the Prairie Parkland Region**

Breeding Species Priorities in Prairie Parkland Region			
Very Rare (& known to be Declining)	Highest Level: I	High Level: II	Moderate Level: III
Green-winged Teal	<b>Blue-winged Teal<sup>3</sup></b>	Redhead	Trumpeter Swan <sup>1,2</sup>
Horned Grebe <sup>1,2</sup>	Northern Pintail <sup>1,3</sup>	Ruddy Duck	Gadwall <sup>3</sup>
American Avocet <sup>1,3</sup>	American Bittern <sup>1</sup>	Greater Prairie-Chicken <sup>1,2,3</sup>	Mallard <sup>3</sup>
Burrowing Owl <sup>1,2</sup>	Least Bittern <sup>1</sup>	Black-crowned Night-Heron <sup>1</sup>	Northern Shoveler <sup>3</sup>
Loggerhead Shrike <sup>1,2</sup>	Northern Harrier <sup>1</sup>	Black-billed Cuckoo <sup>1</sup>	Pied-billed Grebe
Sprague's Pipit <sup>1,2,3</sup>	Yellow Rail <sup>1,2</sup>	Clay-colored Sparrow	Western Grebe
Baird's Sparrow <sup>1,2,3</sup>	<b>Upland Sandpiper <sup>1,3</sup></b>	Dickcissel <sup>1</sup>	Virginia Rail <sup>1</sup>
	Wilson's Phalarope <sup>1,2,3</sup>	Western Meadowlark	Sora
	Franklin's Gull <sup>1,2</sup>		Sandhill Crane
	<b>Black Tern <sup>1</sup></b>		Marbled Godwit <sup>1,2,3</sup>
	Short-eared Owl <sup>1,2,3</sup>		American Woodcock <sup>1,3</sup>
	Chestnut-collared Longspur <sup>1,2,3</sup>		Yellow-billed Cuckoo
	<b>Grasshopper Sparrow <sup>1</sup></b>		Red-headed Woodpecker <sup>1,3</sup>
			Northern Flicker
			Veery <sup>1</sup>
			Brown Thrasher <sup>1</sup>
			Vesper Sparrow
			Henslow's Sparrow <sup>1,2</sup>
			Le Conte's Sparrow <sup>1</sup>
			Nelson's Sparrow <sup>1,2,3</sup>
			Eastern Meadowlark <sup>1</sup>
			Yellow-headed Blackbird

Note: Species in bold **Red** are Target Conservation Species in the Prairie Parkland Region (see Appendix 2).

<sup>1</sup> Minnesota Species in Greatest Conservation Need (*Minnesota Department of Natural Resources 2006a*).

<sup>2</sup> Minnesota State Listed Species (*Minnesota Administrative Rules, Chapter. 6134.0200, Subpart 2(B)*).

<sup>3</sup> Prairie Pothole Joint Venture Region Focal Species (<http://ppjv.org/resources/implementation-plan/2005-implementation-plan>)



## Target Conservation Breeding Species

### Identification of Target Conservation Species in the Prairie Parkland Region

Species that Audubon Minnesota will highlight as Target Conservation Species in the Prairie Parkland Region depend on three key habitats: shallow lakes, wetlands and prairies/grasslands.

- ❖ **Blue-winged Teal\***: The Blue-winged Teal is a Target Conservation Species for shallow lakes; protecting its habitat will provide suitable habitat for some of the following wetland species:

Northern Pintail	Franklin's Gull	Trumpeter Swan	Western Grebe
American Bittern	Redhead	Gadwall	Virginia Rail
Least Bittern	Ruddy Duck	Mallard	Sora
Wilson's Phalarope	Black-crowned Night-Heron	Northern Shoveler	Yellow-headed Blackbird

- ❖ **Upland Sandpiper\***: The Upland Sandpiper is a Target Conservation Species for native prairies and grasslands; protecting its habitat will provide suitable habitat for some of the following grassland species:

Northern Harrier	Grasshopper Sparrow	Western Meadowlark	Henslow's Sparrow
Short-eared Owl	Clay-colored Sparrow	Marbled Godwit	Eastern Meadowlark
Chestnut-collared Longspur	Dickcissel	Vesper Sparrow	

- ❖ **Black Tern**: The Black Tern is a Target Conservation Species for non-forested wetlands; protecting its habitat will provide suitable habitat for some of the following wetland species:

Blue-winged Teal	Franklin's Gull	Trumpeter Swan	Western Grebe
Northern Pintail	Redhead	Gadwall	Virginia Rail
American Bittern	Ruddy Duck	Mallard	Sora
Least Bittern	Black-crowned Night-Heron	Northern Shoveler	Yellow-headed Blackbird

- ❖ **Grasshopper Sparrow**: The Grasshopper Sparrow is a Target Conservation Species for native prairies and grasslands; protecting its habitat will provide suitable habitat for some of the following grassland species:

Northern Harrier	Chestnut-collared Longspur	Western Meadowlark	Henslow's Sparrow
Short-eared Owl	Clay-colored Sparrow	Marbled Godwit	Eastern Meadowlark
Upland Sandpiper	Dickcissel	Vesper Sparrow	

*\*The Blue-winged Teal and Upland Sandpiper are also focal species in the Prairie Pothole Joint Venture Region*



## Minnesota Goals and Objectives for Target Conservation Species in the Prairie Parkland Region

### 1. Blue-winged Teal

**Minnesota Conservation Goal:** Implement the Minnesota Duck Recovery Plan (*Minnesota Department of Natural Resources 2006b*) whose specific goal is to: Recover historical breeding and migrating populations of ducks in Minnesota for their ecological, recreational, and economic importance to the citizens of the state.

**Minnesota Conservation Objective:** Progress towards this goal will be measured by the following long-term objectives: 1) a breeding population of 1 million ducks producing a fall population of 1.4 million ducks; 2) a fall duck harvest that is 16% or more of the Mississippi Flyway harvest; and 3) an average of 140,000 waterfowl hunters and 600,000 waterfowl watchers. These numbers are for the total duck harvest and are not specific to the Blue-winged Teal.

### 2. Upland Sandpiper

**Minnesota Conservation Goal:** Halt the decline of Minnesota's Upland Sandpiper population and increase the population by approximately 35%.

**Minnesota Conservation Objective:** Initiate conservation actions designed to stop the decline of Minnesota's Upland Sandpiper population and work to increase it approximately 2.3% per year as monitored by the Federal Breeding Bird Survey in Minnesota in the next 15 years.

Background: A detailed Minnesota Conservation Plan for the Upland Sandpiper was prepared as part of the Audubon Minnesota *Implementation Blueprint for Minnesota Bird Conservation* and is available on the Audubon Minnesota website (<http://mnaudubon.org>).

### 3. Black Tern

**Minnesota Conservation Goal:** Halt the decline of Minnesota's Black Tern population and increase population by 100%.

**Minnesota Conservation Objective:** Implement conservation actions that increase Black Tern population levels in Minnesota an average of 5% per year over 30 years.

Background: A detailed Minnesota Conservation Plan for the Black Tern was prepared as part of the Audubon Minnesota *Implementation Blueprint for Minnesota Bird Conservation* and is available on the Audubon Minnesota website (<http://mnaudubon.org>).

