DEPARTMENT OF NATURAL RESOURCES

Lac qui Parle Wildlife Management Area

Master Plan, 2024-2034

6/26/2024

DEPARTMENT OF NATURAL RESOURCES

Notice is hereby given that the Lac qui Parle Wildlife Management Area Master Plan, 2024-2034 for the Minnesota Department of Natural Resources has been completed and is now adopted.

6/26/2024

Sarah Strommen, Commissioner Date

6/26/24

Dave Olfelt, Fish and Wildlife Division Director Date

6-26-24

Kelly Straka, Wildlife Section Manager Date

Executive Summary

Department of Natural Resources Mission Statement

The mission of the Minnesota Department of Natural Resources (DNR) is to work with Minnesotans to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.

Fish and Wildlife Division Vision and Purpose

The Fish and Wildlife Division (FAW) is responsible for managing fish and wildlife populations and providing related outdoor recreational opportunities in Minnesota. We conserve and enhance water and land habitats; regulate hunting, trapping, and fishing; foster environmental stewardship; and work with partners and the public to accomplish shared goals. Our work is informed by biological and social sciences, cultural and economic values, and our public trust obligation to manage fisheries and wildlife in perpetuity.

WMA System Description and Purpose

Wildlife Management Areas (WMAs) are part of Minnesota's outdoor recreation system and are established to protect those lands and waters that have a high potential for wildlife production, public hunting, trapping, fishing, and other compatible recreational uses. They are a key component of the DNR's wildlife management efforts and help ensure wildlife habitat for future generations by providing Minnesotans with opportunities for hunting, fishing, and wildlife watching, and by promoting important wildlife-based tourism in the state.

Lac qui Parle WMA Vision Statement

Lac qui Parle WMA will be managed to provide quality hunting, fishing, trapping, and wildlife viewing, as well as other outdoor recreational experiences compatible with the statutory purpose of WMAs. These opportunities will be provided in a way that emphasizes Lac qui Parle WMA's ecological significance as the only prairie-dominated major unit WMA in the state.

Lac qui Parle WMA Master Plan Summary

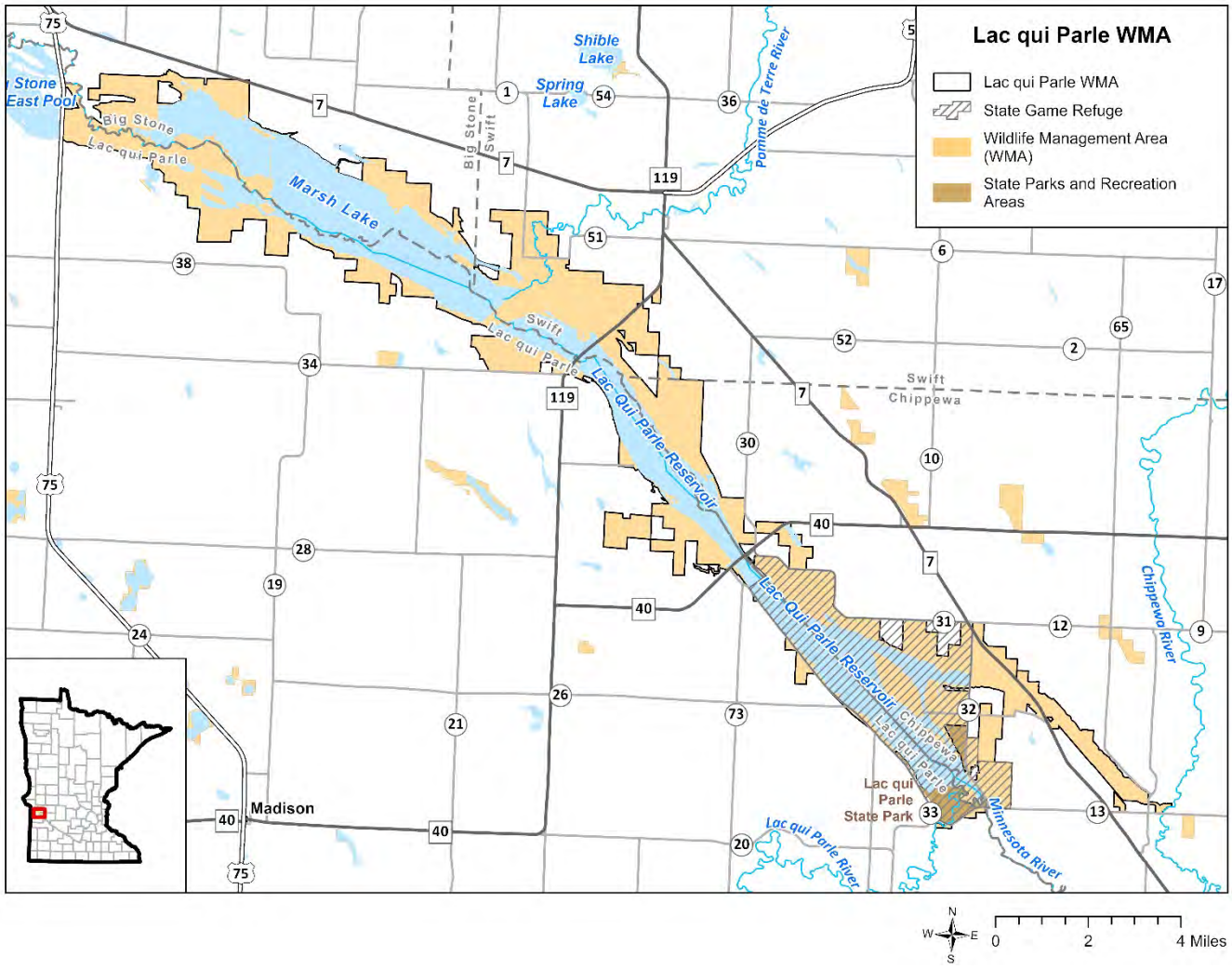
This plan summarizes management activities for the Lac qui Parle WMA, an approximately 33,000-acre WMA in west-central Minnesota. The DNR completed the last master plan for Lac qui Parle WMA in 1977, which was intended to cover a 10-year period. The DNR also developed a Lac qui Parle Area Management Plan in 1997 that included the adjacent state park. Significant changes in this current plan reflect: a greater emphasis on restoring and enhancing native plant communities and habitats and the wildlife populations they support; increased knowledge of the plants and wildlife of Lac qui Parle WMA; new and evolving management techniques; changing wildlife and public use of the area; and evolving challenges like invasive species and changing climate. This plan reaffirms the commitment to provide healthy terrestrial and aquatic systems that support biodiversity and

outdoor recreation. Planned management actions will benefit a variety of wildlife species and improve human use, as described below.

Management, restoration, protection and enhancement of prairies/grasslands will benefit prairie-dependent species, waterfowl, white-tailed deer, pheasants, and furbearers by providing secure nesting habitat, cover and food. Lac qui Parle WMA has some of the largest tracts of native tallgrass prairie left in Minnesota and in the Midwest. Management and restoration of wetlands and impoundments will benefit waterfowl, waterfowl hunters, and birdwatchers. These habitats will support a wide range of goose, duck, shorebird, and waterbird species, including Canada geese, mallards, blue- and green-winged teal and wood ducks, during spring and fall migration seasons and the summer nesting and brood rearing seasons. The DNR will manage all wetland types for a variety of open water and native emergent habitats favorable to a diversity of game and non-game species. The DNR and partner agencies will manage Lac qui Parle Lake and Marsh Lake for less turbid water and healthy vegetation. Management of upland oak forest communities and floodplain forests will benefit white-tailed deer, turkey, rabbit, squirrel, and non-game species. Wetland and upland management activities will benefit aquatic and terrestrial furbearers. Trappers and wildlife observers will also benefit from ensuring there is quality wetland habitat for aquatic furbearers and floodplain forest and upland habitats for terrestrial furbearers. Work in these habitats is critical to support abundant fish and wildlife populations and provide hunting, trapping and fishing opportunities on Lac qui Parle WMA. WMA users will also benefit from well-maintained roads, parking lots, and clearly defined property boundaries that support public access to a rich diversity of wildlife and plant communities. The maintenance and addition of modern buildings and other facilities provide WMA staff the resources necessary to manage for quality habitats efficiently and safely.

This 10-year master plan spells out management goals and objectives as well as the strategies needed to achieve them. Techniques are presented for management of different habitat types, including prescribed fire; grazing; haying; wetland protection, enhancement and restoration; and savanna/forest habitat enhancement through thinning and invasive species management. An annual calendar of management activities is included, as is a discussion of current and potential research and monitoring efforts.

Figure 1. Lac qui Parle Wildlife Management Area



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Introduction

Major Unit Definition

Minnesota currently has over 1,500 Wildlife Management Areas (WMAs) distributed across the state, totaling nearly 1.4 million acres. These WMAs are managed out of 37 local offices, and eight of them are classified as "major units" due to the large and generally connected acreages under management in that administrative area. Each of the major units manages a primary WMA and may also manage other nearby units. Major units are typically, although not always, distinguished by having resident staff (wildlife area supervisor and assistant wildlife area manager). They also typically have greater acreage that is more intensively managed than most WMAs; more fleet assets including heavy equipment such as bulldozers, tractors, and graders; larger staff complements; and more capital improvements.

Purpose of Plan

This master plan outlines the management of Lac qui Parle WMA through 2034, in accordance with the Minnesota Outdoor Recreation Act of 1975. The plan's purpose is to provide management guidance, a basis for allocating staff and fiscal resources, direction for annual work planning, and metrics for measuring management accomplishments.

The previous management plan was prepared in 1997, and many environmental and social changes have occurred since then. Minnesota's population has grown, the climate has changed and continues to change, invasive species have proliferated, new state and federal policies have been enacted, recreation demands and preferences have changed, and many wildlife and plant populations have declined throughout the state. A revised management plan is needed to address and manage these changing conditions. The plan update process also provides an opportunity to engage with a wide variety of Minnesotans. This plan is one of seven comprehensive management plans the DNR is updating for the state's WMA major units. They are 10-year management plans, which will continue to be revised as new management practices develop, resource paradigms evolve, and new challenges are encountered.

Long-range Goals

For Lac qui Parle WMA, the overarching long-range goals outlined in this plan are:

1. To maintain or enhance wildlife production, habitat, and biodiversity.
2. To maintain or increase hunting, fishing, trapping, and other compatible outdoor recreational uses.

Planning Process

The planning process began in July 2023, when an internal planning team was assembled of staff from multiple DNR divisions with diverse areas of expertise (Appendix A).

On October 9, 2023, the DNR published an online questionnaire and requested feedback from the public via a DNR news release. Postcards containing a link to the online questionnaire were distributed in the local community and handed out to individuals using Lac qui Parle WMA. The online questionnaire was available in English, Spanish, and Hmong, and was open for public input from October 9 to November 8, 2023. The questionnaire received responses from 358 individuals. The planning team also hosted an online public meeting on October 25, 2023, to provide an overview of Lac qui Parle WMA and collect public input. Appendix B contains a summary of all input. The planning team reviewed the public comments and considered them while developing content for the plan.

The review process for the full draft of the Lac qui Parle WMA plan started in the spring of 2024. The DNR received comments and incorporated them into multiple rounds of revisions. In March 2024, a complete draft of the plan was distributed for internal DNR staff review. A tribal review process took place from March 21 to April 3, 2024.

The DNR held a second public comment period from April 23 to June 2, 2024 to provide the public an opportunity to review the draft Lac qui Parle WMA plan. Comments were accepted via mail, email, an online survey, and two public meetings. The DNR hosted an in-person public meeting on May 8, 2024 and an online public meeting on May 9, 2024. A list of the comments received, and the responses provided to these comments, can be found in Appendix C.

Guiding Documents

Management at Lac qui Parle WMA is guided by an array of statutes, rules, directives, and plans. A list of many of these documents is included in Table 1. The management objectives and strategies in this plan were developed within the context of these existing guidance documents. Due to the interdisciplinary nature of DNR's work, individual management decisions are often context-dependent and require consistent coordination beginning at the local level. When appropriate, the DNR aligns its work with plans developed by other agencies and organizations. This coordination helps ensure that all management decisions taken within Lac qui Parle WMA will be made to benefit wildlife, wildlife habitats, and compatible outdoor recreation.

Select WMA Statutes and Rules

Minnesota Statues, Chapter 84 Department of Natural Resources, Section 84.942 Fish and Wildlife Resources Management Plan states that the commissioner shall prepare fish and wildlife management plans designed to accomplish the policy of section 84.941.

Minnesota Statutes, Chapter 86A Outdoor Recreation System, Section 86A.05 Classification and Purposes defines the purpose of WMAs as "to protect those lands and waters that have a high potential for wildlife production and to develop and manage those lands and waters for the production of wildlife, for public hunting, fishing, and trapping, and for other compatible outdoor recreation uses." It also directs WMAs be administered in a manner that will "perpetuate, and if necessary, reestablish quality wildlife habitat for maximum production of a variety of wildlife species." Finally, "public hunting, fishing, trapping, and other uses shall be consistent with the limitations of the resource, including the need to preserve an adequate brood stock and prevent long-term

habitat injury or excessive wildlife population reduction or increase. Physical development may provide access to the area but will be developed to minimize intrusion on the natural environment."

Minnesota Statutes, Section 86A.09 Development and Establishment of Units describes the requirements that apply to the development of the master plan.

Minnesota Statutes, Section 97A.135 Acquisition of Wildlife Lands, Subdivision 1 Public Hunting and Wildlife Areas states that the commissioner may designate land acquired under this subdivision as a WMA for the purposes of the outdoor recreation system.

Minnesota Rules, Chapter 6230 Wildlife Management has additional rules that apply to WMAs.

Any portion of Lac qui Parle WMA that was acquired with Wildlife Restoration grant funds must comply with federal regulation 50 CFR 80.134. These grant-acquired properties must continue to serve the purpose for which they were acquired, and grant acquired real property may not be sold without USFWS approval. For these grant-acquired portions of the Lac qui Parle WMA, management must first adhere to relevant federal laws and rules and then secondarily to relevant state statutes and rules.

Additional Documents

Table 1. Additional documents used to guide the development of the Lac qui Parle WMA Master Plan. Acronyms used in this plan are listed in Appendix D.

Document Name	Plan Year	Plan Owner
Audubon Blueprint for Minnesota Bird Conservation	2014	Audubon Minnesota
Big Stone National Wildlife Refuge Comprehensive Conservation Plan	2012	USFWS
Conservation Agenda	2015-2025	DNR
Deer Population Goal Setting	2022	DNR
Executive Order 11990, Protection of Wetlands	1977	Executive Order
FAW Directive No. 070605: Development Standards for WMA/AMAs	2010	DNR
Forest Resource Management Plan Strategic Direction 10-Year Stand Exam List (2021-2030)	2018 2019	DNR
Interim Water Control Manual, Lac qui Parle Project	2017	USACE
Lac qui Parle Area Management Plan	1997	DNR
Lac qui Parle Lake Management Plan	2016	DNR
Lac qui Parle Lake Management Plan Amendment	2018	DNR

Document Name	Plan Year	Plan Owner
Lac qui Parle Wildlife Management Area Master Plan, 1977-1986	1977	DNR
Long Range Duck Recovery Plan	2006	DNR
Long Range Plan for the Wild Turkey in Minnesota	2006	DNR
Managing Minnesota's Shallow Lakes for Waterfowl and Wildlife: Shallow Lakes Program Plan	2010	DNR
Marsh Lake Management Plan	2019	DNR
Marsh Lake Performance Monitoring and Adaptive Management Plan	2024	USACE; DNR; UMRWD
Minnesota Prairie Conservation Plan	2011	Minnesota Prairie Plan Working Group
Minnesota's Endangered Species Statute	2022	Minnesota Statute
Minnesota River Basin Interagency Study	2020	USACE
Minnesota's White-tailed Deer Management Plan	2019-2028	DNR
Minnesota's Wildlife Management Area Acquisition	2002	The Citizens' Advisory Committee
Minnesota's Wildlife Action Plan 2015-2025	2015-2025	DNR
One Watershed One Plan	Ongoing	BWSR
Pheasant Action Plan	2020-2023	DNR
Surveillance and Management Plan for Chronic Wasting Disease	2019	DNR
Wetland Conservation Act	1991	BWSR

History

Area History

The Lac qui Parle area (Figure 1) has long been known for its plentiful and rich natural resources. Knowledge of the habitats, wildlife, and communities in an area at different periods can be a valuable tool for natural resource planning into the future. The area has undergone substantial human and ecological changes since European colonization. The Dakota and other indigenous peoples traveled in and out of the Minnesota River Valley and surrounding lands for thousands of years prior to Europeans and relied heavily on its natural resources for subsistence and cultural uses. For at least the past millennium, in addition to hunting and gathering, these indigenous peoples cultivated various crops. They used fire to support these land uses, influencing plant communities, habitats, and wildlife species (e.g., elk and bison). Understanding these historical forces that

helped shape and maintain a diverse tallgrass prairie landscape are critical to preserving and revitalizing this now-endangered grassland landscape and the species that depend on it.

Explorers, fur traders, and surveyors visited and started to inhabit the Minnesota River Valley in the 1700s and early 1800s (Minnesota River Basin Data Center). Lac qui Parle is a French translation of the name given to the lake by the Dakota, the "Lake that Speaks." Joseph Renville, a Dakota-French interpreter and fur company agent, worked with missionaries in the vicinity to create the first Dakota written language alphabet and dictionary; see the Minnesota Historical Society's Lac qui Parle Mission site for additional information.

Four bands of Dakota – the Mdewakanton, Wahpekute, Sisseton, and Wahpeton – ceded most of their homelands in southern Minnesota through a series of treaties in 1851. The Dakota moved to reservations along the Minnesota River in exchange for promises of food, supplies, and regular payments from the United States government (Reciher, 2014). White settlement accelerated in the 1850s. The Dakota people received little of the payment promised and experienced starvation and death during the summer of 1862 when the United States government failed to provide the food promised to them by treaty. This led to the U.S.-Dakota War of 1862 and the subsequent forced removal of the Dakota from their homelands.

With the region's fertile soils and favorable climate for agricultural production, farming became a primary draw and occupation for white settlers. Thus, the prairie and wetland landscapes were dramatically transformed into an agriculturally dominated system.

Lac qui Parle WMA History

The area that is now Lac qui Parle WMA was first established in 1936 as a state-sponsored flood control project under the federal Works Progress Administration. The unit was authorized as a federal flood control project later in 1936. By 1939, the state completed a series of water control structures, and the United States Army Corps of Engineers (USACE) completed the remainder of the project between 1941 and 1951. Operational authority was transferred from the Minnesota Commissioner of Drainage and Waters to USACE in 1950. In 1957, the Minnesota Legislature placed project lands, except for a small acreage near the water control structures, under the management of the Minnesota Conservation Department, today the DNR, for use as a wildlife refuge and public hunting grounds. The acreage at the time of transfer was 22,877 acres. For more information about the flood control project, and the resulting state park and wildlife area, see this brochure from Lac qui Parle State Park.

Since 1957, Lac qui Parle WMA has expanded to increase the area's potential for wildlife production; to protect, restore, and enhance native plant and animal communities; and to increase outdoor recreation opportunities. In 2024, Lac qui Parle WMA covered 33,567 acres.

The Lac qui Parle WMA has two designated units, each with historically very different management focus:

- The State Game Refuge, centered on lower Lac qui Parle Lake, which is most famous for its role in the restoration of Canada geese and for goose hunting.
- The larger land base of WMA designated lands that lie generally east of the State Game Refuge and northwest of State Highway 40 (Figure 1).

Lac qui Parle State Game Refuge and Canada Geese

The Lac qui Parle State Game Refuge served a pivotal role in the story of Canada geese restoration in the United States. In the early 1900s, Canada geese were rare across the United States. At one time, the giant Canada goose, a subspecies of Canada goose that does not reliably migrate like other subspecies, was thought to be extinct. In July of 1958, the Lac qui Parle State Game Refuge was established under Game Refuge Order #274. The Lac qui Parle Goose Management Project began that same year with the stated goals to re-establish Canada geese in Minnesota and to attract migratory geese. Initially, two locations were considered: Marsh Lake and lower Lac qui Parle Lake. The lands surrounding lower Lac qui Parle Lake were ultimately selected due in part to the amount of open water, topography, cropland, and ownership patterns. In the early 1960s, Dr. Harold Hanson of the Illinois Natural History Survey rediscovered a flock of giant Canada geese residing in Rochester, Minnesota. These birds then became the "seed stock" for restoration of the giant Canada goose. The 1977 Lac qui Parle WMA Master Plan provides more details on early goose restoration efforts, and early goose and hunt management.

Goose hunting became very popular in the 1960s and Lac qui Parle WMA, with its large concentration of geese, became a destination for waterfowl hunters. In the early years, goose hunting took place in the road ditches surrounding the refuge, with high hunter numbers and intense competition for hunting spots. To facilitate this use, 102 goose hunting blinds were established on the WMA in 1974. Although overnight camping was not allowed, many goose hunters paid local youth to sleep in the blinds to reserve their spots. In 1976, a reservation system was instituted with four drawings per day; in the first year of the reservation system, over 12,000 hunters used the refuge blinds. At the height of goose hunting in the late 1980s, almost every field within a 10-mile radius of the refuge had goose hunters, with daily car counts exceeding 200 vehicles. Goose hunting generated millions of dollars in local economic activity. High harvest levels, short seasons, and the emergence of avian cholera caused tension over the balance of allowable harvest and economic activity. In the 1990s, goose blinds were moved out of the road ditches into the refuge to increase hunter satisfaction. A few years later, below-ground pits were installed to encourage field hunting and the use of decoys and calling. Hunting regulations became less restrictive as goose hunter numbers declined, reflecting overall declines in hunter numbers. The reservation system was discontinued in 2014, and the shell limit was eliminated in 2023. Today, 51 goose hunting blinds remain.

Peak numbers of Canada geese at Lac qui Parle WMA steadily increased from only a few hundred in the 1950s to over 150,000 by the mid-1980s. Annual goose numbers then ranged from 120,000 to 150,000 geese over the next 20 years. However, starting in 2008, goose numbers began to decline; recently, annual goose numbers have peaked at around 11,000 to 20,000 birds. In addition, the dates when migratory geese arrive at Lac qui Parle WMA have occurred later in the season since the 1980s. From the 1950s through the 1980s, migratory geese started arriving in mid-September and peak numbers occurred in October. In the 1990s, geese did not start arriving until mid-October and numbers did not peak until November. Today, geese do not arrive until late November or early December.

The changes in migratory goose numbers and arrival dates at Lac qui Parle WMA are also observed at other mid-latitude goose staging areas and involve many interrelated factors. Changes in agricultural production are one factor affecting migration. Corn is now grown farther north, and fall tillage is increasingly rare across Canada and

the Dakotas. This means that high-energy food for migratory geese persists for longer periods of time north and west of Minnesota, which allows for delayed migration. Climate change is also affecting the migration patterns of geese. Snow and cold temperatures, which trigger geese to start migrating south, are arriving later in the season. At the same time, warm temperatures that trigger geese to migrate north are beginning earlier in the season at Lac qui Parle WMA. Due to these shorter winters, geese and other migratory birds stay for only brief periods of time at Lac qui Parle WMA. The migration corridor has also widened due to a very wet cycle in the 1990s and an abundance of water in the Dakotas, increasing options beyond Lac qui Parle WMA for geese to stop on their migration. The resurgence of giant Canada geese across the landscape is also a factor, as these birds act as "decoy flocks"; when migratory geese leave Canada and encounter giant Canada geese across Minnesota and the Dakotas, they settle with them instead of continuing to migrate.

Interestingly, the spring concentration of waterfowl at Lac qui Parle WMA has not changed over the same period. The State Game Refuge still provides sanctuary and food to hundreds of thousands of waterfowl as they push north to their breeding grounds. Although Canada goose numbers have declined, number of species such as white-fronted geese have seen recent increases.

The Lac qui Parle Goose Management Project has completed its stated goals. Giant Canada geese are now common across the Midwest, and migratory goose populations are robust and now offer hunting opportunities throughout Minnesota. While migration patterns have changed, Lac qui Parle WMA's commitment to migratory waterfowl and their habitats remains.

WMA Designated Lands and Management Efforts

The late 1950s through the 1960s was a period of rapid growth for Lac qui Parle WMA. Accomplishments during this time included hiring staff and securing equipment, facilities, and residences. Resurveying and posting property boundaries using barbed wire fences was an initial priority for WMA staff; encroachment by other parties was common since the lands condemned for the Flood Control Project were never surveyed. A few of these initial boundary fences remain on Lac qui Parle WMA today. Land acquisition was another early priority and focused on rounding out irregular boundaries and securing lands in the state game refuge for the Lac qui Parle Goose Management Project. Upland habitat work during this period focused on establishing dense bromegrass and alfalfa nesting cover, planting woody cover, establishing the first agricultural agreements, and noxious weed control. DNR staff also built most of the waterfowl impoundments (i.e., areas designed to control and hold water using dams or dikes) during this period. Lac qui Parle WMA had two dedicated heavy equipment operators who traveled across the region building dikes and water control structures, many of which remain today. Impoundment work focused on larger, deeper wetlands, as the importance of temporary and seasonal wetlands for breeding waterfowl was not well understood at the time.

In the 1980s, appreciation and understanding of prairie habitat started to grow along with efforts to protect the few remaining native prairie parcels. To support these efforts, the DNR formed a strong partnership with The Nature Conservancy (TNC) that remains today. Many of the highest-quality native prairie tracts in Lac qui Parle WMA were purchased by TNC and then donated to the DNR. Thanks to concerted efforts by numerous agencies, non-profits, and individuals across decades, most remaining native prairie tracts are now under permanent protection across the upper Minnesota River valley. Using fire as a prairie management tool also began in the

late 1980s and grew throughout the 1990s. Passage of Minnesota's Legacy Amendment in 2008 enabled the formation of DNR "roving crews", with specialized equipment that could operate in wet ground and open water. The staff on these crews are solely dedicated to habitat enhancement and restoration; on prairie habitats, this work includes prescribed burns, tree removal, grassland restorations, removal of old fencing, and installing fenceposts for conservation grazing.

Cattle grazing as a prairie management tool began at Lac qui Parle WMA in the 1990s, and several partnerships have since formed with local cattle producers. Grazing regimes started simple (e.g., grazing one month in spring) and grew in complexity, including a 3,000-acre patch-burn-graze project at Chippewa Prairie in cooperation with TNC starting in 2012. That project aimed to harness the powerful fire-grazing interaction that shaped the prairies and uses fire instead of fences to move cattle. Although cattle have access to the entire site, grazing pressure is focused on approximately 25% of the unit annually and rotated each season. The DNR's Minnesota Biological Survey (MBS) installed 40 research plots (20 are grazed, 20 are control) to study the effects of fire and grazing across the plant and animal communities; research results are in-press. Today grazing continues at Chippewa Prairie and is used frequently at three to four other prairie tracts. In 2024, around 2,600 acres total, or approximately 23% of the upland prairie native plant community, will be grazed. New grazing sites are being evaluated on Lac qui Parle WMA to explore opportunities to utilize this habitat management tool on other locations in the future.

In the 1970s and from the late 1990s through early 2000s, the DNR and partners made two attempts to restore greater prairie-chickens to Lac qui Parle WMA and the surrounding landscape. Greater prairie-chickens are one of four native grouse species in Minnesota and are associated with open prairie habitat. The first attempt used birds from the Carlos Avery Game Farm. Despite the best efforts of WMA staff, the restoration effort failed, with the pen-reared birds unable to thrive. The second attempt was under the direction of the late Dr. John Toepfer, a nationwide expert in prairie grouse conservation. From 1999 to 2006, the DNR and partners released 574 wild-trapped greater prairie-chickens in the project area, and all birds were radio-marked. Surveys recorded over 100 males on booming grounds a few years post-release. Adult survival was high, but unfortunately, chick survival was low. The birds disappeared from Lac qui Parle WMA by 2013.

Surveys of radio-marked prairie-chickens also helped locate several sharp-tailed grouse dancing grounds. These sharp-tailed grouse had arrived unaided, probably from South Dakota. A few dancing grounds remain today in the Lac qui Parle area. Sharp-tailed grouse are considered more adaptable to a range of grassland habitat types.

The Marsh Lake Ecosystem Restoration Project was the culmination of several decades of planning that began in the 1970s. The aim was to improve water quality and habitat by redesigning the Marsh Lake dam to allow water level manipulation than more closely mimics the natural variability of a prairie lake. Through a long planning process, the project came to fruition through the coordination of USACE, Upper Minnesota River Watershed District (UMRWD), Ducks Unlimited, and the DNR. The completed project involved returning the Pomme de Terre River to its original channel below the Marsh Lake Dam, building a new embankment road, installing a rock ramp fishway with a notch in the original spillway, and installing a water control structure.

Following the completion of the construction phase of the project, the DNR and partners initiated a drawdown of Marsh Lake in the fall of 2019. This drawdown continued until June 2022, when the gates were closed. Since

June 2022, the lake has been allowed to rise and lower with the seasons and prevailing precipitation and runoff, as designed. Any future drawdowns will be guided by the Monitoring and Adaptive Management Plan for the Marsh Lake Ecosystem Restoration Project and will require additional coordination with partners from the USACE, UMRWD and Big Stone NWR. The DNR will continue to track and record the performance of other key project features and objectives once the performance monitoring period of the Marsh Lake Monitoring and Adaptive Management Plan is over.

For more information about Marsh Lake restoration, including the history, habitat changes, project features, and videos, view the Marsh Lake Habitat Enhancement Project StoryMap provided by the USACE.

Archaeological and Historic Aspects

Three prehistoric burial mounds are in Chippewa County just outside Lac qui Parle WMA. Nine other burial mounds are located within Lac qui Parle State Park. None of the sites have been excavated. Other burial mounds are known in the vicinity of Lac qui Parle WMA.

The Minnesota State Archaeologist previously assessed the archaeological potential as follows: "This is an area of extremely high potential as reflected in the large number of archaeological sites recorded in the area. The area has not been surveyed to locate habitation or village sites, and these must exist in numbers and most probably in the lowlands within the management area." (Johnson, 1977)

Four sites of historic interest are in Lac qui Parle WMA in Lac qui Parle County. The sites include wagon road remnants, a habitation site, a river crossing, and a partially completed railroad line, all of which date to the early Euro-American settlement period.

Existing Conditions

Land Ownership

Introduction

Land ownership and associated policies strongly influence natural resource management on state-managed lands. Management goals and designation type are affected by acquisition history, present land ownership patterns, sources of acquisition funds, and state and county policies. Multiple land type designations make up Lac qui Parle WMA, each carrying different implications.

Acquisition of Wildlife Lands

The commissioner of natural resources, or their designee, such as the FAW director, is authorized to acquire lands for wildlife management purposes (Minnesota Statutes, 1978). Proposed acquisitions are reviewed through the Strategic Land Asset Management process. This process uses six goals to affirm an acquisition aligns with the DNR's strategic land portfolio. After approval through this region-led review process, FAW may attempt to acquire lands from willing sellers. FAW must also obtain approval from the appropriate county board before

land can be purchased for a WMA. Newly acquired WMAs are designated by the commissioner and the public is notified through the State Register.

The DNR uses multiple funding sources for wildlife land acquisition, including the Game and Fish Fund (GFF), which is funded by proceeds of hunting and fishing licenses, and federal matching funds from the Pittman-Robertson Wildlife Restoration Act. In addition, wildlife land acquisition has been supported through state bonding funds, and through the Environment and Natural Resources Trust Fund as recommended by an administrative committee, the Legislative-Citizen Commission on Minnesota Resources (LCCMR). Legislative appropriations through the Outdoor Heritage Fund (OHF) became available for wildlife land acquisitions starting in 2009 through its administrative body, the Lessard-Sams Outdoor Heritage Council.

Lands purchased with federal dollars and most purchased with state dollars have use restrictions. The land must be bought and continue to be used for wildlife conservation purposes. Examples of such programs include the federal Pittman-Robertson Fund (50CFR Part 80.134), the OHF, and the state GFF. Generally, approved wildlife conservation activities in Lac qui Parle WMA include the operation of public hunting grounds and the maintenance, restoration, and enhancement of wildlife habitats.

Acquisition of the Present WMA

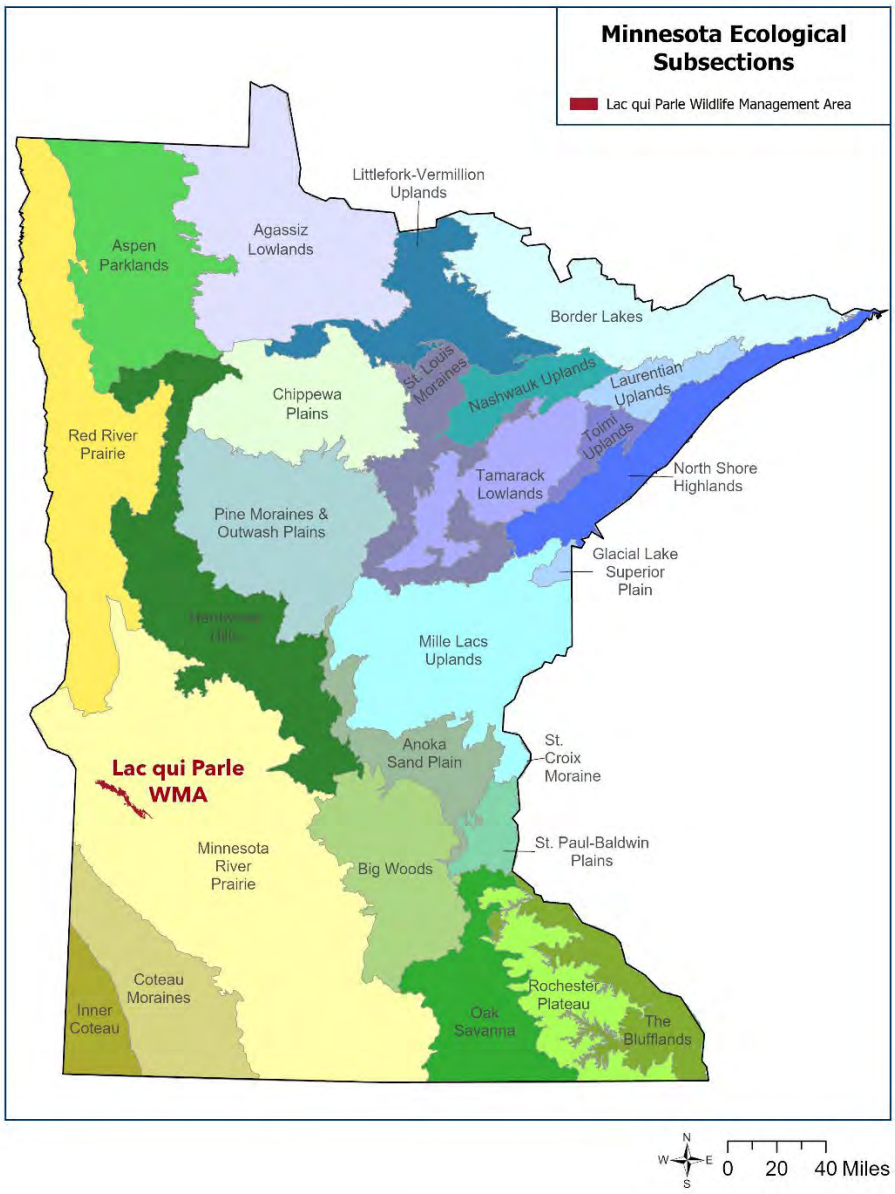
In 1957, the Minnesota Executive Council transferred 22,877 acres of the Lac qui Parle flood control project to the DNR for a wildlife refuge and public hunting ground. Since 1957, approximately 9,100 acres were purchased from private owners using funds from the Pittman-Robertson Wildlife Restoration Act, the North American Wetlands Conservation Act, the OHF, and others. The federal government licenses an additional 340 acres to the DNR. The unit area as of March 2024 was approximately 33,567 acres.

Area Description

Landscape Context

Lac qui Parle WMA lies within the Minnesota River Prairie Ecological Subsection (Figure 2). The boundaries of this subsection coincide with large till plains flanking the Minnesota River. Lac qui Parle WMA is bounded to the southwest by the Prairie Coteau. A series of end moraines define the eastern boundary, starting with the Alexandria Moraine to the northeast and ending with end moraines associated with the Des Moines lobe in the southeast. The Minnesota River Prairie subsection consists of a gently rolling ground moraine about 60 miles wide. Loamy ground moraine (till plain) is the dominant landform, but end moraines and lake plains also occupy a significant area (Hobbs & Goebel, 1982). The Minnesota River occupies a broad valley that splits the subsection in half. The valley was created by Glacial River Warren, which drained Glacial Lake Agassiz (Matsch & Wright, 1967).

Figure 2. Ecological subsections of Minnesota.



Lac qui Parle WMA ranges in elevation from roughly 920 feet above sea level (the lowest depth of Lac qui Parle Lake) to roughly 1,000 feet above sea level. The highest elevation is above the bluff line that encircles most of the lakes and river valley.

Lac qui Parle WMA has several water bodies within its boundaries. The Minnesota River flows through the entire unit from northwest to southeast. The mouth of the Pomme de Terre River is just below Marsh Lake and flows into the Minnesota River. The Lac qui Parle River flows into the Minnesota River at the base of Lac qui Parle Lake near the Churchill Dam. The Chippewa River will flow into Lac qui Parle Lake through the Watson Sag during high

water periods. Several minor streams and ditches flow into Lac qui Parle WMA, as well as several fens and springs. Lac qui Parle Lake and Marsh Lake are dammed reservoirs entirely in Lac qui Parle WMA boundaries.

The Lac qui Parle and Pomme de Terre Rivers terminate their respective watersheds in Lac qui Parle WMA; this, along with a highly altered watershed, is the cause of frequent flooding. Flooding conditions place additional burdens on both wildlife and human users of Lac qui Parle WMA. Wildlife species expend additional energy to adapt to flood conditions and can experience impacts on their habitat and reproduction. Impacts on people include lost recreational opportunities and increased expenditures and workload due to the effects of flooding on infrastructure.

