



Credit: Rebecca Field

Franklin's Gull Minnesota Conservation Plan

*Audubon Minnesota
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Franklin Gull Conservation Plan

Leucophaeus pipixcan

Priority for Minnesota's *Implementation Blueprint for Bird Conservation*

- Prairie Parkland Region (Prairie Parkland Ecological Province): Highest Level Priority
- Tallgrass Aspen Parklands Region (Tallgrass Aspen Parklands Ecological Province): Highest Level Priority

Executive Summary

Audubon Minnesota has selected the Franklin's Gull as one of 26 Target Conservation Species in the state and one of three species selected to represent Minnesota's Tallgrass Aspen Parkland Region (also known as the Tallgrass Aspen Parkland Ecological Province by Minnesota's Ecological Classification System and Bird Conservation Region 11 by Partners in Flight). The other two Target Conservation Species for the region and their level of priority are shown in the table below. Conservation Plans were only prepared for the highest priority Target Conservation Species in the region; so a plan also has been prepared for the Upland Sandpiper.

Highest Level Priority	High Level Priority
Upland Sandpiper	Sharp-tailed Grouse
Franklin's Gull	

Franklin's Gull is a colonial nester found in large, shallow marshes of the northern Great Plains and central Canada. Its' large, mono-specific colonies often support thousands of birds. Minnesota's largest and most active colony occurs on the Agassiz National Wildlife Refuge (NWR) in northwestern Minnesota. When water conditions are suitable this colony may support 10,000 to 40,000 breeding pairs. If conditions are unsuitable many pairs move north to the Thief Lake Wildlife Management Area (WMA). Historically Heron Lake, located in southwestern Minnesota, supported nearly 100,000 breeding pairs. Fluctuations in water levels due to intensive agriculture led to abandonment for many years but management efforts led to the colony's brief re-establishment. Agassiz NWR, Thief Lake WMA, and Heron Lake are Audubon Minnesota Important Bird Areas.

The federal Breeding Bird Survey (BBS) has documented large population declines nationally, regionally and in Minnesota for the Franklin's Gull. The quality of the data in Minnesota, however, is particularly poor. Because it is a colonial nester, limited to only a couple of suitable sites located in large wetland complexes, it is not well-surveyed by the roadside counts employed by the BBS. Regardless, the number of nesting birds reported by numerous observers over the years has declined significantly. The loss of large, shallow wetlands and fluctuating water levels at many of the remaining wetlands during the breeding season are the primary factors responsible for the decline.

This Conservation Plan is divided into two parts. The first provides background on the Franklin's Gull, including its status, distribution, habitat requirements and management needs. The second is a detailed conservation plan that outlines specific management recommendations. The highest priorities are to periodically monitor the well-established colonies of Franklin's Gulls every 3 to 5 years, to implement the goals of the Minnesota's Prairie Landscape Conservation Plan in the Aspen Parklands, and to work with the Heron Lake Watershed Management District and support their recently updated management plan.

Introduction

The Franklin's Gull was selected as a **Target Conservation Species** for *Blueprint for Minnesota Bird Conservation* (<http://mn.audubon.org/>). It is one of three Target Conservation Species selected for the Tallgrass Aspen Parkland Region (also known as the Tallgrass Aspen Parkland Ecological Province by Minnesota's Ecological Classification System and part of Partners In Flight's Bird Conservation Region 11), one of Minnesota's four ecological regions. The process for selecting target conservation species is described in the *Blueprint's* conservation recommendations for the Tallgrass Aspen Parklands Region and is available on the Audubon Minnesota website. Briefly, target species are defined as birds 'whose 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.' This has been broadly adapted from the U.S. Forest Service's definition of Focal Species in the 2012 revisions to the National Forest System Land and Management Planning Rule (*U.S. Forest Service 2012*).

In the Tallgrass Aspen Parklands Region target species were selected to represent the following habitats as delineated and described by the Minnesota Department of Natural Resources in *Tomorrow's Habitat for the Wild and Rare* (Minnesota Department of Natural Resources 2006):

1. Brush Prairie
2. Wetlands
3. Prairies/Grasslands

Franklin's Gull was selected to represent wetland habitats. A complete list of the other priority birds and conservation targets in the Tallgrass Aspen Parklands Region can be found in the *Implementation Blueprint*. Because the Blueprint's primary emphasis is to focus attention and resources on a small, select number of conservation targets, a comprehensive conservation plan was prepared for only two of the region's three target conservation species, i.e. those that were designated the Highest Level Priority.

Background

Status

Legal Status: Officially listed as a State Special Concern Species in Minnesota (*Minnesota Administrative Rules, Chapter 6134.0200, Subpart 2(C)*).

Other Status Classifications:

1. National
 - North American Waterbird Conservation Plan: Moderate Concern; apparently stable population (Population Trend = 3) (*Kushlan 2002*).
2. Regional
 - Northern Prairie and Parkland (NPP) Waterbird Region: High Concern (very high continental responsibility for conservation of this species in the NPP region) (*Beyersbergen et al. 2004*).
 - Upper Mississippi River and Great Lakes Waterbird Region: Status yet to be determined (*Wires et al. 2010*).
3. Minnesota
 - Minnesota Species of Greatest Conservation Need (*Minnesota Department of Natural Resources 2006*); it is proposed to remain on the list of Species in Greatest Conservation Need in 2013.
 - Minnesota Audubon Action List (*Audubon Minnesota 2008*).

Range

Historical Breeding Range: Franklin's Gull is a prairie marsh species largely restricted to the Prairie Pothole region of the northern Great Plains and central Canada, from central Alberta east to southern Manitoba and south to northern Montana, South Dakota, North Dakota, Iowa and Minnesota. Because it requires expansive prairie marshes for nesting, its presence from year to year depends on local water conditions. The sites it chooses for nesting are often inaccessible, making it more difficult, particularly historically, to track population numbers and movements of individual colonies. It is thought that when the prairies of the Great Plains were settled and considerable wetland draining occurred that the population range contracted in the southern portion of its range, later expanding in the 1920s only to contract once again during the Dust Bowl era of the 1930s. Historically, Franklin's Gulls bred as far south as northern Iowa and South Dakota (*Burger and Gochfeld 2009*).

In Minnesota, the Franklin's Gull formerly occurred throughout the western prairie region, from the Iowa border north to Manitoba, nesting in at least 10 locations (*Minnesota Department of Natural Resources 2008*). One of the largest colonies in the state was at Heron Lake in Jackson County. In the late 1930s this site is reported to have supported up to 100,000 nesting pairs (*Roberts 1932*).

Current Breeding Range: While its range in the southern Great Plains has contracted, Franklin's Gull appears to have expanded its breeding range west as far as British Columbia and Oregon and south into the Great Basin where it was not found in the nineteenth century. Colonies are now reported in Colorado, Idaho and Utah. Some of the expansion is considered an outcome of the establishment of protected wildlife refuges where water levels are often controlled (*Burger and Gochfeld 2009*, Figure 1).