### 4. Grasshopper Sparrow

**Minnesota Conservation Goal:** Maintain a statewide population of at least 500,000 individuals of Grasshopper Sparrows.

**Minnesota Conservation Objective:** Initiate conservation actions designed to halt the decline of Minnesota's Grasshopper Sparrow population and then work to increase it by approximately 2.5% per year as monitored by the Federal Breeding Bird Survey in Minnesota in the next 30 years.

**Background:** A detailed Minnesota Conservation Plan for the Grasshopper Sparrow was prepared as part of the Audubon Minnesota *Implementation Blueprint for Minnesota Bird Conservation* and is available on the Audubon Minnesota website (<http://mnaudubon.org>).

## Minnesota Stewardship Species

### Minnesota Stewardship Species present in the Prairie Parkland Region

Bird conservation plans typically focus on identifying species that are declining and facing significant threats and then delineating conservation actions to halt those declines. Audubon Minnesota’s *Implementation Blueprint for Minnesota Bird Conservation* follows that framework. However, as part of the process for identifying priority species it became clear that there are several species that reach exceptionally high abundance in Minnesota due to the quantity of quality habitat that meets their needs during the breeding season. The Golden-winged Warbler and Sedge Wren are outstanding examples; Minnesota supports 42% and 33% of their global populations respectively. Their future survival may depend on how well Minnesota protects and manages their key habitats. Although no other species reach the level of significance globally that these two species do, there are several that reach very high levels of abundance in the state. For example, although the percentage of their population in Minnesota seems low the Veery, Chestnut-sided Warbler and Nashville Warbler, reach their highest abundance south of Canada in the forests of Minnesota.

A total of 12 species that breed in Minnesota have been designated as Minnesota’s Stewardship Species. These species had to meet two criteria: 1) >5% of their global population occurs in Minnesota; and 2) >5% of their North American breeding range occurs in Minnesota. Because of the number of birds that our state supports we have a unique responsibility to ensure that we maintain suitable habitat to sustain their robust populations. The percent of each Stewardship Species population that occurs in the Prairie Parkland Region is shown in Table 2.

**Table 2. Minnesota Stewardship Species and the Percentage of their Population that occurs in the Prairie Parkland Region** (species highlighted in red are most important in the region)

Stewardship Species	% of Global Population in Minnesota’s Prairie Parkland Region *	Percentage of Global Population in Minnesota
Trumpeter Swan	Unknown	12%
<b>American White Pelican</b>	<b>18%</b>	<b>18%</b>
American Woodcock	Not detected by BBS	10%
Black-billed Cuckoo	2.85%	10%
<b>Sedge Wren</b>	<b>8.21%</b>	<b>33%</b>
Veery	0.16%	6%
Golden-winged Warbler	0.08%	42%
Nashville Warbler	0.0%	5%
Chestnut-sided Warbler	0.08%	6%
<b>Bobolink</b>	<b>6.37%</b>	<b>13%</b>
Rose-breasted Grosbeak	.92%	6%
Baltimore Oriole	1.59%	5%

\* **Note:** A dot grid was used to delineate the percentage of NABCI’s BCR11 region that lies in Minnesota’s Tallgrass Aspen Parklands Region and the percentage in Minnesota’s Prairie Parkland Region. The percent of each species population that occurs in NABCI’s BCR11 was obtained from [http://rmbo.org/pif\\_db/laped/](http://rmbo.org/pif_db/laped/); the percentage of the Prairie Parkland Region that occurs in BCR11 was then used to adjust the population estimates for the region.

## Recommendations for Stewardship Species

Focus on the following three species with  $\geq 5\%$  of their global population in Minnesota's Prairie Parkland Region:

### 1. American White Pelican

Background: American White Pelicans have been increasing their distribution and abundance in Minnesota since the 1970s. As their numbers have increased so have concerns of lakeshore residents and anglers that pelicans are negatively impacting local fish populations. As of 2010, pelicans were breeding in 4 locations in the Prairie Parkland Region (Table 3).

**Table 3. American White Pelican Breeding Colonies in the Prairie Parkland Region in 2004 and 2010**

Site	County	Number of Nests	
		2004	2010
Marsh Lake	Lac Qui Parle & Big Stone	13,178	11,233
Minnesota Lake (and surrounding agricultural fields)	Faribault	974	622
Big Twin Lake	Martin	16	0
Lake Johanna	Pope	97	735
Hanska Lake	Brown	0	3
Lake Hassel	Swift	19	0

#### Recommendations:

- Work with conservation partners to educate the public regarding the pelican's ecological role in the lake ecosystem and ensure that colony sites are protected and not vandalized.
- Continue state-wide monitoring for pelicans every five years to determine population trends and identify locations where important changes may be occurring.

### 2. Sedge Wrens and Bobolinks

Recommendation: Annually monitor populations with the Breeding Bird Survey.

## Migrant Species

### Importance of the Region for Migrant Species

In addition to its importance for waterfowl migration, the Prairie Parkland Region provides very important habitat to 24 migrating shorebirds that often travel hundreds to thousands of additional miles further north after stopping to rest in Minnesota's wetlands and grasslands (Table 4). Very little data is available on the significance of particular sites in the region to the array of shorebird species that pass through. A surprisingly large number of forest songbirds also migrate through Minnesota's grassland region, including two flycatchers, three vireos, four thrushes and 24 warbler species (Table 4). These numbers highlight the importance of small woodlots, shrublands, forested ravines and forested floodplains throughout the region.

**Table 4. Selection of Migrants in the Prairie Parkland Region**

Migrant Waterfowl	Migrant Shorebirds	Migrant Songbirds	
Greater White-fronted Goose	Black-bellied Plover	Olive-sided Flycatcher	Northern Parula
Snow Goose	American Golden Plover	Yellow-bellied Flycatcher	Magnolia Warbler
Ross's Goose	Semipalmated Plover	Bell's Vireo	Bay-breasted Warbler
Cackling Goose	Piping Plover	Blue-headed Vireo	Blackburnian Warbler
Tundra Swan	Solitary Sandpiper	Philadelphia Vireo	Chestnut-sided Warbler
American Wigeon	Greater Yellowlegs	Golden-crowned Kinglet	Blackpoll Warbler
American Black Duck	Willet	Ruby-crowned Kinglet	Black-throated Blue Warbler
Cinnamon Teal	Lesser Yellowlegs	Mountain Bluebird	Palm Warbler
Greater Scaup	Whimbrel	Gray-cheeked Thrush	Pine Warbler
Lesser Scaup	Hudsonian Godwit	Swainson's Thrush	Yellow-rumped Warbler
Surf Scoter	Ruddy Turnstone	Hermit Thrush	Black-throated Green Warbler
White-winged Scoter	Red Knot	American Pipit	Canada Warbler
Black Scoter	Sanderling	Sprague's Pipit	Wilson's Warbler
Long-tailed Duck	Semipalmated Sandpiper	Northern Mockingbird	Spotted Towhee
Bufflehead	Least Sandpiper	Smith's Longspur	Fox Sparrow
Common Goldeneye	White-rumped Sandpiper	Louisiana Waterthrush	Lincoln's Sparrow
Common Merganser	Baird's Sandpiper	Northern Waterthrush	White-throated Sparrow
Red-breasted Merganser	Pectoral Sandpiper	Golden-winged Warbler	Harris's Sparrow
	Dunlin	Black-and-White Warbler	White-crowned Sparrow
	Stilt Sandpiper	Prothonotary Warbler	Dark-eyed Junco
	Buff-breasted Sandpiper	Tennessee Warbler	Summer Tanager
	Short-billed Dowitcher	Orange-crowned Warbler	Western Tanager
	Long-billed Dowitcher	Nashville Warbler	Rusty Blackbird
	Red-necked Phalarope	Connecticut Warbler	
		Mourning Warbler	
		Cape May Warbler	

**Recommendations for Migrants in the Prairie Parkland Region**

1. Place primary focus on improving our understanding of the use of wetlands and grasslands in the Prairie Parkland Region by shorebirds, which have received very little conservation attention in Minnesota directed at their habitat protection, restoration and management, or monitoring.