Other public lands adjacent to Lac qui Parle WMA include the Big Stone National Wildlife Refuge (NWR), TNC Chippewa Prairie and Plover Prairie Preserves, Lac qui Parle State Park and Hastad and Hegland Waterfowl Production Areas (WPAs; Figure 3). There are numerous other conservation lands in the vicinity, including WMAs, WPAs, Scientific and Natural Areas (SNAs), United States Fish and Wildlife Service (USFWS) easements, Minnesota Board of Water and Soil Resources (BWSR) easements, and Conservation Reserve Program (CRP) lands (Table 2, Figure 4). These tracts of protected land provide critical habitat for diverse wildlife species and rare features, such as fens, in this vastly altered landscape. Lac qui Parle WMA and the surrounding area have been recognized in several planning initiatives, including Audubon Minnesota's Important Bird Areas and Minnesota's Wildlife Action Plan (MNWAP).

Figure 3. Public lands in the vicinity of Lac qui Parle WMA

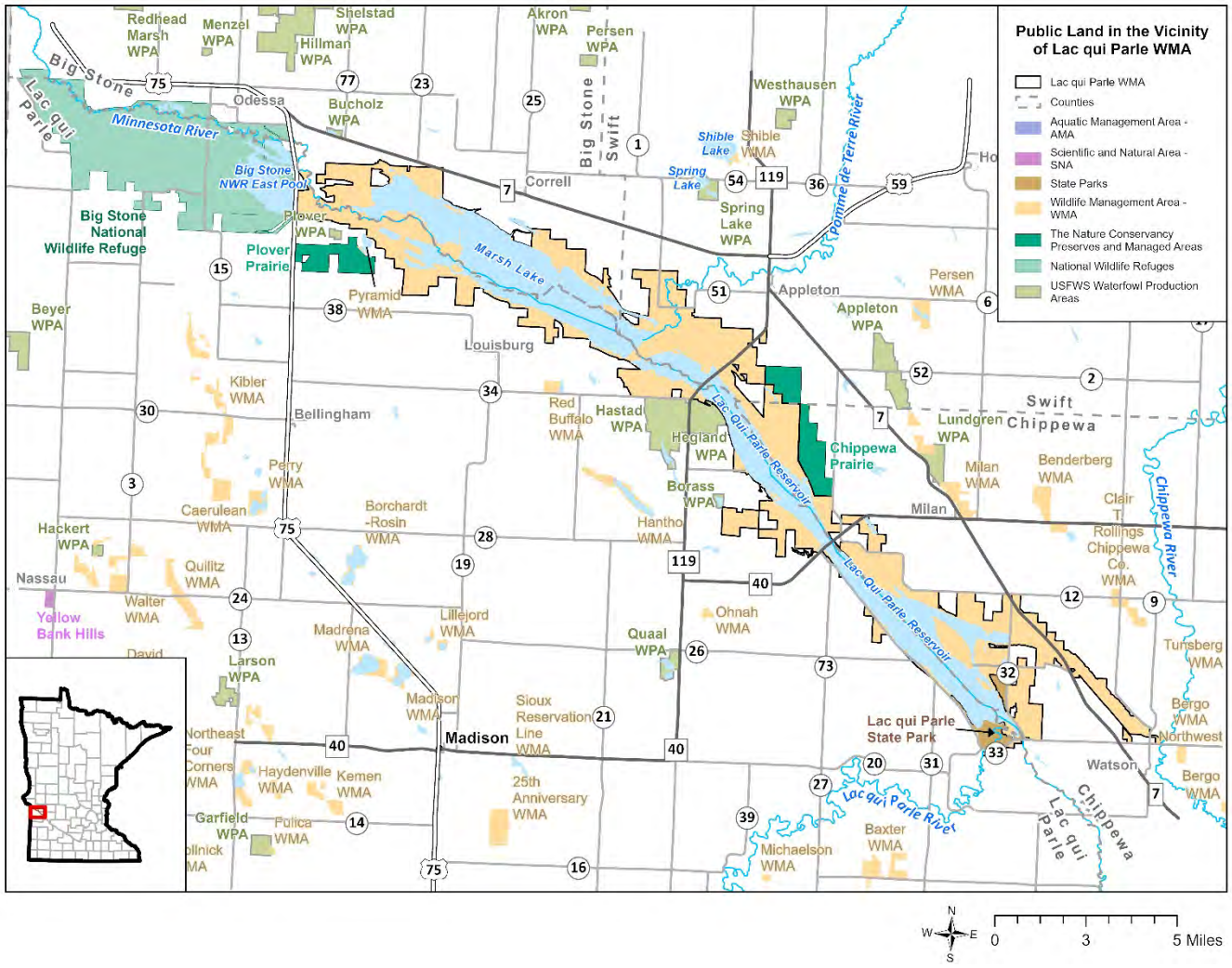


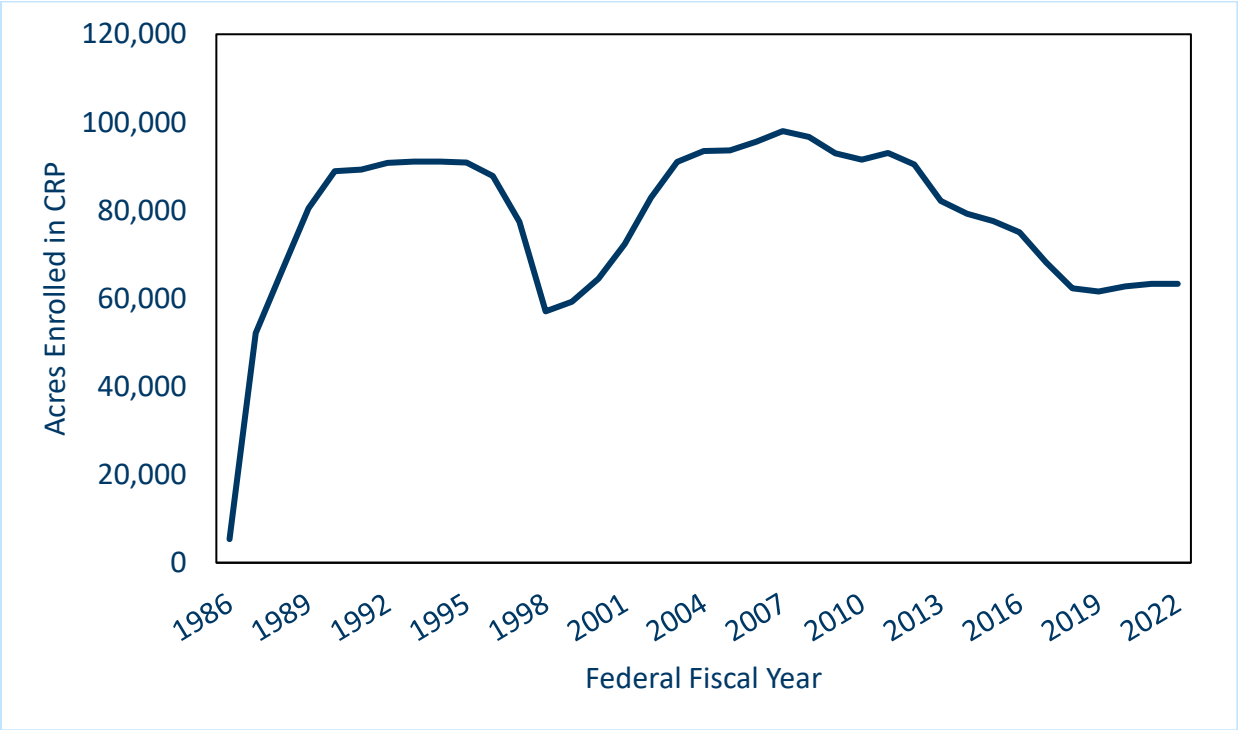
Table 2. Total acres of conservation lands in the four counties covered by Lac qui Parle WMA.

Land Unit	Big Stone County	Chippewa County	Lac qui Parle County	Swift County
Lac qui Parle WMA	7,329	9,940	11,745	4,553
Other WMA	4,426	3,387	10,894	6,816
SNA	269	235	79	0
State Park	1,023	214	443	0
NWR	1,100	0	10,566	0
WPA	12,626	1,049	4,430	9,384
USFWS Easement	4,880	0	730	1,066
BWSR Easement	1,800	10,671	10,118	9,266

Land Unit	Big Stone County	Chippewa County	Lac qui Parle County	Swift County
TNC Preserves and Managed Areas	0	861	919	520
Total Acres	33,453	26,357	49,924	31,605

*Conservation lands and acreages derived from DNR Quick Layers for ArcGIS, March 2024.

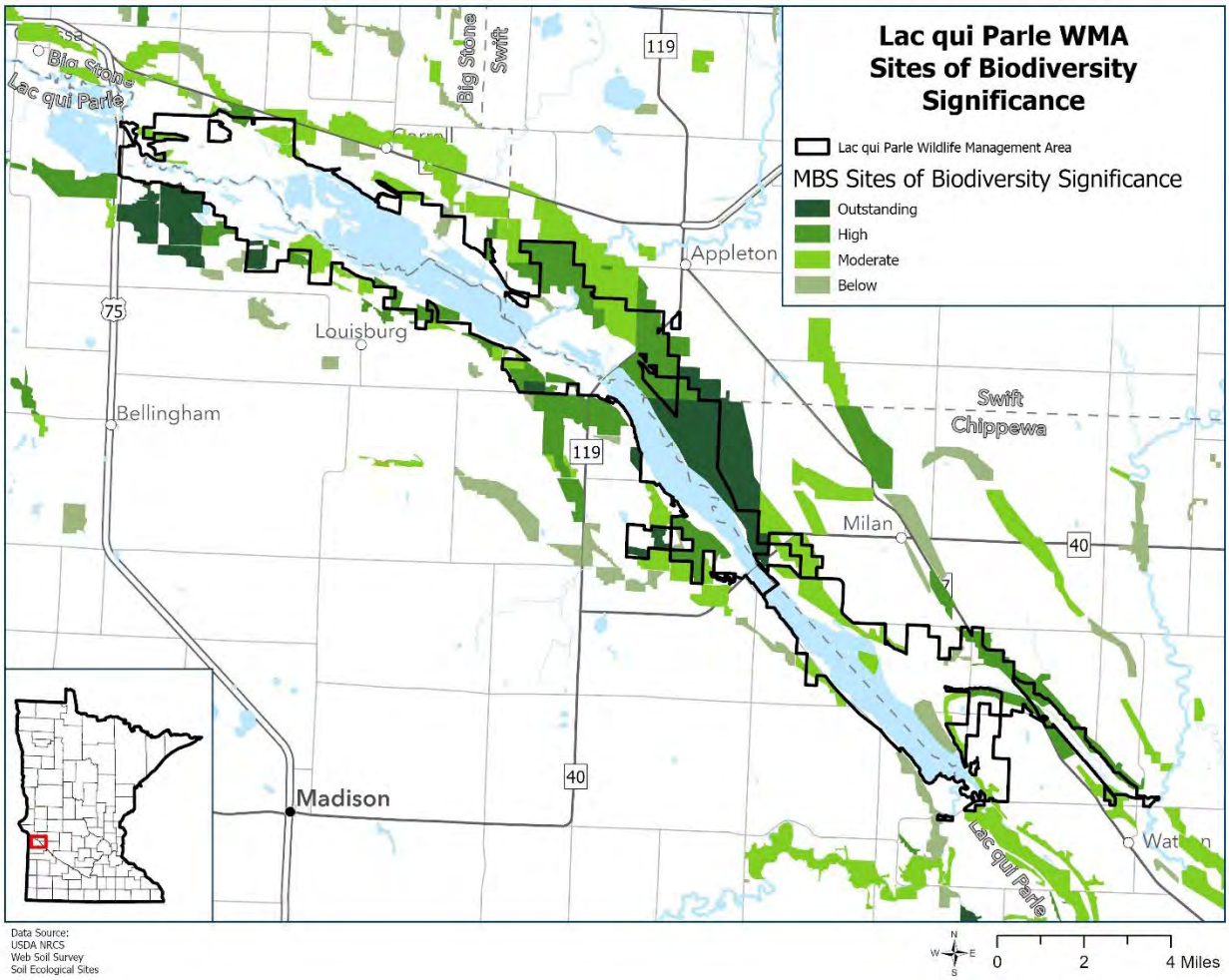
Figure 4. CRP enrollments by federal fiscal year, 1986-2022



Many areas within Lac qui Parle WMA have been identified as areas of Outstanding, High, or Moderate biodiversity significance by the Minnesota Biological Survey (MBS; Figure 5). Within the area of Outstanding Biodiversity Significance are several areas of remnant prairie (i.e., areas of native prairie that have never been plowed or converted to other land uses), including the Chippewa, Plover, Moen, Sleeping Bison and Ripple Prairies. Some of these areas are managed cooperatively with TNC, the USACE and the USFWS.

Other unique features of Lac qui Parle WMA include granite rock outcrops, springs, and fens. The granite outcrops are mostly found on the west end of the unit near the Louisburg Grade. Other areas of rock outcrops are found within Lac qui Parle Lake and Lac qui Parle State Park. Springs and fens are primarily found on the southern end of Lac qui Parle WMA.

Figure 5. MBS sites of biodiversity significance at Lac qui Parle WMA



Socioeconomic Context

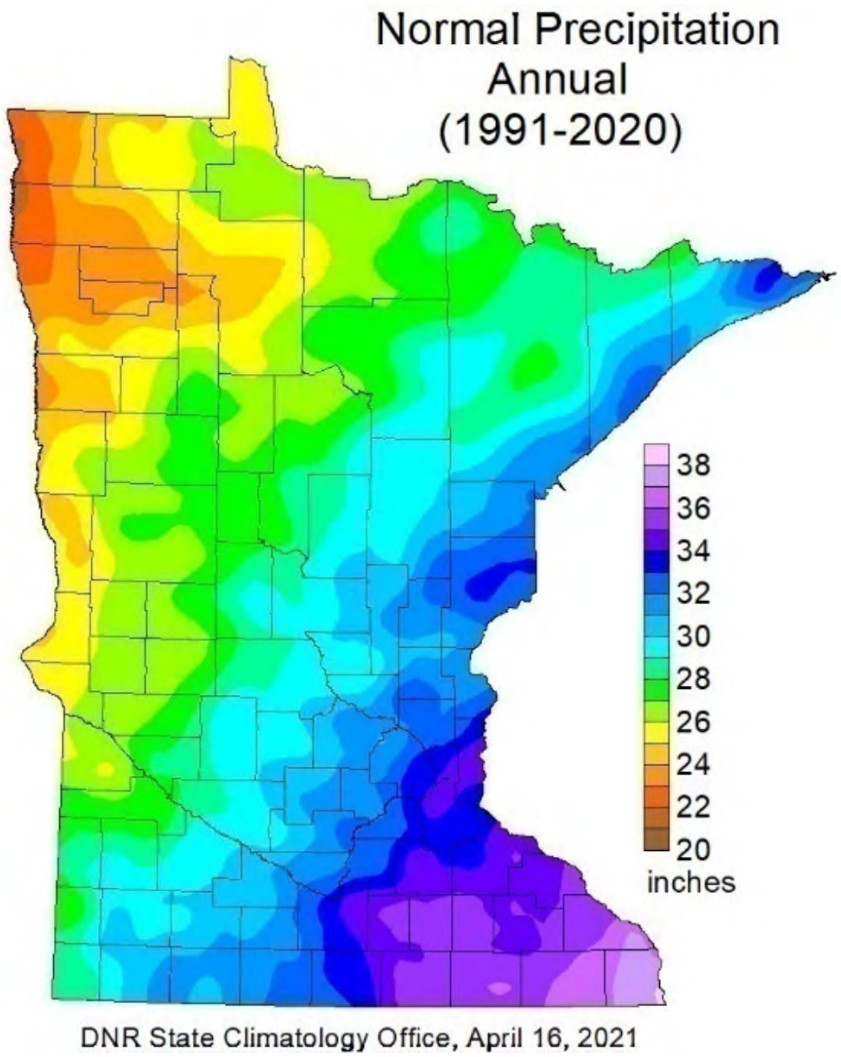
Lac qui Parle WMA is in the western Minnesota counties of Chippewa, Swift, Big Stone and Lac qui Parle. The population of these four counties is approximately 35,000 people, with nearby cities being Montevideo (pop. 5,513), Appleton (pop. 1,425), Ortonville (pop. 2,072) and Madison (pop. 1,518). In 2022, the median household incomes for Chippewa, Swift, Big Stone, and Lac qui Parle counties were $62,112, $58,362, $63,024, and $66,967, respectively (U.S. Census Bureau, 2022). The largest industries in the surrounding counties are Healthcare/social assistance, Agriculture, and Manufacturing.

Public lands and waters around Lac qui Parle WMA, including Lac qui Parle State Park, are an important source of tourism revenue for the local economy, as they attract visitors from across the state with unique recreation opportunities. Lac qui Parle WMA and surrounding public lands are essential in preserving grassland and wetland ecosystems. It is the largest contiguous block of public land in west-central Minnesota and a top-rated destination for hunters, bird and wildlife watchers and others.

Climate

Lac qui Parle WMA has a humid, continental climate with warm to hot summers and cold winters. Based on 1991 to 2023 climate data, the hottest month is July (72°F), and the coldest month is January (12°F) (Minnesota State Climatology Office, 2024). The median dates for last and first hard freeze (i.e., when temperature is at or below 28°F) from 1991 to 2023 are approximately April 25 and October 8, respectively. The growing season, which is the time between the last and first hard freeze, in Lac qui Parle WMA is typically around 166 days according to data from the Milan station (Applied Climate Information System, 2024). Average annual precipitation is approximately 26 inches, placing Lac qui Parle WMA on the lower end of the statewide range of 21–38 inches (Figure 6; Minnesota Climate Explorer, 2024). The region has pronounced wet and dry seasons, with precipitation during the summer more than five times greater on average than during the winter.

Figure 6. Normal annual precipitation across Minnesota, 1991-2020



The number of 1.5-2” and 2-3” daily precipitation events has doubled in recent decades when comparing the 2001-2015 period to previous 14-year increments in the Yellow Bank River watershed, a major tributary of the

Minnesota River located upstream of Lac qui Parle WMA (Minnesota Department of Natural Resources, 2019). The wettest month is typically July, with 3.95 inches of precipitation, and the driest month is January, with 0.7 inches (Minnesota State Climatology Office, 2024). Lac qui Parle WMA on average receives approximately 50 inches of snowfall annually from October through April based on records from 1991 – 2023 (Applied Climate Information System, 2024).

Geology and Soils

Glacial activity shaped the landscape at Lac qui Parle WMA. When the glacial lobes began their retreat around 14,000 years ago, the resulting meltwater formed enormous rivers and lakes. At one time the largest glacial lake in North America, Glacial Lake Agassiz had a basin of almost 600,000 square miles and covered all of northwestern Minnesota. Glacial River Warren carved the present-day Minnesota River Valley when Glacial Lake Agassiz broke through the Big Stone Moraine near present-day Browns Valley, Minnesota, approximately 11,700 years ago and flowed for roughly 2,300 years (Minnesota River Basin Data Center). The Watson Sag, a marshy arm of Lac qui Parle Lake, is a relic channel of Glacial River Warren. As major tributaries joined the Minnesota River, deltas formed natural dams, resulting in expansive lakes. As Marsh Lake to the north was formed in this manner, Lac qui Parle Lake was formed similarly. Alluvium, outwash, lacustrine, and till-plain materials are the primary sedimentary features associated with the mapped surficial geology.

Calcareous glacial till, modified glacial outwash, or lacustrine or alluvial deposits formed the soils in Lac qui Parle WMA. Generally, soils on Lac qui Parle WMA can be described as loam, clay, silt, and sand on slopes of 0-25% (Figure 7). They can have a dark, thick, humus-rich topsoil and contain an accumulation of calcium salts in the subsoil. The soils on Lac qui Parle WMA can be highly productive, although many areas with agricultural history have been impacted by soil erosion and have lost much of the organic matter and carbon that had accumulated in these soils before European settlement and modern intensive agriculture. Drainage class of soils varies between very poorly drained to well drained (Figure 8; Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture).

Soil types in Lac qui Parle WMA are generally delineated by topography. Poorly developed, highly organic mineral soils were formed in marsh and river flat areas, and saline soils were formed where high water tables or evaporated shallow water concentrated mineral salts as the soil formed. Sediment depths range from 0-300 feet. The escarpment above the floodplain has drought-prone soils that are easily eroded. Above the escarpment is a flat, gently rolling terrace, where soils are more variable. These soils are generally fertile and had historically been cultivated where feasible. Additionally, there are areas of exposed bedrock on the western end and on the south end of Lac qui Parle WMA within Lac qui Parle State Park and Lac qui Parle Lake.

Figure 7. Ecological types found at Lac qui Parle WMA.

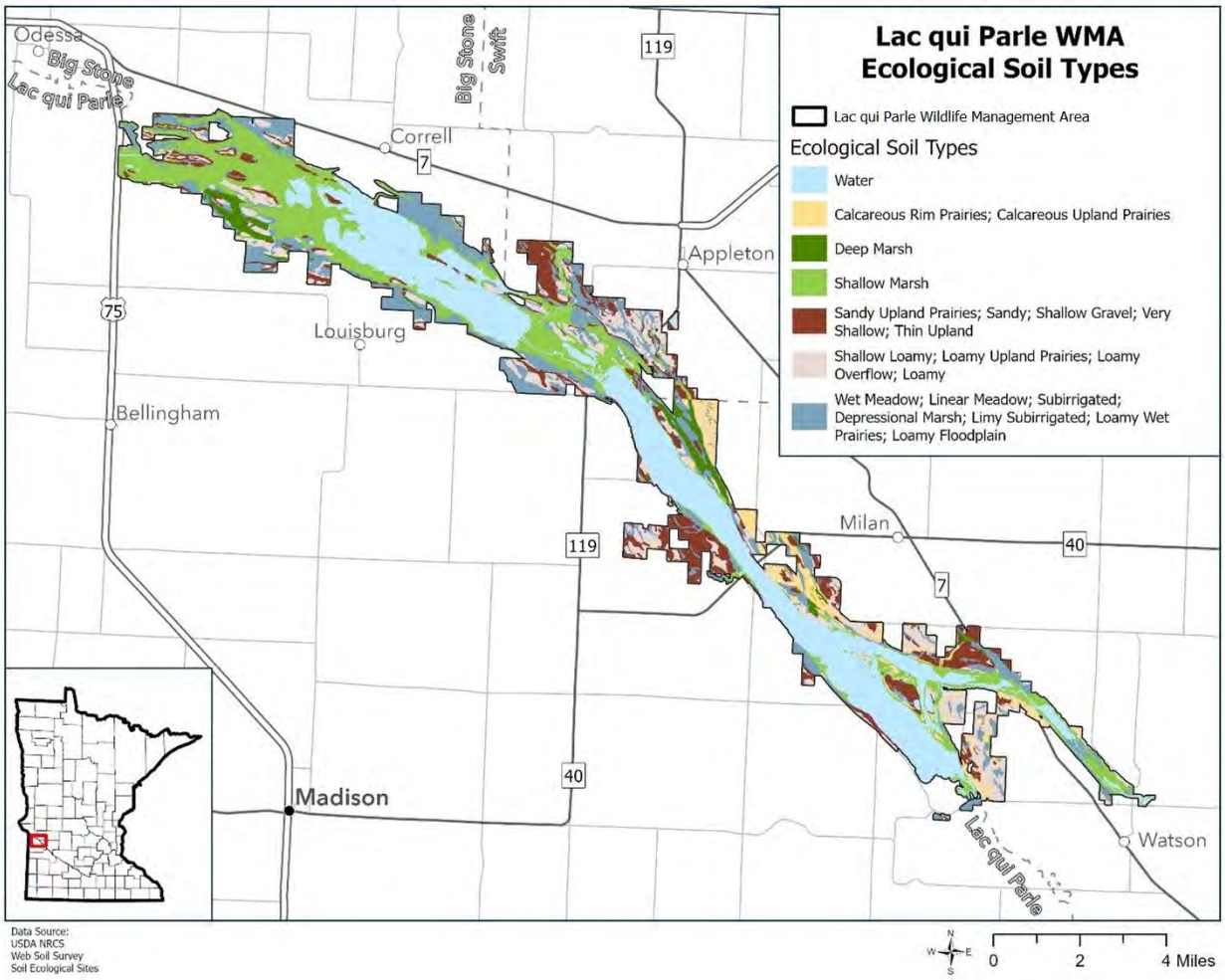
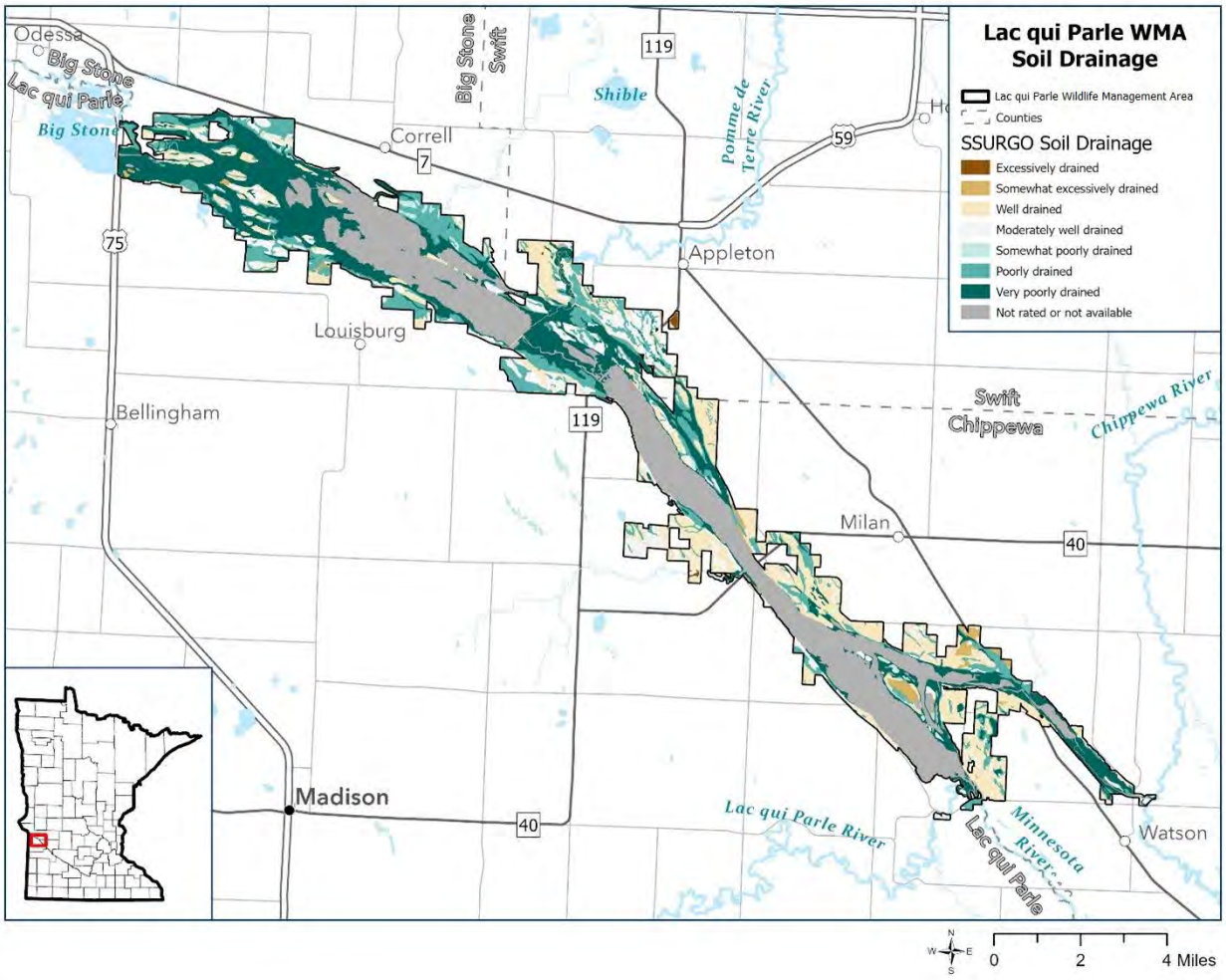


Figure 8. Soil drainage classes at Lac qui Parle WMA



Hydrology

Lac qui Parle WMA encompasses Lac qui Parle and Marsh lakes, two large reservoirs located on the mainstem of the Minnesota River. Four major watersheds contribute to Lac qui Parle WMA (Figure 9; Figure 10): Minnesota River Headwaters, Pomme de Terre River, Lac qui Parle River and Chippewa River. Fluctuating water levels and flooding create challenges due to altered hydrologic conditions caused by land use/land cover and climate changes in the large contributing watersheds. The Minnesota River Headwaters watershed drains an area of approximately 2,132 square miles and includes most of Lac qui Parle WMA. The Pomme de Terre River watershed outlets into Lac qui Parle WMA immediately downstream of Marsh Lake dam and has a contributing area of approximately 875 square miles, which includes a small portion of Lac qui Parle WMA. The Lac qui Parle River watershed discharges into Lac qui Parle WMA immediately upstream of the Lac qui Parle Lake outlet and includes a contributing watershed area of approximately 1,100 square miles. The fourth contributing watershed to Lac qui Parle WMA is the Chippewa River watershed, which has a 2,080 square mile watershed and outlets into Lac qui Parle WMA on the southeast side of Lac qui Parle Lake. A portion of the Chippewa River flow is

diverted into Lac qui Parle WMA via the Watson Sag channel at the Chippewa River diversion structure near Watson, operated by USACE. Flow for the rivers in the management area is highly variable depending on the winter snowfall, rapidity of snow melt, and variability in precipitation throughout the large watershed area.

Figure 9. Watersheds in Lac qui Parle WMA

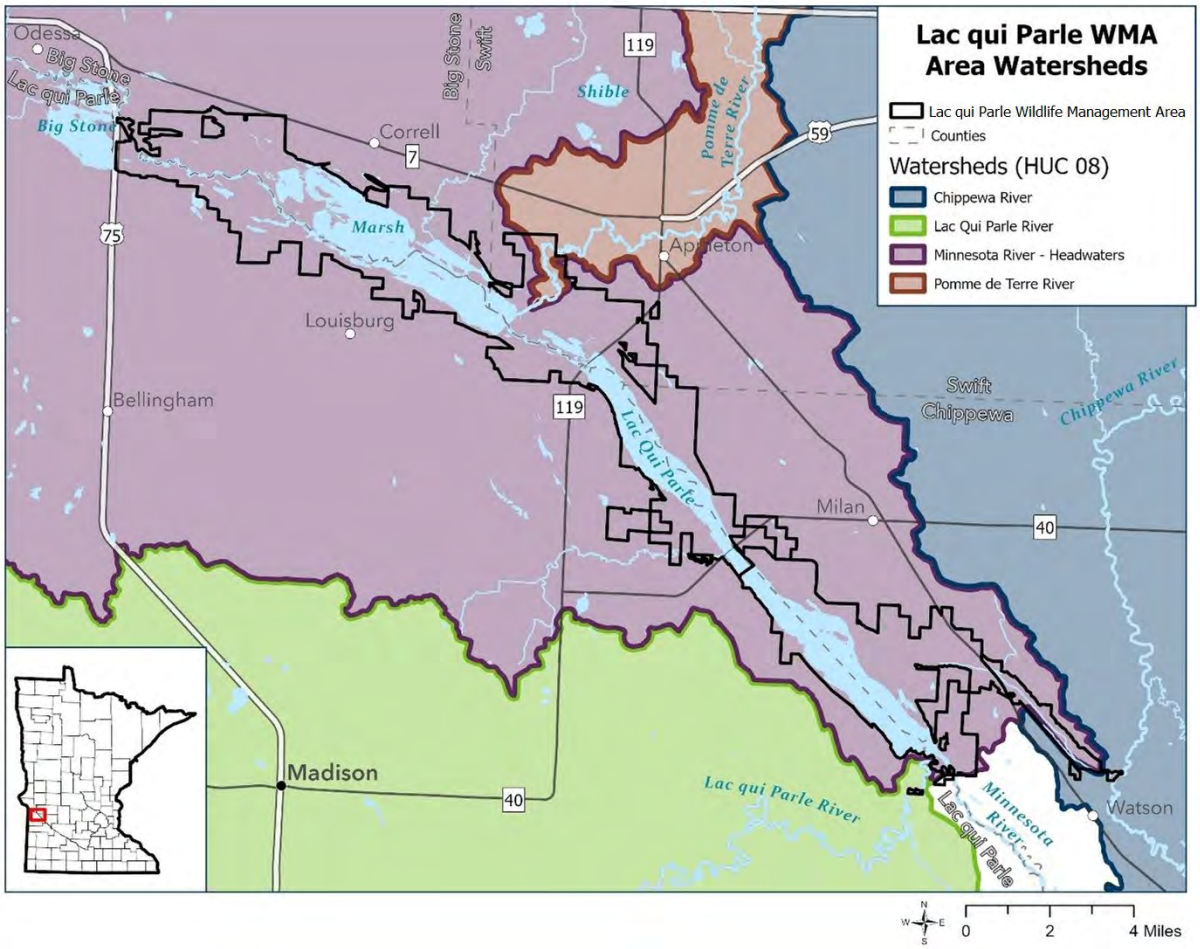
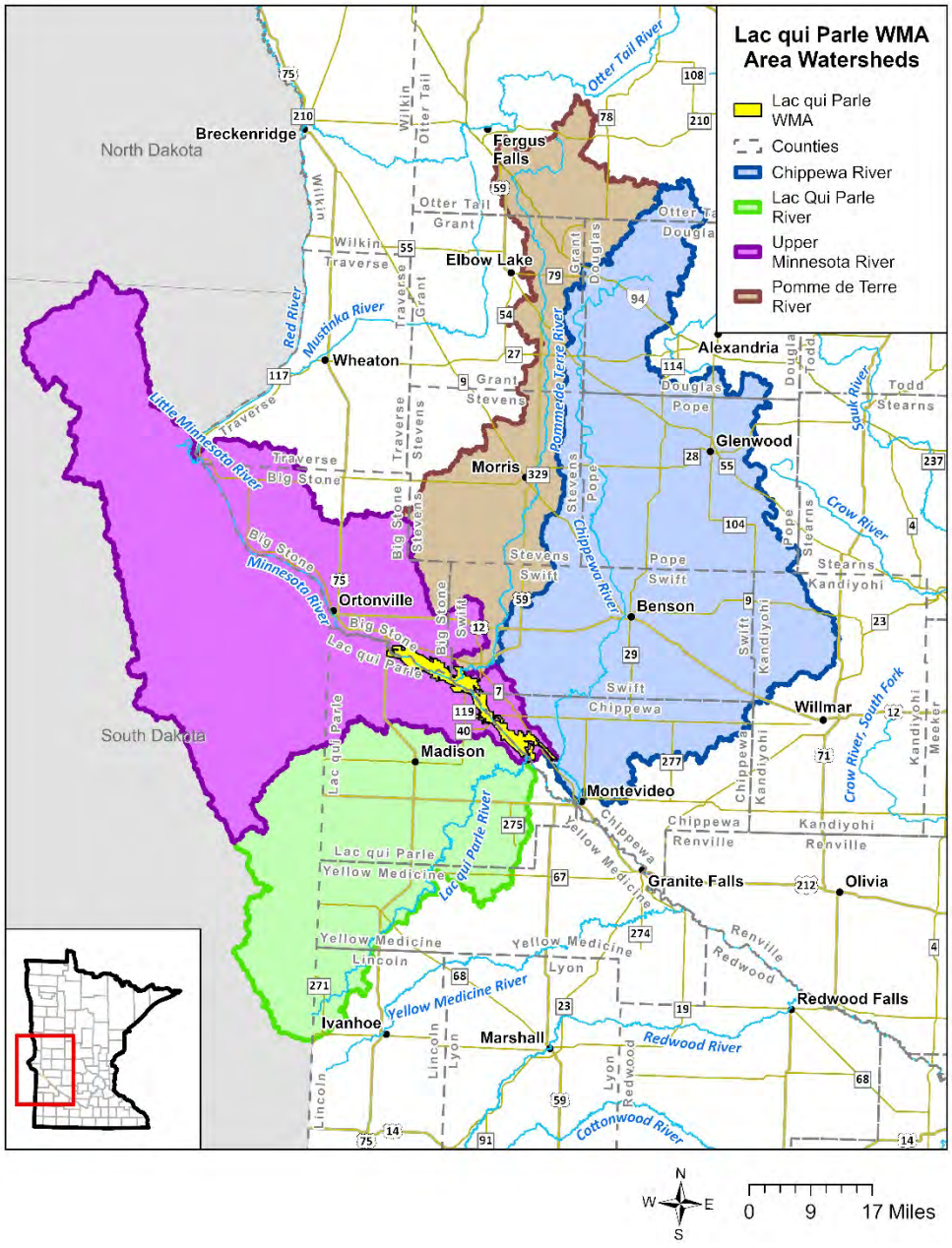


Figure 10. Full extent of Lac qui Parle WMA area watersheds



All major watersheds recently completed a comprehensive watershed management plan under the One Watershed One Plan framework. Lac qui Parle WMA staff strive for management actions on Lac qui Parle WMA that contribute to improving downstream water quality. The following is a description of the four major watersheds.

Minnesota River Headwaters

The Minnesota River Headwaters watershed is primarily located in west-central Minnesota and South Dakota. A small section of the northern portion of the watershed is in North Dakota. The waterway originates in South Dakota as the Little Minnesota River and crosses into Minnesota near Browns Valley where it enters Big Stone Lake. At the outlet of Big Stone Lake (near Ortonville, Minnesota), the waterway officially becomes the Minnesota River. The Minnesota River Headwaters watershed retains a variety of rare and unique features that primarily occur along the Minnesota River. The total watershed area for the Minnesota River Headwaters watershed is 2,132 square miles, of which Minnesota contains approximately 784 square miles (or 37% of the watershed). The watershed drains portions of six Minnesota counties with the largest areas in Big Stone and Lac qui Parle Counties (52.3% and 29.8% watershed coverage, respectively) followed by Swift, Chippewa, Traverse, and Stevens Counties. Approximately three-fourths of the watershed for the Minnesota River lies within the Northern Glaciated Plains Level III ecoregion, while the southeastern quarter lies within the Western Corn Belt Plains ecoregion.