In Minnesota, the species is still restricted to the western region of the state but the colonies are fewer in number and vary considerably in location and size from year to year. Heron Lake, for example, may have been the largest colony in the 1930s but the heavily drained and cultivated landscape surrounding the lake deposits the water from storm events right into the lake, resulting in sudden increases in water levels that can wash out nests at critical points during the nesting season. Following a drawdown in 1994 the colony was abandoned for many years but up to 50,000 nesting pairs were reported in following years. Further north the largest colony is at the Agassiz National Wildlife Refuge (NWR) which supports upwards of 40,000 nesting pairs; 29,669 pairs were reported in 2005 (*Agassiz National Wildlife Refuge 2005*). When conditions are not suitable at Agassiz NWR, some birds appear to move just a few miles north to the Thief Lake State Wildlife Management Area, which may harbor a much smaller colony of a few thousand in some years. In 1997 smaller colonies were reported at Rocky Point in Lake of the Woods County, North Long Lake in Crow Wing County and Lake Osakis in Douglas and Todd counties (*Minnesota Department of Natural Resources 2008*). Minnesota's Breeding Bird Atlas, conducted between 2009-2013, reported two other nesting locations during the 2013 breeding season: Salt Lake in Lac Qui Parle County (fledged young and approximately 60 adults observed) and Upper Red Lake in Beltrami County (fledged young observed; the number of adults was not reported). Table 1 lists all locations where Franklin's Gull nesting attempts have been reported.

Table 2 is extracted from the Franklin's Gull account in *Birds of North America* (*Burger and Gochfeld 2009*) which summarized the status of four of these Minnesota breeding colonies.

Summary of Presence on Audubon Minnesota Important Bird Areas: The three largest nesting colonies in Minnesota are on Important Bird Areas designated by Audubon Minnesota: Agassiz National Wildlife Refuge, Thief Lake Wildlife Management Area and Heron Lake. The smaller colony on Lake Osakis, is also located within an IBA (Lake Osakis). In the past Franklin's Gulls have been reported nesting on the Big Stone National Wildlife Refuge (within the Lac Qui Parle-Big Stone IBA) and on the Chippewa Plains IBA. Franklin's Gulls have also been reported as a spring or fall migrant and/or as a summer visitant at 33 other IBAs in Minnesota.

Table 1. Locations where Franklin’s Gulls Nesting Attempts have been Reported in Minnesota

Location	County	Date	Source
Agassiz NWR	Marshall	2005-2007	See Table 2.
Big Stone NWR	Big Stone	Unknown	Refuge list of nesting birds http://www.npwrc.usgs.gov/resource/birds/chekbird/r3/bigstn.htm .
Breckenridge Sewage Lagoons	Wilkin	1986 only	Natural Heritage Rare Features Database
Chippewa National Forest	Itasca, Cass, Beltrami	Unknown	National Forest list of nesting birds http://www.fs.fed.us/r9/chippewa/plan/program_areas/wildlife/birdlist.pdf
Dog Lake	Kandiyohi	1948-1951	Natural Heritage Rare Features Database
East Grand Forks Sewage Lagoons	Polk	1986	Natural Heritage Rare Features Database
East Park WMA	Marshall	1981-1988	Natural Heritage Rare Features Database
Heron Lake	Jackson	Intermittent after 1994	<i>Minnesota Department of Natural Resources 2008</i>
Lake Lilian	Kandiyohi	1941-1943	Natural Heritage Rare Features Database
Lake Lillian Slough	Kandiyohi	1945-1946	Natural Heritage Rare Features Database
Lake Osakis	Douglas, Todd	1997	<i>Minnesota Department of Natural Resources 2008</i>
Middle Lake	Nicollet	1965	Natural Heritage Rare Features Database
North Long Lake	Crow Wing	1997	<i>Minnesota Department of Natural Resources 2008</i>
Reservation Dam WMA	Traverse	1942	Natural Heritage Rare Features Database
Rocky Point, Lake of the Woods	Lake of the Woods	1997	<i>Minnesota Department of Natural Resources 2008</i>
Salt Lake	Lac qui Parle	2013	Minnesota Breeding Bird Atlas
Thief Lake WMA	Marshall	Intermittent	Natural Heritage Rare Features Database
Upper Red Lake	Beltrami	2013	Minnesota Breeding Bird Atlas

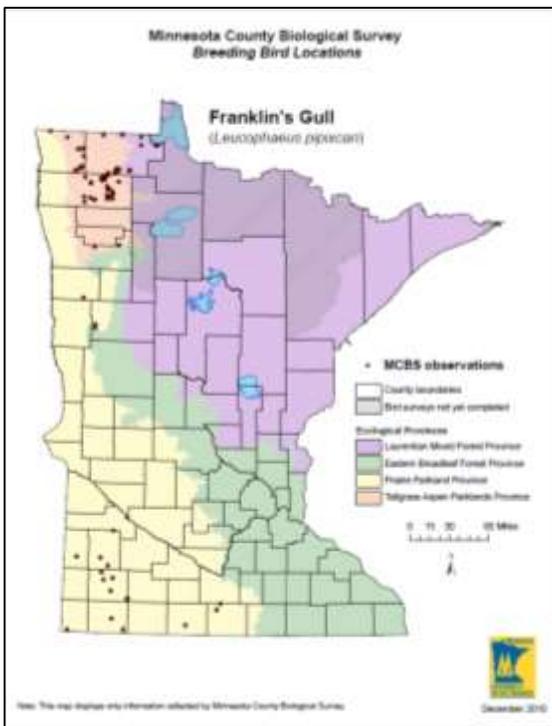
Table 2. Status of Minnesota Franklin’s Gull Colonies

Figure 1. Franklin’s Gull Distribution Maps

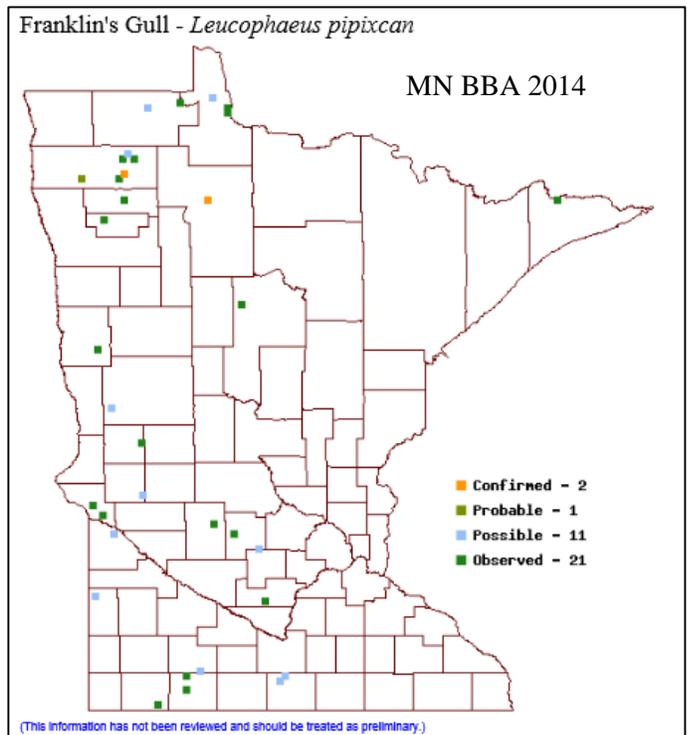
Refuge or Other Area	Status and Trends	Range in Breeding Pairs before 1994	No. of Breeding Pairs in 1994	Other species nesting within colony	Source
Agassiz NWR	Present since refuge formed in 1939; stable to increasing until severe predation events in 2006 and 2007	10,000-40,000	40,000	Eared Grebe, Western Grebe, Black-crowned Night-Heron, Ducks.	<i>Burger 1972, Kotak, G. Huschle, G. Knutsen, M. Gochfeld, Agassiz NWR</i>
Thief Lake WMA	Periodic use when Agassiz not available	5,000-10,000	2,000	Black-crowned Night-Heron	<i>J. Huener, P Telander, L. Will, J. Burger, M.Gochfeld</i>
Heron Lake	Occupied prior to 1930s and after 1985; drained in between, stable since 1985. Drawdown in 1994. Water levels increased, but gulls did not return for many years	100-50,000	-	Eared Grebe, Forster’s Tern, Black-crowned Night-Heron	<i>J. Braastad, J.Voit</i>
Lake Osakis	Active in wet years	<1,000	0	Forster’s Tern	<i>J. Braastad</i>