## *How are we going to protect these species?*

### **Monitoring**

Monitoring species population trends is the key to assessing their long-term status and determining whether conservation actions are having an impact on the species distribution and abundance. Audubon's *Conservation Blueprint* makes the following recommendations for monitoring the highest priority and Target Conservation Species in the Prairie Parkland Region. Table 5 summarizes current monitoring that occurs for these species and assesses additional needs.

#### **Recommendations for species monitoring**

1. Investigate the establishment of a statewide marsh bird monitoring program
  - Assess whether the newly developed Marsh Bird Monitoring Program initiated by the USFWS and promoted by the Midwest Avian Partnership has applicability in Minnesota.
  - Ensure that the program is designed to provide significant information on hard-to-detect marsh birds, such as Yellow Rails, Virginia Rails and Least Bitterns.
  - Investigate opportunities to collaborate with the Minnesota Department of Natural Resources' new statewide, statistically designed, wetland monitoring program as an alternative approach to the USFWS's Marsh Bird Monitoring Program.
  - Investigate opportunities to collaborate with the newly proposed Sentinel Wetlands Program that will be administered by the MNDNR.
2. Assess the status of the former Franklin's Gull colony at Heron Lake in Jackson County. Once the site of Minnesota's largest Franklin's Gull colony, Heron Lake should be surveyed regularly to assess the status of all waterbirds on the lake.
3. Regularly monitor the Chestnut-collared Longspur population at the B-B Ranch in the Felton Prairie IBA. This remains the only population in Minnesota.
4. Assess the presence/absence of rarely seen species such as the Baird's Sparrow, Sprague's Pipit and Loggerhead Shrike on the entire Felton Prairie IBA as well as populations of Northern Harriers, Upland Sandpipers, Marbled Godwits and Grasshopper Sparrows; then recommend a regular monitoring protocol.
5. Ensure that the White Pelican colony at Lac Qui Parle is regularly monitored (Stewardship Species).
6. Assess the presence/absence of Northern Harriers, Black Terns, Upland Sandpipers, Marbled Godwits and Grasshopper Sparrows on the Lac Qui Parle Important Bird Area; then recommend a regular monitoring protocol.
7. Work with USFWS new Integrated Monitoring Program to ensure that high priority species are monitored on the National Wildlife Refuges (i.e. Big Stone NWR).

**Table 5. Status of current monitoring efforts and assessment of additional needs**

<b>Prairie Parkland Region</b>	<b>Habitat</b>	<b>Status of Current Monitoring Efforts for Priority Species and Conservation Target Species in the Prairie Parkland Region</b>				<b>New Monitoring Efforts Needed</b>		
<b>Highest Priority Species and Target Conservation Species (in Red)</b>		Minnesota Department of Natural Resources Waterfowl Surveys (in collaboration with the USFWS Mid-Continental Waterfowl Survey)	USGS Breeding Bird Survey <sup>1</sup>				Warrants individual site monitoring	New statewide monitoring effort needed
			Moderate	Deficient	Important Deficiency	No Data		
			Regional Credibility	Precision of Data				
<b>Waterfowl</b>								
<b>Blue-winged Teal</b>	Wetlands	MNDNR Waterfowl Survey		MN BBS Data of moderate precision	Continue to rely on MNDNR Survey			
Northern Pintail	Wetlands	MNDNR Waterfowl Survey		MN BBS Data has an important deficiency	Continue to rely on MNDNR Survey			
<b>Waterbirds</b>								
American Bittern	Wetlands			MN BBS Data has a deficiency	Assess status on priority IBAs <sup>2</sup>	Yes		
Least Bittern	Wetlands			MN BBS Data has an important deficiency	Assess status on priority IBAs <sup>2</sup>	Yes		
Yellow Rail	Wetlands			Not detected by BBS	Assess status on priority IBAs <sup>2</sup>	Yes		
Franklin's Gull	Wetlands			MN BBS Data has an important deficiency	Assess status of Heron Lake where birds have not nested since early 1990s			
<b>Black Tern</b>	Wetlands			MN BBS Data of moderate precision	See Species Conservation Plan			
<b>Shorebirds</b>								
<b>Upland Sandpiper</b>	Grasslands			MN BBS Data has a deficiency	See Species Conservation Plan			
Wilson's Phalarope	Wetlands			MN BBS Data has an important deficiency	Assess status on priority IBAs <sup>2</sup>	Yes		
<b>Landbirds</b>								
Northern Harrier	Grasslands			MN BBS Data has a deficiency	Assess status on priority IBAs <sup>2</sup>			
Short-eared Owl	Grasslands			MN BBS Data has an important deficiency	Assess status on priority IBAs <sup>2</sup>			
Chestnut-collared Longspur	Grasslands			Not detected by BBS	Assess status at Felton Prairie regularly			
<b>Grasshopper Sparrow</b>	Grasslands			MN BBS Data of moderate precision	See Species Conservation Plan			

<sup>1</sup> The categories listed depict the credibility of the Breeding Bird Survey data for each species. Precise definitions can be found at: <http://www.mbr-pwrc.usgs.gov/bbs/credhm09.html>. Data with moderate precision has at least 14 samples in the long term, of moderate precision. A Yellow level of credibility means the data have a deficiency because of the species low abundance (<1.0 birds/route), a small sample size (< 14 routes), or the results cannot detect a 3% per year population change over time. Data with an important deficiency means the species has a low abundance (<0.1 birds/route), small sample size (< 5 routes), and/or the results cannot detect a 5% per year change in population.

<sup>2</sup>Initial focus should be on the region's priority IBAs (see "Where will we work?"); then, if resources are available, identify select IBAs that are most important for the individuals species.

## Habitat Protection, Restoration and Management

The key to focused habitat protection is identifying which habitats are most critical to those species in need of conservation attention. Audubon’s *Conservation Blueprint* relies on the analysis conducted by *Tomorrow’s Habitat for the Wild and Rare: Minnesota’s Comprehensive Conservation Strategy (Minnesota Department of Natural Resources 2006a)*. Table 6 lists all habitats present in the Prairie Parkland Region. Habitats shaded in **RED** are identified as key habitats (see footnotes below) for Species in Greatest Conservation Need in a particular ecological subsection. Target Conservation Species for the region were selected to represent three of the key habitats: Shallow Lakes, Native Prairie/Grassland and Non-forested Wetlands (see Appendix 2). Table 7 lists the habitat associations for each of the region’s highest priority and Target Conservation species.