The Minnesota Pollution Control Agency oversees the collection and analysis of water quality and biology data within the HUC-8 major watersheds. Most monitored stream reaches and lakes in the Minnesota River Headwaters Watershed are not meeting water quality standards for aquatic life (fishing) and aquatic recreation (swimming). Sixty-five percent of land use in Minnesota's portion of the Minnesota River Headwaters Watershed is cultivated crops. Lac qui Parle Lake on the Minnesota River is impaired for aquatic life and aquatic recreation. Lac qui Parle Lake NW Bay and SE Bay had aquatic recreation impairments based on lake eutrophication data. Lac qui Parle Lake SE Bay was found to be impaired for aquatic life use based on ammonia data. Marsh Lake on the Minnesota River had insufficient or inclusive data to be able to make a water quality status determination at the time of the assessment (Minnesota Pollution Control Agency, 2022).

According to the DNR's Evaluation of Hydrology Change 2023, precipitation increased only moderately while annual discharge increased 133% and instantaneous peak discharge increased 88% for the Minnesota River Headwaters watershed near Lac qui Parle when comparing the data prior to 1984 to the post-period. High flows for the Minnesota River near Lac qui Parle gauge have increased in magnitude by 109% and are exceeded approximately 27% of the time post-change point. Low flows have increased in magnitude by 258% and are exceeded approximately 96% of the time.

Lac qui Parle River

The Lac qui Parle River watershed is in southwest Minnesota, straddling the border between South Dakota and Minnesota, and near the headwaters of the Minnesota River Basin. While the uppermost portions of the watershed are in South Dakota, the Lac qui Parle River itself begins at the outlet of Hendricks Lake near the town of Hendricks, Minnesota. The total watershed area for the entire Lac qui Parle River Watershed is approximately 1,100 square miles, of which Minnesota contains roughly 760 square miles. The watershed overlaps three Minnesota counties: Lac qui Parle County (covering 66% of the Minnesota portion of the watershed area), Yellow Medicine County and Lincoln County. The Lac qui Parle River converges with the Minnesota River at Lac qui Parle State Park near the outlet of Lac qui Parle Lake.

Land use and general water quality are similar throughout this watershed. Much of the land use in the Minnesota portion of the watershed is predominately row-crop agriculture and lacks perennial cover. Watershed-wide water quality is significantly degraded as the majority of monitored stream reaches and lakes are not meeting water quality standards for aquatic life and aquatic recreation (Minnesota Pollution Control Agency, 2021).

Pomme de Terre River

The Pomme de Terre River is located within the Minnesota River Basin in west-central Minnesota. The northern portion of the watershed drains an 875 square mile area. The river is in the Northern Central Forest Ecoregion while the central and southern portions are located in the Northern Glaciated Plains Ecoregion. Portions of six counties are within the watershed, including Otter Tail, Douglas, Grant, Stevens, Swift and Big Stone counties. The watershed discharges into Lac qui Parle WMA immediately downstream of the Marsh Lake Dam.

The land use and general water quality transitions throughout the watershed. The northern, headwater region of the watershed is rich with lakes, wetlands, forests, and grasslands. As the river flows southward through the middle and lower portions of the watershed, the land use changes to predominately row crop agriculture. Elevated bacteria, excess sediment (turbidity), and low dissolved oxygen have been documented as the primary water quality impairments. The Pomme de Terre River watershed has a longer history of water quality and biology monitoring compared to the Minnesota River Headwaters, Lac qui Parle, and Chippewa through the MPCA's watershed-based management approach. When comparing the 2007 to 2017 sampling periods, overall, the health of fish and macroinvertebrate communities did not change (Minnesota Pollution Control Agency, 2021). Much of the Pomme de Terre River mainstem, which outlets to the Minnesota River at Marsh Lake, does not support aquatic life or recreation standards.

Chippewa River

The Chippewa River has a 2,080 square-mile watershed located immediately east of the Pomme de Terre River in west-central Minnesota. The headwaters of the Chippewa River are in Otter Tail County, and it flows 130 miles southwest to its mouth in Montevideo, where it joins the Minnesota River. The basin drains portions of eight counties, including Ottertail, Grant, Pope, Swift, Kandiyohi, Chippewa, Stevens and Douglas. Lands in the western half of the Chippewa River watershed fall within the Northern Glaciated Plains Ecoregion. The Chippewa River watershed, characterized by dominant land use of cultivated crops, also features portions of perennially vegetated lands and developed areas. The identified pollutants in the Chippewa are sediment, phosphorus, nitrogen, bacteria, and low dissolved oxygen. Hydrology and poor in-stream habitat have been identified as stressors within the MPCA's monitored stream reaches (Minnesota Pollution Control Agency & Chippewa River Watershed Project, 2017).

The Chippewa River diversion dam, located near Watson, is operated by USACE, and serves to divert a portion of flows from the Chippewa River through the Watson Sag and into Lac qui Parle Lake within Lac qui Parle WMA. During most flows, discharge from the Chippewa is split somewhat evenly between the Chippewa diversion channel into the Watson Sag and the mainstem Chippewa River, which ultimately joins the Minnesota River in Montevideo.

Habitat and Plant Communities

Introduction

Lac qui Parle WMA is a diverse site that provides many different habitat types for wildlife. Habitat is the combination of spatial, temporal, biotic and abiotic factors and interactions that create the conditions necessary to support free-ranging population(s) of a species through one or more life processes. For some animals (e.g., small mammals, reptiles, amphibians), one habitat provides for both needs; however, most animals (e.g., migratory mammals and birds) require different habitats, often vastly different and far apart, to optimize reproduction and survival.

Native Plant Communities

The habitats at Lac qui Parle WMA can be categorized into distinct native plant communities (NPCs) using the NPC classification system. This document categorizes habitat types at a system group based on vegetative and hydrological characteristics (e.g., upland grasslands, shrublands, and sparse vegetation systems) and then at the broad ecological system level determined by seasonal delivery and movement of nutrients and by timing and severity of natural disturbances (e.g., upland prairie). Next, classification moves to a finer NPC class, determined by local environmental conditions (e.g., UPs13 Southern Dry Prairie). Finally, it is classified by the specific NPC type (e.g., UPs13d Dry Hill Prairie (Southern)), which is determined by canopy dominants, substrate, and finer environmental conditions.

DNR staff have fully categorized and mapped NPCs on portions of Lac qui Parle WMA. However, many natural areas have not yet been mapped to the NPC class or type level. Figure 11 shows the ecological systems and other land types at Lac qui Parle WMA. Table 3 shows the relative percentage of the ecological systems and other land types. An NPC-informed management approach recognizes the inherent ecological characteristics of a site and incorporates that information into natural resource management activities.

Figure 11. Overview of ecological systems and other land types found at Lac qui Parle WMA.

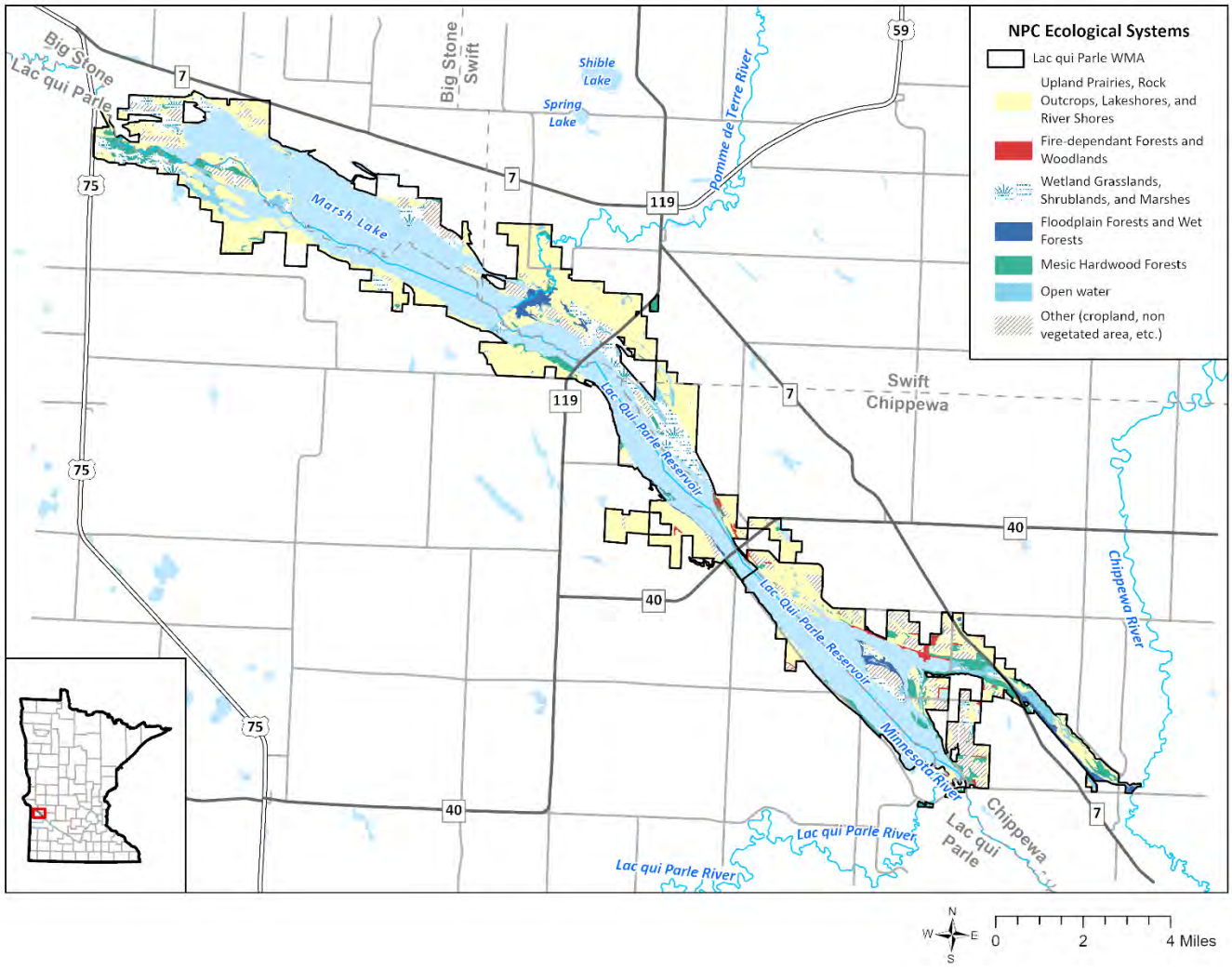


Table 3. NPC ecological systems, approximate acreage, and relative percentage of mapped ecological systems and other land types found at Lac qui Parle WMA.

Ecological Systems	Acreage[1]	Percentage of WMA
Open water	12,000	36%
Upland Prairies, Rock Outcrops, Lakeshores, and River Shores	11,580	34%
Wetland Grasslands, Shrublands, and Marshes	3,920	12%
Other (cropland, non-vegetated areas, etc.)	2,630	8%
Mesic Hardwood Forests	1,960	6%
Floodplain Forests and Wet Forests	740	2%
Fire-dependent Forests and Woodland	320	1%

Ecological Systems	Acreage[1]	Percentage of WMA
Not inventoried	430	1%

[1] Acreage is approximate and may not reflect recent habitat conversions (e.g., restoration of former agricultural land to prairie or wetland)

The following sections provide an overview of the NPC system groups, ecological systems, classes, and types documented at Lac qui Parle WMA.

Upland Grasslands, Shrublands, and Sparse Vegetation

Upland Prairie. This ecological system is fire-dependent and is dominated by tall and short native grasses and forbs (flowers) with few to no trees.

There are two classes of Upland Prairie in Lac qui Parle WMA:

- **UPs13 Southern Dry Prairie** - Grass-dominated herbaceous communities on level to steeply sloping sites with droughty soils. Moderate growing-season moisture deficits occur most years, and severe moisture deficits are frequent, especially during periodic regional droughts. Historically, fires probably occurred every few years. Specific community type UPs13d Dry Hill Prairie (Southern) is known to occur within Lac qui Parle WMA.
- **UPs23 Southern Mesic Prairie** - Grass-dominated but forb-rich herbaceous communities on somewhat poorly drained to well-drained loam soils mainly formed in unsorted glacial till, sometimes in a thin loess layer over till, and locally in lacustrine sediments and outwash deposits. Communities in this class occur primarily on level to gently rolling sites. Drought stress is irregular in occurrence and usually not severe.

Lakeshore. This ecological system occurs along the shorelines of lakes and ponds throughout Minnesota in the zone between the annual low-water level and the upper limit of storm waves and spring ice scouring. Most communities are sparsely vegetated because of absence of well-developed soils and frequent disturbance by waves, ice, and wind.

There are two classes of Lakeshore in Lac qui Parle WMA:

- **LKi32 Inland Lake Sand/Gravel/Cobble Shore** - Plant communities characterized by variable cover of shrubs, forbs, graminoids, and aquatic plants on well-drained, wave-washed sand, gravel, or small cobbles on shores along inland lakes. Present in the zone between low-water level and the upper reach of storm waves or ice scouring.
- **LKi54 Inland Lake Clay/Mud Shore** - Plant communities on clay, mud, or silt substrates—often mixed with organic detritus—on shores of inland lakes and ponds. Vegetation is typically zonal, reflecting seasonal changes in water level. LKi54 includes plant communities in shallow basins and along the edges of ponds and lakes where spring flooding is followed by summer drawdown, exposing mudflats that are colonized by plants.

Rock Outcrop. This ecological system is characterized by open or shrub-dominated plant communities on horizontal or sloping bedrock exposures. It occurs in landscapes with bedrock or just above the ground surface.

There is one class of Rock Outcrop in Lac qui Parle WMA:

- **ROs12 Southern Bedrock Outcrop** - Dry, open lichen-dominated plant communities on areas of exposed bedrock. Woody vegetation is sparse, and vascular plants are restricted to crevices, shallow soil deposits, and rainwater pools. Specific community type ROs12a1 Minnesota River Subtype is known to occur at Lac qui Parle WMA.

Wetland Grasslands, Shrublands, and Marshes

Wet Meadow/Carr. This ecological system is characterized by graminoid- or shrub-dominated wetlands that are subjected to moderate inundation by standing water following spring thaw and heavy rains and to periodic drawdowns during the summer.

There is one class of Wet Meadow/Carr in Lac qui Parle WMA:

- **WMs92 Southern Basin Wet Meadow/Carr** - Open wetlands dominated by dense cover of broad-leaved sedges. Typically present in small, closed, shallow basins isolated from groundwater inputs.

Marsh. This ecological system is characterized by tall forb– and graminoid-dominated wetland communities that have standing or, in the case of riverine marshes, slow-flowing water present through most of the growing season.

There is one class of Marsh in Lac qui Parle WMA:

- **MRp83 Prairie Mixed Cattail Marsh** - Emergent marsh communities, typically dominated by cattails. Present on floating mats or rooted in mineral soil in shallow wetland basins. Specific community type MRp83b Cattail Marsh (Prairie) is known to occur at Lac qui Parle WMA.

Open Rich Peatland System. This ecological system is characterized by graminoid- or low shrub–dominated wetlands on actively forming deep (> 16 in) peat.

There is one class of Open Rich Peatland in Lac qui Parle WMA:

- **OPp93 Prairie Extremely Rich Fen** - Open graminoid-dominated fens on permanently saturated peat sustained by mineral-rich groundwater discharge, with little influence from surface water inputs. Typically present on sloping sites; peat is sometimes mounded or domed. Small pools and sparsely vegetated marly peat areas are commonly present. Specific community type OPp93b Calcareous Fen (Southwestern) is known to occur at Lac qui Parle WMA.

Wetland Prairie System. This ecological system is characterized by herbaceous plant communities dominated by graminoid species with a forb component that can approach codominance with the graminoids. The herbaceous dominance of Wetland Prairie communities is closely tied to the frequent occurrence of fire.

There is one class of Wetland Prairie in Lac qui Parle WMA:

- **WPs54 Southern Wet Prairie -** Grass-dominated but forb-rich herbaceous communities on poorly drained to very poorly drained loam soils formed in lacustrine sediments, unsorted glacial till, or less frequently outwash deposits. Typically, in slight depressions, sometimes on very gentle slopes. Flooded for brief periods at most; upper part of rooting zone is not saturated for most of growing season, but saturation usually persists in lower zone for much of season. Specific community types WPs54a Wet Seepage Prairie (Southern) and WPs54b Wet Prairie (Southern) are known to occur at Lac qui Parle WMA.

Upland Forests and Woodlands

Mesic Hardwood Forests. This ecological system is characterized by a closed canopy of oak and basswood associated with natural fire breaks in prairie landscapes.

Fire-Dependent Forests and Woodlands. Relatively open-canopy woodlands on fire-prone landscapes characterize this ecological system. These communities occur primarily on relatively dry upland sites. Fire is a driving factor for perpetuating these forest types.

Wetland Forests

Floodplain Forest. This ecological system occurs in wet, lowland areas, particularly along streams. They are most often closed canopy, and are dominated by silver maple, cottonwood, ash, and other hardwood tree species.

There is one class of Floodplain Forest in Lac qui Parle WMA:

- **FFs59 Southern Terrace Forest -** Wet-mesic deciduous forests on silty or sandy alluvium on level, occasionally flooded sites along small streams to large rivers in the southern half of Minnesota. Specific community type FFs59c Elm – Ash – Basswood Terrace Forest is known to occur within Lac qui Parle WMA.

Some of the plant communities found at Lac qui Parle WMA exhibit excellent ecological integrity and are uncommon for the area, Minnesota, and even globally (Table 4). Conservation Status Ranks, which reflect the imperilment of a community across its range (state ranks referred to as S-ranks and global ranks referred to as G-ranks), and the Condition Ranks, which refer to the integrity or quality of an individual occurrence of a community, are used to assess the relative importance of different occurrences. More information on Conservation Status Ranks and Condition Ranks can be found in Appendix E and on the DNR NPC status and procedures webpages.

Table 4. Rare NPCs mapped and known to occur at Lac qui Parle WMA and their associated conservation status and observed condition ranks.

NPC	Description	Status Rank	Acres
ROs12 ROs12a1	Southern Bedrock Outcrop Minnesota River Subtype	G3/S2	27.9
UPs23	Southern Mesic Prairie	G1/S2	3,909.9

NPC	Description	Status Rank	Acres
Ups23a	Mesic Prairie (Southern)		
WPs54 WPs54a WPs54b	Southern Wet Prairie Wet Seepage Prairie (Southern) Wet Prairie (Southern)	G2/S1	818.2
UPs13 UPs13d	Southern Dry Prairie Dry Hill Prairie (Southern)	G2/S2	376.0
OPp93 OPp93b	Prairie Extremely Rich Fen Calcareous Fen (Southwestern)	G2/S2	18.8
MRp83 MRp83b	Prairie Mixed Cattail Marsh Cattail Marsh (Prairie)	G5/S1	9.9
FFs59 FFs59c	Southern Terrace Forest Elm - Ash - Basswood Terrace Forest	G4/S2	0.2
LKi32	Inland Lake Sand/Gravel/Cobble Shore	G4/S1	0.5
LKi54	Inland Lake Clay/Mud Shore	G2/S1	0.03
WMs92 WMs92a	Southern Basin Wet Meadow/Carr Basin Meadow/Carr	G3/S2	4.8

G1 – Critically imperiled, G2 – Imperiled, G3 – Vulnerable, G4 – Apparently Secure, G5 – Secure.
S1 – Critically imperiled, S2 – Imperiled.

Agricultural Lands

Lac qui Parle WMA has approximately 1,500 acres of cropland managed through cooperative farming agreements, which are a legal contract with local farmers to farm agricultural fields on a WMA on a sharecrop basis. The state typically receives one-third share of the crops produced, which is usually left standing over winter as a food source for resident wildlife species and migrating waterfowl in the fall and spring. DNR and the farmers mutually agree on the crops which include corn, soybeans, alfalfa, oats, spring and winter wheat, grass hay, and other wildlife mixes. Recently, cooperators have been seeding cover crops into standing corn and soybean fields as well as incorporating cover crop mixes on a variety of state-owned agricultural lands.

Cooperators often conduct soil tests on their fields to determine the productivity of the soil. Analysis of a soil sample will determine nutrient content of the soil including phosphorus, potassium, magnesium, sodium, sulfur, manganese, copper, and zinc. Soil pH, organic matter, and exchangeable acidity will also be included in the results. These results are used to decide what fertilizer to apply and how much to apply. After fertilizer is applied, cooperators often use a combination of herbicides to suppress weed growth and to maximize cash crop yields. Neonicotinoid seed treatments, insecticide spraying, and fall tillage practices have been prohibited since 2017. Farming practices on the WMA have a focus on soil health and diversity of crop types.

Lac qui Parle WMA staff also plant agricultural crops. These food plots are often small and hard to access with larger farming equipment. In total, staff plant about 300 acres annually on 40 different plots. Common crops planted include sorghum, sunflowers, corn, soybeans, buckwheat, wildlife plot mixes, and cover crops. Depending on the soil conditions and crop needs, staff at Lac qui Parle apply fertilizer and spray herbicide to grow the best possible crop. All crops remain standing though the winter. Food plots are strategically located throughout the unit close to major deer and/or pheasant wintering areas to provide food and cover for resident wildlife. These fields and surrounding cover are very popular with wildlife viewers and dove, pheasant, and deer hunters.

Land Cover Types

The Section of Wildlife uses another classification system for WMAs: the Wildlife and Aquatic Habitat Management Application (WAHMA) land cover types. Open Water and Tall Grasses make up the largest portion of the cover, and Forested areas predominate near the Pomme de Terre River and portions of Lac qui Parle and Marsh Lakes. Figure 12 shows the WAHMA land cover types mapped within Lac qui Parle WMA, and Table 5 shows the approximate acreage and relative percentage of each land cover type. The WAHMA classification system is distinct from the NPC classification system described above; habitat acreages and areas defined in the NPC classification system above may not directly line up with the WAHMA classifications.

Figure 12. WAHMA land cover types found at Lac qui Parle WMA

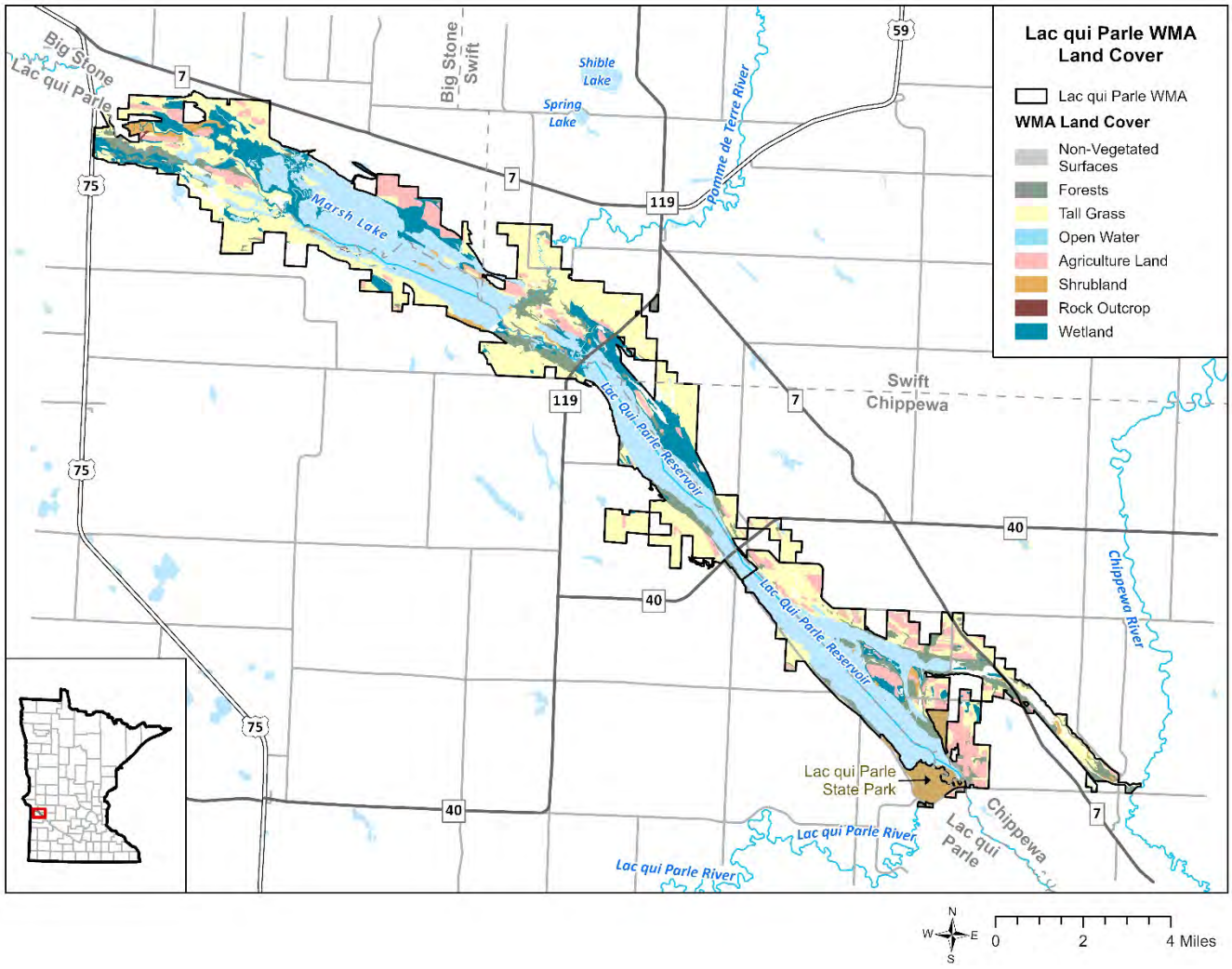


Table 5. Approximate acreage of WAHMA land cover types found at Lac qui Parle WMA

Land Cover Type	Acreage[1]	Percent of WMA
Open Water	12,000	36%
Tall Grasses	11,270	34%
Wetland	3,630	11%
Agricultural Land	2,970	9%
Forest	2,950	9%
Shrubland	510	2%
Rock Outcrop	30	<1%
Non-Vegetated Surfaces	20	<1%

Land Cover Type	Acreage[1]	Percent of WMA
Not inventoried	200	1%

[1] Acreage is approximate and may not reflect recent habitat conversions (e.g., restoration of former agricultural land to prairie or wetland)

Rare Plants

Rare plant species found at Lac qui Parle WMA are listed in Table 6. State status designation is also included. A species is designated as endangered (END) if threatened with extinction throughout all or a significant portion of its range. A species is designated as threatened (THR) if the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. A species is designated as a species of special concern (SPC) if although the species is not endangered or threatened, it is extremely uncommon in this state, or has unique or highly specific habitat requirements and deserves careful monitoring of its status. Species on the periphery of their range that are not listed as threatened may be included in this category along with those species that were once threatened or endangered but now have increasing or protected, stable populations. Additional information on Minnesota's rare species can be found in the DNR Rare Species Guide. Species that are federally listed receive additional protection.

Table 6. Rare plant species known to occur at Lac qui Parle WMA.

Common Name	Scientific Name	State Status
Oregon cliff fern	*Woodsia oregana ssp. cathcartiana*	SPC
A lichen	*Buellia nigra (lichen)*	SPC
Small white lady's-slipper	*Cypripedium candidum*	SPC
Slender milk-vetch	*Astragalus flexuosus var. flexuosus*	SPC
Hall's sedge	*Carex hallii*	SPC
Missouri milk-vetch	*Astragalus missouriensis var. missouriensis*	SPC
Yellow-fruit sedge	*Carex annectens*	SPC
Hooded arrowhead	*Sagittaria montevidensis ssp. calycina*	THR
Three-stamened waterwort	*Elatine triandra*	SPC
Waterhyssop	*Bacopa rotundifolia*	THR
Louisiana broomrape	*Orobanche ludoviciana*	THR
Eared false foxglove	*Agalinis auriculata*	END
Hair-like beak rush	*Rhynchospora capillacea*	THR
Buffalo grass	*Buchloe dactyloides*	SPC
Mudwort	*Limosella aquatica*	SPC
Large water starwort	*Callitriche heterophylla*	THR

Wildlife

Introduction

Lac qui Parle WMA provides habitat for over 260 species of birds, 56 species of mammals, and 18 species of reptiles and amphibians during some part of the year. Abundant populations of diverse wildlife species are found at Lac qui Parle WMA due largely to the wide diversity and quality of habitats.

Birds

Approximately 260 resident and non-resident bird species have been observed in the vicinity of Lac qui Parle WMA. A full list of bird species known to occur or likely to occur on or near the unit can be found in Appendix F. A non-exhaustive list of common bird species found at Lac qui Parle WMA and their associated habitats can be found in Table 7.

Lac qui Parle WMA provides habitat for many high-priority bird species. These birds include Species of Greatest Conservation Need (SGCN), a designation in the MNWAP that indicates a species whose population is rare, declining, or vulnerable, and for which there are concerns for their long-term health and stability. All state-listed species and federally listed species that occur in Minnesota are automatically SGCN; additional non-listed species are SGCN based on specific criteria and expert opinion. Seventy-eight bird species designated as SGCN have been observed in Lac qui Parle WMA (Appendix F). Of these 78 species, there are 13 that are state listed as special concern: American kestrel, American white pelican, Bell's vireo, Forster's tern, Franklin's gull, lark sparrow, marbled godwit, peregrine falcon, purple martin, red-shouldered hawk, short-eared owl, trumpeter swan and yellow rail. One species, Wilson's phalarope, is state listed as threatened, and 4 species are state listed as endangered: Henslow's sparrow, horned grebe, loggerheaded shrike, and the piping plover. Two species are federally listed: the rufa red knot is threatened, and the piping plover is endangered.

Table 7. Common bird species found at Lac qui Parle WMA and their associated habitats.

Habitat	Game Species	Nongame Species
Lakes, Wetlands and Waterways	Canada goose, wood duck, mallard, blue-winged teal, green-winged teal, gadwall, redhead, hooded merganser, common snipe, sora rail, American coot.	Tundra swan, pied-billed grebe, least sandpiper, American white pelican, double-crested cormorant, lesser yellowlegs, pectoral sandpiper, great blue heron, American bittern, least bittern, great egret, black-crowned night heron, bald eagle, northern harrier, belted kingfisher (SGCN), franklin's gull, northern rough-winged swallow (SGCN), bank swallow, cliff swallow, long-billed marsh wren, red-winged blackbird, yellow-headed blackbird.

Habitat	Game Species	Nongame Species
Grasslands	Ring-necked pheasant, mourning dove	Red-tailed hawk, Swainson's hawk, American kestrel, upland sandpiper, eastern kingbird, western kingbird, yellow warbler, bobolink, western meadowlark, dickcissel, savannah sparrow, grasshopper sparrow, vesper sparrow, chipping sparrow, clay-colored sparrow.
Brushlands	Wild turkey, ring-necked pheasant, mourning dove.	Eastern kingbird, western kingbird, yellow warbler, ruby-throated hummingbird, gray catbird, brown thrasher, rose-breasted grosbeak, American goldfinch, indigo bunting, common yellowthroat, song sparrow, clay-colored sparrow.
Forests	Wild turkey, mourning dove.	Great horned owl, turkey vulture, red-tailed hawk, Swainson's hawk, cooper's hawk, American kestrel, bald eagle, ruby-throated hummingbird, red-bellied woodpecker, downy woodpecker, hairy woodpecker, northern flicker, eastern phoebe, blue jay, American robin, common crow, black-capped chickadee, white-breasted nuthatch, cardinal, northern oriole, gray catbird, brown thrasher, yellow warbler, rose-breasted grosbeak, American goldfinch, indigo bunting.
Agricultural Areas	Canada goose, mallard, ring-necked pheasant, wild turkey, mourning dove.	Killdeer, rock dove, red-tailed hawk, American kestrel, European starling, house sparrow, red-winged blackbird, brewer's blackbird, common grackle, common crow, brown-headed cowbird.

SGCN = Species of Greatest Conservation Need

Lac qui Parle WMA and neighboring habitats at Big Stone NWR, Chippewa Prairie, and Plover Prairie are major population stronghold for species that are undergoing severe declines region-wide. These declining species include prairie birds such as upland sandpiper, marbled godwit, western meadowlark, grasshopper sparrow, and American kestrel. Additionally, Lac qui Parle WMA is a crucial reserve for declining wetland species, both migrating and breeding, such as common merganser, black tern, Forster's tern, western grebe, and northern pintail.

Waterfowl and Game Birds

Waterfowl. Lac qui Parle WMA is a vitally important and nationally recognized stopping ground for many species of waterfowl during both the spring and fall migrations. Lac qui Parle Lake is where migrating geese concentrate in the spring and fall. In general, Marsh Lake tends to attract more ducks, but geese can also be present at Marsh Lake in vast numbers in spring. The wetlands, impoundments, moist soil units, and large lakes in Lac qui Parle WMA serve as both feeding and resting areas for waterfowl. Management of moist soil units simulates a seasonal wetland by adding and removing water, most often artificially, in a systematic way to maximize food production for waterfowl and shorebirds. An area managed for moist soil is typically flooded in the spring and then maintained moist during the growing season to target the summer production of annual wetland plants that produce large amounts of seed. The unit must be dry enough to till and plant if crops are planted in lieu of natural seed production. When reflooded in late summer or early fall, the decomposing plants also provide ideal habitat for aquatic invertebrates, an important source of duck and shorebird nutrition (Fredrickson & Reid, 1988). These benefits can carry over to the next spring until the water is again drained off. The food plots and agricultural fields located throughout Lac qui Parle WMA also serve as an important food source to migrating geese and ducks. These food plots are often planted in diverse mixes to provide waterfowl with a highly nutritious food source.

At least 30 different waterfowl species have been documented at Lac qui Parle WMA. The most common fall migrant species observed are Canada geese, mallard, blue-winged teal, green-winged teal, wood duck, and ring-necked duck. The large tracts of restored and native grasslands adjacent to the many wetlands and impoundments located on Lac qui Parle WMA provide excellent nesting and brood rearing habitat for many waterfowl species. Canada geese, mallard, blue-winged teal, and wood duck are the most common species to nest on Lac qui Parle WMA.

Wild Turkey. Wild turkeys use a variety of habitats throughout their life cycle. Mature cottonwoods and mature oak forests provide roost trees; mature oaks also provide acorns as food. Grasslands and hay fields are used as nesting cover and brood rearing habitat. Agricultural fields can be used for feeding, especially in winter.

Wild turkey reintroduction efforts used live-trapped and translocated wild turkeys of the eastern subspecies. Several releases conducted in the late 1990s and early 2000s resulted in the wild turkeys present at Lac qui Parle WMA today.

Ring-necked Pheasant. Pheasants are the most common gamebird in the area and the most iconic gamebird of the southwest Minnesota prairie region. Pheasants are found in all habitat types on Lac qui Parle WMA. They are most often associated with grassland and agriculture, but also use wetlands, shelterbelts, and hayfields. Nesting

and brood rearing habitat are critical for successful pheasant populations. Pheasants are a short-lived bird with annual survival only around 50%. During severe winters, survival can be much lower. Pheasants exhibit one of the highest reproductive potentials of gamebird species, enabling populations to quickly rebound if habitat is good.

The DNR has implemented a Pheasant Action Plan that helps focus efforts The goals are:

- Increase the amount of grassland habitat for pheasants.
- Maintain and enhance grassland habitats for pheasants.
- Increase opportunities for and participation in outdoor recreation related to pheasants and their habitat.
- Increase public awareness and appreciation of grassland conservation for pheasants and people.

Nongame Birds

Of the birds in Appendix F, 231 are nongame, and 78 are listed as SGCN in the MNWAP (Minnesota Department of Natural Resources, 2016). While this list includes forest species, Lac qui Parle WMA is a vital habitat reserve primarily because of tallgrass prairie and associated wetlands and waterbodies. Tallgrass prairie is among the planet's most endangered ecosystems; less than two percent of the original tallgrass prairie in Minnesota persists today (Minnesota Prairie Plan Working Group, 2018). Subsequently, grassland birds are the most endangered group of birds in North America when compared to other habitat guilds. In North America, grassland birds overall have declined by over 50% in the last 50 years (Rosenberg, et al., 2019). The population changes in many individual species reflect this trend, such as western meadowlark, which is declining at 7.2 % per year in Minnesota, grasshopper sparrow at 6.3 % per year, and black tern at 6.8 % per year (Ziolkowski, et al., 2023). For context, a 7.0 % per year decline rate means a population is reduced by half in a ten-year period.

Lac qui Parle WMA's role as a preeminent prairie landscape in southwest/west-central Minnesota makes it a vital reserve for grassland birds. Lac qui Parle WMA is a large and connected prairie landscape compared to other areas in southwest Minnesota. This size and connectedness are landscape characteristics especially important for grassland birds (Cunningham & Johnson, 2006; Davis, et al., 2013). Thus, many of these declining grassland and wetland birds are still present at Lac qui Parle WMA, often in relatively large numbers. For example, the DNR conducts bird surveys at Chippewa Prairie as part of a long-term prairie monitoring effort. Chippewa Prairie is the largest contiguous remnant prairie in southwest Minnesota and is co-managed by Lac qui Parle WMA and TNC. Using the most recent data from 2018, which included 32 point counts, surveyors detected 62 Grasshopper Sparrows at Chippewa Prairie at a rate of 1.9 birds per point count. This detection rate was over 4.5 times greater than the detection rate in remnant prairies statewide (0.4 per point count). Likewise, Western Meadowlarks were detected at Chippewa Prairie at over 2.5 times the statewide detection rate.

While species have unique life history traits and habitat requirements, there are some broad habitat management objectives that apply to all priority nongame bird species: avoid any further fragmentation of habitat; seek opportunities to build connectivity through habitat restoration or reconstruction; and diversify habitat management, both in time and in space and at multiple scales. Management should strive for the heterogeneity or patchiness of the natural habitat disturbances with which these species evolved prior to

European colonization. Structural heterogeneity is of particular importance to birds. A species will often need different vegetation structures in close proximity for different phases of its life history. For example, a species may nest in dense grass thickets, but also use nearby patches of sparser vegetation for foraging and escaping predators. The species may benefit from nearby patches of diverse forbs where fledglings can forage for insects, and also use adjacent shrubs or trees as singing perches. Planned implementation of these management strategies to benefit nongame bird species can be found in Goal 1 of the Desired Conditions section of this report.