Birds of North America - <http://bna.birds.cornell.edu/bna/>



MN DNR http://www.dnr.state.mn.us/eco/mcbs/bird_map_list.html



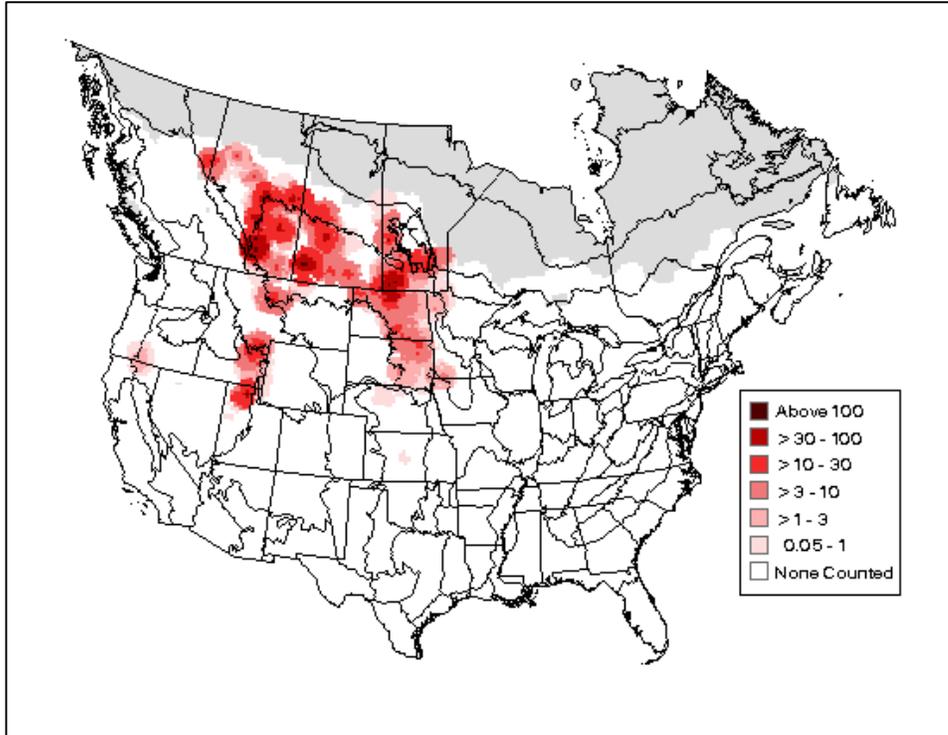
MN Breeding Bird Atlas <http://www.mnbba.org/>

Population Numbers

National

- North American population estimate: 315,608 – 990,864 breeders (*Kushlan et al. 2002*).
- The relative distribution of breeding birds from 2008-2012, as assessed by the Federal Breeding Bird Survey (*Sauer et al. 2014*), is illustrated below.

Figure 2. Relative Abundance of the Franklin’s Gull in North America (2008-2012)



Regional

- Approximately 67% of the global population occurs in the Prairie Pothole Joint Venture region (*Niemuth 2005*).
- Northern Prairie and Parkland Waterbird Conservation Region population estimate: 183,600-689,400 (*Beyersbergen et al. 2004*).

Minnesota

- Minnesota does not have one of the highest centers of the species abundance; the state is on the eastern edge of the Franklin’s Gull’s breeding range and encompasses about 1.75% of the species North American breeding range.
- Regardless, Minnesota does support one of the largest and most consistently used nesting colonies in the United States at Agassiz National Wildlife Refuge (*Burger and Gochfeld 2009*).
- Minnesota’s population estimate is unknown but, based on data collected by Burger and Gochfeld (2009), the population may be approximately 50,000+ breeding pairs.

Population Trends

National Breeding Bird Survey (BBS) Data (*U.S. and Canada, Sauer et al. 2014*)

- Blue level of credibility (i.e. the U.S. Geological Survey has classified the BBS data for the Franklin's Gull as data with at least 14 samples in the long term, of moderate precision, and of moderate abundance on routes: <http://www.mbr-pwrc.usgs.gov/bbs/credhm09.html>).
- In North America the Franklin's Gull has a statistically significant population decline of 3.9% per year from 1966-2012. In the past ten years (2002-2012), however, the population trend was 0.0%.

Regional Breeding Bird Survey (BBS) Data (*Prairie Potholes, Sauer et al. 2014*)

- The Breeding Bird Survey data for this region also has a Blue level of credibility.
- The BBS data shows a statistically significant population decline of 2.0% per year from 1966-2012 in the Prairie Potholes Region; again, the rate of decline has dropped considerably in the past ten years (2002-2012) to a positive 0.9 % per year.

Minnesota Breeding Bird Survey (BBS) Data (*Sauer et al. 2014*)

- The Breeding Bird Survey data for Minnesota has a "Red" level of credibility. This is the lowest level of credibility which reflects data with an important deficiency (<http://www.mbr-pwrc.usgs.gov/bbs/credhm09.html>). In particular:
 1. The regional abundance is less than 0.1 birds/route (very low abundance),
 2. The sample is based on less than 5 routes for the long term (very small samples), or
 3. The results are so imprecise that a 5% per year change would not be detected over the long-term (very imprecise).
- With this caveat, the BBS data for Minnesota show a declining population (not statistically significant) of 11.1% per year from 1966 to 2012 and 11.6% per year from 2002 to 2012.
- Because it is a colonial nester, limited to only a couple of suitable sites in Minnesota that are each located in large wetland complexes, the Franklin's Gull is not well-surveyed by the roadside counts employed by the BBS.

Life History Characteristics Relevant to Recovery

Migration: Neotropical

Climate Change Vulnerability: Medium (3) (*Butcher 2010*).