**Table 6. Key Habitats in the Prairie Parkland Region**

PRAIRIE PARKLAND REGION	Landscapes	Habitats <sup>1</sup>	Key Habitats <sup>2</sup> in each Ecological Subsection within the Prairie Parkland Region (Percent of habitat present in the subsection in the 1990s)				Total # of Subsections
			Red River Prairie	Minnesota River Prairie	Coteau Moraines	Inner Coteau	
<b>Forest</b>		Forest Lowland Deciduous	0.1	0.4	0.3	0.0	1
		Forest Lowland Coniferous	0.3	0.2	-	-	0
		Forest Upland Coniferous	0.0	0.0	0.0	-	0
		Forest Upland Deciduous Aspen-Oak	0.6	0.1	-	-	0
		Forest Upland Deciduous Hardwood	0.6	1.6	0.8	0.2	0
<b>Open</b>		<b>Prairie</b>	0.6	0.0	0.0	0.0	4
		Shoreline-Dunes-Cliff/Talus	N/A	N/A	N/A	N/A	1
		Shrub Lowland	N/A	N/A	-	N/A	0
		Shrub/Woodland-Upland	0.1	0.5	0.4	0.1	0
		Surrogate Grassland	4.6	9.0	12.7	22.7	0
		Cropland	90.2	83.0	82.2	75.9	0
		Developed	0.6	0.8	0.7	0.9	0
	<b>Wetland Nonforested</b>	1.5	1.9	1.0	0.1	4	
<b>Aquatic</b>		Lake Deep	0.3	0.4	0.2	-	0
		Lake Shallow	0.5	2.1	1.7	0.1	1
		River Headwater to Large	N/A	N/A	N/A	N/A	3
		River Very Large	N/A	N/A	N/A	N/A	1

### <sup>1</sup>Background on Habitat Classification:

- Many different classifications have been used in Minnesota to classify bird habitats. These classifications range from a simple classification of cover types to more complex classifications that incorporate age and structural features of the habitats. One of the principal challenges is

that classifications that focus on the plant community rarely incorporate the stand and landscape level features that are important to birds when they select a site(s) for nesting. In addition, the habitats birds use may vary throughout the breeding season, from courtship to nesting to brood rearing.

- For the sake of simplicity, we have used the habitat classification that was developed for Minnesota's Comprehensive Wildlife Conservation Strategy (CWCS): "Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife" (*Minnesota Department of Natural Resources 2006a*). The advantages are that the CWCS is widely available, the habitat classification was developed in consultation with Minnesota County Biological Survey plant community ecologists, it has been cross-walked with Minnesota's Native Plant Community Types, and it incorporates seral stages of plant community succession (e.g. the Shrub Upland Habitat includes plant communities that are successional stages of upland forest communities).

### **<sup>2</sup>Background on Key Habitat Analysis:**

- Key habitats were identified by the Minnesota Comprehensive Wildlife Conservation Strategy. Five different analyses were developed to identify key habitats in each ecological subsection. A prime factor in all five analyses was the use of the habitat by the plan's designated Species in Greatest Conservation Need (SGCN), many of which are also priority species in this plan. Data shown above only includes those key habitats that supported SGCN birds.



**Table 7. Habitat Associations of Highest Priority and Conservation Target Species in the Prairie Parkland Region (colored spaces indicate species use of that habitat)**

PRAIRIE PARKLAND REGION Species	Habitats							
	Forest	Open Landscapes						Aquatic
	Lowland Coniferous	Native Prairie	Shrub Lowland	Shrub/Woodland/Upland	Surrogate Grassland	Cropland	Non-forested Wetland	Shallow Lake
<b>Highest Priority</b>								
Blue-winged Teal								
Northern Pintail								
American Bittern								
Least Bittern								
Northern Harrier								
Yellow Rail							Sedge Meadow	
Upland Sandpiper								
Wilson's Phalarope								
Franklin's Gull								
Black Tern								
Short-eared Owl								
Chestnut-collared								
Grasshopper Sparrow								

## **Recommendations for Habitat Protection, Restoration and Management for Breeding Species in the Prairie Parkland Region**

- Significant habitat protection efforts currently underway

Numerous habitat protection initiatives are underway in the Prairie Parkland Region that are part of broader statewide efforts to protect grasslands and wetlands at both the federal and state level. Long-standing habitat protection efforts (including fee title acquisition, permanent easements and temporary easements) by the USFWS and Minnesota DNR as well as other smaller programs (The Nature Conservancy, Scientific and Natural Areas, Native Prairie Bank, etc.) have resulted in a patchwork of protected wetlands and grasslands. The Conservation Reserve Program also has had a significant impact on the landscape by encouraging farmers to convert highly erodible cropland and/or other environmentally sensitive acreage to vegetative cover. However, as noted earlier, statewide nearly 400,000 of the 1.8 million CRP acres that were protected in Minnesota in 2007 have been converted because of high commodity prices. More recent efforts, such as the Minnesota Prairie Landscape Conservation Plan have taken a broad, landscape level approach in an effort to address the needs for large, interconnected mosaics of wetland and grassland complexes.

- Recommendations for Habitat Protection

1. The Blueprint for Conservation of Minnesota Birds will focus on three Key Habitats within the Prairie Parklands Region: Native Prairie (dry, mesic and wet prairies), Non-forested Wetlands (marshes, wet meadows and wet brush prairie) and Shallow Lakes.

Background:

- Native Prairie and Non-forested Wetlands were identified as Key Habitats in all four Ecological Subsections within the Prairie Parkland Region.
  - Nine of the 13 Highest Priority Species utilize Native Prairie habitat and seven of the 13 utilize Non-forested Wetlands.
  - The only Highest Priority Species in the Region that does not utilize these habitats is Wilson's Phalarope, which is more appropriately classified as a Shallow Lake species.
  - Also, because of the region's overall importance to breeding waterfowl and the significance of both shallow lakes and non-forested wetlands to these species, Shallow Lake habitat was also selected as a Key Habitat.
2. Support the habitat protection goals of Minnesota's recently completed Minnesota Prairie Landscape Conservation Plan (Minnesota Prairie Working Group 2010).
    - Protect 55,123 acres of native prairie; 69,616 acres of grasslands; and 56,123 acres of wetlands within the core areas located in the Prairie Parkland Region identified by the Prairie Landscape Plan (Table 8).
    - Support the Prairie Plan's protection goals for native prairie, grasslands and wetlands within the corridors and agricultural matrix of the Prairie Parkland Region.
    - Ensure that habitat protection efforts meet the habitat requirements of priority species.
  3. Support implementation of Minnesota's Long Range Duck Recovery Plan (*Minnesota Department of Natural Resources 2006b*).
    - Protect and restore 2 million additional acres of habitat (30% wetland, 70% grassland) in wetland/grassland habitat complexes. Assuming no net loss to the existing habitat base, Minnesota will need to protect and restore an average of approximately 40,000 additional acres of habitat per year.
  4. Habitat protection efforts should meet the minimum habitat size requirements for the regions' highest priority species and Target Conservation Species (Table 9).