The Marsh Lake Waterbird Colony boasts the largest nesting colonies in the state for both double-crested cormorants (1800 total nesting pairs in 2020; Cuthbert, et al., 2020) and American white pelicans (10,289 nests in 2015; Cuthbert et al., 2016). In 2015, 63% of Minnesota's pelican population nested at Marsh Lake. The pelican population at Marsh Lake declined by 22% from 2004 to 2015, while the cormorant population increased by 165% from 2004 to 2020. Monitoring of these colonies is an important priority given these large fluctuations and the colony's statewide and continental significance. The Nongame Program historically has contracted with the University of Minnesota to census waterbird colonies throughout the state on an approximate five-year rotation. These censuses can be supplemented at Marsh Lake with less intensive surveys conducted annually by Nongame or Wildlife staff.

In addition to the waterbird colony, Marsh Lake is also important breeding/nesting habitat for other waterbirds and as stopover habitat for migrating birds.

Mammals

Most mammal species found at Lac qui Parle WMA today were present during pre-European settlement times. As European settlement progressed, habitat destruction and unregulated hunting and trapping decimated populations of several larger mammals. The historical distribution of small, inconspicuous species is unknown. Mammal species present at Lac qui Parle WMA were determined from information supplied by Section of Wildlife records and observations from staff working at Lac qui Parle WMA. Fifty-six mammal species are known to occur on or near Lac qui Parle WMA (Appendix G). Nineteen of these 56 mammal species are identified as game species, 11 are state listed as special concern, one species (eastern spotted skunk) is state listed as threatened, and 18 are considered SGCNs.

Large Mammals and Big Game

Lac qui Parle WMA supports a moderate population of deer and accommodates large numbers of deer hunters. Deer are habitat generalists and use almost all the habitats available at Lac qui Parle WMA. They tend to feed in prairies and grasslands, brushlands, early successional forests, and on agricultural crops. Deer use forested habitat and wetlands for security and thermal cover. They prefer that these cover types are well interspersed with each other and favor edge habitat. A variety of habitats are managed for deer cover and forage at Lac qui Parle WMA. Prairies, grasslands, brushlands and forest transition areas are regularly burned. The resulting new growth (e.g., resprouting shrubs) after a burn provide high quality forage and browse for deer. Some areas of brush, including sandbar willow and plum, that are not regenerated by fire are mowed to maintain these areas as cover and regenerate high-quality browse.

Mid-sized Mammals, Small Game, and Furbearers

Lac qui Parle WMA is home to several mid-sized mammals, many of which are classified as small game in hunting regulations or as furbearers in trapping regulations. Common small game hunted at Lac qui Parle WMA include raccoons, coyote and rabbits. Furbearers include a variety of mammals trapped or hunted for their pelts. Important furbearers at Lac qui Parle WMA include muskrats, mink, beaver, otter and raccoon. Many furbearers are associated with water and wetlands (e.g., muskrats, otters, beavers and weasels). Rabbits, raccoons and coyotes can be found in a wide variety of habitats, including croplands, open areas and forests.

Small Mammals

Small mammals are important to ecosystems, serving as food for predators, seed distributors, grazers and invertebrate consumers. Although generally inconspicuous, small mammals are present in deciduous forest, wetland and grassland communities at Lac qui Parle WMA. Several species of small squirrels, voles, mice, shrews, bats and moles are common.

Fish

Lac qui Parle WMA has abundant fisheries resources, including Lac qui Parle and Marsh Lakes, the Minnesota River, portions of the Pomme de Terre and Lac qui Parle Rivers and several wetlands. The primary game fish are crappies, walleyes, catfish, pike and bass. Forty-six fish species have been sampled in Lac qui Parle WMA since 1956 (Appendix H). American eel and lake sturgeon are listed as SGCN in the MNWAP. Lake sturgeon have likely originated from stockings upstream in Big Stone Lake. Numerous species are noticeably absent from Lac qui Parle WMA, likely due to the major migration barrier posed by the Granite Falls dam downstream on the Minnesota River. Some of those species include river carpsucker (*Carpiodes carpio*), gizzard shad (*Dorosoma cepedianum*), shovelnose sturgeon (*Scaphirhynchus platorynchus*), shortnose gar (*Lepisosteus platostomus*), flathead catfish (*Pylodictis olivaris*) and sauger (*Sander canadensis*).

Herpetofauna

Lac qui Parle WMA has a moderate diversity of reptiles and amphibians, influenced by the diversity of habitats, native plant communities and their landscape connections. Nine amphibian species and nine reptile species are known to occur at Lac qui Parle WMA. Herpetofauna species that occur at Lac qui Parle WMA and their current conservation status are listed in Appendix I.

Lac qui Parle WMA provides habitat for three SGCN and state listed herpetofauna: mudpuppy, Great Plains toad and plains hog-nosed snake. Mudpuppies are the only entirely aquatic salamander found in Minnesota. They are found primarily in lakes and rivers in Lac qui Parle WMA. Mudpuppies are the only known host for the larval form of the rare salamander mussel. They are at risk due to habitat loss and habitat damage from siltation, dredging, damming, and pollution. Great Plains toad depends on grasslands and associated wetlands and is at risk due to habitat loss. The plains hog-nosed snake is a habitat specialist, preferring open, sparsely vegetated habitats on well-drained soils. The major threat to plains hog-nosed snake is habitat loss caused primarily by agriculture and urban development.

The Habitat Management Guidelines for Amphibians and Reptiles of the Midwestern United States provides guidelines for reptiles and amphibians management.

Insects and Other Arthropods

Arthropods make up a vast, diverse phylum containing not only thousands of species of insects but species as diverse as spiders, centipedes and crayfish. These creatures are vital for the Lac qui Parle WMA ecosystem; they are an important part of the food chain and carry out vital functions such as pollination and decomposition of organic matter. Nearly all the data currently existing for Lac qui Parle WMA is for insects, but there is need for data on other arthropods. Interest in arthropod species has grown in recent years, and survey efforts and capacity to identify these challenging species have increased. Lac qui Parle WMA is among the strongholds in west-central Minnesota for insect populations, especially for those species associated with tallgrass prairie and associated wetlands. It may have a particularly high diversity and potentially greater abundance of insects due to the size, diversity, and connectivity of the habitat. Lac qui Parle WMA was formerly a key area for the Poweshiek skipperling *(Oarisma poweshiek*), a butterfly species federally endangered that may now be extirpated from Minnesota.

There are 15 species of arthropods known to occur or likely to occur on Lac qui Parle WMA that are considered SGCN. These species are in five different taxonomic groups and include three bees, the American bumble bee (*Bombus pensylvanicus*), yellow bumble bee (*Bombus fervidus*) and yellow-banded bumble bee (*Bombus terricola*); seven butterflies and moths, the abbreviated underwing (*Catocala abbreviatella*), Whitney's underwing (*Catocala whitneyi*), monarch (*Danaus plexippus*), leadplant flower moth (*Schinia lucens*), Pawnee skipper (*Hesperia leonardus montana*), phlox moth (*Schinia indiana*) and regal fritillary (*Speyeria idalia*); four jumping spiders; and one leafhopper, red-tailed prairie leafhopper (*Aflexia rubranura*). Of the SGCN butterflies and moths found at Lac qui Parle WMA, all are listed as special concern in Minnesota except for the monarch. All the SGCN-designated spiders and the leafhopper are listed as special concern.

A new edition of the MNWAP will be written to cover species conservation from 2025 – 2035 and will be published later in 2024. Biodiversity management priorities for Lac qui Parle WMA should incorporate information from the most recent plan and respond to new science. Management for these species could include increasing habitat connectivity, floral diversity (e.g., abundant blooming plants available throughout the season), structural diversity (e.g., patches of grass and forbs with sparsely vegetated areas for nesting), and propagation of specific host plants for butterflies, including milkweed (*Asclepias* spp.) for monarchs and violets (*Viola* spp.) for regal fritillary. Minimizing grassland-crop field edges and creating large, contiguous grassland tracts may provide refugia in which beneficial arthropods can avoid insecticide drift (Goebel, Andersen, Rice, & Davros, 2024).

Mussels

Surveys conducted between 2000 and 2022 found eighteen species of mussels on Lac qui Parle WMA (Appendix J). The elktoe and spike are both considered to be threatened in Minnesota, and the black sandshell is listed as special concern in Minnesota; all three species are considered SGCN in Minnesota. Nine species that may have historically occurred on Lac qui Parle WMA are likely extirpated from the Minnesota River basin: mucket

(*Actinonaias ligamentina*), rock pocketbook (*Arcidens confragosus*), yellow sandshell (*Lampsilis teres*), flutedshell (*Lasmigona costata*), hickory nut (*Obovaria olivaria*), round pigtoe (*Pleurobema sintoxia*), salamander (*Simpsonaias ambigua*), monkeyface (*Theliderma metanevra*) and pistolgrip (*Tritogonia verrucosa*).

Public Use

Introduction

By statute, Minnesota's WMAs are used for public hunting, trapping, fishing, and other activities compatible with wildlife and fish management. Hunting and fishing have consistently accounted for the largest share of public use at Lac qui Parle WMA. Lac qui Parle WMA is also used for other compatible activities, including wildlife watching, foraging, nature photography, dog training, antler hunting and hiking. Knowledge of the present use levels is necessary to predict the future demand for outdoor recreation and guide management objectives and strategies. Outdoor recreationists and general visitors are provided with a unique opportunity to experience a variety of activities when visiting the area because Lac qui Parle State Park, Minnesota River Scenic Byway, and Lac qui Parle Mission border Lac qui Parle WMA near Lac qui Parle Lake. A recent questionnaire revealed that, beyond hunting and fishing, the following activities are popular at Lac qui Parle WMA: enjoying solitude and relaxing in the outdoors, viewing or photographing wildlife or nature, boating, canoeing and/or kayaking, bird watching and hiking. Visitors indicated they like the diversity and abundance of wildlife, waterfowl, pheasant, deer hunting, fishing, birdwatching, habitat, recreation, natural beauty, location, size, and access at Lac qui Parle WMA. See Appendix B for the November 2023 summary of public scoping results.

Hunting

Waterfowl Hunting

Lac qui Parle WMA is probably best known as a destination to go waterfowl hunting; it is widely known for its excellent Canada goose hunting. People come from all over Minnesota and the upper Midwest to hunt waterfowl each year. Waterfowl hunting at Lac qui Parle WMA can be subdivided into the controlled hunt from the designated hunting blinds within the state game refuge, as well as duck and goose hunting over land and water on the rest of Lac qui Parle WMA.

The controlled hunt occurs within the state game refuge boundary on Lac qui Parle WMA. Currently, waterfowl hunting is allowed at designated hunting stations from the third Thursday in October through the end of the goose season. Currently, small game hunting is restricted from the Saturday before the third Thursday in October through November 30. The following general restrictions apply at Lac qui Parle WMA controlled hunt:

- Hunters must use designated hunting stations on a first-come, first-served basis.
- No one may park in or otherwise occupy any designated controlled hunting zone parking lot or any hunting station from 10 p.m. to 5 a.m.
- General regulations for WMAs and state game refuges apply to hunters using designated blinds.
- Hunters must also comply with all other waterfowl and general hunting regulations.
- No one may leave any refuse, offal, or feathers on public lands in the controlled hunting zone, parking lot, or designated overnight use area of the management area.

- No alcoholic beverages may be consumed or possessed at any hunting stations on public lands.

Most waterfowl hunting takes place over water from small boats and canoes on Marsh Lake and Upper Lac qui Parle Lake. In addition, field hunting opportunities for both ducks and geese take place on the harvested agricultural crop areas within Lac qui Parle WMA. During the opening day of the regular waterfowl season, area staff conducted a vehicle count to estimate hunter participation trends (Table 8). Hunters are then interviewed at access points, and records of hunter success (i.e., numbers of ducks harvested per hunter) and bag composition (i.e., species harvested) are collected.

Although variable from year to year, the number of vehicles in Lac qui Parle WMA during the opening day car count has been relatively stable. Hunter success is highly variable and can be impacted by weather, water levels, and bird populations.

Table 8. Opening day waterfowl season car counts and bag checks, 2013-2023

Year	Car Count	Hunters Interviewed	Birds Harvested	Birds/Hunter
2013	92	93	301	3
2014	79	102	242	2
2015	99	86	312	4
2016	73	90	155	2
2017	85	68	172	3
2018	87	48	126	3
2019	65	23	17	1
2020	73	71	143	2
2021	60	30	88	3
2022	68	20	118	6
2023	67	55	111	2

White-tailed Deer Hunting

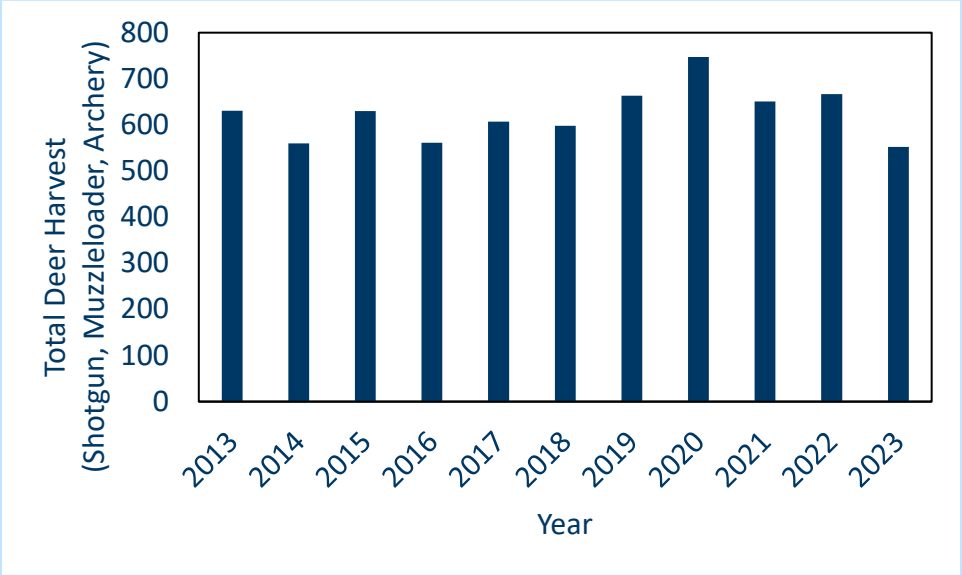
White-tailed deer hunting is another popular activity at Lac qui Parle WMA. Lac qui Parle WMA lies entirely within deer permit area (DPA) 278 which runs along the Minnesota River from Ortonville southeast to Montevideo, containing parts of Big Stone, Chippewa, Lac qui Parle and Swift counties. Big Stone NWR and Lac qui Parle WMA are in this DPA. Nearly 20 percent of the DPA is public land, the majority being Lac qui Parle WMA. Agriculture is the other dominant land use outside public lands. Population goals are set through a stakeholder-informed process with hunting pressure the primary tool available for management. Annual

population modeling and hunter harvest data are used by DNR staff to develop harvest regulations that help meet deer density goals.

Lac qui Parle WMA provides a mix of habitats preferred by deer and deer hunters. The primary habitat type is grassland, a mix of native prairie and prairie reconstructions. Deer hunting opportunities are available from mid-September through the end of December in archery, firearms and muzzleloader seasons. In addition to open public hunting, Lac qui Parle WMA staff coordinate with Capable Partners Inc. to hold a special deer hunt within the state game sanctuary on Rosemoen Island. Fourteen blinds are wheelchair accessible and offer outdoor recreational opportunities for those with physical disabilities. The fall of 2023 marks the 27th year Lac qui Parle WMA has offered this hunting opportunity.

Figure 13 shows reported white-tailed deer harvest by year in DPA 278. Car counts are conducted at Lac qui Parle WMA on the opening day of the firearms A season and are used to estimate the number of hunters per year.

Figure 13. Total deer harvest in DPA 278, 2013-2023

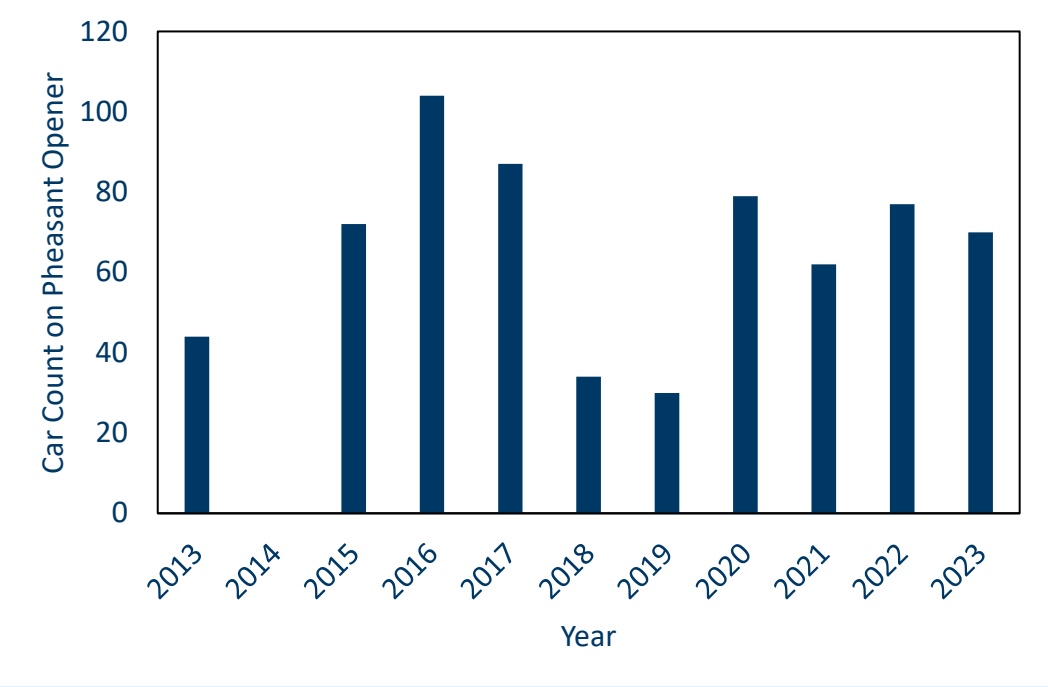


Pheasant Hunting

Pheasant hunting is another popular hunting activity on Lac qui Parle WMA (Figure 14). Pheasant populations are estimated using a relative abundance index to monitor long-term trends in regional and range-wide populations. Since 1955, DNR wildlife and enforcement personnel have conducted the annual August Roadside Survey to monitor annual fluctuations and longer-term population trends. Although harvest is not tracked yearly on Lac qui Parle WMA, it is thought to be relatively high, especially in years which strong pheasant populations. Historic opening day bag check data was usually around 0.5 birds per hunter. Lac qui Parle WMA is unique in that the State Game Refuge, and historically the controlled hunt boundary, is closed to small game hunting

including pheasant until December 1st. The December 1st opener in the State Game Refuge has been extremely popular with hunters hoping to harvest pheasants late in the season that haven't already experienced hunting pressure. In 2023, 70 cars were counted in the refuge on December 1st.

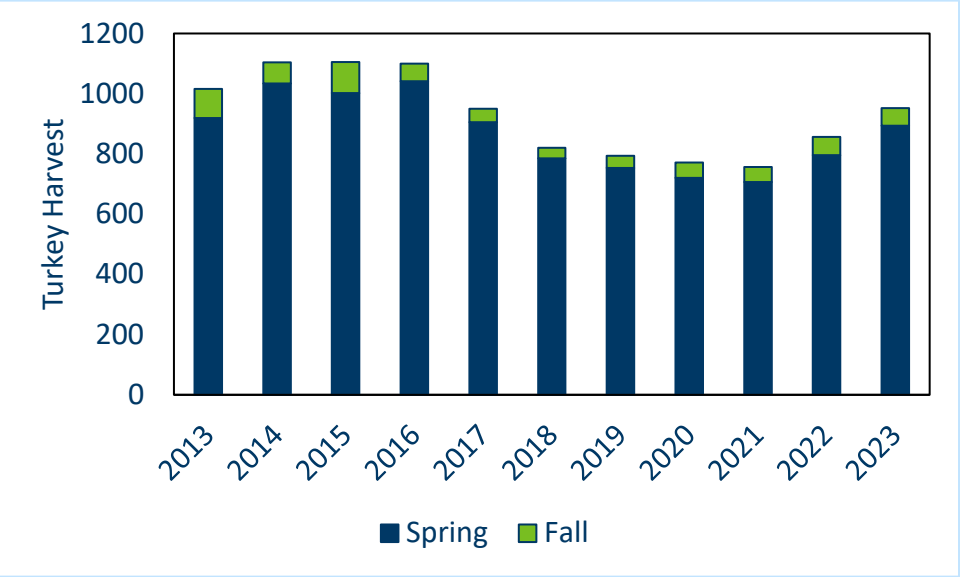
Figure 14. Pheasant opener car counts, 2013-2023



Wild Turkey Hunting

Spring turkey season is popular on Lac qui Parle WMA. The spring 2023 hunting season was open from April 12 through May 31. Hunters were limited to harvesting a single bird: a tom, jake or bearded hen. Firearm hunters were restricted to hunting one of five week-long periods (A-E), in addition to the final two weeks of the season (F), if they did not harvest a bird earlier. Archery and youth hunters could hunt the entire season. An unlimited number of permits were available during all periods, except for three permit areas that maintained a lottery during the A-C periods (511, 512) or A-B periods (502). All hunters declared a permit area at the time of license purchase but could harvest a bird within any permit area. Lac qui Parle WMA lies within turkey Permit Area 505. The spring wild turkey season in Area 505 had 700 archery permits, 1831 general permits, and 643 youth permits declared, with a total harvest of 894 birds in 2023 (Figure 15).

Figure 15. Turkey harvest in Area 505, 2013-2023

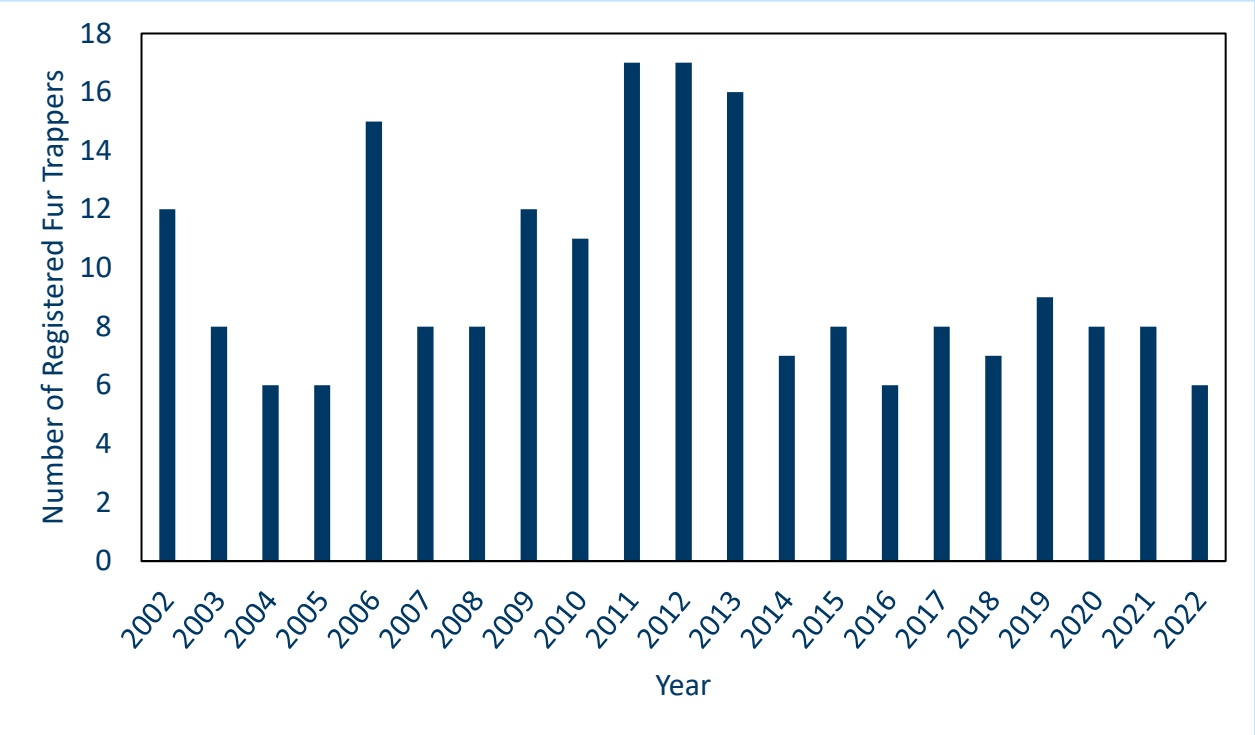


Trapping

All trappers at Lac qui Parle WMA are required to obtain a special use permit which allows managers the ability to monitor trapping pressure and harvest. Over the last five years, four to eight trappers applied for special use permits annually (Figure 16). From 1965 to 1975, an average of 31 permits were issues annually with a range from 23 to 45 permits being issued. From 1994 to 1976, an average of 23 permits were issued annually with a range from nine to 36 permits being issued.

Harvest data on 11 species is tracked at Lac qui Parle WMA: muskrat, raccoon, beaver, mink, skunk, opossum, weasel, coyote, otter, badger and red fox. The species with the highest harvest totals from 2002 to 2022 are muskrat, raccoon and beaver, respectively (Appendix K). This follows the pattern noted in the 1977 and 1997 management plans, except mink outnumbered beaver in harvest totals. Other noted changes include fewer red foxes and badgers and more coyotes reported. Total muskrat and mink harvests have decreased; however, the annual average harvest of beaver has increased. Otters and opossums have become more abundant. There was no season for otters when previous plans were prepared, and they are now quite common. Fisher and bobcat are now regularly reported in this part of the state and continue expanding their range in southern and west-central MN where suitable habitat conditions are available. At least three confirmed fisher sightings on Lac qui Parle WMA have occurred within the last five years.

Figure 16. Number of registered fur trappers using Lac qui Parle WMA, 2002-2022



Fishing

Fishing destinations in Lac qui Parle WMA include Lac qui Parle and Marsh Lakes, as well as the Lac qui Parle, Pomme de Terre, and Minnesota Rivers. Lac qui Parle Lake receives very high fishing pressure. When fishing is good, the DNR has documented 150,000 angler hours in a year. Over 400 fish houses have been on the lake during recent winters. Marsh Lake and the rivers experience low fishing pressure and can provide quieter getaways for anglers seeking more remote experiences. Lac qui Parle WMA offers numerous shore angling opportunities since most of the shoreline is publicly owned. All waters in Lac qui Parle WMA offer scenic fishing experiences since the shorelines are almost completely undeveloped. The primary species anglers seek are black crappie, walleye, northern pike, channel catfish, bluegill and white bass. Fishing for all these species can be very good throughout Lac qui Parle WMA.

Wildlife Observation

Wildlife observation is a widespread activity, but it is often difficult to quantify. Nearly all visitors to Lac qui Parle WMA are looking to observe wildlife, whether they are hunting or not. Wildlife observation is one of the fastest-growing wildlife-related recreation activities in the United States, and as such, it has significant implications for the work of wildlife agencies (Sinkular, et al., 2022).

Lac qui Parle WMA is an especially popular wildlife viewing destination for birdwatchers because of the diversity and expanse of the grassland and wetland habitats, as well as the excellent viewing opportunities at locations such as Marsh Lake Dam and Chippewa Prairie. Birders can see many species on a given day, especially given other prairie destinations such as Lac qui Parle State Park, Big Stone NWR, and Plover Prairie Preserve managed by TNC. This large network of birding hotspots draws many visitors. A key indicator of birding activity in this region is in data stored in eBird, a well-known website in the birding community where birders can store their observation data. As of March 2024, 600 birders entered birding data in eBird from Lac qui Parle County. Those birders have submitted over 4,800 checklists, which record the number and species of birds detected on an outing, and they have collectively observed 286 different bird species in Lac qui Parle County.

Resource Gathering

Resource gathering, also known as foraging, is an activity where edible foods are harvested for personal use. No commercial harvest of any plants or animals is permitted on Lac qui Parle WMA. A variety of wild foods commonly collected for personal consumption include wild asparagus, morel and other mushrooms, fiddleheads, nettles and ramps (wild leeks). Minnesota Rule 6230.0250 Subp 20 states that the harvest of whole plants is not permitted on Lac qui Parle WMA. However, since the tops of leeks are edible, the top portion of the plant may be harvested; the bulb may not. Foraging is a growing activity in the area. The DNR also issues special fuelwood permits to allow firewood harvest for personal use with a maximum volume of 12 cords. The number of permits given each year varies, but it is generally less than five permits.

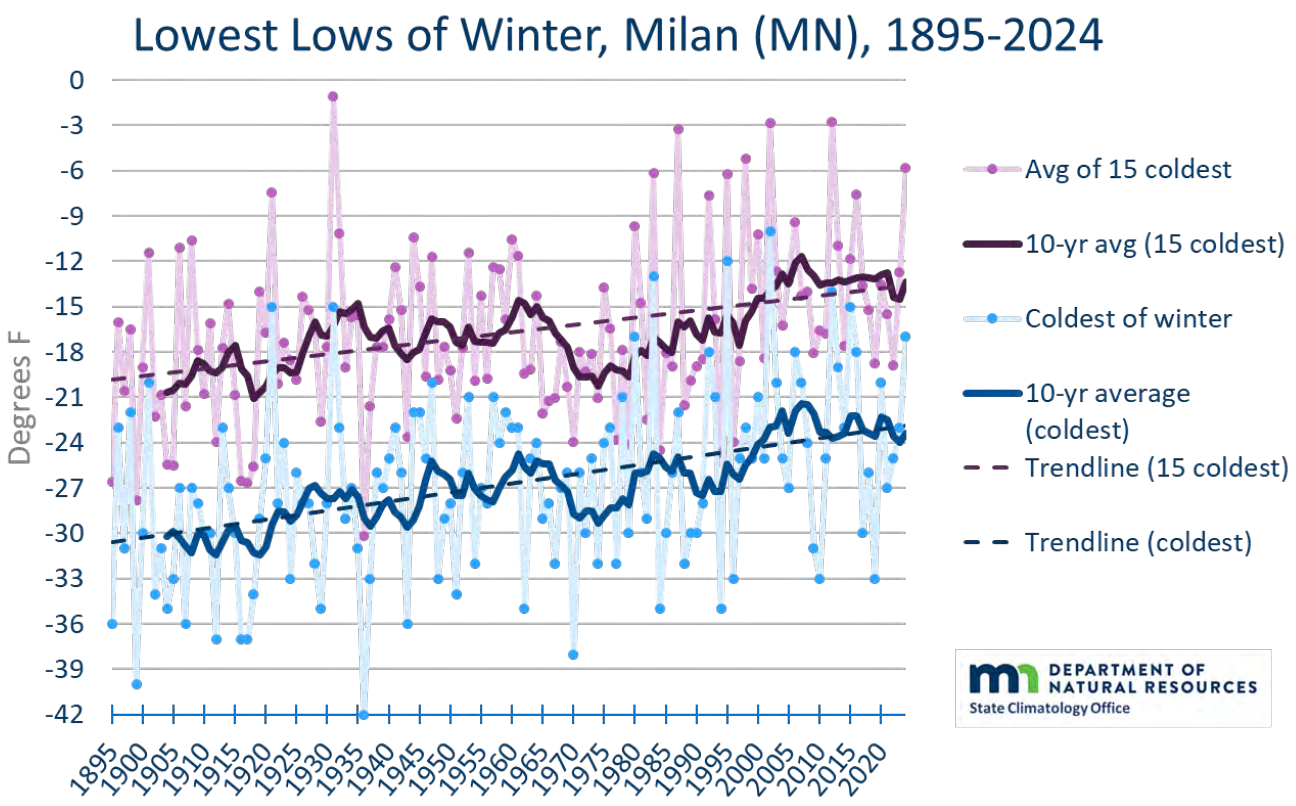
Strategic Considerations

Climate, Extreme Weather, and Climate Change

The future climate of Lac qui Parle WMA is projected to be warmer and wetter than it is currently. From 1895 through 2023, average annual temperatures increased by 2.7°F, slightly below the statewide average temperature increase of 3.1°F during the same period. Observed changes to average temperatures at night and in the winter are happening more quickly that overall averages. These changes are markedly evident in the period since 1970, when daily minimum temperatures have risen about 50% faster than daily maximum temperatures, and average winter temperatures have risen nearly five times faster than average summer temperatures. In summary, daily low temperatures in winter have risen sharply, and extremes of winter cold are less frequent and less severe than in decades past.

In Milan, which has the nearest high-quality and long-term climate station to Lac qui Parle WMA, winter's lowest temperatures have increased by an average of 7.7°F since the 1890s. Milan experienced its warmest winter on record in 2023-24, with more highs of at least 50°F and fewer lows around 10°F or lower than any other winter in its recorded history (Figure 17).

Figure 17. Winter temperature changes observed at Milan, MN, 1895 - 2024.



Annual precipitation has increased by 2.6 inches since 1895, and intense rainfall events producing daily totals of more than 1, 2, and 3 inches have been more common in western Minnesota since 1990 than during any other period on record.

Climate change results in more extreme weather, especially heat and precipitation, and frequency of extreme weather events is increasing at Lac qui Parle WMA. It is in a part of the state that is especially prone to hot weather extremes and can also experience intense summer thunderstorms. In May of 2022, several outbreaks of extreme thunderstorms affected the area, with 90+ mph thunderstorm winds recorded near Lac qui Parle WMA on May 12 and again on Memorial Day (Minnesota Department of Natural Resources, 2023; Minnesota Department of Natural Resources, 2022).

Climate projections summarized in the 2014, 2017, 2018 and 2023 National Climate Assessments, and others available for the state of Minnesota, predict Lac qui Parle WMA area will warm by an additional 2.5–4° F by 2070, while annual precipitation will increase by an additional 1–2.5 inches. Short-term variations can be expected, leading to episodes of cooler conditions and drought, even as trends toward warmer and wetter conditions continue (Pryor, et al., 2014; Vose, et al., 2017; Easterling, et al., 2017; Jay, et al., 2018; Marvel, et al., 2023; Wilson, et al., 2023).

Appendix L contains the historical (1895-1969) and current (1991–2020) mean seasonal precipitation and temperature values, as well as projected end-of-century values under a moderate greenhouse gas emissions scenario. Annual precipitation is modeled to increase moderately. Temperature is projected to be warmer by the end of the century, with winter and spring experiencing the greatest temperature increases proportionally.

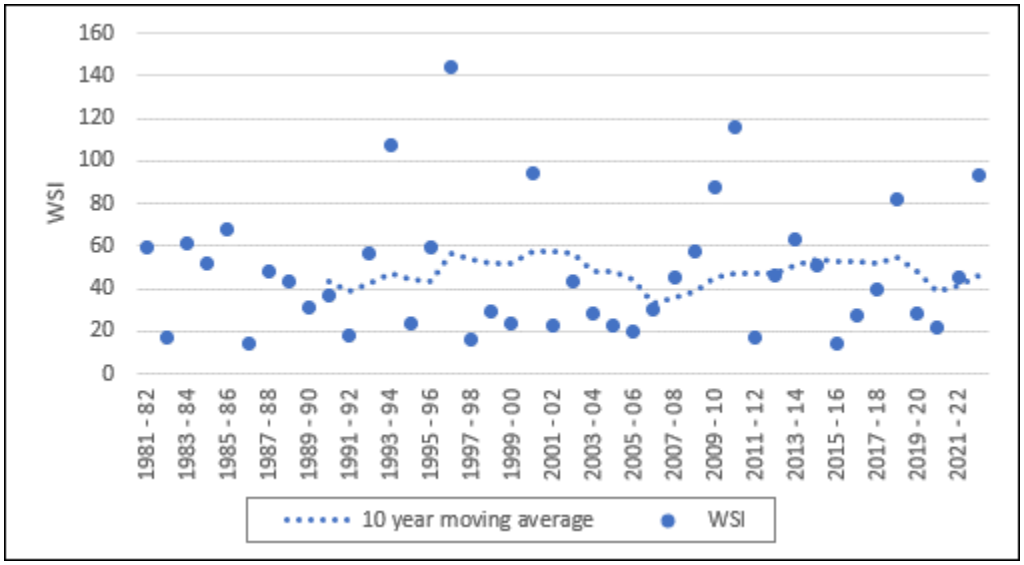
These climate changes affect fish, wildlife, and plant populations—altering behavior, distribution, development, reproduction and survival. Many changing climate factors and resultant habitat changes affect animals and plants, such as altered snow cover, shorter winters, shifts in dissolved oxygen regimes in lakes, and increasing stream temperatures. Some species may benefit from climate change, while many other native fish, wildlife, and plant populations will be negatively affected.

Winter Severity

The temperature in the wintertime is predicted to increase more than any other seasonal temperature value. Days with snow coverage are also predicted to decrease (Liess, et al., 2022). These changes may benefit deer populations at Lac qui Parle WMA and certain plant species growing at the northern edge of their ranges. However, subtle changes to snow quality affected by warmer winter and early spring air temperatures can negatively affect wildlife. One example is freezing rain forming a hard, icy crust on the snow surface or the ground, which can prevent pheasants and deer from accessing certain food resources. The DNR measures snow depth and cold temperatures from November through May to calculate a winter severity index (WSI), which estimates winter weather impacts on deer survival. More days with extreme cold and deep snow result in a higher WSI, correlating to lower deer survival. Winter severity indices for Lac qui Parle WMA's DPA 278 were calculated back to the winter of 1981 – 82.

WSIs in DPA 278 are slightly trending downward (Figure 18), primarily due to fewer days with deep snow. The average WSI in this dataset for the first 20 years is 48.8, with one winter ranked as severe (WSI greater than 120). The winter with the greatest WSI was 1996-1997, with a WSI of 144. The average WSI for the last 20 years is 46.6, with zero winters ranked as severe.

Figure 18. Winter severity index (WSI) for Lac qui Parle WMA, 1981 - 2023



Invasive Species

Invasive plants and animals pose management concerns because they can out compete native species for sunlight, food, space and other resources. Based on DNR invasive species monitoring data, there are not many invasive plant and animal species within and adjacent to Lac qui Parle WMA. However, some of those present have a significant impact on habitat. Although the DNR's monitoring programs have increased recently, species are likely underreported or unreported, and invasive plants and animals are likely more widespread than current data indicate. In the future, the number and abundance of different invasive species will increase, and these organisms will pose significant risks to native species. Educating users, early detection, and aggressive treatment of invasive species can effectively minimize new introductions and their spread. For more information on invasive species in Minnesota and how the DNR works to help prevent the spread and promote the management of invasive species, visit the DNR Invasive Species page.