Home Range and Territoriality: While on the nest, the adult pair defends a territory within approximately 2-3 meters of the nest site. Inter-nest distances average >7 meters, but by mid-May they average 2-3 meters; some nests are even closer. The size of the territory increases more later in the nesting cycle because some pairs fail and leave the colony. At Agassiz NWR, the inter-nest distance varied from 0.5 – 4.5 meters, with most nests located 0.6 – 2.5 meters apart (*Burger and Gochfeld 2009*).

When the birds first return to the colony site in the spring, feeding occurs on nearby agricultural fields where they feed on worms or insects. Later, as aerial insects become available on the wetlands where they nest, they will hawk insects over the marsh. Then, as agricultural activity resumes, the gulls follow behind the plows picking at uncovered worms and arthropods (*Burger and Gochfeld 2009*).

During the breeding season, Franklin's Gulls generally limit their activities to within 30 km of the nesting colony (*Beyersbergen 2004*).

Age at First Reproduction: Data on age at first reproduction is not available but it is thought that some birds breed at 2 years of age (*Burger and Gochfeld 2009*)

Nesting Dates: Although Franklin's Gulls may return to northern Minnesota as early as March (*Janssen 1987*), the majority of birds return in mid-April. By late-April to early May they begin settling on the colony site and territory selection and defense begin immediately (*Burger and Gochfeld 2009*).

Colony Site: Usually nests in large colonies on fresh water marshes. Nests are constructed over the water on muskrat houses or on floating vegetative debris. Water depth at the nest site may vary from 15-150 cm. Colonies are usually monospecific. Sub-colonies form around a series of epicenters which may coalesce. Birds may nest on same water body year after year, but often use new colony site, an unusual phenomenon for a larid (i.e. gull). Low site tenacity reported for Minnesota, Saskatchewan, and elsewhere (*Burger and Gochfeld 2009*).

Clutch Size: Mean clutch size is 3; range is 2-4 (*Burger and Gochfeld 2009*).

Longevity of Adults: Recorded longevity from banding data is 9 years; probably longer. No adult survivorship or mortality data is available (*Burger and Gochfeld 2009*).

Food: Omnivorous species that feeds on earthworms, insects, seeds and other vegetable materials as well as small mammals, fish, crabs, etc. Franklin's Gulls often forage in flocks and are considered an economically beneficial species (*Burger and Gochfeld 2009*).

Habitat Requirements and Limiting Factors Related to Habitat

Habitat Categorization: Emergent Marsh

Limiting Factors during the Breeding Season

From Birds of North America Species Account (Burger and Gochfeld 2009) and Minnesota Department of Natural Resources Rare Species Account (Minnesota Department of Natural Resources 2008):

- Water levels that are too high or too low will force the birds to abandon marshes used in previous years and search for new, suitable sites.
- Rapidly changing water levels during the nesting season can cause sudden abandonment of the nesting colony.
- Human disturbance at the nesting colony can also cause abandonment.

General Habitat Descriptions

From Birds of North America Species Account (Burger and Gochfeld 2009):

- Fresh water marshes; always nests over water, on floating mats built on water's surface, on muskrat houses, or on floating debris in marshes or lakes. Optimal habitat is intermediate density vegetation with patches of open water of varying sizes. During the breeding season, Franklin's Gulls feed aerially on swarming insects; they also forage on the ground for earthworms and insects and on the water for aquatic insects.
- Prefers to nest in areas of low vegetation density or at edges of dense clumps. Nest dispersion is related to visibility from nest.
- Colony site selection begins anew each year, as marsh conditions vary widely from year to year. Choice depends on water level, vegetation density, and dispersion pattern; Franklin's Gulls prefer sparse stands of emerging vegetation but also nest in moderately dense cattails. Water depth under nest reported as 15–150 cm. At Agassiz NWR birds desert if water < 80 cm deep.

From Northern Prairie and Parkland Waterbird Conservation Plan (Beyersbergen 2004):

- Breeding colonies occur in extensive prairie marshes that provide cattail, bulrush, or other, preferably sparse, emergent vegetation. Typically nests on floating mats of vegetation, muskrat houses, or debris. Reported water depths at nests vary (e.g., 15-180 cm); however, rapid increases in water levels during the breeding season may negatively impact egg and chick survival. During breeding, activities are mainly focused within 30 km of colony. Generally forages over water surface in flooded areas and in agricultural fields and prairies for flying insects, grains/seeds and other available plant and animal matter (e.g., midges, dragonfly nymphs, earthworms, grasshoppers, and grubs).

From Minnesota Department of Natural Resources Rare Species Account (Minnesota Department of Natural Resources 2008):

- The Franklin's Gull depends on extensive prairie marshes for breeding, where it nests over water on floating vegetation or muskrat houses. Large colonies may switch locations between years in response to changing water levels.
- Large prairie marshes are critical breeding habitat for the Franklin's gull, as they nest over water and in colonies. They prefer areas with low vegetation density, or areas along the interface between cattails and open water. Habitat with patches of low or intermediate vegetation densities interspersed with areas of open water is considered optimal breeding habitat. Summer feeding habitats for this species include wet pastures, farm fields, and marshes.

From Franklin's Gull (Larus pipixcan) Breeding Colonies and Associated Habitats in Minnesota, 1984 (Vorland 1984):

- Marsh dwelling larids do not exhibit strong nest site tenacity but do show colony site tenacity. McNicholl (1975) postulates that these larids have strong group adherence allowing colonies to quickly relocate to more suitable sites when former colony locations become unsuitable.
- Inexperienced breeders appear to be attracted to sites where larids are displaying, rather than returning to their natal colony location (Burger 1974, Southern 1977).
- Forster's tern colonies may serve to attract pioneering Franklin's Gulls to new colony sites in Minnesota.
- Franklin's Gulls return to former colony sites to display; however, these sites are readily deserted if conditions are unsuitable.
- Franklin's Gulls exhibited a significant preference for nesting along the cattail-open water interface at Heron Lake; similar observations were made at Agassiz NWR.
- Openings are an important habitat feature for nesting Franklin's Gulls. They provide sites for landing, bathing, displaying, and gathering nest material, as well as providing an avenue for escape.
- Aggression is the ultimate mechanism for nest dispersion in gull colonies. High nest densities are possible only when there is adequate screening to prevent visual contact between neighboring pairs. This screening may be provided by vegetation debris from previous summers or by new emergent growth as the nesting season progresses.

Threats

From Northern Prairie and Parkland Waterbird Conservation Plan (Beyersbergen 2004):

- Botulism outbreaks on some lakes in the region can cause high mortality.
- The use of certain agricultural pesticides may be having detrimental effects on this species, which commonly feeds in agricultural fields.
- In some areas, there is a potential for negative interaction between large congregations of Franklin's Gulls and human development, such as airports.