**Table 8. Habitat Protection Goals for the Core Areas in the Prairie Parkland Region delineated by the Minnesota Prairie Landscape Conservation Plan**

<b>Prairie Parkland Core Areas</b>	<b>Native Prairie Protection Goals (acres)</b>	<b>Grassland Protection Goals (acres)</b>	<b>Wetland Protection Goals (acres)</b>
Blanket Flower Prairie	1,167	0	652
Bluestem Prairie	1,331	0	1,368
Felton Prairie	4,712	0	1,378
Rothsay Prairie	3,092	0	422
Syre Prairie	1,227	0	409
Rush Lake	911	0	198
Wambach Santee Prairie	516	3,043	1,811
Waubun Prairie	1,115	0	543
Glacial Lakes	4,410	18,411	8,760
Agassiz Dunes	939	2,152	1,205
Chester Hills Prairie	1,031	2,453	0
Glacial Ridge	5,024	0	0
Lake Christina Hills	120	4,328	2,083
Antelope Hills	1,326	1,099	1,091
Big Stone Lake Prairie-North	1,146	467	845
Big Stone Lake Prairie-South	1,142	0	983
Big Stone Moraine	1,147	0	1,209
Lac Qui Parle Prairie	6,049	0	249
Lake Traverse Prairie	2,360	824	1,693
Reisdorah Prairie	272	726	547
Upper Minnesota River Valley	3,581	15,786	9,818
Chanarambie Creek	2,821	16	1,611
Hole-In-The-Mountain	2,366	2,992	4,219
Prairie Coteau/Rock River	863	2,745	2,228
Shaokatan Prairies	1,286	833	1,033
Yellow Medicine Coteau	1,168	0	1,406
Cottonwood River Prairies	194	419	380
Des Moines River Valley	2,842	11,173	8,195
Plum Creek	349	745	594
Red Rock Ridge	315	1,404	1,195
<b>TOTAL</b>	<b>55,123 acres</b>	<b>69,616 acres</b>	<b>56,123 acres</b>

**Table 9. Minimum Habitat Requirements for the Highest Priority Species within the Prairie Parkland Region**

<b>Minimum Habitat Area*</b>	<b>Wetlands</b>	<b>Grasslands</b>	<b>Sedge Meadows</b>
<b>&gt;0.5 ha</b>	Blue-winged Teal		
<b>&gt;10 ha</b>	American Bittern		Yellow Rail
	Least Bittern		
<b>&gt;20ha</b>	Black Tern		
<b>&gt;30ha</b>		Grasshopper Sparrow	
<b>&gt;100 ha</b>	Wilson’s Phalarope	Upland Sandpiper	
		Northern Harrier	
		Short-eared Owl	
		Chestnut-collared Longspur	
<b>Hundreds of ha</b>	Franklin’s Gull		

**\*Note:** Minimum habitat needed for Northern Pintail is not available. All species with a minimum area requirement of ≤100 ha would do best in habitats that are 100-250 ha in size. The Grassland Bird Conservation Area (GBCA) model recommends a core of at least 800 ha of grasslands and wetlands to meet the needs of most grassland/wetland species. Further details can be found in the Partners in Flight Plan for Physiographic Region 40 ([http://www.partnersinflight.org/bcps/plan/pl\\_40all.pdf](http://www.partnersinflight.org/bcps/plan/pl_40all.pdf)). Data for most species comes from *Effects of Management Practices on Grassland and Wetland Species*, led by D. Johnson, PhD. USGS (Johnson et al. 2004).

- **Recommendations for Habitat Restoration**

1. Engage in partnerships that support the restoration goals of Minnesota's Prairie Landscape Conservation Plan.
  - Restore 86,389 acres of grassland and 79,281 acres of wetlands within all the core areas located in the Prairie Parkland Region that are identified by the Prairie Landscape Plan (Table 10).
  - Support the Prairie Pan’s restoration goals for native prairie, grasslands and wetlands within the corridors and agricultural matrix within the Prairie Parkland Region.
  - Ensure that habitat restoration efforts meet the habitat requirements of individual priority species.
2. Engage in partnerships that support the habitat restoration goals of Minnesota’s Long Range Duck Recovery Plan.
  - Protect and restore 2 million additional acres of habitat (30% wetland, 70% grassland) in wetland/grassland habitat complexes. Assuming no net loss to the existing habitat base, Minnesota will need to protect and restore an average of approximately 40,000 additional acres of habitat per year.
  - Continue the ongoing management of 1,800 shallow lakes across Minnesota (which provide habitat for many high priority wetland birds).
3. Support continuation of the Wetland Reserve Program, the Conservation Reserve Program, the Conservation Reserve Enhancement Program, the Grassland Reserve Program and the Reinvest in Minnesota Reserve Program, which provide thousands of acres of wetland and grassland habitat for high priority species in Minnesota. Support continued funding for all federal and state grassland and wetland restoration programs.

**Table 10. Habitat Restoration Goals for the Core Areas in the Prairie Parkland Region delineated by the Minnesota Prairie Landscape Conservation Plan**

<b>Prairie Parkland Core Areas</b>	<b>Grassland Restoration Goals (acres)</b>	<b>Wetland Restoration Goals (acres)</b>
Blanket Flower Prairie	0	1,088
Bluestem Prairie	0	1,907
Felton Prairie	0	2,281
Rothsay Prairie	0	1,810
Syre Prairie	0	576
Rush Lake	787	0
Wambach Santee Prairie	9,393	2,186
Waubun Prairie	2,624	0
Glacial Lakes	5,137	0
Agassiz Dunes	0	644
Chester Hills Prairie	145	0
Glacial Ridge	0	2,758
Lake Christina Hills	3,063	1,783
Antelope Hills	0	2,024
Big Stone Lake Prairie-North	1,159	1,074
Big Stone Lake Prairie-South	1,740	1,849
Big Stone Moraine	1,007	1,669
Lac Qui Parle Prairie	4,624	6,834
Lake Traverse Prairie	3,575	2,649
Reisdorah Prairie	1,558	668
Upper Minnesota River Valley	27,835	10,863
Chanarambie Creek	548	2,984
Hole-In-The-Mountain	0	7,762
Prairie Coteau/Rock River	0	3,512
Shaokatan Prairies	0	1,871
Yellow Medicine Coteau	0	2,397
Cottonwood River Prairies	0	552
Des Moines River Valley	18,762	14,085
Plum Creek	1,266	1,157
Red Rock Ridge	3,168	2,296
<b>TOTAL</b>	<b>86,389 acres</b>	<b>79,281 acres</b>

- Recommendations for Habitat Management

**Table 11. Management Recommendations for Highest Priority and Conservation Target Species**

**Note:** This table includes specific habitat parameters to include in managing habitat for the Highest Priority Species. Water depth information comes from various accounts; most data comes from the series, *Effects of Management Practices on Grassland and Wetland Species*, led by D. Johnson, PhD. USGS (*Johnson et al. 2002, Johnson et al. 2004*); data on minimum size requirements comes from Table 9.