Monitoring and Control

The DNR proactively uses tools to help prevent the introduction of new invasive species, including those outlined in DNR Operational Order 113 Invasive Species Prevention and Management and FAW's guidelines on Operational Order 113. These documents outline how staff are to minimize the spread of invasive species and pathogens on state lands. Protocols include day-to-day guidelines on preventing the introduction or spread of invasive species, monitoring, reporting, training, and incorporating invasive species spread prevention in contracts and grants.

Staff report new infestations of invasive species to the DNR Invasive Species Program using the Early Detection Distribution and Mapping System (EDDMapS) website or app, or the Invasive Species Reporting Form. DNR invasive species specialists verify invasive species reports. With the help of these staff, fast action can be taken

for new invasive plants and animals found at Lac qui Parle WMA. New invasive discoveries on Lac qui Parle WMA should be prioritized with the goal of eradication.

For invasive plants and animals already present at Lac qui Parle WMA, control of limited populations on higher-quality sites in larger project areas will be prioritized. Prioritizing these limited invasions will reduce their spread into uninvaded areas. Funding for future invasive species control should be identified and applied to multiple invasive species using multiple control tactics. Planned control measures and strategies to combat the introduction and spread of invasive species can be found in Goal 1 of the Desired Conditions section of this report.

The following paragraphs list plants and animal species in or near Lac qui Parle WMA. Species that could be potential invaders over the next ten years are also listed. Because of shortages in staff time to monitor invasive species populations, this is likely a partial list.

Animals

Terrestrial Animals

Several non-native terrestrial animals are well established in and around Lac qui Parle WMA and are not tracked in invasive species databases, including rock pigeons, European starlings, house sparrows, house mice, Norway rats, and invasive earthworms. These species are undesirable because they may spread diseases, impact habitat structure, and compete with native cavity-nesting birds. There is currently no cost-effective control method for these species.

Aquatic Animals

Zebra mussels are known to occur in Lac qui Parle WMA. There is currently no effective management technique to control them. Any equipment used in waters where zebra mussels occur should follow the DNR's invasive species cleaning protocol to manage spread to other waters.

Common carp are a non-native species considered naturalized in Minnesota and known to occur in all lakes, rivers, streams and some wetlands on Lac qui Parle WMA. No specific effort has been made to survey for carp in the impoundments within Lac qui Parle WMA; however, it is known that common carp are present during certain times of the year, including spring spawn. Water drawdowns can be an effective tool for removing carp from shallow lakes. Fish barriers can be used in water control structures to help prevent common carp from entering upstream impoundments. Common carp can threaten fish and wildlife, especially in shallow lakes and wetlands, because of their impacts on water quality and aquatic vegetation.

Other invasive carp species of concern, specifically bighead carp (*Hypophthalmichthys nobilis*), silver carp (*H. molitrix*), grass carp (*Ctenopharyngodon idella*), and black carp (*Mylopharyngodon piceus*) have not been found in Lac qui Parle WMA. The DNR will continue annual assessments to monitor their spread.

Terrestrial Plants

Woody Plants

There are seven invasive woody species known to occur within Lac qui Parle WMA:

- European buckthorn (*Rhamnus cathartica*)
- Siberian elm (*Ulmus pumila*)
- Exotic honeysuckle (*Lonicera spp.*)
- Black locust (*Robinia pseudoacacia*)
- Siberian peashrub (*Caragana arborescens*)
- Russian olive (*Elaeagnus angustifolia*)
- Amur maple (*Acer ginnala*)

Buckthorn is pervasive on Lac qui Parle WMA and is found in almost all habitat types. Because buckthorn is widespread on Lac qui Parle WMA, control is prioritized to larger project areas and high-quality, diverse sites with limited invasion.

Siberian elm is pervasive on Lac qui Parle WMA. Where it occurs, it can overtake grasslands, form dense stands over time, and significantly impact grassland nesting birds, including waterfowl and pheasants. It spreads readily from seeds and regenerates from stump sprouts. Numerous areas across Lac qui Parle WMA must be treated, including entire stands dominated by Siberian elm. This species represents a long-term management challenge on Lac qui Parle WMA.

Amur maple was historically planted as a hedgerow in a few Lac qui Parle WMA locations. In the early 1990s, this species was often included in shrub plantings. Amur maple has thrived in the hedgerows where it was planted, but it does not appear to have widely spread.

Siberian peashrub occurs in a few locations on Lac qui Parle WMA. Where it occurs, it forms dense colonies that preclude other species. It does not appear to spread widely from where it first takes root, but it poses an invasive threat in other parts of the state. Small pockets will be identified and slated for treatment in the next few years to prevent them from expanding.

Black locust is a species native to the United States, but not Minnesota. It is a clonal species, forming dense colonies that preclude other tree and shrub species and can invade grasslands. It is a challenging species to control due because of its vigor and ability to sucker. There are a handful of known locations on Lac qui Parle WMA. These sites are monitored for spread. If there is no planned disturbance in woods with black locusts, a hands-off approach has been taken simply because the species is so challenging to treat. As control techniques improve, control of this species will increase as staff time and funding permit.

Other invasive species known to occur in low abundance on or near Lac qui Parle WMA include:

- Glossy buckthorn (*Frangula alnus*)

Over the next 10-20 years, the following invasive woody plants could arrive at Lac qui Parle WMA:

- Multiflora rose (*Rosa multiflora*)
- Oriental bittersweet (*Celastrus orbiculatus*)
- Japanese knotweed (*Polygonum cuspidatum*)

Herbaceous Plants

There are many herbaceous invasive plant species on Lac qui Parle WMA. Many have been present for decades, such as reed canary grass and brome. This plan does not address all known herbaceous invasives but will focus on actively managed species, including:

- Birds foot trefoil (*Lotus corniculatus*)
- Bull thistle (*Cirsium vulgare*)
- Canada thistle (*Cirsium arvense*)
- Crown vetch (*Securigera varia*)
- Hoary alyssum (*Berteroa incana*)
- Leafy spurge (*Euphorbia esula*)
- Plumless thistle (*Carduus acanthoides*)
- Queen Anne's lace (*Daucus carota*)
- Smooth brome (*Bromus inermis*)
- Spotted knapweed (*Centaurea stoebe*)
- Wild parsnip (*Pastinaca sativa*)
- Oxeye daisy (*Leucanthemum vulgare*)

Common control methods for these species are mechanical or chemical treatment, prescribed fire, and biocontrol (for example, leafy spurge using leafy spurge beetles).

Wild parsnip occurs commonly in grassland, riparian, roadsides, and agricultural areas. Poorly timed mowing is the most likely culprit for spread of this species; however, its papery seeds can easily move in wind and water. This species is a target for control, not only because it can outcompete native vegetation, but because it also can cause a photosensitive rash on humans.

Spotted knapweed is a perennial herbaceous plant typically found on sites with poor soil, such as sandy and rocky areas. This plant can spread quickly in disturbed areas and sandy habitats. Areas of Lac qui Parle WMA with poor soil should be monitored to allow for early detection and management. Construction areas and gravel parking lots should be monitored because spotted knapweed seeds can be transported through construction activities and movement of aggregate materials.

Oxeye daisy is a perennial plant that grows in disturbed, open areas. Oxeye daisy can spread by seed and can also spread vegetatively by rhizomes sending up plants nearby the parent plant.

Over the lifespan of this plan, the following terrestrial invasive species could arrive at Lac qui Parle WMA:

- Garlic mustard (*Alliaria petiolata*)
- Poison hemlock (*Conium maculatum*)

- Amur silvergrass (*Miscanthus saccariflorus*)

If any garlic mustard populations are found on the unit, they should be prioritized for treatment; new infestations increase dramatically in just a few years. It typically occurs in forested settings, particularly moist woods, but it can be found in various habitats. It is easily spread by wildlife and human footwear.

Poison hemlock is a relatively new invasive species in Minnesota. This plant is poisonous to humans and some wildlife if consumed. Control of this species should also be prioritized.

Amur silver grass is a warm-season ornamental grass used primarily in landscaping. This species spreads by rhizomes to form very dense pockets that preclude all other plants.

Aquatic Plants

There are three known invasive aquatic plant species occurring within or very near Lac qui Parle WMA:

- Purple loosestrife (*Lythrum salicaria*)
- Hybrid cattail (*Typha x glauca*)
- Reed canary grass (*Phalaris arundinacea*)

Purple loosestrife invades marshes and replaces native species such as sedges, broadleaf cattails, and other wetland plants. It forms dense stands, and infested areas become unusable to native wetland animals, including ducks, geese, rails, bitterns, muskrats, frogs, toads and turtles. Beetles used for biocontrol of purple loosestrife have been released on Lac qui Parle WMA in the last 10-15 years. Hybrid cattail has existed around and within Lac qui Parle WMA for decades. It forms dense stands and outcompetes native species. Aerial herbicide treatment for reducing cattail encroachment into open water is planned to be used on Marsh Lake in 2024. Aerial applications of herbicides on hybrid cattail have been used on other parts of Lac qui Parle WMA in the last ten years and have proven effective. Reed canary grass is present in wet areas throughout Lac qui Parle WMA. It is a major threat to wetland habitats as it often outcompetes native species by forming dense stands. Grazing and prescribed burning provide temporary control of this species, although grazing appears to provide longer-term benefits. Grazing allows other plant species to become established after it is grazed down, although reed canary grass eventually becomes reestablished. Burning primarily removes dead plant material and reed canary grass immediately grows back, with some other plant species growing depending on the time of year the site is burned. Due to the lack of cost-effective, large-scale treatment options, specific management actions are limited.

Other species not currently present at Lac qui Parle WMA but threatening include:

- European common reed (*Phragmites australis ssp. australis*)
- Eurasian watermilfoil *(Myriophyllum spicatum*)
- Curly-leaf pondweed (*Potamogeton crispus*)
- Flowering rush (*Butomus umbellatus*)

Fish and Wildlife Diseases and Parasites

The diseases and parasites listed below can potentially impact fish and wildlife populations at Lac qui Parle WMA. Responses to diseases and parasites will vary depending on the scale and causative agent. All actions will be closely coordinated with other DNR divisions, FAW's Health Programs, and partners (i.e., state, federal, and tribal agencies) as appropriate.

Waterfowl Diseases

Waterfowl are susceptible to several infectious diseases that cause mortality including avian cholera, avian botulism, avian tuberculosis, avian salmonellosis, chlamydiosis, duck plague, aspergillosis, and avian influenza. Common denominators among outbreaks are a concentration of waterfowl and often poor water quality. Avian salmonellosis and aspergillosis also infect songbirds, but the source of these outbreaks is usually moldy, contaminated food at feeders.

Chronic Wasting Disease

Chronic wasting disease (CWD) is a contagious neurological disease affecting cervid species, including deer, elk, and moose. It causes a characteristic spongy degeneration of the brains of infected animals resulting in emaciation, abnormal behavior, loss of bodily functions, and death. As of March 2024, no CWD positive wild deer have been detected at Lac qui Parle WMA or its vicinity. See the following link for the current DNR CWD response plan.

Epizootic Hemorrhagic Disease

Epizootic hemorrhagic disease (EHD) is a naturally occurring viral disease that can spread to white-tailed deer by biting *Culicoides* midges. The disease can dramatically reduce a local deer population in the short-term but has a relatively small impact on the overall deer population. There are no management interventions available to combat the disease. EHD is seasonal and often occurs during drought-like conditions in the late summer and early fall. Frost will kill midge that carries the virus, ending the potential infection period. Finding multiple healthy-looking deer dead near water is typical of an EHD die-off. Fever drives the animals to seek water, and they die from internal lesions and hemorrhages. EHD has not been documented at or near Lac qui Parle WMA.

Mange

Mange, particularly sarcoptic mange, is a disease transmitted by mites and affects mainly canids (e.g., wolves, foxes and coyotes) but also bears, raccoons, porcupines, and some rabbits and squirrels. The mites are transferred from one individual to another through direct contact or transfer at den sites. The disease causes hair loss, and in some cases exposed skin becomes encrusted or oozes fluids, often resulting in death. Red foxes are particularly susceptible to mange, and thousands can die during an outbreak. Mange has been identified on Lac qui Parle WMA. Its abundance varies yearly and is seen primarily in coyotes.

Canine Distemper

Canine Distemper is a highly contagious disease caused by a paramyxovirus. It is a widespread disease affecting wild and domestic carnivores and primarily affects raccoons, grey foxes and skunks in the spring and fall. Transmission occurs from contact with infected saliva, urine, feces, or respiratory secretions. Animals can shed virus up to two weeks after they recover. The virus can survive long periods in the environment if the temperatures are below freezing. Distemper has been identified on Lac qui Parle WMA. Like mange, the occurrence of distemper varies from year to year. Raccoons appear to be the most impacted by this disease on Lac qui Parle WMA.

Rabies

Rabies is an acute infectious disease of the central nervous system caused by a virus transmitted in saliva through bites. Rabies is most common in raccoons, skunks, bats, and foxes, but can occur in any mammal. Once signs of the illness manifest themselves, rabies is 100% fatal. Rabies has not been documented on Lac qui Parle WMA; however, it has been documented in neighboring counties.

Newcastle Disease

Virulent Newcastle disease is a contagious and fatal viral disease of birds affecting respiratory, nervous, and digestive systems. The disease is so virulent that many birds die without showing any clinical signs. In Minnesota, it has occurred periodically in colonial nesting waterbirds (e.g., pelicans, cormorants, gulls, terns, and herons). Waterbird colonies occur within Lac qui Parle WMA at Lac qui Parle Lake and Marsh Lake. Birds that die from Newcastle disease are collected from colonies and disposed of by incineration. There has been no recent documentation of Newcastle disease at Lac qui Parle WMA.

West Nile Virus

West Nile Virus is a mosquito-borne virus that can kill some birds, particularly waterfowl, ruffed grouse, crows and jays, and mammals, including elk and moose. Lac qui Parle WMA is in a moderate to high-risk area for West Nile Virus. Incidence of infection vary by year with changes in wet and dry cycles and mosquito populations.

Threats to Forest Tree Health

The most significant threats to forests, woodlands and savannas on Lac qui Parle WMA are floods, droughts, and native pests that take advantage of highly stressed trees. The frequency of excessively high amounts of seasonal spring, summer and fall precipitation stresses floodplain forests.

In the near future, emerald ash borer will likely start infesting ash on Lac qui Parle WMA. There also is a chance that oak wilt may someday threaten oaks on Lac qui Parle WMA.

Oak Health

Oak decline

Bur oaks are the predominant oak species on Lac qui Parle WMA. Denser forests comprised of older bur oaks are susceptible to decline. Opportunistic pests, namely two-lined chestnut borer and Armillaria root disease, attack stressed older oak trees and are the main contributors to oak decline in Minnesota. Typical symptoms of attack by two-lined chestnut borer are dead leaves that persist in the canopy for at least a couple of months in summer and fall. Dying trees in declining oak forests frequently are more abundant closer to wetlands and small ephemeral ponds due to limited rooting areas in anoxic soils. Decline and susceptibility to drought can be reduced by thinning forests, reducing tree density and removing weak and non-competitive trees. However, thinning should be avoided during drought and a couple of years following drought.

Bur oak blight

Bur oak blight is a leaf disease of bur oak caused by the native fungus *Tubakia iowensis*. The disease creates wedge-shaped dead zones on leaves in late summer, particularly in the lower canopy, sometimes resulting in premature leaf drop and heavy defoliation. Bur oak blight becomes more abundant across the landscape as more early growing seasons with high levels of precipitation occur. Fortunately, bur oaks almost always recover the following spring from this leaf disease, and there is no evidence as of 2024 that bur oak blight is a significant threat to healthy bur oaks.

Oak wilt

Oak wilt is a serious non-native threat to forests with large proportions of red oaks. It can also create expanding mortality zones in forests dominated by bur oaks, and invasive plants frequently invade these openings in stands. As of March 2024, the nearest known oak wilt was about 80 miles from Lac qui Parle WMA. The most likely pathway for oak wilt to get to Lac qui Parle WMA is infected fresh red oak firewood brought to or near Lac qui Parle WMA by campers or nearby property owners.

Oak wilt on bur oak is very difficult to identify. They typically die one to seven years after infection. Symptoms and symptom progression on bur oaks resemble Armillaria root disease and two-lined chestnut borer. The most distinguishing feature of oak wilt is rapid leaf drop from symptomatic branches. More symptoms can be found at the DNR's oak wilt homepage and in the DNR Forestry Division (FOR)'s oak wilt guide. If WMA managers are concerned about oak wilt present on Lac qui Parle WMA, they should consult the FOR's Central Region Forest Health Specialist.

Oak wilt can be prevented by not wounding oaks from April through mid-July. Once oak wilt is known to be within 20 miles of an oak tree, the risk of contracting oak wilt through a fresh wound, including some fresh fire scars, becomes significant. The DNR's forest health team maintains a map of at-risk areas for oak wilt on the oak wilt webpage. These data are also available at the Minnesota Geospatial Commons.

Floodplain Forests

Emerald ash borer

Emerald ash borer (EAB), an invasive and deadly pest of ash trees, is a threat to ash on Lac qui Parle WMA and will reduce tree species diversity in floodplain forests. As of March 2024, the nearest known occurrence of EAB to Lac qui Parle WMA was about 40 miles away.

As scattered ash trees die from EAB, canopy gaps in intact forests will potentially be invaded by invasive plants. In addition, as ash stands die, it will create significant changes in habitat and produce increased heavy fuel loads on Lac qui Parle WMA with dead and down trees. Death of clusters of ash on the edge of riverbanks and lakeshores that could exacerbate bank erosion and instability.

Human Activities

Lac qui Parle WMA is the fifth largest WMA in Minnesota and is part of one of the largest blocks of contiguous public land units in southwestern Minnesota. Based on the public scoping questionnaire completed in the fall of 2023 (Appendix B), most users come from the Montevideo and Appleton vicinities. Visitors also travel from the Saint Cloud and Cold Spring areas in Stearns County, Minnesota. In addition, visitors are coming from the Twin Cities metro area and other communities near Lac qui Parle WMA.

Lac qui Parle WMA will continue to support its mission of protecting and managing the land for wildlife production and for hunting, fishing, and trapping opportunities. However, other recreational users may seek additional uses or enhancements to the area to address other recreational activity interests or priorities. These will be allowed or implemented when determined to be compatible with the primary purpose of Lac qui Parle WMA.

Other nearby public lands may have the facilities or capacity to address these interests. For example, some nearby lands have trails for off-highway vehicles and horseback trail riding facilities. Lac qui Parle State Park has developed facilities for camping, hiking, and nature interpretation facilities and services. Bird watchers, hikers, paddlers and outdoor enthusiasts can use Lac qui Parle WMA roads, public water access sites, parking lots and other facilities for compatible uses.

Hunting, fishing, and trapping are regulated activities that do not threaten habitat or wildlife populations when done in accordance with regulations. Taking animals or plants beyond the legal allowances could threaten habitat and wildlife. Other compatible and non-compatible uses and activities at Lac qui Parle WMA are regulated by Minnesota statute or administrative rule and generally do not threaten Lac qui Parle WMA.

Neighboring Land Use

The purchase, development, or fragmentation of private lands adjacent to Lac qui Parle WMA will challenge WMA management activities, recreational use, and access. These challenges include impacts to water quality, the introduction of invasive species, land use disturbances, pesticide drift, and increased human and wildlife

conflicts. Changes in the use of private lands may present challenges to existing land, resource, and infrastructure management activities within Lac qui Parle WMA.

These concerns can be viewed as an opportunity for more coordinated land and management planning efforts to ensure farming, natural resources and other public objectives are addressed. Efforts should identify areas where development or fragmentation would have the most impact, and coordinate tools to address or limit this impact. Local communication and coordination are key, working with other private and public land managers in the area to maintain large areas of grassland habitats with travel corridors connecting them. Proper land planning will enhance the value of these lands for wildlife, plants, residents, and visitors.

Examples of land planning tools include the following:

- Informing the public about the area's exceptional and diverse natural features, unique wildlife, and rare plant communities.
- Engaging with neighboring private landowners in cooperative habitat and facility projects.
- Encouraging private landowners to protect rare features and associated habitats by enrolling in conservation easements and programs.
- Working with local government units to promote conserving significant wildlife habitats.
- Working with local governments on zoning ordinances.

Unit Access Limitations

In addition to public highways and roads that border the unit, Lac qui Parle WMA has a network of WMA roads to help maintain the unit, facilitate management activities, and provide public access. WMA staff maintain this internal road network. Maintenance needs must be prioritized and consistent sources of funding identified to ensure access is maintained for ongoing management and public recreation activities. Coordination with the Minnesota Department of Transportation (MnDOT), local units of government and private organizations on road and infrastructure projects will improve access opportunities for the public.

Frequent flooding presents a long-term challenge for maintaining roads in Lac qui Parle WMA and the public roads surrounding and serving Lac qui Parle WMA. Flooded roads need to be closed; when waters recede, the roads also need follow-up repairs to make them suitable and safe for public travel. These repairs take time and cost money.

Public water access for hunting and fishing must be updated to meet Americans with Disabilities Act standards. The present design of some facilities (e.g., placement of river rock in the center approach to docks) precludes people with mobility needs from using them. Options to improve access for people with disabilities to Marsh Lake and Upper Lac qui Parle Lake need to be evaluated as well; potential public water access sites that could be improved to increase access for people with disabilities are the Louisburg Grade, Correll Landing and Twin Bridges.

Water access can be improved by either removing cattail by mowing, crushing, or chemical application and changing the plant community from cattail to open water or a plant community that allows for easier access.

Accesses that need this work are at Peterson, Nygard, Cabin Site, Killen, Correll and east of the triple culverts off the Louisburg Grade.

In addition, some areas within Marsh Lake are difficult to access because of cattails. Options will be considered to mechanically manipulate cattail by crushing or mowing or chemically applying herbicide to specific areas. The purpose of this would be to improve access to open areas in the lake that are difficult to access and create new open pockets within cattail areas.

Technology

Changes in technology change how the public use Lac qui Parle WMA. New mapping applications that show public lands can improve the public's ability to use and appreciate Lac qui Parle WMA. However, currently available online maps for Lac qui Parle WMA lack refuge and sanctuary boundary detail. Planned strategies for updating online maps with accurate boundary information can be found in Goal 2 of the Desired Conditions section of this report. The use of remote cameras, cell phones, drones, social media, portable structures, and other online information can impact resources and user experiences. Some of these technologies, like trail cameras and drones, are not legal to use on Lac qui Parle WMA. Although some of these technologies can improve the public's experience on Lac qui Parle WMA, they may make it easier to harvest fish and wildlife and put greater harvest pressure on populations. Increased use of Lac qui Parle WMA may impact infrastructure and ecosystem, including garbage and human waste pollution, and road damage.

WMA Infrastructure

Lac qui Parle WMA maintains a vast array of infrastructure requiring continued and ongoing maintenance, including:

- Roads and Trails
    - 105 miles of WMA boundary
    - 32 miles of WMA boundary fence
    - 20 miles of interior management trails and roads
    - 10 miles of public vehicle accessible roads
    - 6 miles of interior dikes
- Facilities
    - 1 Managers Residence
    - 1 Headquarters building
    - 13 maintenance and storage buildings
    - More than 40 informational signs & kiosks
    - 88 parking lots
    - 10 gates
    - 13 culverts
    - 52 controlled hunt blinds
    - 14 wheelchair accessible deer hunting blinds

Water Control Structures

Water control structures are important infrastructure and resource management components of Lac qui Parle WMA. The water control structures present on Lac qui Parle WMA that are managed by the DNR are described in Table 9.

Table 9. Water control structures managed by the DNR on Lac qui Parle WMA

Name	County	Date built	Updated	Length of dikes (ft)	Type of control structure	Acres of wetland
Engebretson 1	Chippewa	1960		900	Vegetated spillway	40
Engebretson 2	Chippewa	1960		190	Tube overflow	5
Lillijord	Chippewa	1965		500	Vegetated spillway	30
Marsh Lake Fish Pond	Lac qui Parle	1965	2024	2850	Concrete Stop-log	10
Avelsgard	Lac qui Parle	1968	2022	850	Vegetated spillway updated to Agri drain	10
Sotoberg 1	Lac qui Parle	1973		1000	Half riser	100
Sotoberg 2	Lac qui Parle	1973	2004	640	Half riser	80
Sotoberg 3	Lac qui Parle	1976	2004	950	Half riser	80
Big culvert	Chippewa	1978		1000	Center riser	80
Mettlerkamp	Chippewa	1979		700	Center riser	40
Beaver	Chippewa	1982		600	Center riser	80
Williamson	Swift	1982		1250	Center riser	20
Anderson 1	Chippewa	1988		150	Vegetated spillway	2
Anderson 2	Chippewa	1988		150	Vegetated spillway	2
Headquarters	Chippewa	1991		100	Vegetated spillway	3
Killen MSU	Big Stone	2005/ 2012		15500	Agri drain	130
Marsh Lake	Lac qui Parle	2019		10350	Concrete with 12 Slide Gates	6100

Water control structures are vulnerable to extreme precipitation events, deferred maintenance due to funding limitations, and degradation over years of use. Periodic maintenance, repair, replacement, or removal of water control structures is needed to ensure that surface water management is effective and resilient to future weather events.

Operational Context

Administrative and Fiscal

Lac qui Parle WMA is managed by the Section of Wildlife within FAW, and is in the DNR's southern region, also known as Region 4. WMA operations are funded primarily through the GFF, supported by the sale of hunting, fishing, and trapping licenses and federal aid from surcharges on hunting and fishing equipment. GFF funding primarily covers salary and operational costs, such as maintenance. Some wildlife management projects at Lac qui Parle WMA are funded through dedicated wildlife accounts (e.g., deer, wild turkey, waterfowl, and pheasant stamp), and the majority of current project funding is through the OHF, or other grant funding, such as the Competitive State Wildlife Grant and LCCMR. Additional project funding is brought to Lac qui Parle WMA through partnerships with non-governmental organizations (NGOs) such as TNC, Ducks Unlimited, Pheasants Forever, National Wild Turkey Federation, Minnesota Sharp-tailed Grouse Society, and others. These organizations apply for grants and help administer habitat projects on Lac qui Parle WMA to achieve combined organizational and resource goals.

Staffing

The Lac qui Parle WMA staff consists of the wildlife area supervisor, two assistant wildlife area managers, four seasonal staff classified as laborer, trades and equipment (LTE) and one office and administrative specialist intermediate (OASI) shared with DNR's Parks and Trails Division (PAT).

Staffing levels are an important factor in implementing plan strategies and priority work. The area supervisor is responsible for supervision, work planning, budgets and administrative tasks, and assists with habitat and facility projects as needed. Assistant wildlife area managers are responsible for implementing day to day operations and field project work. LTEs carry out various habitat and facility project work and maintain equipment. The OAS provides administrative support and allows all staff to stay engaged in high priority habitat and facility activities.

DNR staff manages Lac qui Parle WMA and coordinates daily work planning with three area offices to complete critical habitat and facility work across nine counties. This work is supplemented by the Region 4 Roving Crew (funded by the OHF) in Montevideo. The Roving Crew works across all 32 counties that comprise Region 4.

Partnerships

Partnerships with outside groups have been important for Lac qui Parle WMA in the past, and this is expected to continue into the future. In the past, non-profit groups have assisted with everything from building and facility maintenance to habitat improvement projects. Partnerships with these groups is important and helps the DNR leverage resources to achieve outcomes that would not otherwise be possible.

Operational Orders, Policies, Guidelines, and Directives

The DNR has Operational Orders, which direct the internal management of the department. Policies, guidelines, and directives are the divisions' way of further defining the ways that specific work is undertaken on state lands.

Periodic review and updating of existing guidance documents occur and new documents are developed as new policy needs are identified.

Interdepartmental Coordination

The FAW Lac qui Parle WMA staff participate in bi-annual coordination meetings with the USFWS, TNC, USACE and the DNR's Ecological and Water Resources Division (EWR). In addition to these bi-annual meetings, Lac qui Parle WMA staff work in coordination with other divisions and conservation partners continuously throughout the year. Lac qui Parle WMA staff also communicate with the DNR Regional Management Team on ongoing or emerging WMA issues.

Desired Conditions

Goal 1: Enhance fish and wildlife habitat and biodiversity.

All Habitat Types

Habitats in Lac qui Parle WMA are recognized as vitally important for sustaining wildlife populations and biological diversity in west-central Minnesota. The DNR manages public lands based on ecological classification systems. The habitats at Lac qui Parle are predominately upland and wet prairies. Very little of the prairie landscape remain today in Minnesota, less than 2%, and the remaining tracts are isolated. Lac qui Parle WMA requires active attention and management to protect and restore this endangered landscape and the species that depend on open grasslands for survival.

Grazing as a prairie management tool

The diversity, productivity, and character of prairies are shaped by three factors: climate (especially periodic droughts), fire, and grazing. There are numerous records of bison in the Lac qui Parle area. They would have grazed an area, moved on, and may not have returned for months or years. Today, wildlife managers try to replicate these same dynamics with cattle by lightly grazing areas and grazing different areas each year.

Grazing increases plant diversity, especially wildflower diversity and abundance. Grazers focus on grass. With less competition from grasses, there is more room for wildflowers. This creates pollen and nectar for insects in the summer and fruits and seeds for wildlife in the late summer and fall.

Grazing also increases the structural diversity of the habitat, with areas that are grazed to different heights. Several species of wildlife will use cattle paths through the grass to travel from one area to another, especially young birds. The shorter, more open canopy makes it easier for birds to move around and forage, but always with some taller vegetation for cover. Finally, many species of birds prefer to nest in shorter grasses, including blue-winged teal and pintails, prairie grouse, upland sandpipers and marbled godwits, and meadowlarks and longspurs. In any year, cattle only graze a small percentage of Lac qui Parle WMA.

Haying as a prairie management tool

Haying is a tool the staff at Lac qui Parle WMA use to affect the structure and diversity of grasslands. Early blooming species, which are often short-statured, such as pasqueflower, prairie smoke, and blue-eyed grass do well in hayed areas because there is less thatch to grow through.

Sharp-tailed grouse and prairie-chickens use hayed areas for their spring leks, and turkeys will often display in hayed areas. In other cases, the green-up after haying will attract grazing and browsing animals such as deer. Like grazing, haying opens the structure of the vegetation and allows for easier movement and foraging by wildlife, especially young birds.

Haying is a flexible tool where managers can work with cooperators to hay very specific areas at precise times to meet management objectives, such as targeting an invasive species like brome when it's most vulnerable to give native species a chance to crowd out these species over the following months. Haying can be used in areas where prescribed burns are dangerous or otherwise tough to conduct and can be effective for woody vegetation control. Cooperators cut hay outside the primary nesting season (May 15 to August 1) unless there is a specific, short-term management objective for haying a particular location during the nesting season.

Trees in the prairie landscape

Before European colonization, fire and periodic droughts kept trees out of the Lac qui Parle area. European settlers removed fire from the landscape. Plowing the prairies created firebreaks and reduced the size of fires that did start. Finally, multiple government programs encouraged tree planting. With fewer fires to control trees and more trees depositing seed across the landscape, trees today are far more common in the region than historically. Many of these trees are invasives, such as Siberian elm and Russian olive. Other trees, such as boxelder, green ash, and eastern red cedar, are native but can become very dense and overtake grassland habitat.

With so little open prairie remaining across Minnesota, staff at Lac qui Parle WMA preserve the open landscape required by prairie specialist species by removing trees where appropriate. Many of the prairie specialist wildlife species the DNR manages for, especially birds, have low nest success and survival near trees. Trees can provide a pathway, refuge, and a perch to hunt for predator species in grasslands. Popular game species, such as pheasants and ducks, experience increased nest success when trees are removed. Prairie specialist, or obligate, birds are the fastest declining group of birds in the US. While many wildlife species do use forests and forest edges, these are often species that are relatively common across Minnesota. While tree removal may remove habitat for abundant, generalist species, it creates habitat for many declining, specialist species. The DNR does manage native trees in sites where they were historically found.

1.1 Manage native and restored plant communities to ensure a sustainable landscape that supports healthy fish, wildlife, and plant populations.

- Use site conditions (e.g., soil types, NPC, land management history) to guide specific management decisions.
- Conduct systematic surveys to update NPC designations and initial condition ranks that were determined over 20 years ago to inform future adaptive management decisions.
- Use NPC designations to inform prairie management, such as tree management/removal priorities, suitability for grazing, prescribed fire intervals, and similar actions.

1.2 Maintain or increase rare NPCs, rare plants, rare animals, and their associated habitats.

- Explore the feasibility of restoring bison to a portion of the wildlife area to aid in the genetic rescue of this iconic prairie species and to recouple the fire and grazing interaction that helped shape the tallgrass prairie. Bison can also serve as ambassadors for larger discussions on prairie conservation and as a tourist attraction for the area.
- By 2027, inventory and assess ecological condition of granite rock outcrops; assess for woody encroachment, primarily buckthorn, and remove as necessary. Install temporary fences around rock outcrops with listed species, such as the Thompson Tract, to protect them from grazing disturbance.
- By spring of 2025, install fences to protect fens from disturbance in areas with grazing.
- Consider rare plant and wildlife species guidance when proposing and implementing projects.
- Work with conservation partners on targeted acquisition to protect vulnerable plant and animal communities and to buffer and enhance existing plant communities necessary to maintain viable populations.
- Conduct spring prairie grouse surveys every year by checking previously used leks and surveying for any potential new booming and dancing grounds; coordinate efforts with the Minnesota Sharp-tailed Grouse Society, Big Stone NWR, the Appleton and Marshall DNR Wildlife offices, local Pheasants Forever chapters, and other organizations to incorporate citizen-science projects into WMA management.

1.3 Encourage and accommodate monitoring and research to address management questions.

- Support EWR long-term research and monitoring program at Chippewa Prairie to address conservation issues and to track management and environmental change.
- Assess expansion of adaptive monitoring of NPCs to other sites (e.g., south side of Marsh Lake, and Ripple, Storm, Moen, Sleeping Bison, and Peterson tracts) using photo points and monitoring plots (e.g., Grassland Monitoring Team) to assess change related to habitat management or climate change and to evaluate management success.
- Submit research ideas and/or monitoring protocols to assess the efficacy of management actions for protecting and enhancing wildlife populations.
- Collaborate with local schools and colleges, Pheasants Forever and Ducks Unlimited chapters, and similar organizations to incorporate citizen science into wildlife monitoring programs.
- Promote resource professional and citizen awareness and engagement through education, training, and field workshops. Working with conservation partners, hold one field day for conservation professionals per year at Lac qui Parle WMA.

- Establish and document measurements of management actions to evaluate success or adjust future management actions.
- Establish strategically located photo points to provide a qualitative, visual measure of landscape and habitat conditions. Use these images and time series to communicate with the public, constituents, legislators, and others.

1.4 Work towards improving existing hydrology and, where possible, manage for a more dynamic flow regime to support resilient wetlands and aquatic habitats and to help protect the watersheds.

- Partner with the USACE to achieve a coordinated reservoir management approach across all water control structures, protecting fish and wildlife habitats and mimicking natural flow regimes.
- Maintain floodplain connections on Lac qui Parle WMA and support similar efforts on the Big Stone NWR and other tributaries.
- Take an active role in local watershed management planning efforts and actively support management strategies that promote additional water storage on the landscape to minimize the artificial delivery of water; restore all wetland types on future acquired lands.

1.5 In response to Minnesota's changing climate, develop strategies to enhance ecosystem resiliency and mitigate impacts to WMA resources and infrastructure.

- Support healthy and resilient watersheds, such as designing stream crossings according to geomorphic principles.
- Design both new and existing projects and infrastructure for sustainability and resiliency to handle increased flows.
- Increase plant species diversity in prairie reconstructions to build resilience and climate adaptations.
- Raise awareness on the role natural landscapes (e.g., forests, grasslands, and wetlands) play in flood mitigation, building climate resiliency, recharging aquifers, and storing carbon.

1.6 Minimize the introduction, establishment, and spread of invasive species.

- Prioritize control and early detection of new and emerging invasive species, such as wild parsnip and Queen Anne's lace, that can either be eradicated or significantly controlled.
- Work with BWSR and local SWCDs to reinvigorate funding for local county partnerships on invasive species prevention and control.
- Use DNR Best Management Practices to prevent the introduction of new invasive species.
- Continue to use proven biological, mechanical, and chemical control techniques appropriate for the site and species.
- Enter new and previously discovered locations of invasive species into EDDMapS.

Grasslands

1.7 Manage all remnant (i.e., never plowed) and restored prairie areas to enhance wildlife habitat and rare plant communities.

- Enhance/manage an average of 25% of Lac qui Parle WMA's grasslands each year through a combination of prescribed fire, haying, tree removal, and grazing.

    - Assess each parcel for management needs by considering factors such as grassland condition and the presence, abundance, and potential for invasion of invasive and woody species. Some parcels may need annual work to reach desired conditions; other areas may not need to be managed as frequently.
- Promote plant community/habitat heterogeneity (i.e., short, mid, and tall plant heights) through prescribed burning, haying, grazing, and patch-burn grazing; rotate techniques at different temporal and spatial scales across Lac qui Parle WMA.
    - Increased landscape heterogeneity and patchiness drives biodiversity and provides the range of habitats required by most wildlife species, including game animals. Pheasants benefit as patchy habitats promote wildflowers and insects critical for chick survival and ease of travel. Some waterfowl species prefer short cover for nesting, while others prefer tall cover.
- Expand the window for prescribed burning.
    - Historically most fires were in the fall, which can be a more effective season for controlling woody species as energy reserves are above ground and not in the root system. Spring fires can prune and fertilize tree/shrub species, which may make woody species available and more palatable for browsing by deer and other wildlife species along with the nutritious grass regrowth. Management should include spring, late summer, and early fall fires to maximize diversity.
- Control native and invasive woody species invading remnant and restored prairie, primarily through mechanical removal, chemical treatment and prescribed burning. This will maintain the open landscapes required by prairie species, including some of Lac qui Parle WMA's more popular game species.