Best Management Practices

From Minnesota Department of Natural Resources Rare Species Account (Minnesota Department of Natural Resources 2008):

- Disturbance should be minimized as Franklin's gulls are highly susceptible to disturbance. Early in the breeding cycle, human disturbance may cause all birds to abandon a colony site. Later in the cycle, chicks may leave the nest and get lost or drown if disturbed by people.
- A stable water level is critical; fluctuating water levels may cause colony desertion or increased mortality. Increased water levels due to storms can threaten eggs and chicks; decreasing water levels, due to drawdown or other factors, can leave chicks more vulnerable to land predators such as raccoons, foxes and skunks.
- If predator numbers are high, adults may abandon nests at night, leaving chicks to die of exposure.
- Population density may depend on the type and amount of vegetation in an area. Dense cattails may prevent a water escape from predators; however, lack of vegetation may leave birds vulnerable to avian predators and storms.
- Insufficient screening by vegetation may also cause breeding pairs to increase their distance from each other, thus decreasing the possible number of breeding pairs at a given site.
- Conservation efforts need to focus on limiting human disturbances, preventing water level fluctuations where possible, managing vegetation to limit predation and other negative interactions, preserving large marsh habitat, and limiting pesticide applications near colonies.

From Birds of North America Species Account (Burger and Gochfeld 2009):

- Nesting habitat degradation occurs during draining of marshes or intentional drawdowns for management of duck-nesting habitat.
- Birds appear to respond to the total expanse of water, depth of water, density and dispersion of vegetation, and size and dispersion of open-water areas. Any changes in these patterns result in colony desertion.
- Gulls themselves cause some degradation of habitat because of net contribution of nitrogen and phosphorus to the immediate area of nesting (from defecation load). Increased fertilization can lead to increased vegetation density, making habitat less suitable for nesting. If *Phragmites* replaces cattails and bulrushes, this may reduce optimal habitat in the future.
- For nesting, Franklin's Gulls require large marshes, with emergent vegetation for nest attachment and deep water to prevent drying before young fledge (antipredator adaptation). Such marshes are vulnerable to natural drought and to draining and other adverse management practices.
- Maintaining suitable water levels in large marshes is the main management technique (known since 1940). Many of the marshes where Franklin's Gulls nest are currently managed for waterfowl production which often results in draw-downs that temporarily render the habitat unsuitable for nesting gulls.
- Colonies that have disappeared have largely done so because of droughts or the intentional drying down of marshes or, during the wet years of the late 1990s, severe flooding that eliminated vegetation. The more recent trend to manage marshes on National Wildlife Refuges for biodiversity is benefitting gulls, as well as grebes.

From Franklin's Gull (Larus pipixcan) Breeding Colonies and Associated Habitats in Minnesota, 1984 (Vorland 1984):

- Management needs to take a landscape approach; if water level conditions are unsuitable in the gulls primary nesting wetland there needs to be suitable alternatives nearby for the gulls to move to, otherwise they will completely abandon the region.
- Stabilized water levels are important during the breeding season but ultimately stabilization of water levels over several years will result in the elimination of semi-open emergent habitat favored by

Franklin's Gulls. As a result, periodic drawdowns (or droughts) are essential for providing suitable habitat.

- Human disturbance must be restricted during the nesting season.

Gaps in Knowledge

From Northern Prairie and Parkland Waterbird Conservation Plan (Beyersbergen 2004):

- Determine the influence of human development on colony size, location, and production.
- Determine influence of other gull species on Franklin's Gull ecology.
- Develop better understanding of colony dynamics, including determinants of colony location and consistency of use of individual sites.
- Investigate interactions between avian botulism and Franklin's Gull. Blue-green algae poisoning of Franklin's Gulls may be a key trigger for botulism outbreaks. Outbreaks may be a significant mortality factor.

From Birds of North America Species Account (Burger and Gochfeld 2009):

- There is a lack of demographic information available; long-term studies of marked adults is needed to estimate age-specific and lifetime breeding success, mate fidelity, age distribution and life span.
- Improved monitoring and documentation of the location and size of breeding colonies is needed on an annual basis.
- Detailed physiologic and metabolic studies are needed.
- There is a major gap in our understanding of their wintering distribution, abundance and biology.
- Because many Franklin's Gulls colonies are quite large, numbering in the tens of thousands, it would be beneficial to understand the relative benefits of nesting in the center of the colony versus in the edge or in dense versus sparse subcolonies.

MINNESOTA CONSERVATION PLAN

Conservation Goal

Maintain a statewide population of at least 50,000 breeding pairs of Franklin's Gulls.

Background: Neither the North American Waterbird Conservation Plan (*Beyersbergen 2004*) or the Northern Prairie and Parkland Waterbird Conservation Plan (*Kushlan 2002*) delineate specific conservation goals for the Franklin's Gull. At the national level it is listed as a species of Moderate Concern but in the Northern Prairie and Parkland Region it is listed as a species of High Concern.

Given the lack of any specified goal, Minnesota's *Implementation Blueprint for Bird Conservation* relied on current knowledge of the species status in Minnesota coupled with the goals of the Agassiz National Wildlife Refuge, which supports the primary breeding colony in the state and one of the largest colonies in the United States. There are approximately eight nesting sites in the lower 48 states but none appear to be as consistently large as that found on the refuge. In 2005, the National Wildlife Refuge completed its Comprehensive Conservation Plan (*U.S. Fish and Wildlife Service 2005*). With its extensive wetlands and series of 26 impoundments, as well as three natural lakes, the refuge is an ideal nesting spot for Franklin's Gulls; over the years, it has supported an average of 25,000 breeding pairs. The plan delineates a specific objective for sustaining the population:

- *Maintain an annual average of 20,000 nesting Franklin's Gull pairs over a 5 year period by providing ideal nesting conditions in Agassiz Pool.*

In addition to the primary breeding location at Agassiz NWR, Franklin's Gulls have also nested regularly, though not annually, at Heron Lake in Jackson County and Thief Lake in Marshall County. At times, both these locations have supported substantial numbers of breeding pairs, numbering in the thousands at Thief Lake and in the tens of thousands at Heron Lake. Small nesting colonies also have been reported sporadically in several widely scattered locales including Lake of the Woods county, Douglas and Todd counties, Lac qui Parle county and Beltrami county. As a result, it seems reasonable to establish a minimum statewide goal of 50,000 breeding pairs in Minnesota.

Conservation Objective

Protect and maintain nesting habitat at a minimum of three suitable nesting colonies in Minnesota.

Background: Again, none of the national or regional plans that address waterbird conservation delineate specific objectives for maintaining and/or enhancing population levels. The only specific objective addressed pertains to the need to improve population monitoring.

In lieu of any guidance, Audubon Minnesota's *Implementation Blueprint for Minnesota Bird Conservation* relied on current information. In the recent past, and perhaps historically, there have been at least three major breeding colonies in the state: Heron Lake, Thief Lake Wildlife Management Area and Agassiz National Wildlife Refuge. It is unknown if all three sites ever are used in a given year but each has supported significant numbers of breeding pairs periodically. Thief Lake, for example, often supports large numbers of breeding birds when conditions at Agassiz are poor. The objective of this plan is to ensure that the habitat at each of these sites is managed so that water levels and vegetation are conducive to Franklin Gull nesting. As noted above, this is already a stated management goal for Agassiz National Wildlife Refuge. Efforts should be taken to help ensure that it is also among the management goals for Thief Lake Wildlife Management Area (managed by the state) and Heron Lake (located within the Heron Lake Watershed Management District; the district completed a new management plan in January 2012 (*Heron Lake Watershed Management District 2012*)). This plan recognizes that all three

sites may not provide suitable habitat every year; best management practices for Franklin's Gulls' nesting habitat requires periodic drawdowns.