Species	Minimum Area	Vegetation height (cm)	Visual obstruction reading (Robel pole)	Grass cover (%)	Forb cover (%)	Shrub cover (%)	Bare ground cover (%)	Litter cover (%)	Litter depth (%)	Wetland Drawdowns	Grassland Disturbance (burning, mowing, grazing)	Water depth
<b>Wetland Species</b>											<b>Note:</b> all disturbances need to leave some areas untreated	
Blue-winged Teal	>0.5 ha	-	-	-	-	-	-	-	-	Periodic	Periodic	<1m
Northern Pintail	Unknown	-	-	-	-	-	-	-	-	Periodic	Periodic	-
American Bittern	> 10 ha	30-203	44-49	-	-	-	-	-	-	-	Not more often than 2-5 years	<61cm
Least Bittern	> 10 ha	-	-	-	-	-	-	-	-	-	-	>30cm
Yellow Rail	> 10 ha	-	-	-	-	-	-	-	-	-	Periodic burning	3-4cm
Wilson's Phalarope	> 100 ha	17-32	8-12	-	-	-	-	-	<3	-	Periodic burning	-
Franklin's Gull	Hundreds of has	-	-	-	-	-	-	-	-	Drawdowns unsuitable	-	15-180cm
Black Tern	> 20 ha	-	-	-	-	-	-	-	-	-	Remove woody vegetation along wetland margin	>30cm
<b>Grassland Species</b>												
Northern Harrier	> 100 ha	15-82	7-54	33-53	18-25	<2	3-5	12-30	2-6	-	Not more often than 2-5 years	-
Upland Sandpiper	> 100 ha	<82	5-20	>33	<50	<13	3-12	11-30	≤9	-	Every 2-4 years	-
Short-eared Owl	> 100 ha	30-90	21-47	85	8	-	-	-	-	-	Every 2-5 years	-
Chestnut-collared Longspur	> 100 ha	15-52	1-17	38-67	6-16	<5	1-12	6	1-7	-	Prefers grazed prairie	-
Grasshopper Sparrow	> 30 ha	<134	6-40	33-95	4-33	<35	≤35	6-61	≤9	-	Every 2-4 years	-

## *Where are we going to work?*

### **Breeding Grounds**

#### **Important Bird Areas to Focus on in Minnesota's Prairie Parkland Region**

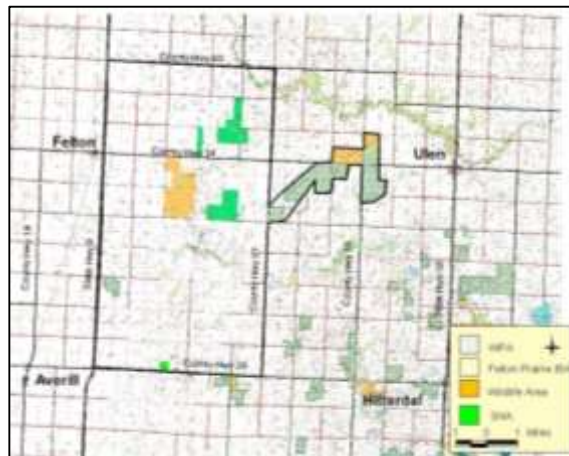
- Significant IBAs to focus efforts on for Priority Species

A broad analysis of the IBAs in Minnesota's Prairie Parkland Region was conducted to assess their relative importance using the following criteria:

1. Presence of priority species
2. Threats to the site
3. Need to act
4. Ability to acquire funding
5. IBA aligns with partner priorities
6. Bird Life ranking
7. Audubon Minnesota capabilities/capacity

Following this analysis, a more detailed analysis of the sites importance to the priority species was conducted. The result was the identification of two sites where more focused work is warranted at this time:

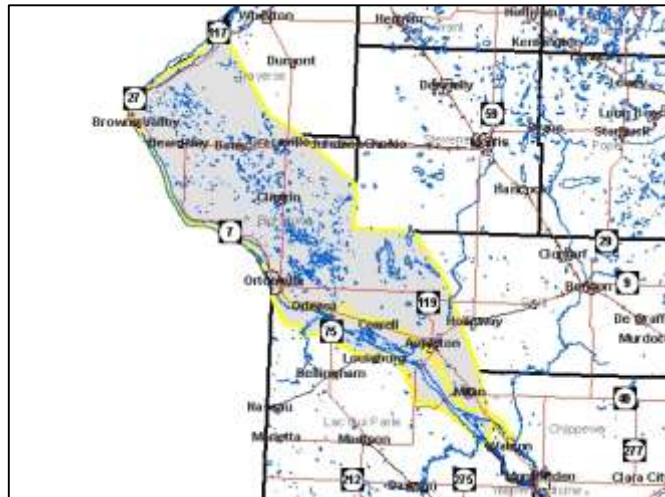
#### **Felton Prairie Important Bird Area, Clay County**



#### **Felton Prairie Recommendations:**

1. Conduct an updated assessment of the priority bird species present on the IBA.
2. Regularly monitor the Chestnut-collared Longspur population on the B-B Ranch portion of Felton Prairie; this is the only site in the state where they have regularly occurred for decades.
3. Regularly monitor the populations of all the highest priority birds on the entire IBA.
4. Assess opportunities for collaboration with MNDNR's Prairie Monitoring and Evaluation Program.
5. Conservation partners should work to:
  - Ensure the long-term maintenance of grazed prairie conditions on the B-B ranch
  - Protect the prairie complex from gravel mining
  - Conduct periodic burns on the publically owned tracts within the complex
  - Ensure the long-term protection of the privately owned B-B ranch
  - Ensure that wind energy development does not impact prairie birds

## Lac Qui Parle – Big Stone Important Bird Area, Lac Qui Parle and Big Stone Counties



### Lac Qui Parle – Big Stone Recommendations:

1. Work with conservation partners to ensure the White Pelican Colony at Lac Qui Parle County is regularly monitored (noted under Stewardship Species)
2. Regularly monitor populations of all the highest priority birds on the IBA.
3. Assess opportunities for collaboration with MNDNR's Prairie Monitoring and Evaluation Program.
4. Conservation partners should work to:
  - Ensure that the publically owned tracts within the complex are burned on a regular rotational basis
  - Annually monitor the abundance and diversity of shorebird migrants in the complex each spring
  - Ensure that wind energy development does not impact priority grassland and wetland species
  - Ensure that vital grassland and wetland tracts are protected as home development and energy development (biomass) expands in the area

## Migration Stopovers

### Important Migrant Shorebird Habitats

Shorebirds that depend on wetland habitats for migration usually require shallow waters that vary from damp mudflats to waters that are up to 6 inches deep. Vegetative cover is generally minimal (<25%). The most important criteria is the abundance of invertebrates (insects, crustaceans, worms and spiders) to help refresh depleted fat reserves from their long flights from the wintering grounds and to provide additional fuel for the remaining journey north.

- Recommendations for Shorebird Migrant Habitat
  1. Support the establishment of moist-soil management units that create shorebird habitat:
    - Seek cooperative projects with the Prairie Pothole Joint Venture, USFWS, and MNDNR to develop moist-soil management units for temporary water retention and shorebirds.
    - Document the value of these new sites to migrating shorebirds, with an initial emphasis on spring migrants.



- Consider establishing a shorebird monitoring project in collaboration with the DNR on the Lac Qui Parle WMA moist-soil management unit and on the NRCS's North Ottawa Project in Grant County.
2. Assess the contribution of Flood Water Damage Reduction Impoundments to providing migratory shorebird habitat.

## ***Selected Resources***

### **Waterfowl**

Ringelman, J.K., R E. Reynolds and R.R. Johnson. 2005. Prairie Pothole Joint Venture: 2005 Implementation Plan, Section II-Waterfowl Plan.