1.8 Reconstruct prairie areas to enhance wildlife habitat.

- Assess and target conversion on approximately 40 acres per year of degraded grassland areas, such as brome fields or native grass monocultures (e.g., early CRP plantings), to diverse plant communities.
- Develop a better understanding for the plant species, both native and invasive, that "explode" during the first three years after seeding and apply management (mowing/spraying) only in specific locations where needed.
    - Annual native plants provide cover, abundant and nutritious seeds, and a plant structure that is preferred by many bird species. These new seedings offer excellent dove and pheasant hunting opportunities. In the past, entire sites were sprayed and mowed in the first 2-3 years as DNR staff incorrectly believed that all plant competition needed to be removed to have a successful prairie reconstruction; WMA staff have since learned those efforts had the opposite effect. Moving forward, only apply spot spraying or mowing in very small areas with specific issues, such as extremely dense stands of thistles.
- Continue to work with the seed harvest consortium between the DNR, USFWS, and TNC to harvest native seeds for prairie restorations.
- Increase the number of volunteers available to hand-harvest seeds and number of species harvested, focusing on early-season species.

- Explore reactivating the Friends of Lac qui Parle group to help with volunteer recruitment.

1.9 Manage invasive and native tree and shrub encroachment to maintain open grassland habitat.

- Prioritize removal of invasive species, such as Siberian elm, Russian olive and European buckthorn, to maintain open prairie areas required by prairie wildlife species.
- Reduce woody encroachment through prescribed burning, especially in the fall, and mechanical control in prairies and shoreland areas to maintain unique habitats, such as open water-grassland transition zones along Marsh Lake and Lac qui Parle Lake.

1.10 Manage for plant diversity within grassland habitat communities to provide variety in habitat for all wildlife species dependent on grassland habitats, provide pollen and nectar resources for pollinators throughout the growing season, to provide increased numbers of insects, and to provide more suitable habitat for pheasant brood movement.

- Develop seed mixes that will provide for seasonal variation in blooming times from early spring through late fall. Target at least 3 species blooming per season.
- Leave areas that do not burn during prescribed burns as reserve areas within the burn unit to provide patchiness.
- Use a variety of grazing techniques, including patch-burn grazing and seeding-grazing, on 1,400 acres annually, and expand seasons of grazing through the end of October to produce a variety of habitat structure.
- Use haying to discourage woody encroachment and produce heterogeneity in grasslands.

Wetlands

1.11 Manage and restore a range of wetland types critical for wetland dependent wildlife species.

- Maintain all existing wetlands with a variety of management techniques including prescribed burning, grazing, woody removal, and others.
- Map areas suitable for potential wetland restorations in restored and remnant grasslands, with emphasis on identifying temporary and seasonal wetlands that have been overlooked in the past.
    - Restore identified wetlands through scrape outs, tile breaks, and ditch plugs.
- Manage cattails and reed canary grass in Chippewa Prairie every three years, and Maynard, Szabo, Ripple, and Nygard tracts every five years using techniques such as prescribed burning, herbicide treatment, mechanical removal, and grazing to ensure basins stay open for waterfowl and other wetland dependent species.
- Enhance plant diversity through seeding and woody removal on 10 acres per year.
- By 2027, evaluate the Soderberg, Williamson and the File Mile Creek Delta in Marsh Lake for seeding of wild rice. By 2030, seed those sites that are identified as suitable.

1.12 Manage moist soil units to produce high energy food for waterfowl and waterbirds and provide a secure staging location for migratory waterfowl.

- Encourage the germination and growth of crops or native annual plant species through soil disturbance practices on 130 acres.

- Actively manage water levels through flooding and draining to make food resources available to waterfowl and other waterbirds.
- Maintain associated moist soil unit management facilities, including the high-capacity pump, dikes, gates, and control structures.
- Plan moist soil unit management activities to adapt to changing seasonal temperatures and migration patterns.

1.13 Manage Lac qui Parle Lake to promote more clear water conditions and more diverse fish, wildlife, and vegetative communities.

- Support and encourage the USACE to update their Reservoir Operating Plan Evaluation plan for Lac qui Parle and Chippewa Diversion Dam to identify a range of potential alternative strategies for water level management that further enhance fish and wildlife populations, adapt to changing climate and improve shoreline stability. Work with the USACE to explore these alternatives and bring them into action.
- Coordinate with the USACE on project scoping initiatives across the wildlife area.

1.14 Manage Marsh Lake to maintain more clear water conditions to benefit diverse fish, wildlife, and vegetative communities.

- Continue to support adaptive management plan and active monitoring across agencies.
- Continue to meet at least annually with partners from the USACE, UMRWD and Big Stone NWR to discuss status of Marsh Lake and any plans for water level management.
- Utilize both mechanical control and chemical control to manage 300 to 600 acres of cattails by 2034.
- Follow existing plan for management triggers and allow Marsh Lake to function under a natural hydrologic regime.
- Reduce sediment transport, resuspension, and loading to improve water clarity and increase the availability of waterfowl and fish habitat through emergent and submerged aquatic vegetation enhancement.
- Utilize 1,500 acres or approximately 30% of the basin with emergent vegetation cover as a trigger point to consider doing a drawdown on Marsh Lake.
- Increase submerged vegetation coverage to 60% of open water areas.
- Maintain and improve aquatic habitat connectivity within the Pomme de Terre River and Lac qui Parle Lake.
- Explore the feasibility of improving connectivity between Marsh Lake and Upper Marsh Lake.
- Increase the diversity and abundance of native fish by maintaining the fishway and longitudinal connectivity.
- Reduce common carp abundance by maintaining a diverse and abundant native fish population to provide competition for resources.
- Coordinate with Wildlife Health, the nongame program in EWR, Marsh Lake rookery banding groups, and waterbird research to monitor waterbird populations, reproduction, and diseases on waterbird islands in Marsh Lake. Evaluate efficacy of current waterbird monitoring efforts (i.e., banding).

1.15 Improve the health and resiliency of rivers and streams.

- Coordinate with local partners on stream restoration and stabilization projects, specifically those identified in the applicable local comprehensive watershed management plan, also referred to as One Watershed One Plan. In addition, work with other organizations to improve surface water quality by reducing runoff and erosion and implementing best management practices in the contributing watersheds.
- Monitor stream stability in Five Mile Creek, Emily Creek, and the Pomme de Terre River to prioritize projects to reconnect incised streams and rivers to their floodplains by working with EWR clean water staff.
- Maintain and protect Five Mile Creek as a quality fish habitat and follow the DNR Fish Management Plan.
- When replacing culverts or other existing stream crossings, ensure culverts are replaced with appropriate sizes, slopes, and elevations to provide connectivity for fish and wildlife passage and support stream stability.
- Explore the potential for mussel reintroduction. Coordinate with the DNR's Center for Aquatic Mollusk Programs (CAMP) to rebuild populations of threatened or endangered native mussel species.

1.16 Identify and protect rare wetland features, including calcareous fens and springs.

- Support the installation of monitoring wells by EWR and install exclusion fencing where needed to protect monitoring wells from disturbance due to grazing.
- Continue to identify and map locations of these rare resources. Engage regional ecologists prior to management.

1.17 Manage impoundments at optimal water levels to provide quality habitat for waterfowl, shorebirds, and other wetland dependent species.

- Evaluate all 15 impoundments every year to determine if rehabilitation or removal is appropriate.
- Actively monitor and manage water levels to achieve clear water and abundant submersed vegetation critical for waterfowl use. During active management check weekly at a minimum to monitor water levels and to keep intakes free of debris.
- Use winter or summer drawdowns to eliminate undesirable fish species (e.g., carp, fathead minnows) to maximize the productivity of these wetlands for wildlife.

Forests

1.18 Maintain well established floodplain forests on the landscape.

- Align management strategies with climate smart goals focusing on adaptive management, diversification, and matching tree plantings to specific site conditions.
- Identify opportunities where streambank stabilization is appropriate and can be accomplished by tree plantings or toe-wood installations.
- Identify and treat areas within floodplain forests that need invasive species management.
- Monitor for EAB in ash trees, report to EDDMapS if discovered, and act where appropriate.

1.19 Maintain and enhance oak dominated forests (i.e., mesic hardwood and fire dependent).

- Manage 30 acres of oak stands to maintain and/or expand this forest type as either an oak woodland or oak savanna plant community (based on soils), particularly near the Pomme de Terre River corridor. Complete an inventory with local DNR Forester.
- Maintain the health of these stands via both prescribed fire and with timber stand management to encourage regrowth.
- Control and prevent invasive species in oak dominated forest near the Pomme de Terre River and at the base of lower Lac qui Parle Lake.

1.20 Manage woodlots and farm groves for wildlife species including white-tailed deer, squirrels, and rabbits.

- Explore opportunities for planting native shrubs around the perimeter of existing woodlots/farm groves for resident wildlife and to reduce invasive species encroachment via plant competition.
- Plant native tree species, such as bur oak, silver maple, and basswood, that can withstand changing climate conditions and emerging tree diseases and pests, such as EAB, and provide wildlife benefits.
- Conduct forest stand improvement through fuel wood sales and/or selective thinning to encourage regeneration and browse.
- Where feasible (e.g., on sites with new introductions), use mechanical and chemical control methods to reduce buckthorn.
- Monitor for EAB and educate WMA staff on how to identify EAB outbreaks.

1.21 Manage woody cover plantings to provide winter shelter for resident wildlife species.

- By 2034, evaluate the effectiveness and condition of all woody cover plantings considering the surrounding landscape and habitat.
- Target new shrub plantings or direct hardwood seedings near core deer wintering areas adjacent to or in floodplain forest on the wildlife area.
- Target regeneration of 40 acres per year of native shrub communities, including plum, willow, and sumac, through dormant season mowing to regenerate browse for deer, maintain cover for pheasants, and provide structure for reptiles, songbirds, small mammals, and insects.
- Regenerate planted shrub species through mechanical thinning and prescribed burning.
- Plant native trees and shrubs to increase diversity where ecologically appropriate.

Agricultural Lands

1.22 Evaluate and assess food plots toward meeting intended purpose: to increase the carrying capacity of resident wildlife, to provide a supplemental food source for migratory waterfowl, to keep wildlife in or near secure winter cover, to reduce animal depredations on adjacent private lands, and to provide outdoor recreation and wildlife viewing.

- Continue to monitor the effectiveness through field checks of wildlife use and adjust management and/or location of food plots as appropriate.
- Continue to plant diversified food plots in key deer and pheasant wintering areas that are difficult to reach by cooperative farmers.

- Continue to diversify crop species planted by DNR staff or cooperators – forage and grain sorghum, buckwheat, small grains, alfalfa, pollinator and/or brood mixes, and cover crops inter-seeded into traditional corn and bean rotations as feasible.
- Select new cooperators that demonstrate a genuine interest in planting alternative crop types and interest in cover crops, small grains and alfalfa.
- Actively target small grains in traditional locations very popular with dove hunters (popular within the Hmong and Hispanic communities) and target same crop in areas popular or conducive for September goose hunting outside the State Game Refuge.
- By 2034, hold two workshops on alternative farming practices that provide soil health benefits by minimizing spring tillage, keeping the soil covered, use of cover crops and keeping living roots in the soil. Present on current management practices, soil health monitoring, and benefits to farmers.
- Enroll all WMA food plots in the Minnesota Agricultural Water Quality Certification Program by 2025; work with co-op farmers to enroll all agricultural lands in the program by 2034.
- Focus on soil heath and regenerative agricultural on all cropped lands by implementing established soil health principles.
- Every three years, monitor soil health on four co-operative farming plots and two WMA food plots by using phospholipid fatty acid (PLFA) analysis and Haney soil tests to ensure productivity of food plots and maintenance of healthy soils.

Goal 2: Enhance public user facilities to deliver outdoor recreation opportunities to promote increased usage, to welcome new users, to maintain traditional users, and to increase user satisfaction.

2.1 Enhance user facilities to support diverse quality hunting and trapping opportunities.

- Partner with accessibility groups (e.g., Capable Partners) to prioritize accessibility projects; submit project proposals and engineering requisitions based on recommendations. By 2027, construct two WMA parking lots to ADA standards and re-design half of the deer blinds on Rosemoen Island to full ADA specifications.
- Promote Adopt-A-WMA Program and enroll organizations or volunteers in each of the four counties that encompass the wildlife area by 2025. Build and strengthen partnerships. Focus on facility, habitat, and boundary maintenance and improvement projects (e.g., parking lot mowing, posting of unit boundaries, old fence removal).
- Engage with the Master Naturalist Program and DNR Volunteer Programs annually to provide and identify opportunities for education and resource enhancement opportunities. Potential opportunities include vegetation and wildlife surveys, prairie seed harvest and planting, water quality monitoring, nest structure placement and maintenance, habitat enhancement and facility maintenance.
- Encourage township and county road authorities to submit projects for State Park Road Account consideration for the numerous roads that directly connect to the wildlife area and lakes; build partnerships with local road authorities on opportunities.
- Work with engineering staff as the Bahl and Howard Tract Road improvement projects progress through the Design and Construction Phase.

- Coordinate with PAT to improve and modernize Marsh Lake water access sites at Correll, Killen, Peterson, and Cabin Site landings. Work with PAT to formalize maintenance agreements for appropriate sites.
- Mow access trails, as necessary, through cattail stands in front of the major boat landings on Marsh Lake to reach open water to support waterfowl hunting and traditional boat use where site and seasonal conditions allow.
- Improve parking opportunities at the Louisburg Grade Bridge and West Pool, Marsh Lake.
- Partner with Chippewa County to explore opportunities to improve Chippewa County Road 33.
- Annually prioritize road maintenance projects on the wildlife area via Game and Fish Fund dollars set aside for this work; submit project proposals for road projects requiring engineering and construction management.
- By 2027, work with FAW Information Technology staff to provide refuge and sanctuary boundaries as publicly available layers and maps, which is a critical step toward making data available for popular commercial hunting applications.
- Review county private land parcel data for accuracy regarding state boundaries and ownership; work with county assessors when discrepancies are found. This layer also informs commercial hunting apps.
- Install signage around public land boundaries in the State Game Refuge by 2025.

2.2 Provide quality fishing opportunities.

- Coordinate with PAT and Fisheries to develop a priority list of public water access sites to modernize on Lac qui Parle Lake. Build project list into annual work planning. Work with PAT to formalize maintenance agreements for appropriate sites.
- Work in partnership with local community leaders and state agencies to improve parking opportunities and accessible fishing opportunities along State Highway 119 near the Twin Bridges.
- Partner with Fisheries on exploring shore fishing opportunities on the wildlife area and at PAT administered water access sites. Work with PAT to formalize maintenance agreements for appropriate sites.
- Maintain access and encourage users, through informational signage, to protect and conserve the resources at Lac qui Parle WMA to provide quality ice fishing experiences. Collaborate with Lac qui Parle Lake Association on dumpster and portable toilet placement near lake accesses.

2.3 Enhance quality birding and wildlife observation opportunities.

- Provide a printable bird checklist for Lac qui Parle WMA by April 2025.
- Consider wildlife viewing values when improving parking opportunities, overlooks, and accesses. Explore opportunities for increased viewing areas on the south and west sides of Lac qui Parle Lake.
- Maintain existing and explore opportunities for additional wildlife viewing sites, especially in grasslands, prairies, and wetlands.
- Develop a digital geo-referenced maps and other materials for auto tour birding routes to promote self-guided birding opportunities by April 2026.

- At least twice a year, update wildlife area information available on publicly accessible websites; use DNR social media twice a year to promote outdoor events and birding opportunities.
- Coordinate with Salt Lake WMA birding weekend to promote opportunities at Lac qui Parle WMA.

2.4 Promote other compatible recreational opportunities.

- Engage with PAT, USACE and local community leaders as WMA staff reevaluate the two bike trail alternatives initially outlined to reach the Marsh Lake day-use area. Evaluation to include the opportunities, challenges and administrative steps required to support a selected corridor.
- Submit engineering requisition to bring the trail spur to the state record cottonwood tree to modern trail standards. Incorporate signage and interpretation. Coordinate with PAT, FOR, and other partners.
- Work with PAT to formalize and modernize the trail connecting the Upper Campground at Lac qui Parle State Park to the office/education center shared by WMA and PAT staff. This concept should also detail future desired habitat conditions and interpretation along the trail segment.
- Raise awareness and work with DNR outreach staff to promote volunteer opportunities and dispersed recreational opportunities at Lac qui Parle WMA, including hiking, snowshoeing, cross country skiing, art and photography along with plant phenology.
- Continue to partner with the MN Master Naturalist program once a year to promote learning about prairie environments, plants and animals with educators; continue to host and encourage "Bioblitz" events on the wildlife area every two to three years.
- Work with Tribal partners and PAT to develop environmental education, interpretation, cultural and natural history displays and programs.
- Promote dark sky experiences by identifying suitable locations and informing recreational users through the Lac qui Parle WMA website.
- Explore the concept of sustainable, non-motorized natural surface trails utilizing road right of way, federal lands, and Lac qui Parle WMA/State Park lands by building on partnerships with FAW, PAT, Minnesota Historical Society, USACE and local government units to provide connectivity to key focal points in the area such as: Upper Campground, Lac qui Parle Mission, natural areas, scenic viewsheds, Churchill Dam, and Lac qui Parle Headquarters.

Implementation Process

Operational Overview

The management objectives and strategies laid out in this plan describe the "what" and "why" for management intended to occur on Lac qui Parle WMA in the next 10 years, but specific operations at Lac qui Parle WMA are dependent on several factors, including weather conditions, funding, and changing priorities. To allow flexibility in the operational plan, the "who," "when," and "how" of specific work activities will be determined annually by unit staff in conjunction with division-wide annual work planning. Table 10 shows an overview of ongoing annual work activities that are performed at Lac qui Parle WMA in a typical year. The table reflects the month(s) when the workload for each activity is the highest. Most activities also occur outside of the listed months.

Table 10. Overview of ongoing annual work activities performed at Lac qui Parle WMA in a typical year.

Activity/Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rx burn plans	Yes	Yes	Yes									Yes
Grazing agreement administration				Yes	Yes	Yes	Yes	Yes	Yes			
Food plot prep and planting			Yes	Yes	Yes	Yes	Yes	Yes				
Coop farming agreements		Yes	Yes									
Rx burn equipment prep			Yes	Yes	Yes				Yes	Yes		
Rx burning			Yes	Yes	Yes				Yes	Yes		
Road repair/maintenance					Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Parking lot construction						Yes	Yes	Yes	Yes			
WCS maintenance/monitoring			Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Mow dikes						Yes	Yes	Yes	Yes			
Repair dikes					Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Site clean-up/fence removal				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Native prairie reconstructions	Yes	Yes	Yes							Yes	Yes	Yes
New prairie seeding mowing						Yes	Yes	Yes	Yes	Yes		
Native seed harvest								Yes	Yes	Yes		
Mowing trails, roads, & parking lots							Yes	Yes	Yes	Yes		
Mow firebreaks	Yes	Yes	Yes	Yes							Yes	Yes
Cattail spraying							Yes	Yes	Yes			
Invasive species control					Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Boundary posting	Yes	Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Prairie grouse surveys			Yes	Yes								
Waterfowl surveys									Yes	Yes	Yes	Yes
Roadside wildlife survey								Yes				
Predator scent post survey									Yes			
CWD check station											Yes	
Deer season management	Yes				Yes						Yes	Yes
Wood duck house maintenance	Yes	Yes	Yes									Yes
Tree removal projects	Yes	Yes						Yes	Yes	Yes	Yes	Yes
Accomplishment reporting							Yes					Yes
Physical inventory	Yes											Yes
Furbearer registration	Yes										Yes	Yes

Activity/Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rosemoen island deer hunt									Yes	Yes		
Land acquisition	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Professional training/development	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Headquarters operation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Public information/outreach	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Inter/Intra agency tech guidance	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Animal disease management						Yes	Yes	Yes		Yes	Yes	Yes
Annual review of WMA plan	Yes											

Adaptive Management

Adaptive management incorporates new or untried knowledge, techniques, or policy decisions into previously existing management actions. Many of these changes cannot be planned, but some can be anticipated. Adaptive management for Lac qui Parle WMA will include:

- Continuously review research and monitoring results and build off the results to improve habitat restoration and management techniques, maximize wildlife benefit, and increase user satisfaction.
- Collaborate with other divisions and partners to continue, improve, and expand research and monitoring projects.
- Monitor advances in climate change predictions and mitigation and implement management directions accordingly. Examples of sources of climate change and habitat management information might come from Northern Institute of Applied Climate Science (NIACS), Minnesota Forest Resources Council (MFRC) and various state universities.
- Modify management activities if new species are listed as state or federally threatened or endangered.

The management objectives and strategies set forth in this document will be reviewed annually by regional and area staff and adjusted, as necessary. This annual review will take place in January. A revision of the master plan is recommended after 10 years.

Research and Monitoring

Current and future research and monitoring projects at Lac qui Parle WMA involve intra-agency cooperation between WMA staff and other DNR staff including, but not limited to, FAW Research program staff, FAW Populations & Regulations program staff, and EWR Nongame program staff. The DNR also collaborates with various other governmental organizations, academic institutions, and NGO partners.

Current Research and Monitoring

Wildlife Monitoring

- Canada goose banding
- Mourning dove banding
- August roadside counts
- Predator scent post survey
- Prairie grouse lek surveys in cooperation with the Minnesota Sharp-tailed Grouse Society & Big Stone NWR
- Investigate CWD reports
- Monitor for waterfowl disease
- Nesting islands on Marsh Lake monitoring
- Weekly waterfowl counts/migration reports in fall
- Fish population monitoring in Lac qui Parle River and Pomme de Terre River
- Mussel population monitoring in Pomme de Terre River
- Macroinvertebrate monitoring in Pomme de Terre River
- Long-term prairie bird monitoring (since 2008) at Chippewa Prairie through the Sustaining Prairies in a Changing Environment project
- Muskrat house counts on Marsh Lake.

Invasive Species Monitoring

- Purple loosestrife monitoring
- Queen Anne's lace monitoring
- Siberian elm monitoring
- Buckthorn monitoring
- Wild parsnip monitoring

Public Use Monitoring

- Opening day bag check surveys
- Furbearer harvest reports
- Trapping permits
- Other special use permits
- Opening day car counts
- Fishing tournament permits
- Monitor condition of facilities

Vegetation/Habitat Monitoring

- Chippewa Prairie monitoring

- Marsh Lake habitat monitoring
- Shallow lake survey on Marsh Lake

Hydrological Monitoring

- Hydrological monitoring on the Pomme de Terre River and rock ramp fishway out of Marsh Lake
- Water surface and flow monitoring on Lac qui Parle Lake and Marsh Lake

Research

- Chippewa Prairie patch burning/grazing research
- Chippewa Prairie bird and invertebrate sampling

Potential Research and Monitoring Projects

- More use of photo points and quantitative sampling around Lac qui Parle WMA that could be tied to WAHMA to assist with monitoring habitat conditions and changes over time.
- Fire effects from prescribed burning – are prescribed burn unit plans meeting objectives?
- Soil health conditions within agricultural areas.
- Increase monitoring of water quality on Marsh Lake (i.e., more frequent Secchi disk readings).
- Evaluate and monitor prairie reconstructions, including wildlife responses.
- Evaluate and monitor success of mowing shrubs for deer browse.
- Vegetation surveys of impoundments.
- Monitor how Lac qui Parle WMA use by the public is changing over time.
- Monitor technological changes associated with Lac qui Parle WMA public use.
- Evaluate accessibility of public use facilities.
- Identify and survey cultural/historic sites, working with DNR Tribal Relations staff, archeologists and local Dakota partners.
- Explore potential feasibility study for bison reintroduction.
- Research and evaluate potential for scattered shrub plantings or seedings interspersed in grassland habitat.
- Coordinate with EWR Nongame program staff to monitor waterbird populations on islands in Marsh Lake.

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Appendix A. Lac qui Parle WMA planning team members

Name	Division	Position
Kelly Straka	FAW	Wildlife Section Manager
Dave Trauba	FAW	Regional Wildlife Manager
Kelly Wilder	FAW	Policy and Planning Supervisor
Laurinda Brown	FAW	Strategic Planning Director
Greta Brandt	FAW	Policy and Planning Coordinator
Brooke Hacker	OSD	Regional Planner
Walt Gessler	FAW	Wildlife Area Manager
Nick Trauba	FAW	Assistant Wildlife Area Manager
Jake Arvidson	FAW	Assistant Wildlife Area Manager
Greg Hoch	FAW	Prairie Habitat Supervisor
Todd Call	FAW	Wildlife Lake Specialist
Chris Domeier	FAW	Area Fisheries Supervisor
Dustin Graham	EWR	Plant Ecologist
Michael Worland	EWR	Regional Nongame Wildlife Specialist
Ethan Jenzen	EWR	North District Manager
Terri Dinesen	PAT	Park Manager
Benjamin Schaefer	LAM	Southern Region Operations Coordinator
Mason Bulthuis	ENF	Conservation Officer
Brian Schwingle	FOR	Forest Health Program Coordinator

Appendix B. Summary of public responses received during early project scoping

The DNR conducted a public scoping questionnaire on the Lac qui Parle WMA from October 9 to November 8, 2023. The questionnaire was advertised via media, the DNR homepage, and printed flyers. It was voluntary, informal, and not randomized. There were 358 respondents.

Findings emerging from the survey included the following:

- 88% of respondents had used Lac qui Parle WMA, and 68% had used it within the past 2 years
- 86% of respondents who had used Lac qui Parle WMA participated in hunting activities at the unit
    - Pheasant hunting and waterfowl hunting were the most popular hunting activities reported
- 3% of respondents who had used Lac qui Parle WMA participated in trapping activities at the unit
    - The December-February trapping period was the most commonly reported period
    - 78% of respondents who trapped at Lac qui Parle WMA reported trapping 10 or more days per year
    - Muskrat, beaver, raccoon, and mink were the most common species reported to be trapped
- 54% of respondents who had used Lac qui Parle WMA participated in fishing activities at the unit
- Other popular activities enjoyed at Lac qui Parle WMA:
    - Enjoying solitude/relaxing in the outdoors
    - Viewing or photographing wildlife and/or nature
    - Boating, canoeing, and/or kayaking
    - Bird watching
    - Hiking
    - Deer shed hunting
    - Foraging
    - Outdoor cultural and/or spiritual activities
    - Skiing/snowshoeing
    - Naturalist program/citizen science
- 65% of respondents who had used Lac qui Parle WMA described the overall quality of their visit(s) as “good” or “very good”
- When asked what they liked most about their visit(s) to Lac qui Parle WMA, responses included:
    - Wildlife diversity
    - Wildlife abundance
    - Former goose hunting
    - Waterfowl hunting
    - Pheasant hunting
    - Deer hunting
    - Fishing
    - Bird watching
    - Recreation

    - Marsh Lake improvement
    - Natural beauty
    - Location
    - Size
    - Solitude
    - Habitat
    - Prairie
    - Access
- When asked what could be done to improve the quality of their visits to Lac qui Parle WMA, respondents mentioned the following themes:
    - Increase tree coverage
    - Improve access to Marsh Lake
    - Stop grazing/haying
    - More trails/fewer trails
    - Improved maps/signage
    - Changed or simplified hunting and fishing regulations
    - Marking/removal of hazards
    - Create more small wetlands
    - Change refuge boundaries/eliminate controlled hunting zone
    - Increase enforcement
    - Increase/maintain/decrease food plots
    - Invasive species management
    - Improve shore angling opportunities
    - Increase game abundance
    - Ban trapping
    - Allow camping
    - Allow motorized boat access
    - Add naturalist programs
    - Minimize use by guides
- 82% of respondents reported they were “likely” or “very likely” to use Lac qui Parle WMA in the next year
- 5% of respondents reported they were “very unlikely” to use Lac qui Parle WMA in the next year, with overcrowding, distance, low game abundance, poor access, and other priorities as the main reasons
- Respondents ranked wildlife health, game species abundance, wetland development and management, water quality and quantity, and fish health as the top 5 priorities for natural resource management at Lac qui Parle WMA
- Respondents ranked bison reintroduction, ADA accessible hunting opportunities, and climate change resilience as the bottom 3 priorities for natural resource management at Lac qui Parle WMA

Appendix C. Summary of responses received during public review

The DNR published the draft Lac qui Parle WMA plan on April 23, 2024 for public comment review. The public comment period on the draft Lac qui Parle WMA plan was open from April 23 until June 2, 2024. In addition, the DNR held two meetings to get feedback on the draft plan. One meeting was in-person on May 8, 2024 and the other meeting was held online on May 9, 2024. The DNR received 135 comments from one group and 21 individuals. Additionally, the DNR received 11 comments from three other government agencies (Chippewa County Highway Department, USACE, and USFWS).

The following tables provides the comments received during the public comment period from the public and from other government agencies, and the responses provided to these comments.

Comments received from the public during the public review period.

Comment Received	Resolution Category	Response Provided
Commenter 1		
I saw nothing in the executive summary about allowing cattle grazing on WMA land which I have observed happening at a much higher rate in recent years. If it isn't part of the executive summary as an accepted practice for the benefits to wildlife and the land why is being used?	No Change Made	Thank you for the comment. Grazing is mentioned on page 2 of the Executive Summary as a habitat management technique. Additional information about the use of grazing in Lac qui Parle WMA can be found in the Desired Conditions section on habitat (Goal 1).
In the long range goals section the following are listed as goals: For Lac qui Parle WMA, the overarching long-range goals outlined in this plan are: To maintain or enhance wildlife populations, habitat, and biodiversity. To maintain or increase hunting, fishing, trapping, and other compatible outdoor recreational opportunities I see nothing in the long range plan about providing grazing opportunities to ranchers that absolutely abuse the land that they lease by letting hearts over graze the land by allowing water tanks to be placed on WMA's which defeats the idea of selected grazing. My guess this is a practice the area managers are using to raise funds for their budgets not really to benefit wildlife or the land.	Change Made	Thank you for your comment. Grazing is mentioned several times throughout the plan as a tool for invasive species management and as a mechanism for creating habitat heterogeneity. We added additional details about the reasons why Lac qui Parle WMA uses grazing to manage grassland habitat in the Desired Conditions section on habitat (Goal 1).
There are many strategic land acquisitions that could be made in the Pomme de Terre watershed that would benefit Lac qui Parle watershed greatly.	Change Made	Thank you for the comment. Proposed land acquisitions are reviewed through the Strategic Land Asset Management process.

Comment Received	Resolution Category	Response Provided
		We added a link to more information about the process in the Existing Conditions section.
I agree with the statements: Soil types in Lac qui Parle WMA are generally delineated by topography. Poorly developed, highly organic mineral soils were formed in marsh and river flat areas, and saline soils were formed where high water tables or evaporated shallow water concentrated mineral salts as the soil formed. Sediment depths range from 0-300 feet. The escarpment above the floodplain has drought-prone soils that are easily eroded. As a long term user of Lac qui Parle, I have observed how drought prone this area can be.	No Change Made	Thank you for the comment.
I hope that long term management of Lac qui Parle maintains these priorities! WMAs should not be used as money makers or ways to balance area managers budgets. I agree with users fees to provide for the maintenance and improvements required to create outstanding outdoor recreational opportunities, I do not agree with the area being used to benefit farmers and ranchers greed!	Change Made	Thank you for the comment. Grazing is a well-established grassland management technique that provides unique habitat benefits. We added additional details about the reasons why Lac qui Parle WMA uses grazing to manage grassland habitat in Goal 1 of the Desired Conditions section.
I strongly do not agree with the grazing timelines listed in the implementation section. Allowing grazing in the April, May and June timeframes is in direct conflict with nesting of birds of all types and should not be allowed. If it must be used, it should only be done outside of the early summer timelines of April, May and early June. Those prairie acres of Lac qui Parle cannot produce consistent upland and song bird production when there are cattle trampling the required habitat.	Change Made	Thank you for the comment. The grazing timeline listed in the "Implementation Process" section reflects when WMA staff are spending the most time on processing and administering grazing agreements, not when grazing is occurring on the WMA. We modified the wording to better reflect the work activities occurring during those months.
The farming/ranching practices allowed on WMA's and other State lands must be done to benefit wildlife, including pheasants, other upland birds and song birds not to be used as a fiscal management tool!	Change Made	Thank you for the comment. Grazing is a well-established grassland management technique that provides unique habitat benefits. We added additional details about the reasons why Lac qui Parle WMA uses grazing to

Comment Received	Resolution Category	Response Provided
		manage grassland habitat in Goal 1 of the Desired Condition section.
I would have scored this area as very satisfied if I saw actual implementation in previous years.	No Change Made	Thank you for the comment.
Commenter 2		
Encourage oak savanna.	No Change Made	Thank you for the comment. The plan addresses expanding oak savanna habitat in the Desired Conditions section on forests.
plant sorghum in food plots. Test perennial crops in food plots.	No Change Made	Thank you for the comment. The plan addresses including sorghum and perennials in food plots in the Desired Conditions section on agriculture.
Emphasize management of marsh lake with more frequent but less invasive drawdowns. I read management of the Soderberg marshes place wave barriers in both lakes	No Change Made	Thank you for the comment. The plan proposes management of Marsh Lake under a more natural flow regime in the Desired Conditions section. The plan also proposes coordinating with the USACE on future water control structures.
I'm reading rec use is a two edged sword. Maintaining quality of the experience is also critical. Wildlife habitat should have priority over fishing and other rec	No Change Made	Thank you for the comment. Minnesota statutes guide WMA management priorities. Those priorities are reflected in the plan goals, objectives, and strategies.
Restoring wild rice should be a priority. The Mn River valley is part of its historic range	Change Made	Thank you for the comment. We updated the text to include evaluation of sites for potential wild rice seeding in the Desired Conditions section on habitat (Goal 1).
Commenter 3		
I not sure it's very clear in the Goal 2 portion, but I just find the existing signage to be confusing for pheasant hunting and if you in the proper place/spot to be able to hunt? I don't see why hunting pheasants isn't allowed before December on the Refuge portion. Isn't	No Change Made	Thank you for the comment. The late-season pheasant hunt is popular with hunters and provides a unique opportunity in the area. The plan discusses improving

Comment Received	Resolution Category	Response Provided
it meant more for waterfowl? Or if I'm wrong, then that's what is confusing.		signage on Lac qui Parle WMA in the Desired Conditions section on user facilities (Goal 2).
In previous section table 3 showed "Cropland and non-vegetated areas" as 8% and table 5 "Agricultural land" as 10%. This seems to be high percentage of area.	No Change Made	Thank you for the comment. The percentages are estimates and may not account for recent habitat conversions (e.g., restoration of agricultural land to prairie or wetland).
My experience of pheasant hunting seems like a lot of the accessible hunting area is in agriculture fields (food plots). I have noticed a lot of standing water and/or drowned out areas. This condition is neither habitat nor food. I think there should be a desire to restore some of these areas (hydric soils) that are in Ag production to wetlands with upland habitat. This would help to restore the hydrology (water storage), provide needed wildlife and pollinator habitat, and improve water quality.	No Change Made	Thank you for the comment. The plan discusses targeting conversion of degraded areas to grassland and wetland habitat in the Desired Conditions section on habitat (Goal 1).
Commenter 4		
All these seemed good and was definitely some interesting information at hand there. Would there ever be a system to control the water there?	No Change Made	Thank you for your comment. Water level management requires coordination with partners from the USACE, UMRWD and Big Stone NWR. The plan discusses strategies for managing water levels in the Desired Conditions section.
All these things are tough to fight if you even can. Everything changes and there isn't anything you can do about it when it comes to nature.	No Change Made	Thank you for the comment.
I like it keep it up.	No Change Made	Thank you for the comment.
I think it's good to expand the chances for everyone to get out and experience and explore the area. I'd like to see more area for hunting.	Change Made	Thank you for the comment. Proposed land acquisitions are reviewed through the Strategic Land Asset Management process. We added a link to more information about the process in the Existing Conditions section.

Comment Received	Resolution Category	Response Provided
More parking around the area and more handicap spots.	No Change Made	Thank you for the comment. The plan addresses improving parking opportunities and parking lot accessibility in the Desired Conditions section on user facilities (Goal 2).
More public access.	No Change Made	Thank you for the comment. The plan addresses improving public access in the Desired Conditions section on user facilities (Goal 2).
More public use for hunting the better. Open up add more public land around the area.	Change Made	Thank you for the comment. Proposed land acquisitions are reviewed through the Strategic Land Asset Management process. We added a link to more information about the process in the Existing Conditions section.
Commenter 5		
some of the access roads and trails need improvement.	No Change Made	Thank you for the comment. The plan addresses improving public access in the Desired Conditions section on user facilities (Goal 2).
The Marsh Lake Dam project is a welcome addition to the overall water quality of Marsh Lake and the Marsh Lake watershed.	No Change Made	Thank you for the comment.
Commenter 6		
This area is a crown jewel in West Central Minnesota for all the reasons mentioned in your draft plan. And with the recent improvements made to the Marsh Lake control structure I believe there are great things to come yet from the improved water quality on Marsh. We are looking forward to improved waterfowl hunting on the lake, as well as trapping activity for muskrats and other furbearers. I cannot find any fault in the draft plan as written. I am thankful for your reaching out to the public for their comments.	No Change Made	Thank you for the comment.
Commenter 7		
look at raising road CR 33 down to the boat landing	Change Made	Thank you for the comment. We have added "Partner with

Comment Received	Resolution Category	Response Provided
		Chippewa County to explore opportunities to improve Chippewa County Road 33" as a strategy in the Desired Conditions section.
Commenter 8		
Seems like the park could be mentioned as an important socioeconomic factor	Change Made	Thank you for the comment. We added a reference to the state park in the Existing Conditions section on socioeconomic context.
2010 data sounds kinda old	Change Made	Thank you for the comment. We have updated the Existing Conditions section on climate to include data through 2023.
old data	Change Made	Thank you for the comment. We have updated the Existing Conditions section on climate to include data through 2023.
Figure 9 A larger more complete watershed map might help paint the picture	Change Made	Thank you for the comment. We have added an additional figure that shows the full extent of the four watersheds that contribute to Lac qui Parle WMA.
A 1/4th crop share is more common on CFA's isn't it?	No Change Made	Thank you for the question. A one-third share is more common on Lac qui Parle due to additional input costs for producers on planting cover crops.
WMA plants crops: If you are going to go through the effort to plant, do it so you would expect a reasonable yield. Use soil tests, fertilizer and herbicides when appropriate. FYI- Dual herbicide is compatible with corn, soybeans and "safened" grain sorghum	Change Made	Thank you for the comment. The plan proposes using soil tests on WMA food plots in the Desired Conditions section on habitat (Goal 1). We have added additional information in Existing Conditions about current soil test, fertilizer, and herbicide use on Lac qui Parle WMA.
Mature cottonwoods deserve a place in turkey biology	Change Made	Thank you for the comment. We have added additional detail on mature cottonwoods to the

Comment Received	Resolution Category	Response Provided
		Existing Conditions section on wild turkey.
No estimate of current use of blinds for the controlled hunt	No Change Made	Thank you for the comment. The plan details in the Existing Conditions section that the hunting blinds on Lac qui Parle WMA are available on a first-come, first-served basis during the controlled hunt. Their use is not tracked by WMA staff.
Oxeye daisy is already here	Change Made	Thank you for the comment. We revised the text to reflect that oxeye daisy has been confirmed on the WMA.
Are people really migrating to rural areas near LQP?	Change Made	Thank you for the comment. We have updated the text to reflect current migration trends more accurately.
Use much larger exclosures to monitor Chippewa Prairie grazing effects. If in fact it can be proven/shown that grazing is improving overall prairie diversity, then the public needs to be offered the facts. A whole lot of skepticism exists about fences and grazing	Change Made	Thank you for the comment. The results of the Chippewa Prairie grazing research are currently in-press. We modified the text to add clarification about the status of the research results.
More intense scientific monitoring of grazing practices	Change Made	Thank you for the comment. The results of the Chippewa Prairie grazing research are currently in-press. We modified the text to add clarification about the status of the research results.
Woody cover suggestions run contrary to current management philosophies. What is changing?	No Change Made	Thank you for the comment. The strategies outlined in the Desired Conditions section are aligned with current best management practices.
Agree, take a serious look at what species are going to use the food plots during the winter	Change Made	Thank you for the comment. We revised the text to include field checks of wildlife use.