Actions Needed for Conservation

Inventory and Assessment Needs:

- Identify the location of new colonies in the state in order to provide for an accurate statewide account of nesting locations.

Action: Following completion of the Minnesota Breeding Bird Atlas in 2013, conduct an inventory of any new nesting reports that are collected, outside of the traditional nesting locations on Heron Lake, Agassiz National Wildlife Refuge and Thief Lake Wildlife Management Area.

- Collect, within one breeding season, an accurate estimate of the number of breeding pairs in Minnesota. Although Franklin's Gulls have a low nesting site fidelity, in response to changing water level conditions, there is a need to establish a baseline assessment of the breeding population.

Action: Conduct a one-time inventory of all known Franklin's Gull breeding colonies to establish a baseline assessment.

Monitoring Needs

- Regularly collect sufficient up-to-date data to assess whether Minnesota is achieving its population target of 50,000 nesting pairs.

Action: Support and encourage the continuation of the monitoring efforts already underway at Agassiz National Wildlife Refuge and work with other partners and cooperators to ensure that well-established colonies are all monitored at least every 3 to 5 years.

Background: In its Comprehensive Conservation Plan, Agassiz National Wildlife Refuge (*U.S. Fish and Wildlife Service 2005*) notes that aerial census of the nesting colony was initiated in 1993. Since that time the colony has varied in size from 7,000 nesting pairs to 40,000 nesting pairs (1993 to approximately 2005). The exception was the year 2000 when a drawdown in the Agassiz pool prevented any nesting. One of the strategies for the Refuge to ensure the maintenance of 20,000 nesting pairs is to "conduct breeding gull surveys annually with aerial photography and mapping acreage on the water to determine density of nesting pairs."

Aside from the regular monitoring conducted at Agassiz NWR, data are collected at other sites intermittently. Indeed, a comprehensive, statewide assessment of Franklin's Gulls has not been conducted since 1984 (*Minnesota Department of Natural Resources 2008*). At the Thief Lake Wildlife Management Area, Audubon Minnesota should work with its partners in the Department of Natural Resources to ensure that the colony is monitored each year. Elsewhere, Audubon will need to work with its volunteers and partners to establish a monitoring protocol for the other colonies. Monitoring all major and consistently used sites in the same year, every 3 to 5 years, would significantly improve our knowledge of the species distribution and abundance in the state.

Habitat Protection Needs

- Continue to emphasize and support wetland habitat protection efforts across western and central Minnesota.

Action: Work with conservation partners to support the Minnesota Prairie Landscape Conservation Plan’s goal to protect approximately 74,000 acres of wetland habitat.

Background: Wetlands throughout the drainage basin of the shallow lakes and marshes where Franklin’s Gulls nest are critical for storing water and diminishing the sudden bounce in water levels in larger wetlands downstream, thereby reducing the likelihood of flooding the shallow nests built by Franklin’s Gulls and other marsh-nesting birds. The Minnesota Prairie Landscape Conservation Plan (*Minnesota Prairie Plan Working Group 2010*) covers that region of the state where Franklin’s Gulls nest (Figure 3) and specifically delineates and maps two types of areas for native prairie, grassland and wetland protection and restoration:

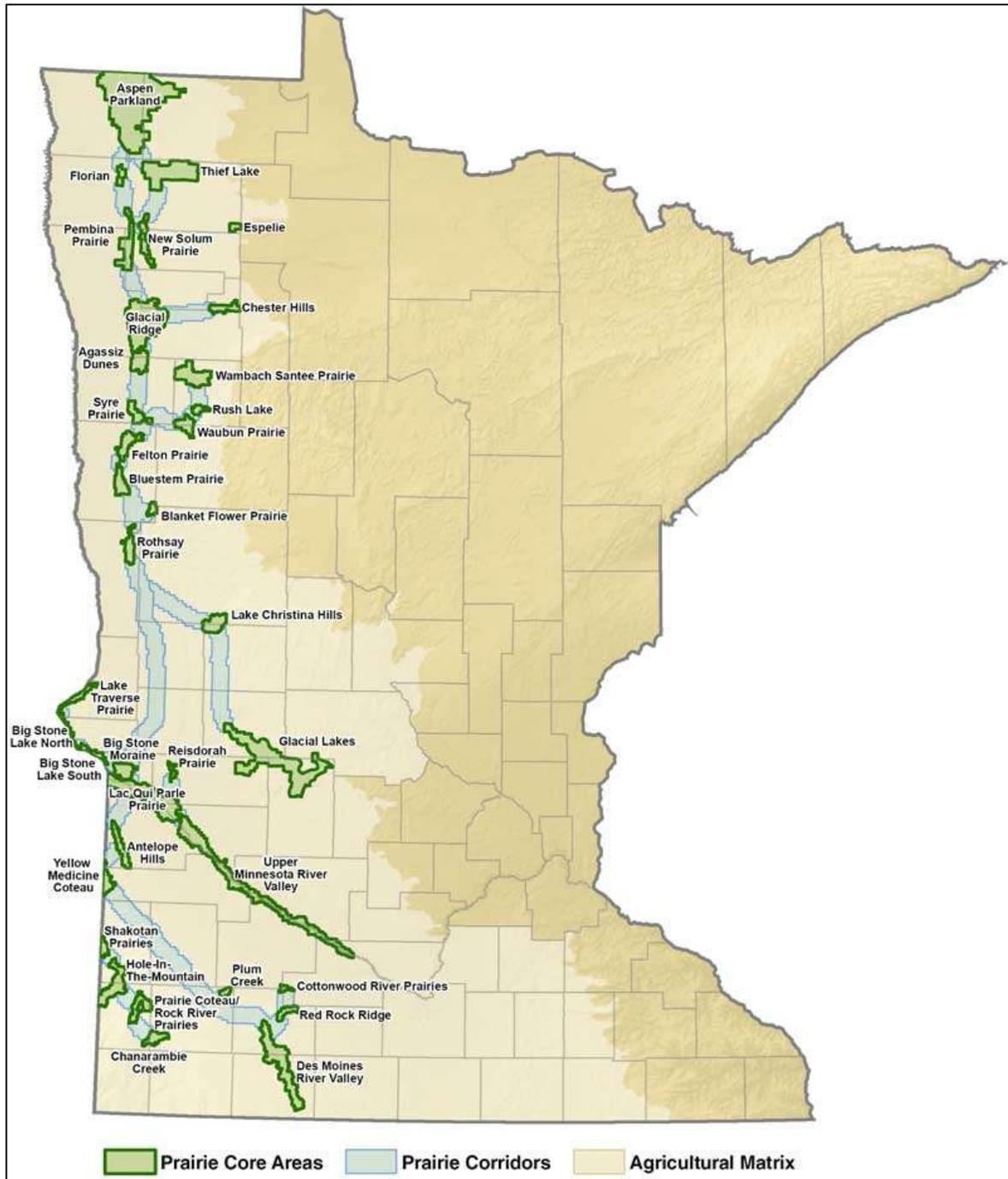
- **Core areas** that are “large landscapes (5,000 to 300,000 acres) that retain some features of a functioning prairie landscape and include 71% of Minnesota’s remaining native prairie”; and
- **Corridors** that are “linear stretches of habitat six miles wide that connect the core areas to each other.”