U.S. Fish and Wildlife Service, U.S. Department of the Interior, the Canadian Wildlife Service, Environment Canada, and SEMARNAP Mexico. 2004. 2004 Strategic Guidance: Strengthening the Biological Foundation. North American Waterfowl Management Plan.

U.S. Fish and Wildlife Service, U.S. Department of the Interior, the Canadian Wildlife Service, Environment Canada, and SEMARNAP Mexico. 2004. 2004 Implementation Framework: Strengthening the Biological Foundation. North American Waterfowl Management Plan.

### **Waterbirds**

Beyersbergen, G.W., N.D. Niemuth, and M.R. Norton, coordinators. 2004. Northern Prairie & Parkland Waterbird Conservation Plan. A plan associated with the Waterbird Conservation for the Americas initiative. Published by the Prairie Pothole Joint Venture, Denver, Colorado. 183 pp.

Kushlan, J. M. J. Steinkamp, K. C. Parsons, J. Capp, M. A. Cruz, M. Coulter, I. Davidson, L. Dickson, N. Edelson, R. Elliot, R. M. Erwin, S. Hatch, S. Kress, R. Milko, S. Miller, K. Mills, R. Paul, R. Phillips, J. E. Saliva, B. Sydeman, J. Trapp, J. Wheeler, and K. Wohl. 2002. Waterbird Conservation for the Americas: The North American Waterbird Conservation Plan, Version 1. Waterbird Conservation for the Americas. Washington, DC, U.S.A.

Niemuth, N.D. 2005. Prairie Pothole Joint Venture: 2005 Implementation Plan, Section IV-Waterbird Plan.

### **Shorebirds**

Brown, S., C. Hickey, B. Harrington, and R. Gill, eds. 2001. The U.S. Shorebird Conservation Plan, 2nd ed., Manomet Center for Conservation Sciences, Manomet, MA. Northern Prairie and Parkland Waterbird Region Plan.

Granfors, D.A. and N.D. Niemuth. 2005. Prairie Pothole Joint Venture: 2005 Implementation Plan, Section III-Shorebird Plan.

Skagen, S.K. and G. Thompson. 2013. Northern Plains/Prairie Potholes Regional Shorebird Conservation Plan Version 1.0, Updated January 2013. Online Version available at: <http://www.shorebirdplan.org/wp-content/uploads/2013/01/NORPLPP2.pdf>.

### **Landbirds**

Berlanga H., J. A. Kennedy, T. D. Rich, M. C. Arizmendi, C. J. Beardmore, P. J. Blancher, G. S. Butcher, A. R. Couturier, A. A. Dayer, D. W. Demarest, W. E. Easton, M. Gustafson, E. Inigo-Elias, E. A. Krebs, A. O. Panjabi, V. Rodriguez Contreras, K. V. Rosenberg, J. M. Ruth, E. Santana Castellon, R. Ma. Vidal, and T. Will. 2010. Saving Our Shared Birds: Partners in Flight Tri-National Vision for Landbird Conservation. Cornell Lab of Ornithology: Ithaca, NY.

Fitzgerald, J.A., D.N. Pashley, S.J. Lewis and B. Pardo. 1998. Partners in Flight Bird Conservation Plan for the Northern Tallgrass Prairie (Physiographic Area 40). Online available at: [http://www.partnersinflight.org/bcps/plan/pl\\_40all.pdf](http://www.partnersinflight.org/bcps/plan/pl_40all.pdf).

Partners in Flight Science Committee 2013. Population Estimates Database, version 2013. Available at <http://rmbo.org/pifpopestimates>. Accessed on January 2014.

Rich, T. D., C. J. Beardmore, H. Berlanga, P. J. Blancher, M. S. W. Bradstreet, G. S. Butcher, D. W. Demarest, E. H. Dunn, W. C. Hunter, E. E. Inigo-Elias, J. A. Kennedy, A. M. Martell, A. O. Panjabi, D. N. Pashley, K. V. Rosenberg, C. M. Rustay, J. S. Wendt, T. C. Will. 2004. Partners in Flight North American Landbird Conservation Plan. Cornell Lab of Ornithology. Ithaca, NY.

Rosenberg, K. V. 2004. Partners in Flight Continental Priorities and Objectives Defined at the State and Bird Conservation Region Levels: Minnesota. Cornell Lab of Ornithology.

## Other

Commission for Environmental Cooperation. 1997. Ecological Regions of North America: Toward a Common Perspective. Available at: <http://www3.cec.org/islandora/en/item/1701-ecological-regions-north-america-toward-common-perspective-en.pdf>.

Dexter, M.H., editor. 2012. Status of wildlife populations, fall 2012. Unpub. Rep., Division of Fish and Wildlife, Minn. Dept. Nat. Res., St. Paul, Minnesota. 311 pp.

Johnson, Douglas H., and Jill A. Dechant-Shaffer (Series Coordinators). 2002. Effects of management practices on wetland birds. Northern Prairie Wildlife Research Center, Jamestown, ND. Northern Prairie Wildlife Research Center. Online: <http://www.npwrc.usgs.gov/resource/literatr/wetbird/index.htm> (Version 12Dec2003).

Johnson, Douglas H., Lawrence D. Igl, and Jill A. Dechant Shaffer (Series Coordinators). 2004. Effects of management practices on grassland birds. Northern Prairie Wildlife Research Center, Jamestown, ND. Jamestown, ND: Northern Prairie Wildlife Research Center. Online. <http://www.npwrc.usgs.gov/resource/literatr/grasbird/index.htm> (Version 12AUG2004).

McDonald, K. 2013. Is Anyone Paying Attention? We've Lost 9.7 Million Acres of RP Land in Five Years. Online at: <http://www.bigpictureagriculture.com/2013/03/weve-lost-9-7-million-acres-of-crp-land-in-five-years-334.html>.

Minnesota Administrative Rules. Chapter 6134. Endangered, Threatened, Special Concern Species. Department of Natural Resources. Part 6134.0200. Animal Species. Online available at: <https://www.revisor.mn.gov/rules/?id=6134.0200>.

Minnesota Department of Natural Resources. 2005. Field Guide to the Native Plant Communities of Minnesota: The Prairie Parkland and Tallgrass Aspen Parklands Provinces. Ecological Land Classification Program, Minnesota County Biological Survey and Natural Heritage and Nongame Research Program. MNDNR, St. Paul, MN.

Minnesota Department of Natural Resources. 2006a. *Tomorrow's Habitat for the Wild and Rare: An Action Plan for Minnesota Wildlife*, Comprehensive Wildlife Conservation Strategy. Division of Ecological Services, Minnesota Department of Natural Resources.

Minnesota Department of Natural Resources. 2006b. Long Range Duck Recovery Plan. Division of Fish and Wildlife, Minnesota Department of Natural Resources.

Minnesota Department of Natural Resources. 2007. Range Distribution Maps for Minnesota Birds by Ecological Subsection. Division of Fish and Wildlife, Minnesota Department of Natural Resources.

Minnesota Department of Natural Resources. 2010. Shallow Lakes Program Plan. Minnesota Department of Natural Resources, Division of Fish and Wildlife, Wildlife Management Section. December 2010.

Minnesota Department of Natural Resources. 2012. 2012 Waterfowl Breeding Population Survey: Minnesota. Compiled by Steve Cordts. Wetland Wildlife Populations and Research Program. Division of Fish and Wildlife, Minnesota Department of Natural Resources, Bemidji, MN.