Comment Received	Resolution Category	Response Provided
Small grains for doves would likely result in increased hunter participation. Some roosting habitat needed small grain would help	No Change Made	Thank you for the comment.
How do small grains effect September goose hunting under existing conditions? September goose hunting on these small grain fields planted adjacent to or around the goose blinds or simply as attractants for September gatherings	Change Made	Thank you for the comment. We modified the text to clarify that small grains will be targeted in areas conducive for goose hunting outside of the State Game Refuge.
Time to reclaim state owned land currently used by private individuals	No Change Made	Thank you for the comment. The plan addresses reviewing county private land parcel data for accuracy regarding state boundaries and ownership in the Desired Conditions section on user facilities.
Bird lists. Already have one in the appendix. Get it printed	Change Made	Thank you for the comment. We have updated the goal to clarify that the bird list will be available in a printable format.
Improve viewing area for the south end of the lake where the action is. Fort Renville and adjacent sand bar. West side of the lake at overlook sites.	Change Made	Thank you for the comment. The goals have been revised.
More time should be recognized for work time on CFA's throughout the year. Native prairie restorations need time in May to July. Wood duck box maintenance in April.	No Change Made	Thank you for the comment. The overview of work activities table reflects the month(s) when the workload for each activity is the highest. Many listed activities, including CFA administration and native prairie restorations, also occur outside of the listed months. Native prairie restoration maintenance occurs throughout the summer; it is listed as "New prairie seeding mowing" in the table. Wood duck house maintenance is typically not performed significantly in April due to unsafe ice conditions.
This plan completely ignores any reference to Canada goose hunting or lack there of, the removal of the controlled hunting zone which is just another layer of	No Change Made	Thank you for the comment. The plan includes evaluating and assessing the efficacy of food plots

Comment Received	Resolution Category	Response Provided
regulation confusion, the large number of cropland acres totally wasted on the thought that geese will someday return. These acres could actually be used for habitat for wildlife and water quality issues referred to throughout this plan		in the Desired Conditions section on habitat (Goal 1).
Commenter 9		
Cattails in Marsh Lake are currently over 30%. Do you have long-range plans for management?	Change Made	Thank you for the comment. We have revised the text to clarify that 30% emergent vegetation cover will be used as a trigger point for management.
Commenter 10		
Are there aquatic weeds left in Lac qui Parle Lake? Are you going to work to restore any weeds there?	No Change Made	Thank you for the question. The presence of aquatic vegetation in Lac qui Parle Lake is dependent on weather and water conditions. Aquatic vegetation restoration in Lac qui Parle Lake is a potential outcome of working with the USACE on updating the Reservoir Operating Plan Evaluation, as detailed in Goal 1 of the Desired Conditions section.
Commenter 11		
Has there ever been wild rice found here?	Change Made	Thank you for the question. Wild rice is currently not known to occur in Lac qui Parle WMA. We added a new strategy in Desired Conditions for evaluating potential wild rice restoration sites.
Commenter 12		
People from other parts of the state take these courses and are very excited to discover it. We need to provide better opportunities for people to learn about the area. How do we engage new volunteers? Happy with the engagement objectives but encourage DNR to think big and engage people outside the local area.	Change Made	Thank you for the comment. We have included an additional strategy for engaging new volunteers.
Wish the invasive species section was more robust.	Change Made	Thank you for the comment. We have provided a link to the DNR

Comment Received	Resolution Category	Response Provided
		invasive species page for more information.
Commenter 13		
Have done a great job with hunting opportunities. Would like to address tree coverage. Are there plans for increasing wood cover? Local opinion is that trees were eliminated to provide for prairie chicken habitat.	Change Made	Thank you for the comment. We have added additional details about where and why tree removal occurs on Lac qui Parle WMA. Strategies for forest management can be found in Goal 1 within the Desired Conditions section.
Commenter 14		
Is elm considered invasive?	No Change Made	Thank you for the question. American elm is native, Siberian elm is invasive.
Commenter 15		
Looking for hunters to report sharp-tailed grouse. Were many reported?	No Change Made	Thank you for the question. Around 17 sharp-tailed grouse were reported last year.
Aren't sharp-tailed grouse more native to the area the prairie chickens? Shouldn't we be focusing more on them.	No Change Made	Thank you for the comment. There are currently no known active sharp-tailed grouse leks in Lac qui Parle WMA. Lac qui Parle WMA will continue to monitor for sharp-tailed grouse and will manage grassland habitat to benefit all prairie-obligate species, including sharp-tailed grouse should they arrive.
Commenter 16		
Is this considered Hungarian partridge habitat?	No Change Made	Thank you for the comment. They are not currently prevalent on Lac qui Parle WMA.
Commenter 17		
Very pleased to see the remnant prairie and prairie reconstruction objectives.	No Change Made	Thank you for the comment.

Comment Received	Resolution Category	Response Provided
Commenter 18		
Traditionally Lac qui Parle WMA and Marsh Lake were flood control sites. Does the DNR have any more management authority or does the Army Corps of Engineers still have the main authority?	No Change Made	Thank you for the question. The USACE still has authority over management, however the DNR meets with USFWS and USACE twice a year to coordinate management. The plan also addresses working with the USACE to update the reservoir operating plan in the Desired Conditions section on wetlands.
Commenter 19		
Are you bringing the goats back?	No Change Made	Thank you for the question. There are no current plans to bring goats back to Lac qui Parle WMA.
Commenter 20		
What is the plan doing for furbearers?	No Change Made	Thank you for the question. As detailed in the Existing Conditions section on trapping, Lac qui Parle WMA staff monitor furbearer populations and trapping harvest. Furbearers will also benefit from the habitat improvements proposed in the Desired Conditions section of the plan.
What is the plan doing to help with pheasant and turkey numbers, specifically nesting habitat?	No Change Made	Thank you for the question. The plan details how grassland habitats will be managed to provide quality nesting areas for pheasants in the Desired Conditions section. The plan also details how forested areas will be maintained and enhanced to benefit turkeys in the Desired Conditions section.
Commenter 21		
First of all I want to compliment the team that wrote the plan. It is very well written, easy to understand, and contains an incredible amount of information. I see it as a good roadmap to guide management	No Change Made	Thank you for the comment.

Comment Received	Resolution Category	Response Provided
activities for many years to come. I like the emphasis on preserving as much of the original remnant native flora and fauna as possible, while at the same time working to restore altered parts of the landscape to a close replica of the original. I am a prairie enthusiast, but I was impressed with the plans to enhance the oak and other hardwood forest on the WMA.		
I am aware of previous efforts to restore native prairie grouse to the unit. That initial effort focused on the Prairie Chicken, probably driven by nostalgia from older residents in the area. I wonder though, if perhaps the emphasis should be on Sharptail Grouse instead. Sharptail seem adaptable to a wide range of varied habitat and as such perhaps could find a home on LQP WMA.	No Change Made	Thank you for the comment. Sharp-tailed grouse are difficult to restore through relocation. Lac qui Parle WMA will continue to monitor for sharp-tailed grouse and will manage grassland habitat to benefit all prairie-obligate species, including sharp-tailed grouse should they arrive.
I took special notice of the sections of the plan dealing with the challenges presented by the hydrology of a major river system flowing through two reservoirs within the WMA (LQP and Marsh LK), all the while fed by discharge from two additional reservoirs upstream of the WMA. The recent completion of the re-route of the Pomme de Terre and subsequent water level management of Marsh Lake is very encouraging. Despite sometimes conflicting needs of flood control versus fish spawning, waterfowl nesting/resting/feeding and probably some others that I'm not aware of, I think that continued cooperation between those interests should be part of the long-term plan. As more and more flood protection infrastructure is put in place to protect high value property (primarily our river communities) it would seem to make sense to let our flood plain areas be just that, broad areas that can be allowed to store flood water as is their natural function This concept could be expanded to also include the tributaries that feed the Minnesota River mainstem/reservoirs.	No Change Made	Thank you for the comment. The plan proposes management of Marsh Lake under a more natural flow regime in the Desired Conditions section. The plan also proposes coordinating with the USACE on future water control structures.
The Draft Plan has so much potential to create a truly remarkable multi-purpose natural-resources treasure in western Minnesota, I say finalize the plan and implement it with the vigorous enthusiasm it will require!	No Change Made	Thank you for the comment.

Comment Received	Resolution Category	Response Provided
Commenter 22		
An overarching comment is that we are observing numerous inconsistencies from one DMP to the next. With most of the master plans nearly complete, our desire is that when the next master plans are written, our hope is there will be a WMA Program, with staff specifically assigned to writing these plans. That would hopefully provide the consistent "voice and messaging" throughout that plan writing process. This same message can be incorporated into the upcoming regional landscape plans or of the WMA Strategic Plan.	Future Consideration	Thank you for the comment. The WMA/AMA system plan effort is underway to ensure greater consistency across future WMA/AMA planning efforts.
we again did not see a comparative analysis between the previous 1977 LQP WMA Master Plan with the WMA as it appears and functions today. What changed, what can be learned or improved upon? Look at the changes in habitats over time, management techniques applied then and now, of impacts due to climate change, user demands/preferences then and now, etc.	No Change Made	Thank you for the comment. While the plan does not specifically analyze the accomplishments of the previous plan, the work conducted since 1977 and current understandings of wildlife management science inform the current plan
We particularly commend DNR for including that it's "our public trust obligation to manage fisheries and wildlife in perpetuity." This is a powerful statement that future generations will need to count on, in order for them to receive all of the resources the present generation currently enjoys.	No Change Made	Thank you for the comment.
the LQP Vision Statement (lines 7-8) leans on the statutory responsibility to provide hunting, fishing, trapping and other compatible outdoor recreation "opportunities". We would prefer the plan utilize the statutory language and say "uses", and cite the statute 86A.05 Classification and Purposes.	Change Made	Thank you for the comment. We modified the text to align with your comment.
The Plan Summary (pg. 1-2) recognizes that much time has passed since the last Master Plan, and with that passage our knowledge of the sciences, user needs and expectations and the landscape and abiotic inputs (climate change) have altered the LQP WMA and surrounding landscape. These represent both opportunities and challenges for management, not just today but into the near and more distant future	No Change Made	Thank you for the comment.

Comment Received	Resolution Category	Response Provided
At Figure 1 (pg. 3), our only comments on the map is that is focuses on state land ownership. So that there is a more inclusive landscape context, we like to see another map with all public ownerships (including Federal lands). The LQP WMA doesn't exist and isn't managed in a vacuum, and having these other lands can provide perspectives on habitat continuity, terrestrial migration corridors, etc.	No Change Made	Thank you for the comment. A map of all public lands is included in the plan as Figure 3.
In Purpose of the Plan (pg. 8), we agree with what is included in the statement, but wish to add that it is important to include more than the allocation of resources, but to discuss fiscal, staffing, equipment and facility needs. Documenting these needs allows DNR Leadership, the Governor and Legislature to anticipate and plan for eventually addressing these shortfalls.	No Change Made	Thank you for the comment. Staffing needs and considerations are outside the scope of these plans. FAW recognizes the need for these types of information and is working on a division-wide annual work planning effort.
It's also worth noting that lands acquired under the Pittman-Robertson Act require the preparation of a plan, and that these plans should be updated every ten (10) years. See planning requirements listed in Pittman-Robertson Act - Part D Wildlife Conservation Strategies – subpart vi 1. at the end of these comments. Abidance with the Act would prevent the kind of long time lapses (45 years) between development of DMPs that is now being addressed.	No Change Made	Thank you for your comment. A revision of the master plan every 10 years is recommended in the Implementation Process section.
Under Long-range Goals, we would prefer to see the two statements reversed. Item 2., directly relates to the mandate in state statute, and should be given priority over the fine goals now listed in item 1.	No Change Made	Thank you for the comment. Minnesota Statutes, Chapter 86A Outdoor Recreation System, Section 86A.05 Classification and Purposes defines the purpose of WMAs as "to protect those lands and waters that have a high potential for wildlife production and to develop and manage those lands and waters for the production of wildlife, for public hunting, fishing, and trapping, and for other compatible outdoor recreation uses." We believe that the current order of the goals aligns with the language in state statute.

Comment Received	Resolution Category	Response Provided
There is an issue under Long-range Goals: To maintain or enhance wildlife populations production, habitat, and biodiversity. Again, for consistency sake, please use “production”.	Change Made	Thank you for the comment. We modified the text to align with your comment.
Under “Planning Process”, in para. 2 (pg. 9 – lines 11-12) it says “A tribal review process took place from March 21 to April 3, 2024.” From a participation standpoint, we wonder why the Tribes weren’t give the same amount of time as the general population for review and providing comment? While the Tribe can still comment during the general public comment period, when future plans are submitted for Tribal comment, we’d recommend they be provided a 30-day comment period.	Future Consideration	Thank you for the comment. We are always working to improve the tribal review process and will consider your comment in future planning efforts.
While we are pleased the DNR involving the Tribes in this process, true consultation requires more. According to the United Nations, “the Declaration on the Rights of Indigenous Peoples requires States to consult and cooperate in good faith with the Indigenous peoples concerned through their own representative institutions in order to obtain their free, prior and informed consent before adopting and implementing decisions that may affect them. Sept. 13, 2007” This is the standard which must be met for the DMP.	No Change Made	Thank you for the comment. The DNR has Operational Orders and division policies in place to ensure meaningful tribal consultation.
Under “Guiding Documents” (pg. 9 – line 18) the DMP states “Management at Lac qui Parle WMA is guided by an array of statutes, rules, directives, and plans that do not have a strict hierarchy.” Again, consistency. We previously commented on this same statement in the Mille Lacs WMA DMP. Our comments were as follows: “This statement fails to recognize an important rule of law, the Supremacy Clause of the US Constitution, which states: This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, anything in the Constitution or Laws of any State to the Contrary notwithstanding.”	Change Made	Thank you for the comment. We modified the language in this section to reflect the points raised.

Comment Received	Resolution Category	Response Provided
This means federal laws governing lands acquired for Lac qui Parle that were obtained using Federal Pittman-Robertson Act (50CFR Part 80.134) or other Federal grant funds such as Dingell-Johnson Act, must first comply with this Act, and then secondarily, to those accompanying state statutes and rules that also direct the use and management of these lands. All other policy documents that provide management guidance for the management of fish, wildlife, lands, water, and vegetative habitats, shall all comply with these federal and state legal requirements. Documents and plans of a statewide resource must also comply with these legal mandates on these acquired lands, as must this DMP. A correction in the LQP DMP is necessary, such that this hierarchy is stated and understandable to the public and DNR staff." These Federal laws and rules should be added to these Guiding Documents, just ahead of the cited Select WMA Statutes and Rules.		
On pg. 12, Lac qui Parle WMA History there's no acreage breakdown by acquisition type. A simple pie chart or table could easily remedy this issue. This could also include on pg. 16 (line 30) or in the Appendix a list of the land acquisition types and an explanation of the encumbrances associated with each.	No Change Made	Thank you for your comment. The management implications are discussed within the Acquisition of Wildlife Lands subsection in the Existing Conditions section. All lands at Lac qui Parle WMA, no matter the acquisition type, are managed for diverse, productive, landscape-appropriate habitats that meet implications detailed in the Acquisition of Wildlife Lands subsection.
On pg. 12 – line 28 it references Chippewa County Road #32. Figure 1 (Map) doesn't show this County Road. While the cross-hatching is helpful in showing the difference in these two units, listing a road that's not shown is confusing. For those not familiar with the area, it would be helpful to show/label this Road.	Change Made	Thank you for the comment. We revised the figure to include county road labels.
At the top of pg. 15, it states "Cattle grazing as a prairie management tool began at Lac qui Parle WMA in the 1990s, and several partnerships have since formed with local cattle producers. Grazing regimes started simply (e.g., grazing one month in spring) and	Change Made	Thank you for the comment. We have updated the text with an estimate of the number of acres

Comment Received	Resolution Category	Response Provided
grew in complexity, including a 2012 3,000-acre patch-burn-graze project at Chippewa Prairie in cooperation with TNC." I would expect this plan to have more up-to-date data on the number of acres under grazing. This data is 12 years old. Please provide a more current acreage.		per year that are currently grazed at Lac qui Parle WMA.
Later in that para., it states "DNR's Minnesota Biological Survey (MBS) had installed research plots to study the effects of fire and grazing across the plant and animal communities." When were these plots installed and what are the results of this research? Is there a positive response by native vegetation and associated wildlife, or is the research identifying needed changes in this approach? An explanation is necessary so users can understand the potential impacts and make constructive comments.	Change Made	Thank you for the comment. The results of the research are currently in-press. We modified the text to add clarification about the number and status of the MBS research plots.
We also want to state, that we have heard for some time from partner organizations that there is frustration over the extent to which grassland wildlife habitat is being managed for agriculture production. The consensus seems to be that the grassland habitat going into the fall hunting season is in poor condition because of late-summer haying (rotational grazing done properly seems to be less of an issue). This plan needs to discuss haying in greater detail, and take greater care to see that these grasslands that provide wildlife with food and cover are in top condition as the fall and the long winter approaches	Change Made	Thank you for the comment. We have added additional details about the practice of haying on Lac qui Parle WMA in the Desired Conditions section.
On pg. 16, Existing Condition on lines 13-14, it mentions that various land types come with different "implications". It is important that readers of this plan understand these management implications, and how that may impact the lands and management at this WMA. At a minimum, we'd like to see a paragraph or two describing these implications and their impact on management by land acquisition type.	No Change Made	Thank you for your comment. The management implications are discussed within the Acquisition of Wildlife Lands subsection in the Existing Conditions section. All lands at Lac qui Parle WMA, no matter the acquisition type, are managed for diverse, productive, landscape-appropriate habitats that meet implications detailed in the Acquisition of Wildlife Lands subsection.
On lines 18-19 under Acquisition of WMA Lands, it says: "This process uses six goals to affirm an	Change Made	Thank you for the comment. We have provided a link to the SLAM

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acquisition aligns with the DNR's strategic land portfolio. There's nothing in the report listing or explaining these goals. Please articulate these six goals for the readers. And, do these goals abide by federal and state statute, and is this part of the WMA Acquisition Plan?		website where you can view the goals for strategic land acquisitions listing department-wide and division and programmatic criteria
In Acquisition of the Present WMA, it identifies that lands have been/are acquired using multiple funding sources, but lumps most of the sources together. Again, this may be an opportune passage where a pie chart or graph could be used to identify how much of each funding source has been/is being used to acquired LQP WMA lands.	No Change Made	Thank you for your comment. The land acquisition history is at an appropriate level of detail for this 10-year management plan. All lands at Lac qui Parle WMA, no matter the acquisition type, are managed for diverse, productive, landscape-appropriate habitats that meet implications detailed in the Acquisition of Wildlife Lands subsection.
In Landscape Context, the description and map seem to differ, with the description saying LQP WMA lies on the "western edge of the Minnesota River Prairie Ecological Subsection". The assumption is this ecological subsection continues for some undetermined distance into South Dakota (not shown). But the map depicts the WMA at the heart of this subsection (though near the western edge of the state boundary), with surrounding subsections some distance away. Maybe this is a matter of perspective, but the Fig. 2 map does not seem to put the WMA on any ecological "edge".	Change Made	Thank you for the comment. We revised the description to align with your comment.
On pg. 19, line 3-8 it mentions that flooding is a major detriment to management of the LQP WMA, without identifying the cause of the flooding (wetland loss and intensive agricultural drainage?). It also does not state where loss of terrestrial reproduction creates a "wildlife sink" or is there still a positive net value in terms of wildlife production, to say nothing of the workload and fiscal costs associated with the flooding? These points need expounded upon and clarified. Are there plans to remedy this unfortunate circumstance? If so, this should be included in this plan. If not, why not?	Change Made	Thank you for the comment. We have added additional detail about the causes of flooding in the "Existing Conditions" section on hydrology. Addressing many of the root causes of flooding (e.g., land use outside of the WMA boundaries) would be outside the scope of this plan; however, the Desired Conditions section of the plan details strategies for managing water levels within Lac qui Parle WMA.

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We are happy to see Fig. 3, Public lands in the vicinity of Lac qui Parle WMA, but we are wondering if a similar map at a scale of 2 miles/inch scale would allow users to see a more expansive landscape depicting these same features. As it is, Big Stone Nat. Wildlife Refuge is cut off, and not fully shown. Again, landscape context is important because of connectivity, wildlife corridors, etc.	Change Made	Thank you for the comment. We revised the scale of the figure to make Big Stone NWR and other nearby public lands more visible.
This map also raises the possibility of improving efficiencies for all of these conservation partners, by conducting some strategic land exchanges to consolidate boundaries. There's nothing in this plan to suggest this possibility has been discussed. Think about that as a possibility during this 10-year planning window.	Change Made	Thank you for the comment. Proposed land acquisitions are reviewed through the Strategic Land Asset Management process. We added a link to more information about the process in the Existing Conditions section.
In Habitat and Plant Communities the DMP introduces yet another definition for "habitat" – "Wildlife habitat can be defined as the totality of an animal's abiotic (e.g., water, mineral, thermal, solar) and biotic (typically plant) environmental components that allow for it to reproduce and survive interim periods to reproduce. For some animals (e.g., small mammals, reptiles, amphibians), one habitat provides for both needs; however, most animals (e.g., migratory mammals and birds) require different habitats, often vastly different and far apart, to optimize reproduction and survival." For consistency, please adopt one definition of "habitat and plant communities" for all of the DMPs	Change Made	Thank you for the comment. We revised this definition to match the language in previous plans.
Under Land Cover Types the LQP WMA uses the Wildlife and Aquatic Habitat Management Application (WAHMA) land cover types. One of the types is "non-vegetated surfaces", and it makes up about 496 acres. These are separate from "agricultural lands", nor is it "rock outcrop". It is hard to picture 496 acres of pavement or some similar surface. For the benefit of the readers, please describe this type.	Change Made	Thank you for the comment. We have revised the figure and table with updated WAHMA data, which reclassified the majority of the previously determined "Non-Vegetated Surfaces" area into other land cover types.
Under Agricultural Lands there is a brief description of the agricultural sharecrop practices for various row crops. And while devoting almost 1800 acres to more row crops in a landscape overrun with row crops might appear to be similar to "selling sand at the	No Change Made	Thank you for the comment.

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beach", we can see that there's some benefit arrived by using a small acreage for intensive production of food and cover for wildlife, particularly until a significantly greater percentage of the farm community adopts the practice of cover cropping		
The cropland paragraph is going to greatly change due to statute changes just passed this past session, that eliminated the use of corn for commercial purposes. This will likely impact the crop-share agreements, but not necessarily the acres of corn planted by WMA staff that are left without harvest as wildlife food plots.	No Change Made	Thank you for the comment. HF3624, which would have prohibited planting corn on state lands, did not pass during the 2024 legislative session.
What seems to be missing in the agricultural discussion is a thorough discussion of the more controversial practice of haying grasslands on the WMA. Establishing how much is open to haying, when can haying begin, and how late in the summer can haying be conducted while still permitting sufficient growing time to allow the site to regrow/recover, thus providing some food and cover for wildlife for the coming fall and winter months. We are aware this is a point of contention with hunters using DNR WMA lands. This is a critically missing discussion in this plan, and it needs to be added in the final version	Change Made	Thank you for the comment. We have added additional details about the practice of haying on Lac qui Parle WMA.
On pg. 40, line 6, there is a missing period at the end of the sentence.	No Change Made	Thank you for the comment. We did not observe a missing period on line 6 of page 40 and did not make any changes.
In addition, lines 6-11 outline goals to improve pheasant habitat. The goals not only benefit pheasant, but all grassland non-game bird species, which have been in a steep decline as grasslands have been converted to row crops. Perhaps, converting some of the row crops on the LQP WMA to additional grasslands would benefit both pheasants and the declining non-game grassland bird species mentioned in Table 7 (Red-tailed hawk, Swainson's hawk, American kestrel, upland sandpiper, eastern kingbird, western kingbird, yellow warbler, bobolink, western meadowlark, dickcissel, savannah sparrow, grasshopper sparrow, vesper sparrow, chipping sparrow, clay- colored sparrow). This point is	No Change Made	Thank you for the comment. The plan discusses targeting conversion of degraded areas to diverse native prairie communities in the Desired Conditions section on grasslands.

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subsequently emphasized in the next chapter on Nongame Birds		
On pg. 62, lines 23-25 it says “Efforts should identify areas where development or fragmentation would have the most impact, and coordinate tools to address or limit this impact. We see this as a positive recognition of a problem, but would like to see more specificity in dealing with this issue. The examples listed are a good start. But also consider how development encroachment may hamper the use of RX as a tool for managing the land. Also, attaching a FY to developing a planned approach with area partners to address encroachment and fragmentation would provide a needed metric for accomplishment.	No Change Made	Thank you for the comment. The scope of a 10-year plan is intentionally, necessarily broad; we will address greater detail in annual work plans.
In Unit Access Limitations on pg. 63, line 3-5 say “WMA staff maintain this internal road network. Maintenance needs must be prioritized and consistent sources of funding identified to ensure access is maintained for ongoing management and public recreation activities.” As pre-work, have traffic count studies been conducted to help identify what sites WMA users want to access. This would allow you to prioritized, ranking those with the greatest need. We’d also like to see some specifics as to what funding sources might be tapped to accomplish this work. Finally, a timeline would be beneficial, and could provide another metric for accomplishment. Wildlife needs to setup and adopt road/trail classification system similar to Forestry’s Silviculture and Roads Module	Future Consideration	Thank you for the comment. Further funding and timeline information is outside the scope of the plan. Costs are variable over time, as are timelines due to changing needs and conditions. Additionally, the road network at Lac qui Parle WMA is not substantial; a traffic count study and a road/trail classification system would not be appropriate for Lac qui Parle WMA. However, they may be considered in future WMA planning efforts.
Further down, it says “frequent flooding presents a long-term challenge for maintaining roads in Lac qui Parle WMA and the public roads surrounding and serving Lac qui Parle WMA.” As a reminder, our changing climate with more intense rainfall, and increased pattern tile drainage upstream, is likely to mean the road repairs must now be designed to meet these new realities. Culverts must be enlarged to meet anticipated flow 50-60 years from now. Using bottomless arched culverts may be beneficial where fish passage is important.	No Change Made	Thank you for the comment. The plan addresses road maintenance and improvement as part of the Desired Conditions section. Any specific considerations, such as culvert size and type, will be made on a project-by-project basis and are outside the scope of this plan.

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Importantly, it would be good to look hard at the cause(s) of this flooding issue. Treating the cause may ultimately be more effective and efficient than just dealing with the aftermath. Can working with partners and the public help minimize these causes, thus cutting costs and preserving habitat?	No Change Made	Thank you for the comment. The plan discusses coordinating with local partners to treat causes of flooding and improve reservoir management in the Desired Conditions section on wetlands.
Difficult choices may have to be made for some locations. Some challenging access roads may need to be managed instead as “minimum maintenance roads” or abandoned altogether, because they can no longer meet year-round safety standards or where costs are simply too high. Anticipating future engineering needs today, will save money and staff time in the long run	No Change Made	Thank you for the comment. The plan addresses road maintenance and improvement as part of the Desired Conditions section.
The next two paragraphs describing public accesses to various waterbodies does a good job of identifying challenges and needed work. Again, we’d like to see a ranking of projects, and a timeline for accomplishment. This builds a framework for measuring accomplishments.	No Change Made	Thank you for the comment. The plan proposes improving public accesses as part of the Desired Conditions section. Additional detail is being developed in annual work plans that will inform budget and staffing decisions.
We are happy to see a discussion on the impacts of “technology” (pg. 63, line 26). Outdoor users, managers and the general public need to have this conversation to ensure the public’s resources are adequately protected for today and future generations, and to build consensus over what is fair chase and the ethical pursuit of fish and game.	No Change Made	Thank you for the comment.
Page 64, line 1 looks at water control structures. However, the MLWMA MP mentions significantly more infrastructure, note how its listed in that plan. “WMA Infrastructure In addition to public highways and roads that border the unit, the Mille Lacs WMA uses a network of WMA roads to maintain the unit, facilitate management activities, and provide public access. WMA staff maintain this internal road network. Over time, it will be imperative to prioritize maintenance needs and identify consistent sources of funding to ensure access is maintained for ongoing management and public recreation activities.	Change Made	Thank you for the comment. We added additional details about infrastructure at Lac qui Parle WMA in the Strategic Considerations section.

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The Mille Lacs WMA maintains a vast array of infrastructure requiring continued and ongoing maintenance, including: • Roads and Trails o 44 miles of WMA boundary line o 103 miles of interior trails and roads o 12 miles of vehicle accessible roads o 5 miles of interior dikes • Facilities o More than 475 WMA boundary signs & posts o More than 375 informational signs & posts o 88 parking lots o 35 gates o 97 culverts o 20 water control structures o 66 property monuments o 18 wood routed signs o 3 boat ramps” We’d like to see a more comprehensive look at the LQP WMA infrastructure in the way Mille Lacs did.		
Line 5-8 on pg. 64 it describes some challenges for the LQP water control structures, saying “Water control structures are vulnerable to extreme precipitation events, deferred maintenance due to funding limitations, and degradation over years of use. Periodic maintenance, repair, replacement, or removal of water control structures is needed to ensure that surface water management is effective and resilient to future weather events.” All true, but one key challenge that should be added is the public safety aspect. Dam failure can have devastating impacts on surrounding human development and on the resources.	No Change Made	Thank you for your comment. The plan discusses the human impacts of flooding in the Existing Conditions section. Dams on Lac qui Parle WMA are operated by the USACE; dam failure is outside the scope of the plan.
Under Administrative and Fiscal line 9-13, we’re happy to see a robust recognition of the important roles NGO partners play in managing these public resources. This is likely to continue for the foreseeable future. This is too soft of a statement, we have continually asked for a Partnership section in all previous DMP. This is not the place for a NGO/Partnership discussion, is a poor recognition of this valuable relationship (another inconsistency).	Change Made	Thank you for the comment. We have added a "Partnerships" paragraph to the "Strategic Considerations" section.

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On pg. 65 under Staffing it lists the staff at the LQP unit. What is missing in the discussion is whether this staffing level is sufficient to accomplish all of the tasks and to manage the resources and public trust responsibilities. What additional accomplishments would be prioritized and completed with additional staffing? This is an important consideration that drives future funding for staff, and would inform DNR Leadership, the Governor and the Legislature of these needs. There needs to be some kind of statement that notes we have continually asked this question in all other MP drafts!!! We ask, if not here, where and when? There is no other document that captures this needed discussion.	No Change Made	Thank you for the comment. Staffing needs and considerations are outside the scope of these plans. FAW recognizes the need for these types of information and is working on a division-wide annual work planning effort.
On pg. 65, under Operational Orders, Policies, Guidelines, and Directives for the benefit of staff and the public we would add that these documents are written to further define the mission established in statute and rule, with the latter taking precedence.	No Change Made	Thank you for the comment. We feel that adding this additional detail is unnecessary since it is common understanding that statutes are authoritative, regulations implement statute, and other types of policy documents further clarify an agency's implementation of statute and regulations.
There is discussion about reintroducing bison to the LQP unit. While the general public likely sees this as the frivolous adding of potential game species (at some point in the future), and does not see this as a priority (some ranchers may even be concerned about disease transmission), we believe this could be a beneficial tool, one currently missing in managing and restoring prairie habitats, and the creation of additional ephemeral wetlands at wallows. Bison should be viewed as landscape and ecosystem engineers, just as beaver are in wetlands. Rather than using RX, cattle grazing, and haying, adding bison could better fit that role. We would encourage further discussions on this topic with other partners. At the same time, we recognize that there would be user conflicts between hunters/anglers/trappers using the WMA, with the removal of acreage to be used as an upland refuge for bison. Possibly the statutory removal of commercial corn operations may lead to	No Change Made	Thank you for the comment.

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restoration of more grasslands, which might offer an opportunity for bison restoration on these former agricultural acres.		
In lines 19-21 we see a contrast in plan style. The first bullet, to protect rock outcrops, has no measureable metrics, no time frame and not methodology for protecting these geologic features. But a specific date is given to protecting the fens (by spring 2025). It then states how this will be accomplished (by building a fence). We prefer the latter, and would like to see more of these specifics built into these plans. The final bullet in 1.2 also does a great job of presenting metrics (when, how often, by who).	Change Made	Thank you for the comment. We revised the rock outcrop bullet to include a timeline for implementation.
Be cautious about using unfamiliar acronyms (EWR?). Would prefer to see it spelled out the first time it's being used (EcoWater).	Change Made	Thank you for the comment. EWR is the standard acronym used across other WMA plans to refer to the DNR's Ecological and Water Resources Division. We have modified the text to define EWR on first use.
Monitoring should be a part of all management actions. It's more than seeking to "address management questions". It's, "did we accomplish what we set out to do; was there a short or long-term benefit to the resource and the users; was it done cost effectively; what would we do differently next time"? Monitoring is a tool to better management.	No Change Made	Thank you for the comment. Adaptive management is discussed in the plan in the Implementation Process section and is continuously occurring at Lac qui Parle WMA.
Pg. 67, lines 3-4, the use of citizen scientist (volunteers mostly) can provide real benefits to all those that participate. The volunteers create buy-in for the management, they become public spokespersons for the LQP WMA, they add eyes and ears on the ground for the work they do, but also identifying concerns that a limited staff might not discover as quickly. A win-win for everyone.	No Change Made	Thank you for the comment.
1.4 These are excellent goals. Working with local SWCD, USACE, NRCS and others to strategically restore wetlands across each watershed is an important goal, because LQP WMA alone cannot hope to mitigate flooding just utilizing the State lands.	No Change Made	Thank you for the comment.

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In 1.5 add to the third bullet we'd add the idea or researching well-reasoned assisted migration using seed sources from adjacent states to the south and west that have historically exhibited tolerance for warmer temperatures and unstable but often severe precipitation patterns (from drought to flooding) when attempting to establish or restore prairie habitats. Knowing that LQP WMA faces almost certain warming with alternating drought and flooding conditions, it will be necessary to build a grass/forb community that can withstand the anticipated extremes in weather. MN DNR Forestry has already begun experimenting to determine which tree species will tolerate, and even thrive in, tomorrow's climate.	No Change Made	Thank you for the comment. The current management goal of Lac qui Parle WMA in response to climate change is to create healthy, resilient habitats that can adapt to new climatic conditions on their own. We are aware of assisted migration efforts but are not considering it as a strategy at Lac qui Parle WMA until more data are available.
We agree with the goals and the tools being proposed, other than we would restrict the use of haying on remnant prairie. And, we want to avoid having haying turn grasslands into a "butch haircut" (flat top) in late summer when the opportunity to recover the site for wildlife food and cover is minimal. Haying should not occur until after nesting is completed by ground nesting birds (climate change may be moving when this happens in spite of the statutory deadline), and should be limited to only one cutting per season, so there is adequate time for the site to grow back before the fall hunting season arrives. The exception may be established lekes or for establishing new lekes for prairie grouse, which could be managed for shorter vegetation	Change Made	Thank you for the comment. Haying is a well-established grassland management technique that provides unique habitat benefits. We added additional details about the reasons why Lac qui Parle WMA uses haying to manage grassland habitat in the Desired Conditions section.
We also approve of the third bullet, utilizing RX at various times of the year, a three-season approach, to achieve different habitat goals.	No Change Made	Thank you for the comment.
While controlling woody encroachment seems simple enough, we struggle to find a way for haying to be anything but homogenous in structure. Unless the haying is done in a way that leaves uncut rows/patches in the field. But this would seem like an onerous exercise, one that most farm cooperators might balk at. Or possibly adjacent fields are treated separately to achieve a form or heterogeneity. But this isn't explained in the bullet.	Change Made	Thank you for the comment. Haying occurs on a small portion of the WMA and provides landscape heterogeneity when used in combination with other management techniques. We added additional details about the reasons why Lac qui Parle WMA uses haying to manage grassland

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		habitat in the Desired Conditions section.
Before this is attempted, a survey should be undertaken to ensure the wetland isn't hosting a healthy population of wood ducks, which depend on large woody cavities for nesting habitat.	No Change Made	Thank you for the comment. Trees targeted for woody removal in wetland areas are generally too small to be utilized for wood duck nesting.
We see a potential opportunity here to work with commercial bait dealers to utilize these undesirable fathead minnows as fish bait. For a number of years, there's been a minnow shortage (usually not fatheads, more often shiners). Still, it seems these fatheads may have some economic value, and offering them to bait dealers may be a win-win.	No Change Made	Thank you for the comment. Bait harvest can be considered at Lac qui Parle WMA on a case-by-case basis and permits will be issued in accordance with DNR policy.
This is the closest the plan come to discussing whatever limited timber harvest there is on the largely wetland-prairie WMA. So, what plans are in place for timber harvest on the LQP WMA? Is there an acreage or cordage goal (unlikely, but have to ask)? Is there a list of stands to be treated over the duration of this 10-year plan, and if so what treatment prescriptions were assigned to each?	No Change Made	Thank you for the comment. There are no forest stands on Lac qui Parle WMA with timber harvest treatment planned in the next 10 years.
As previously mentioned, climate change is driving our forests to the edge, and it's time to consider "assisted migration" as a tool to maintain forest stands into the future. DNR Forestry has been researching the use of multiple species in an attempt to see which are best suited to survive the new climate reality. Discuss options with Forestry to see what they might suggest for regenerating LQP's savannas, woodlands, and upland and wetland forests.	No Change Made	Thank you for the comment. The current management goal of Lac qui Parle WMA in response to climate change is to create healthy, resilient habitats that can adapt to new climatic conditions on their own. We are aware of assisted migration efforts but are not considering it as a strategy at Lac qui Parle WMA until more data are available.
1.22 discusses using agricultural practices "to increase the carrying capacity of resident wildlife". Undoubtedly this has been occurring for decades. But has this practice been studied to determine if it might have negative impacts on sensitive plant communities or on ETS species. Deer for example have food preferences that have been shown to have negative impacts on certain vegetation populations, on tree regeneration, and certainly on the abundance of	No Change Made	Thank you for the comment. The plan includes evaluating and assessing the efficacy of food plots in the Desired Conditions section on habitat (Goal 1).