Large habitat complexes (nine square miles) also are identified within each corridor and all the land outside of the core areas and corridors is referred to as the agricultural matrix. Figure 4 illustrates the core areas, corridors and larger agricultural matrix.

Figure 3. Area Covered by Minnesota’s Prairie Landscape Conservation Plan



Figure 4. Prairie Core Areas, Corridors and Agricultural Matrix from Minnesota's Prairie Landscape Conservation Plan



Minnesota’s Prairie Landscape Conservation Plan also establishes acreage goals for protecting native prairies, grasslands and wetlands within the core areas, corridors and the larger agricultural matrix of the prairie region and specifies what portion of each goal should be attained with acres that are permanently protected versus acres that are voluntarily protected. Ideally, Minnesota’s community of conservation partners will successfully achieve all the goals for each area, thereby benefitting the Franklin’s Gull as well as a host of other grassland and wetland species. For the purposes of this Conservation Plan, however, we have highlighted and focused just on the protection goals established for permanently protected wetlands (i.e. protected through fee acquisition or permanent conservation easements) in the core areas and corridors shown in Table 3 (highlighted in green). The acres that are to be permanently protected within the agricultural matrix and those that are to be voluntarily protected within the core areas, corridors and matrix were not reported separately for grasslands and wetlands but only as a combined total, so they are not included. In addition, although not all wetland types are suitable for Franklin’s Gulls, the Prairie Plan does not establish goals for different wetland types so, with the caveats stated above, this document adopts the Prairie Plan’s overall wetland protection goals for Minnesota’s Prairie Region.

Table 3. Wetland Protection Goals from the Minnesota Prairie Landscape Conservation Plan

Conservation Action	Prairie Landscape Conservation Areas	Specific Conservation Action	Acreage Goals by Habitat ¹	
			Wetlands	Grasslands & Wetlands
Protection	Core Areas	Acquisition/Easements	60,837 acres	
		Voluntary management or conservation contracts		149,022 acres
	Corridor Areas (complexes & general corridors)	Acquisition/Easements	13,397 acres	
		Voluntary management or conservation contracts		39,364 acres
	Matrix Landscape	Acquisition/Easements		523,564 acres
		Voluntary management or conservation contracts		1,221,650 acres
Protection Total			74,234 acres	1,933,600 acres

¹Some subtotals for conservation actions in the Prairie Plan do not reflect the totals reported in the plan; this table uses the totals.

- Ensure shorelines are protected along privately-owned lakeshores where Franklin’s Gulls are known to nest.

Action: Work with lake associations and private lakeshore homeowners on lakes where Franklin’s Gulls nest to protect and restore their shoreline habitats.

Background: The shorelines of Heron Lake in Jackson County and at least two other sporadically used nesting sites (North Long Lake in Crow Wing County and Lake Osakis in Todd and Douglas counties) are largely privately owned. The health of the aquatic vegetation in these lakes that breeding gulls use for nesting depends to a large extent on the health of the surrounding shoreline. Lakeshore owners should be encouraged to take actions to protect and restore this important habitat, not only for the benefit of Franklin’s Gulls but for many other birds that use this critical habitat.

Habitat Restoration and Management Needs

- Continue to emphasize and support wetland habitat restoration and management efforts across western and central Minnesota.

Action: Work with conservation partners throughout the state to restore approximately 104,000 acres of wetland habitat, targeting Priority IBAs and using best management practices summarized in the preceding pages.

Background: Wetland restoration within the drainage basin of shallow lakes and marshes where Franklin’s Gulls nest is critical for helping to manage water levels throughout the watershed. In addition to delineating wetland protection goals, the Minnesota Prairie Landscape Conservation Plan also delineated wetland restoration goals (Table 4). The plan, however, does not distinguish between restored wetlands that are permanently protected or voluntarily protected. The plan simply states that if state funds are used for restoration it should take place only on public lands or on private lands subject to a conservation easement, deed restriction or contract. Acres for restoration in the agricultural matrix are not shown because it was reported as a combined goal for both wetlands and grasslands.

Table 4. Wetland Restoration Goals from the Minnesota Prairie Landscape Conservation Plan

Conservation Action	Prairie Landscape Conservation Areas	Wetland Restoration Goal
Restoration	Core Areas	83,169 acres
	Corridor Areas (complexes & general corridors)	20,439 acres
Restoration Total		103,608 acres

Action: Audubon Minnesota staff shall lead the technical field team responsible for one of the core areas delineated in the Minnesota Prairie Landscape Conservation Plan, the Tallgrass Aspen Parklands, to insure that conservation actions in the region, especially those focused on wetland management and restoration, are guided by the plan.

Background: Implementation of Minnesota’s Prairie Landscape Conservation Plan focuses on the establishment of technical field teams in the primary core areas. The teams are composed of state, federal and local resource professionals as well as professionals with conservation organizations. Together they are responsible for insuring that the goals of the plan are achieved. Because of its long-standing interest and engagement in northwest Minnesota, Audubon staff has assumed a leadership role for the Aspen Parklands Technical Team shown in Figure 5. Given the overwhelming importance of this region to the sustainability of Franklin’s Gulls in Minnesota this leadership role is critical.

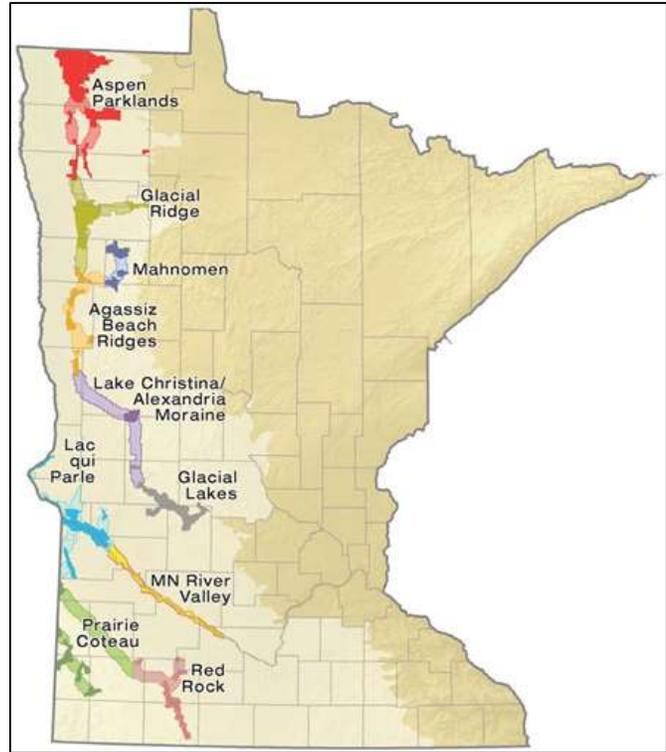


Figure 5. Minnesota’s Prairie Landscape Conservation Plan Technical Teams

- Actively engage and coordinate with the Heron Lake Watershed Management District to support restoration of Heron Lake and to ensure that habitat suitable for nesting Franklin’s Gulls and other important waterbirds is available.