Minnesota Ornithologists Union. Minnesota Bird Occurrence Maps. Available online: <http://moumn.org/menu.php#occurrence>.

Minnesota Prairie Plan Working Group. 2010. Minnesota Prairie Conservation Plan. Minnesota Prairie Plan Working Group, Minneapolis, MN. 55p.

Roberts, T. S. 1932. The Birds of Minnesota. University of Minnesota Press.

Sauer, J. R., J. E. Hines, J. E. Fallon, K. L. Pardieck, D. J. Ziolkowski, Jr., and W. A. Link. 2014. The North American Breeding Bird Survey, Results and Analysis 1966 - 2012. Version 02.19.2014 [USGS Patuxent Wildlife Research Center](http://www.mbr-pwrc.usgs.gov/bbs/bbs.html), Laurel, MD. Online at: <http://www.mbr-pwrc.usgs.gov/bbs/bbs.html>.

U.S. Forest Service. 2012. National Forest System Land Management Planning: Final rule and record of decision. Federal Register Vol. 77. No. 68. Pp 21162-21276.

## Appendix 1. Process for selection of Priority Breeding Species in the Prairie Parkland Region

- **Very Rare and Known to be Declining**

All of these species have historically been a component of Minnesota's Prairie Parkland avifauna but are extremely rare and have experienced documented declines in abundance and/or distribution. These species are considered too rare and/or sporadic in their occurrence to justify focused conservation efforts.

- **Highest Priority Level**

Two approaches were used to identify priority species in each ecological region. The first approach relied heavily on assessments compiled by a team of experts for each Bird Conservation Region delineated by the North American Bird Conservation Initiative; the second approach incorporates more data specific to the species population in Minnesota. The Highest Priority Level was determined as follows:

1. Landbirds

Landbird species that had the highest Partners in Flight (PIF) Regional Combined Assessment Scores (RCSb $\geq$ 14 and PTr  $\geq$ 4 and TB  $\geq$  4; <http://www.rmbo.org/pif/scores/scores.html> ) **and** which were declining in the BCR (Prairie Potholes Region) in Minnesota and were dependent on vulnerable habitat in Minnesota were classified as the Highest Priority Level species.

2. Waterbirds

Waterbird species that were rated "High Concern" in the Northern Prairie and Parkland Region by the North American Waterbird Conservation Plan (<http://www.pwrc.usgs.gov/naewcp/pdfs/regional/NPPTText.pdf>) **and** which were declining in Minnesota and were dependent on vulnerable habitat in Minnesota were classified as the Highest Priority Level species.

3. Shorebirds

Shorebird species that were rated "Highly Imperiled", "High Concern" or "Moderate Concern" in the Northern Plains and Prairie Region by the U.S. Shorebird Conservation Plan (<http://www.fws.gov/shorebirdplan/RegionalShorebird/downloads/NORPLPP2.pdf>), the prairie region was rated as very important for either migration or breeding for the species, **and** the species were declining in Minnesota and were dependent on vulnerable habitat in Minnesota were classified as the Highest Priority Level species.

4. Waterfowl

Waterfowl species that were rated "Highest" in the North American Waterfowl Management Plan 2004 Implementation Framework in the Prairie Region (<http://www.fws.gov/birdhabitat/nawmp/files/ImplementationFramework.pdf>) **and** which were declining in Minnesota and were dependent on vulnerable habitat in Minnesota were classified as the Highest Priority Level species.

- **High Priority Level**

1. Landbirds

Landbirds that had a high PIF Regional Combined Assessment Score (RCSb $\geq$ 14 and PTr + TB  $\geq$ 7) **and** which were declining in the BCR (Prairie Potholes) in Minnesota and were dependent on vulnerable habitat in Minnesota were classified as the High Priority Level species. Occasionally a species that met only one of these criteria was added if it was also recognized as a priority species by other initiatives.

2. Waterbirds

Waterbird species that were rated "Moderate Concern" in the Northern Prairie and Parkland Region by the North American Waterbird Conservation Plan **and** which were declining in Minnesota and were dependent on vulnerable habitat in Minnesota were classified as the High Priority Level species. Occasionally a species that met only one of these criteria was added if it was also recognized as a Priority species by other initiatives.

3. Shorebirds  
Shorebird species that were rated “High Concern” or “Moderate Concern” in the Northern Plains and Prairie Region by the U.S. Shorebird Conservation Plan, regardless of whether the prairie region was rated as very important for migration or breeding, **and** the species were declining in Minnesota and were dependent on vulnerable habitat in Minnesota were classified as the High Priority Level species. Occasionally a species that met only one of these criteria was added if it was also recognized as a Priority species by other initiatives.
  4. Waterfowl  
Waterfowl species that were rated “High” or “Moderately High” in the North American Waterfowl Management Plan 2004 Implementation Framework in the Prairie Region (<http://www.fws.gov/birdhabitat/nawmp/files/ImplementationFramework.pdf>) **and** which were declining in Minnesota and were dependent on vulnerable habitat in Minnesota were classified as the High Priority Level species. Occasionally a species that met only one of these criteria was added if it was also recognized as a Priority species by other initiatives.
- **Moderate Priority Level**  
Species that met the criteria listed above by their respective North American Bird Conservation Plan as High Level Species, which were declining in Minnesota and were dependent on vulnerable habitat in Minnesota, **or** were also recognized by other initiatives as priority species (e.g. Joint Venture Focal Species, state listed species, PIF Continental Concern Species, PIF Stewardship Species) were classified as Moderate Level Priorities.

## Appendix 2. Process for Selecting Target Conservation Species in the Prairie Parkland Region

Target Conservation Species have been defined by various initiatives. In this plan the concept mirrors that of the U.S. Forest Service and the North American Joint Ventures. A target species is essentially a species “who’s status and trends are likely to be responsive to changes in ecological conditions, permit inference to the integrity of the overall ecosystem and provide meaningful information regarding the effectiveness of the plan” (*U.S. Forest Service 2012*).

Using this definition, the key habitats present in each Ecological Region, as delineated by *Tomorrow’s Habitat for the Wild and Rare: An Action Plan for Minnesota (Minnesota Department of Natural Resources 2006a)*, were identified (see Table 6). One or more Target Conservation Species was then selected, from amongst the pool of priority species shown in Table 1, for the most important key habitats in the region.

In Minnesota’s Prairie Parkland Region the following habitats were identified as “Key Habitats”:

Forest Lowland Deciduous	Lake: Shallow
Prairie	River Headwater to Large
Shoreline-Dune-Cliff/Talus	River Very Large
Wetland Non-forested	

These seven key habitats were focused down to three key components of the Prairie Parkland landscape: Shallow Lakes, Native Prairie/Grasslands and Non-forested Wetlands and Target Conservation Species selected for each.

To help guide the decision about which species to select as the Target Conservation Species a prioritization matrix was established that assessed species using the following criteria:

1. Species Level of Priority
2. Species Ecological Significance
3. Species Management Significance
4. Cost Effectiveness and Feasibility of Managing
5. Species Sensitivity to Climate Change
6. Percent of the Species Global Breeding Range that occurs in Minnesota

The priority was to select a target species from the Highest Priority category of species that was ranked high with the above criteria. When that was not feasible, species were selected from the other priority categories.