Action: Coordinate with the Heron Lake Watershed District and support implementation of their recently updated Watershed Management Plan (*Heron Lake Watershed Management District 2012*); provide the district with data on the current and on-going status of Franklin’s Gulls and other nesting waterbirds on Heron Lake so that they have feedback on the outcomes of their management efforts.

Background: Unlike Agassiz NWR and Thief Lake WMA, Heron Lake is not a publically owned site so the status of waterbird colonies, particularly Franklin’s Gulls, is not regularly monitored by any management agency. Maintenance and enhancement of habitat that is important for fish and wildlife is an explicit action in the recently updated Heron Lake Watershed District Management Plan (Action 5.4-1d; page 58, *Heron Lake Watershed District 2012*). As a result, it is important that state resource personnel and/or Audubon Minnesota, assume responsibility for collecting up-to-date information on the colony and communicate that to watershed district staff so that there is an on-going dialogue about their management actions and the impacts to nesting waterbirds.

- When drawdowns occur at any of the primary nesting colonies in Minnesota, there is a need to ensure that other nesting habitat is available in the region.

Action: Coordinate drawdowns of wetlands where Franklin’s Gulls nest with other nearby management units to ensure that some suitable nesting habitat is available in the region.

Background: This action is the third and final strategy listed within the Comprehensive Conservation Plan for Agassiz National Wildlife Refuge but also pertains to water level management on other wetlands where Franklin’s Gulls nest.

- Monitor the amount of wetland that is protected and restored and assess if it is sufficient to provide for a sustainable population of Franklin’s Gulls in Minnesota.

Action: Work with members of the Minnesota Prairie Landscape Conservation Implementation team to insure that actions to protect and restore Minnesota’s wetlands are accurately tracked and monitored.

Specific Actions for Audubon Minnesota:

- Work with the Minnesota Department of Natural Resources to ensure that:
 1. The Franklin’s Gull remains a high statewide priority.
 2. A one-time inventory of all known Franklin’s Gull breeding colonies is conducted.
 3. Regular monitoring of all well-established colonies is begun, particularly at Heron Lake (as well as for other waterbirds nesting at the site). Audubon Chapter members could be solicited to help.
 4. Management of nesting habitat for Franklin’s Gulls is among the considerations for managing the wetland pools at Thief Lake Wildlife Management Area.
 5. Staff lead the efforts to implement the Minnesota Prairie Landscape Conservation Plan goals for wetland protection and management in the Aspen Parklands.
 6. Conservation partners work with the Heron Lake Watershed Management District to advocate for the nesting habitat needs of Franklin’s Gulls and other waterbirds.

See additional details in Table 5.

Table 5. Franklin’s Gull Minnesota Conservation Plan Action Summary

Conservation Goal: Maintain a statewide population of at least 50,000 breeding pairs of Franklin’s Gulls.

Conservation Objective: Protect and maintain nesting habitat at a minimum of three suitable nesting colonies in Minnesota.

Actions Needed for Conservation	Priority	Projected Timeline	Responsible Entity	Others Involved
Inventory and Assessment				
<ul style="list-style-type: none"> Following completion of the Minnesota Breeding Bird Atlas in 2013, conduct an inventory of any new nesting reports that are collected, outside of the traditional nesting locations on Heron Lake, Agassiz National Wildlife Refuge and Thief Lake Wildlife Management Area. 	#4	2015	Minnesota Audubon	Minnesota DNR
<ul style="list-style-type: none"> Conduct a one-time inventory of all known Franklin’s Gull breeding colonies to establish a baseline assessment. 	#5	2015	Minnesota DNR	USFWS, Agassiz NWR; Thief Lake WMA Audubon Minnesota
Monitoring				
<ul style="list-style-type: none"> Support and encourage the continuation of the monitoring efforts already underway at Agassiz National Wildlife Refuge and work with other partners and cooperators to ensure that well-established colonies are all monitored at least every 3 to 5 years. 	#1	Ongoing; Begin Heron Lake Monitoring ASAP	Agassiz NWR, Thief Lake WMA, Minnesota Audubon	Audubon Chapters
Habitat Protection				
<ul style="list-style-type: none"> Work with conservation partners to support the Minnesota Prairie Landscape Conservation Plan’s goal to protect approximately 74,000 acres of wetland habitat. 	#6	Ongoing	Minnesota DNR	MN Audubon USFWS, TNC, BWSR, etc.
<ul style="list-style-type: none"> Work with lake associations and private lakeshore homeowners on lakes where Franklin’s Gulls nest to protect and restore their shoreline habitats. 	#8	2016	Minnesota DNR	Audubon Minnesota
Habitat Restoration and Management				
<ul style="list-style-type: none"> Work with conservation partners throughout the state to restore approximately 104,000 acres of wetland habitat, targeting Priority IBAs and using best management practices. 	#7	Ongoing	Minnesota DNR	Minnesota Audubon USFWS BWSR, NRCS, TNC
<ul style="list-style-type: none"> Audubon Minnesota staff shall lead the technical field team responsible for one of the core areas delineated in the Minnesota Prairie Landscape Conservation Plan, the Tallgrass Aspen Parklands, to insure that conservation actions in the region, especially those focused on wetland management and restoration, are guided by the plan. 	#2	2013	Audubon Minnesota	USFWS, DNR, NRCS, TNC, Watershed Districts
<i>continued on following page</i>				

Actions Needed for Conservation	Priority	Projected Timeline	Responsible Entity	Others Involved
Habitat Restoration and Management, continued				
<ul style="list-style-type: none"> Coordinate with the Heron Lake Watershed District and support implementation of their recently updated Watershed Management Plan (2012); provide the district with data on the current and on-going status of Franklin’s Gulls and other nesting waterbirds on Heron Lake so that the outcomes of their management efforts on birds is well-known. 	#3	2015	Audubon Minnesota	DNR, USFWS, TNC, Heron Lake Watershed District, NRCS
<ul style="list-style-type: none"> Coordinate drawdowns on wetlands where gulls nest with other nearby management units to ensure that some suitable nesting habitat is available in the region. 	#9	Ongoing	Minnesota DNR Agassiz NWR	Watershed Districts, USFWS, DNR
<ul style="list-style-type: none"> Work with members of the Minnesota Prairie Landscape Conservation Implementation team to insure that actions to protect and restore Minnesota’s wetlands are accurately tracked and monitored. 	#10	Ongoing	Minnesota Prairie Landscape Implementation Team	

Selected Resources for Franklin's Gull Minnesota Conservation Plan

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