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species they prefer for browse. This idea of increasing carrying capacity may have long-term detrimental impacts. It's worth researching to see what impact this practice may be having on the native plant community.		
Pg. 73, lines 4-5 and 9-11 discuss looking for farmers that are interested in new cropping systems. We fully agree with this approach. Both LQP and cooperators can learn from each other as the try new methods, and word of these successes (and failures) can be used to inform the broader farm community in the area, in the hope others will adopt successful techniques/strategies. This will not only help wildlife, but it could lead to less erosion and cleaner waters, which will benefit fish and aquatic birds and animals.	No Change Made	Thank you for the comment.
Line 12-13, LQP WMA should insist that all cooperative farm agreements meet specifications to qualify for the Minnesota Agricultural Water Quality Certification Program, and set a reasonable date to accomplish this goal (ex., 2030).	Change Made	Thank you for the comment. The plan includes enrolling all agricultural lands in the program as a strategy in the Desired Conditions section on habitat (Goal 1). We modified the text to provide a goal date.
Under 2.1 we are encouraged by the number and variety of infrastructure projects being proposed. Would be nice to see timelines assigned to more of these statements, so there was a way to measure progress over time.	No Change Made	Thank you for the comment. We have included timelines in the Desired Conditions section where feasible and appropriate for a 10-year plan. More specific timelines will be developed in annual work plans.
This may be an opportunity to work with the Division of Forestry to promote this rare specimen.	Change Made	Thank you for the comment. We have modified the text to include collaboration with FOR.
In the third bullet, there's confusion over which office/education center if being referred to, the Park's or the WMA's (headquarters)?	Change Made	Thank you for the comment. The office/education center referenced is used by both PAT and WMA staff. We have modified the text to clarify use of the center.
Again, many good suggests, but most lack specificity and timelines. Consider adding this to the existing statements.	No Change Made	Thank you for the comment. Timelines were included in the Desired Conditions section where

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		feasible and appropriate for a 10-year plan. More specific timelines will be developed in annual work plans.
Repeat statement last used for the MLWMA DP "While Table 14 makes for an interesting day planner, there are no metrics (i.e. staff hours nor costs) noted in this section to note hours, FTE's, activity costs, etc. by work activity so as to benchmark current outputs, trends, or needs. For example, the LQP WMA is its own location code, so this is an easy report to generate." In the Mille Lacs Plan there was a comment that this wasn't relevant in this plan. Our reply to that would be, if not here, then where and when would this question be publicly discussed? No other document covers this issue.	No Change Made	Thank you for the comment. Staffing needs and considerations are outside the scope of these plans. FAW recognizes the need for these types of information and is working on a division-wide annual work planning effort.
The DMP describes Adaptive Management as "Adaptive management incorporates new knowledge, techniques, or policy decisions into previously existing management actions." We view this as partially correct, but it leaves out another perspective. Adaptive Management can also be shifting to Plan B after Plan A provided unacceptable results. Often the science we though would provide a satisfactory result somehow fails. Through trial and error, we can sometimes find a path to an acceptable result. This too can be viewed as adaptive management. Occasionally this may come in the form of "new knowledge, techniques, or policies" but often as not, it was one of several possible solutions we already knew but didn't initially select. It's learning from our failures.	Change Made	Thank you for the comment. We modified the text to clarify that adaptive management can also include incorporating untried knowledge, techniques, or policy decisions.
Lines 15-16 of this chapter suggest that "A revision of the master plan is recommended after 10 years." Referring again to language in the Pittman-Robertson Act, the federal law governing WMA's with a federal nexus states in D – (v) provides for periodic monitoring of species identified under paragraph (1) and their habitats and the effectiveness of the conservation actions determined under paragraph (4), and for adapting conservation actions as appropriate to respond to new information or changing conditions; (vi) provides for the review of the State wildlife	No Change Made	Thank you for the comment. Adaptive management is discussed in the plan in the Implementation Process section and is continuously occurring at Lac qui Parle WMA.

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conservation strategy and, if appropriate, revision at intervals of not more than ten years; We interpret this to mean, revised master plans are due on less than ten year intervals.		

Comments received from other government agencies during the public review period.

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USACE	Suggest including: 1) the "Minnesota River Basin Interagency Study" (I believe that report was finalized in 2019); 2) Marsh Lake MAMP (latest version dated April 2024, but can be revised periodically as a living document); Laq qui Parle Water Control Manual.	Change Made	Thank you for the comment. We have revised the table to include those documents.
USACE	1) The MAMP is relevant until the performance monitoring period is over (circa 2029). After this, USACE's involvement may be limited. This has been acknowledged in the current version of the MAMP. I think the hope is that ownership of the plan would fall to the MNDNR and continued in 2030 and beyond.	Change Made	Thank you for the comment. We have revised the text to clarify that the DNR will continue to monitor Marsh Lake according to plan objectives past the performance monitoring period.
USACE	2) I defer to USACE Water Control as the experts, but would think that the Standing Orders and LQP Water Control Manual would also help guide future drawdowns?	Change Made	Thank you for the comment. We have added additional clarification in the text about the coordination required to initiate drawdowns.
USACE	Wonder if Asian carps should be addressed here as there were, albeit very few, instances of occurrence in the MN River. While the upstream range may be limited because of existing barriers (e.g., Granite Falls Dam), it may be worth noting that here.	Change Made	Thank you for the comment. We added additional details about invasive carp to the Existing Conditions section on invasive species.
USACE	Why aren't Chippewa Diversion & Laq qui Parle dams included?	Change Made	Thank you for the comment. The water control structures listed in Table 9 are operated by the DNR; the dams were not included since they are not owned nor operated by the DNR. We have added additional clarification about ownership of the water control structures in Table 9.

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USACE	Suggest including Marsh Lake as there has been interest to promote connectivity between Marsh Lake and Upper Marsh Lake (i.e., the Louisburg road culverts).	Change Made	Thank you for the comment. We have added exploring the feasibility of improving connectivity between Marsh Lake and Upper Marsh Lake as an additional objective in the Desired Conditions section.
Chippewa County Highway Department	In the Public Use section other than the introductory paragraph, there is no more information on hiking, canoeing, kayaking, etc. Consider adding this information.	No Change Made	Thank you for the comment. Hiking, canoeing, kayaking, and related compatible recreational activities are dispersed and unstructured on Lac qui Parle WMA; information on public use of the WMA for these activities is unavailable.
Chippewa County Highway Department	Regarding trails in the WMA, Chippewa County completed a county-wide trail action plan in May of 2023. The plan is available upon request. Review and where compatible, incorporate similarities into this plan. Specific comments include add the trail loop around the LQP WMA as it was called out in the 1997 plan and also in the County Trail Action Plan, consider adding action item to connect or support connection of LQP WMA or LQP state park trails to the Milan Bike Trail.	No Change Made	Thank you for the comment. Trails outside of Lac qui Parle WMA are outside the scope of this plan.
Chippewa County Highway Department	The 1997 plan had a goal to raise Chippewa County Road 33 (Volden Pit Road) by 18-inches. The new draft plan has dropped this item. The Chippewa County Highway Department is the road authority for this road and would like to see this goal added back into the new plan. The County has interest in raising this road and improving safety standards of the road.	Change Made	Thank you for the comment. We have added "Partner with Chippewa County to explore opportunities to improve Chippewa County Road 33" as a strategy in the Desired Conditions section.
USFWS	Region 3 CI appreciates the opportunity to comment on the Lac qui Parle WMA master plan prior to finalizing. It is clear that Minnesota DNR has put a lot of effort into this plan, especially in making measurable	No Change Made	Thank you for the comment.

Agency	Comment Received	Resolution Category	Response Provided
	goals in the desired future conditions section of the plan. We applaud the DNR for focusing on quality habitat management, biodiversity, and recreation on the WMA.		
USFWS	Region 3 CI does not have a specific questions or comments on the document, however, we encourage Minnesota DNR to consider potential impacts of any secondary uses on any federal grant acquired lands and appropriate grant expenditures and potential income from secondary uses. We ask the DNR to consider and include CI on discussions on the appropriateness and impacts of crop land, trails, and other recreational development on the WMA where CI interest real property is involved or grant funding is used for habitat or recreation management, WMA operations and maintenance, or other eligible grant actions.	No Change Made	Thank you for the comment. The DNR looks forward to continuing its longstanding, regular interactions with the Office of Conservation Interest on land and habitat management. Any secondary activities proposed will be thoroughly checked for any federal funding nexus and appropriateness in the lens of federal grant requirements.

Appendix D. Acronyms used in Lac qui Parle WMA plan

Acronym	Definition
ADA	Americans with Disabilities Act
BWSR	Minnesota Board of Water & Soil Resources
CAMP	Center for Aquatic Mollusk Programs
CRP	Conservation Reserve Program
CWD	Chronic wasting disease
DNR	Minnesota Department of Natural Resources
DPA	Deer Permit Area
EAB	Emerald ash borer
EDDMapS	Early Detection Distribution and Mapping System
EHD	Epizootic hemorrhagic disease
END	Endangered
EWR	Ecological and Water Resources Division
FAW	Fish and Wildlife Division
GFF	Game and Fish Fund
LCCMR	Legislative-Citizen Commission on Minnesota Resources
LTE	Laborer, Trades and Equipment
MBS	Minnesota Biological Survey
MFRC	Minnesota Forest Resources Council
MnDOT	Minnesota Department of Transportation
MNWAP	Minnesota's Wildlife Action Plan
NAWCA	North American Wetlands Conservation Act
NGO	Non-Governmental Organization
NIACS	Northern Institute of Applied Climate Science
NPC	Native Plant Community
NWR	National Wildlife Refuge
OAS	Office and Administrative Specialist
OASI	Office and Administrative Specialist Intermediate
OHF	Outdoor Heritage Fund
PAT	Parks and Trails Division

Acronym	Definition
PLFA	Phospholipids fatty acids
SGCN	Species of Greatest Conservation Need
SNA	Scientific and Natural Area
SPC	Special Concern
SWCD	Soil and Water Conservation District
THR	Threatened
TNC	The Nature Conservancy
UMRWD	Upper Minnesota River Watershed District
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
WAHMA	Wildlife and Aquatic Habitat Management Application
WMA	Wildlife Management Area
WPA	Waterfowl Production Area
WSI	Winter Severity Index

Appendix E. Conservation status ranks

Rank Code	Rank Label	Rank Description
S1	Critically Imperiled	At very high risk of extinction due to extreme rarity (often five or fewer populations), very steep declines, or other factors.
S2	Imperiled	At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors.
S3	Vulnerable	At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors.
S4	Apparently Secure	Uncommon but not rare; some cause for long-term concern due to declines or other factors.
S5	Secure	Common; widespread and abundant.

Appendix F. Bird species know to occur at Lac qui Parle WMA

Common Name	Scientific Name	Spring	Summer	Fall	Winter
Alder flycatcher	*Empidonax alnorum*	R	R	R	
American avocet	*Recurvirostra americana*	C	U	C	
American bittern	*Botaurus lentiginosus*	C	U	R	
American black duck	*Anas rubripes*	R		R	
American coot	*Fulica americana*	A	C	C	
American crow	*Corvus brachyrhynchos*	A	C	C	A
American golden-plover	*Pluvialis dominica*	R	R	C	
American goldfinch	*Spinus tristis*	C	A	A	C
American goshawk	*Accipiter atricapillus*	R		R	R
American kestrel	*Falco sparverius*	C	C	C	U
American pipit	*Anthus rubescens*	R		U	
American redstart	*Setophaga ruticilla*	C	C	C	
American robin	*Turdus migratorius*	A	A	A	C
American tree sparrow	*Spizelloides arborea*	C		C	A
American white pelican	*Pelecanus erythrorhynchos*	A	A	A	U
American wigeon	*Mareca americana*	A	R	C	U
American woodcock	*Scolopax minor*	U		U	
Baird's sandpiper	*Calidris bairdii*	U	C	A	
Bald eagle	*Haliaeetus leucocephalus*	A	A	A	A
Baltimore oriole	*Icterus galbula*	C	C	C	
Bank swallow	*Riparia riparia*	C	C	C	
Barn swallow	*Hirundo rustica*	A	A	A	
Barred owl	*Strix varia*	R	R	R	U
Bay-breasted warbler	*Setophaga castanea*	R		R	
Bell's vireo	*Vireo bellii*	Cas			
Belted kingfisher	*Megaceryle alcyon*	C	C	A	
Black scoter	*Melanitta americana*	Cas			
Black tern	*Chlidonias niger*	U	C	C	
Black-and-white warbler	*Mniotilta varia*	U		U	
Black-bellied plover	*Pluvialis squatarola*		R	U	
Black-billed cuckoo	*Coccyzus erythropthalmus*	R	U	R	
Blackburnian warbler	*Setophaga fusca*	R		R	
Black-capped chickadee	*Poecile atricapillus*	A	C	A	A
Black-crowned night heron	*Nycticorax nycticorax*	R	U	R	
Black-necked stilt	*Himantopus mexicanus*	Cas			
Blackpoll warbler	*Setophaga striata*	C		R	
Black-throated green warbler	*Setophaga virens*	R			
Blue grosbeak	*Passerina caerulea*		Cas		

Common Name	Scientific Name	Spring	Summer	Fall	Winter
Blue jay	*Cyanocitta cristata*	A	A	A	A
Blue-gray gnatcatcher	*Polioptila caerulea*	C	U	U	
Blue-headed vireo	*Vireo solitarius*	U		U	
Blue-winged teal	*Spatula discors*	A	A	A	
Blue-winged warbler	*Vermivora cyanoptera*			Cas	
Bobolink	*Dolichonyx oryzivorus*	C	C	C	
Bohemian waxwing	*Bombycilla garrulus*				R
Bonaparte's gull	*Chroicocephalus philadelphia*	C	R	R	
Brewer's blackbird	*Euphagus cyanocephalus*	U	C	U	
Broad-winged hawk	*Buteo platypterus*	C		R	
Brown creeper	*Certhia americana*	C		U	C
Brown thrasher	*Toxostoma rufum*	C	C	U	
Brown-headed cowbird	*Molothrus ater*	A	A	C	
Buff-breasted sandpiper	*Calidris subruficollis*		R	U	
Bufflehead	*Bucephala albeola*	A		R	U
Burrowing owl	*Athene cunicularia*	Cas			
Cackling goose	*Branta hutchinsii*	C		U	C
Canada goose	*Branta canadensis*	A	A	A	A
Canada warbler	*Cardellina canadensis*	R		U	
Canvasback	*Aythya valisineria*	C	R	U	R
Cape May warbler	*Setophaga tigrina*	R			
Caspian tern	*Hydroprogne caspia*	R	U	U	
Cedar waxwing	*Bombycilla cedrorum*	C	C	C	C
Chestnut-sided warbler	*Setophaga pensylvanica*	R	R	U	
Chimney swift	*Chaetura pelagica*	R	C	U	
Chipping sparrow	*Spizella passerina*	A	C	C	
Cinnamon teal	*Spatula cyanoptera*	R			
Clay-colored sparrow	*Spizella pallida*	A	A	C	
Cliff swallow	*Petrochelidon pyrrhonota*	C	A	C	
Common goldeneye	*Bucephala clangula*	A		U	A
Common grackle	*Quiscalus quiscula*	A	A	A	U
Common loon	*Gavia immer*	R	R	U	
Common merganser	*Mergus merganser*	A		R	A
Common nighthawk	*Chordeiles minor*	U	C	C	
Common redpoll	*Acanthis flammea*	U		R	U
Common tern	*Sterna hirundo*	R	R	R	
Common yellowthroat	*Geothlypis trichas*	C	A	A	
Cooper's hawk	*Accipiter cooperii*	C	U	C	U
Curve-billed thrasher	*Toxostoma curvirostre*	R			
Dark-eyed junco	*Junco hyemalis*	A		C	A

Common Name	Scientific Name	Spring	Summer	Fall	Winter
Dickcissel	*Spiza americana*	R	C	U	
Double-crested cormorant	*Nannopterum auritum*	A	A	A	
Downy woodpecker	*Dryobates pubescens*	A	C	A	A
Dunlin	*Calidris alpina*	U	R	R	
Eared grebe	*Podiceps nigricollis*	R	R		
Eastern bluebird	*Sialia sialis*	C	C	C	
Eastern kingbird	*Tyrannus tyrannus*	C	A	A	
Eastern meadowlark	*Sturnella magna*	U	R	R	
Eastern phoebe	*Sayornis phoebe*	C	C	C	
Eastern towhee	*Pipilo erythrophthalmus*	R	R		
Eastern whip-poor-will	*Antrostomus vociferus*	R			
Eastern wood-pewee	*Contopus virens*	R	C	A	
Eurasian collared-dove	*Streptopelia decaocto*	C	C	C	U
European starling	*Sturnus vulgaris*	A	C	C	C
Evening grosbeak	*Coccothraustes vespertinus*	R			
Field sparrow	*Spizella pusilla*	C	C	C	
Forster's tern	*Sterna forsteri*	C	C	C	
Fox sparrow	*Passerella iliaca*	C		U	
Franklin's gull	*Leucophaeus pipixcan*	C	C	C	
Gadwall	*Mareca strepera*	A	U	U	U
Golden eagle	*Aquila chrysaetos*	R			R
Golden-crowned kinglet	*Regulus satrapa*	C		U	U
Golden-winged warbler	*Vermivora chrysoptera*	R		R	
Grasshopper sparrow	*Ammodramus savannarum*	U	C	U	
Gray catbird	*Dumetella carolinensis*	C	A	A	
Gray partridge	*Perdix perdix*	R		R	R
Gray-cheeked thrush	*Catharus minimus*	U			
Great blue heron	*Ardea herodias*	C	A	A	R
Great crested flycatcher	*Myiarchus crinitus*	C	C	C	
Great egret	*Ardea alba*	C	A	A	
Great horned owl	*Bubo virginianus*	C	U	C	C
Greater prairie-chicken	*Tympanuchus cupido*	R	R	R	R
Greater scaup	*Aythya marila*	U			
Greater white-fronted goose	*Anser albifrons*	A			C
Greater yellowlegs	*Tringa melanoleuca*	C	C	A	
Green heron	*Butorides virescens*	U	C	U	
Green-winged teal	*Anas crecca*	A	R	C	R
Hairy woodpecker	*Dryobates villosus*	C	C	C	A
Harris's sparrow	*Zonotrichia querula*	C		C	R
Henslow's sparrow	*Centronyx henslowii*	R	U	R	

Common Name	Scientific Name	Spring	Summer	Fall	Winter
Hermit thrush	*Catharus guttatus*	U		R	
Herring gull	*Larus argentatus*	C	U		
Hoary redpoll	*Acanthis hornemanni*				R
Hooded merganser	*Lophodytes cucullatus*	A	U	C	U
Horned grebe	*Podiceps auritus*	C			
Horned lark	*Eremophila alpestris*	A	C	U	C
House finch	*Haemorhous mexicanus*	C	C	U	U
House sparrow	*Passer domesticus*	C	C	C	C
House wren	*Troglodytes aedon*	C	A	A	
Hudsonian godwit	*Limosa haemastica*	U	R	R	
Indigo bunting	*Passerina cyanea*	R	C	C	
Killdeer	*Charadrius vociferus*	A	A	A	
Lapland longspur	*Calcarius lapponicus*	C		U	R
Lark sparrow	*Chondestes grammacus*	R	U	R	
Least bittern	*Ixobrychus exilis*	R	U		
Least flycatcher	*Empidonax minimus*	C	C	C	
Least sandpiper	*Calidris minutilla*	C	A	A	
LeConte’s sparrow	*Ammospiza leconteii*	R	U	U	
Lesser black-backed gull	*Larus fuscus*	Cas			
Lesser scaup	*Aythya affinis*	A		C	U
Lesser yellowlegs	*Tringa flavipes*	A	A	A	
Lincoln's sparrow	*Melospiza lincolnii*	C		C	
Loggerhead shrike	*Lanius ludovicianus*	R	R	R	
Long-billed dowitcher	*Limnodromus scolopaceus*	U	R	U	
Louisiana waterthrush	*Parkesia motacilla*	Cas			
Magnolia warbler	*Setophaga magnolia*	U		R	
Mallard	*Anas platyrhynchos*	A	A	A	A
Marbled godwit	*Limosa fedoa*	C	C	C	
Marsh wren	*Cistothorus palustris*	C	A	C	
Merlin	*Falco columbarius*	R		U	R
Mourning dove	*Zenaida macroura*	A	A	A	R
Mourning warbler	*Geothlypis philadelphia*	R	R	R	
Nashville warbler	*Leiothlypis ruficapilla*	U		C	
Nelson's sparrow	*Ammospiza nelsoni*			R	
Northern cardinal	*Cardinalis cardinalis*	A	C	C	A
Northern flicker	*Colaptes auratus*	A	C	A	U
Northern harrier	*Circus hudsonius*	A	C	C	C
Northern parula	*Setophaga americana*	R		R	
Northern pintail	*Anas acuta*	A	U	U	U
Northern rough-winged swallow	*Stelgidopteryx serripennis*	C	C	C	

Common Name	Scientific Name	Spring	Summer	Fall	Winter
Northern saw-whet owl	*Aegolius acadicus*				R
Northern shoveler	*Spatula clypeata*	A	C	C	R
Northern shrike	*Lanius borealis*	U		U	C
Northern waterthrush	*Parkesia noveboracensis*	C		U	
Olive-sided flycatcher	*Contopus cooperi*	R		R	
Orange-crowned warbler	*Leiothlypis celata*	C		C	
Orchard oriole	*Icterus spurius*	U	C	U	
Osprey	*Pandion haliaetus*	U	R	U	
Ovenbird	*Seiurus aurocapilla*	C	R	C	
Palm warbler	*Setophaga palmarum*	C		U	
Pectoral sandpiper	*Calidris melanotos*	C	C	A	
Peregrine falcon	*Falco peregrinus*	U		U	
Philadelphia vireo	*Vireo philadelphicus*	R		R	
Pied-billed grebe	*Podilymbus podiceps*	A	C	C	
Pileated woodpecker	*Dryocopus pileatus*	C	C	C	C
Pine siskin	*Spinus pinus*	R		U	
Piping plover	*Charadrius melodus*	Cas			
Prairie falcon	*Falco mexicanus*		Cas	Cas	
Prothonotary warbler	*Protonotaria citrea*	R	R		
Purple finch	*Haemorhous purpureus*	U		U	U
Purple martin	*Progne subis*	U	C	C	
Red crossbill	*Loxia curvirostra*			R	R
Red knot	*Calidris canutus*		Cas	Cas	
Red-bellied woodpecker	*Melanerpes carolinus*	A	C	A	C
Red-breasted merganser	*Mergus serrator*	U		R	
Red-breasted nuthatch	*Sitta canadensis*			U	U
Red-eyed vireo	*Vireo olivaceus*	C	C	C	
Redhead	*Aythya americana*	A	U	C	U
Red-headed woodpecker	*Melanerpes erythrocephalus*	R	U	U	
Red-necked grebe	*Podiceps grisegena*	R	R	R	
Red-necked phalarope	*Phalaropus lobatus*	R	U	U	
Red-shouldered hawk	*Buteo lineatus*	R	R		
Red-tailed hawk	*Buteo jamaicensis*	A	A	A	C
Red-winged blackbird	*Agelaius phoeniceus*	A	A	A	C
Ring-billed gull	*Larus delawarensis*	A	A	A	U
Ring-necked duck	*Aythya collaris*	A		C	U
Ring-necked pheasant	*Phasianus colchicus*	A	A	A	A
Rock pigeon	*Columba livia*	C	C	C	C
Rose-breasted grosbeak	*Pheucticus ludovicianus*	C	C	C	
Ross's goose	*Anser rossii*	C		R	R

Common Name	Scientific Name	Spring	Summer	Fall	Winter
Rough-legged hawk	*Buteo lagopus*	C		U	A
Ruby-crowned kinglet	*Corthylio calendula*	C		C	
Ruby-throated hummingbird	*Archilochus colubris*	R	C	C	
Ruddy duck	*Oxyura jamaicensis*	C	U	U	R
Ruddy turnstone	*Arenaria interpres*	R	R	R	
Ruff	*Calidris pugnax*		Cas		
Rusty blackbird	*Euphagus carolinus*	C		U	
Sanderling	*Calidris alba*	R	U	C	
Sandhill crane	*Antigone canadensis*	C	U	R	
Savannah sparrow	*Passerculus sandwichensis*	C	C	C	
Say's phoebe	*Sayornis saya*	R			
Scarlet tanager	*Piranga olivacea*	R	R	R	
Sedge wren	*Cistothorus stellaris*	C	A	C	
Semipalmated plover	*Charadrius semipalmatus*	U	C	C	
Semipalmated sandpiper	*Calidris pusilla*	C	C	A	
Sharp-shinned hawk	*Accipiter striatus*	C		U	U
Sharp-tailed grouse	*Tympanuchus phasianellus*	R	R	R	
Short-billed dowitcher	*Limnodromus griseus*	U	C	C	
Short-eared owl	*Asio flammeus*	R	R	R	R
Smith's longspur	*Calcarius pictus*	Cas			
Snow bunting	*Plectrophenax nivalis*	R		R	U
Snow goose	*Anser caerulescens*	C		U	U
Snowy egret	*Egretta thula*	R	R	U	
Snowy owl	*Bubo scandiacus*	R		R	R
Snowy plover	*Anarhynchus nivosus*		R		
Solitary sandpiper	*Tringa solitaria*	C	C	C	
Song sparrow	*Melospiza melodia*	A	A	A	
Sora	*Porzana carolina*	C	C	C	
Spotted sandpiper	*Actitis macularius*	C	A	A	
Spotted towhee	*Pipilo maculatus*			Cas	R
Stilt sandpiper	*Calidris himantopus*	R	C	C	
Surf scoter	*Melanitta perspicillata*	Cas			
Swainson's hawk	*Buteo swainsoni*	U	U	U	
Swainson's thrush	*Catharus ustulatus*	C		R	
Swamp sparrow	*Melospiza georgiana*	C	C	C	
Tennessee warbler	*Leiothlypis peregrina*	C	R	U	
Townsend's solitaire	*Myadestes townsendi*				U
Townsend's warbler	*Setophaga townsendi*	Cas			
Tree swallow	*Tachycineta bicolor*	A	A	A	
Trumpeter swan	*Cygnus buccinator*	C	C	U	C

Common Name	Scientific Name	Spring	Summer	Fall	Winter
Tundra swan	*Cygnus columbianus*	C		C	
Turkey vulture	*Cathartes aura*	A	C	C	
Upland sandpiper	*Bartramia longicauda*	U	U	U	
Veery	*Catharus fuscescens*	R	R		
Vesper sparrow	*Pooecetes gramineus*	C	C	U	
Virginia rail	*Rallus limicola*	U	U	U	
Warbling vireo	*Vireo gilvus*	C	A	C	
Western cattle egret	*Bubulcus ibis*	R	R	R	
Western grebe	*Aechmophorus occidentalis*	C	U	U	
Western kingbird	*Tyrannus verticalis*	R	C	U	
Western meadowlark	*Sturnella neglecta*	A	A	C	
White-breasted nuthatch	*Sitta carolinensis*	A	C	A	A
White-crowned sparrow	*Zonotrichia leucophrys*	C		U	
White-faced ibis	*Plegadis chihi*	U	R	R	
White-rumped sandpiper	*Calidris fuscicollis*	U	R	R	
White-throated sparrow	*Zonotrichia albicollis*	C		C	
Wild turkey	*Meleagris gallopavo*	C	C	C	U
Willet	*Tringa semipalmata*	U	U		
Willow flycatcher	*Empidonax traillii*	R	C	U	
Wilson's phalarope	*Phalaropus tricolor*	U	U	U	
Wilson's snipe	*Gallinago delicata*	C	C	C	
Wilson's warbler	*Cardellina pusilla*	R		U	
Winter wren	*Troglodytes hiemalis*	R		R	
Wood duck	*Aix sponsa*	A	C	A	R
Wood thrush	*Hylocichla mustelina*	R	U		
Yellow rail	*Coturnicops noveboracensis*		Cas		
Yellow warbler	*Setophaga petechia*	A	A	C	
Yellow-bellied flycatcher	*Empidonax flaviventris*			R	
Yellow-bellied sapsucker	*Sphyrapicus varius*	C	C	C	
Yellow-billed cuckoo	*Coccyzus americanus*		R	R	
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	A	A	C	
Yellow-rumped warbler	*Setophaga coronata*	A		C	
Yellow-throated vireo	*Vireo flavifrons*	C	C	C	

A = abundant, C = common, U = uncommon, R = rare, Cas = casual or very rare

Bird Species of Greatest Conservation Need found at or near Lac qui Parle WMA.

Common Name	Scientific Name	Habitat	State Status	Federal Status
American bittern	*Botaurus lentiginosus*	W	SGCN	
American black duck	*Anas rubripes*	W	SGCN	
American kestrel	*Falco sparverius*	G, F	SGCN	
American white pelican	*Pelecanus erythrorhynchos*	W	SPC	
American woodcock	*Scolopax minor*	F	SGCN	
Bay-breasted warbler	*Setophaga castanea*	F	SGCN	
Bell's vireo	*Vireo bellii*	F	SPC	
Belted kingfisher	*Megaceryle alcyon*	B, F	SGCN	
Black tern	*Chlidonias niger*	W	SGCN	
Black-billed cuckoo	*Coccyzus erythropthalmus*	B, F	SGCN	
Black-crowned night-heron	*Nycticorax nycticorax*	W	SGCN	
Bobolink	*Dolichonyx oryzivorus*	G	SGCN	
Brown thrasher	*Toxostoma rufum*	B, F	SGCN	
Cape May warbler	*Setophaga tigrina*	F	SGCN	
Chimney swift	*Chaetura pelagica*		SGCN	
Common loon	*Gavia immer*	W	SGCN	
Common merganser	*Mergus merganser*	W	SGCN	
Common nighthawk	*Chordeiles minor*	G	SGCN	
Dickcissel	*Spiza americana*	G	SGCN	
Eared grebe	*Podiceps nigricollis*	W	SGCN	
Eastern meadowlark	*Sturnella magna*	G	SGCN	
Eastern towhee	*Pipilo erythrophthalmus*	F	SGCN	
Eastern whip-poor-will	*Antrostomus vociferus*	B, G	SGCN	
Field sparrow	*Spizella pusilla*	G	SGCN	
Foster's tern	*Sterna forsteri*	W	SPC	
Franklin's gull	*Leucophaeus pipixcan*	W	SPC	
Golden-winged warbler	*Vermivora chrysoptera*	B	SGCN	
Grasshopper sparrow	*Ammodramus savannarum*	G	SGCN	

Common Name	Scientific Name	Habitat	State Status	Federal Status
Greater yellowlegs	*Tringa melanoleuca*	W	SGCN	
Henslow's sparrow	*Ammodramus henslowii*	G	END	
Horned grebe	*Podiceps auritus*	W	END	
Hudsonian godwit	*Limosa haemastica*	G, W	SGCN	
Lark sparrow	*Chondestes grammacus*	G	SPC	
LeConte's sparrow	*Ammodramus leconteii*	G	SGCN	
Least bittern	*Ixobrychus exilis*	W	SGCN	
Lesser scaup	*Aythya affinis*	W	SGCN	
Loggerheaded shrike	*Lanius ludovicianus*	B, G	END	
Marbled godwit	*Limosa fedoa*	G, W	SPC	
Northern harrier	*Circus cyaneus*	G, W	SGCN	
Northern pintail	*Anas acuta*	G, W	SGCN	
Northern rough-winged swallow	*Stelgidopteryx serripennis*	F, W	SGCN	
Olive-sided flycatcher	*Contopus cooperi*	F	SGCN	
Peregrine falcon	*Falco peregrinus*		SPC	
Philadelphia vireo	*Vireo philadelphicus*	F	SGCN	
Piping plover	*Charadrius melodus*	W	END	END
Prothonotary warbler	*Protonotaria citrea*	F	SGCN	
Purple finch	*Haemorhous purpureus*	B, F	SGCN	
Purple martin	*Progne subis*		SPC	
Red-headed woodpecker	*Melanerpes erythrocephalus*	F, G	SGCN	
Red-necked grebe	*Podiceps grisegena*	W	SGCN	
Red-shouldered hawk	*Buteo lineatus*	F	SPC	
Rufa red knot	*Calidris canutus rufa*	W	SGCN	THR
Sedge wren	*Cistothorus platensis*	W	SGCN	
Semipalmated sandpiper	*Calidris pusilla*	W	SGCN	
Sharp-tailed grouse	*Tympanuchus phasianellus*	B, G	SGCN	
Short-billed dowitcher	*Limnodromus griseus*	G, W	SGCN	
Short-eared owl	*Asio flammeus*	G, W	SPC	
Swainson's hawk	*Buteo swainsoni*	F, G	SGCN	

Common Name	Scientific Name	Habitat	State Status	Federal Status
Trumpeter swan	*Cygnus buccinator*	W	SPC	
Upland sandpiper	*Bartramia longicauda*	G, W	SGCN	
Veery	*Catharus fuscescens*	B, G	SGCN	
Virginia rail	*Rallus limicola*	W	SGCN	
Western grebe	*Aechmophorus occidentalis*	W	SGCN	
Western kingbird	*Tyrannus verticalis*	G	SGCN	
Western meadowlark	*Sturnella neglecta*	G	SGCN	
Wilson's phalarope	*Phalaropus tricolor*	W	THR	
Wood thrush	*Hylocichla mustelina*	F	SGCN	
Yellow rail	*Coturnicops noveboracensis*	W	SPC	
Yellow-billed cuckoo	*Coccyzus americanus*	B, F	SGCN	
Yellow-headed blackbird	*Xanthocephalus xanthocephalus*	W	SGCN	

Habitat Key: B = Brushlands, F = Forests, G = Grasslands, W = Wetlands

END = endangered, THR = threatened, SPC = special concern, SGCN = Species of Greatest Conservation Need; all state-listed species and federally listed species that occur in Minnesota are SGCN, those listed as SGCN in the table are species not on Minnesota's endangered, threatened, and special concern list.

Appendix G. Mammal species known to occur at Lac qui Parle WMA

Common Name	Scientific Name	Game Species	State Status	Federal Status	Occurrence in WMA
American badger	*Taxidea taxus*	X	SGCN		
Beaver	*Castor canadensis*	X			
Big brown bat	*Eptesicus fuscus*		SPC		
Black bear	*Ursus americanus*	X			Rare transient
Bobcat	*Lynx rufus*	X			
Coyote	*Canis latrans*				
Deer mouse	*Peromyscus maniculatus*				
Eastern cottontail	*Sylvilagus floridanus*	X			
Eastern mole	*Scalopus aquaticus*				
Eastern spotted skunk	*Spilogale putorius*		THR		
Elk	*Cervus elaphus*		SPC		Rare transient
Fisher	*Pekania pennanti*	X			
Fox squirrel	*Sciurus niger*	X			
Franklin's ground squirrel	*Poliocitellus franklinii*		SGCN		
Gray fox	*Urocyon cinereoargenteus*	X			
Gray squirrel	*Sciurus carolinensis*	X			
Gray wolf	*Canis lupus*			THR	Rare transient
Hoary bat	*Lasiurus cinereus*		SGCN		
House mouse	*Mus musculus*				
Keen's myotis	*Myotis keenii*				
Least weasel	*Mustela nivalis*		SPC		
Little brown myotis	*Myotis lucifugus*		SPC		
Long-tailed weasel	*Mustela frenata*	X			
Masked shrew	*Sorex cinereus*				
Meadow jumping mouse	*Zapus hudsonius*				
Meadow vole	*Microtus pennsylvanicus*				

Common Name	Scientific Name	Game Species	State Status	Federal Status	Occurrence in WMA
Mink	*Neovison vison*	X			
Moose	*Alces alces*		SPC		Rare transient
Mountain lion	*Felis concolor*		SPC		Rare transient
Mule deer	*Odocoileus hemionus*				Rare transient
Muskrat	*Ondatra zibethicus*	X			
Northern grasshopper mouse	*Onychomys leucogaster*		SPC		
Norway rat	*Rattus norvegicus*				
Plains pocket gopher	*Geomys bursarius*				
Plains pocket mouse	*Perognathus flavescens*		SPC		
Prairie vole	*Microtus ochrogaster*		SPC		
Pronghorn	*Antilocapra americana*				Rare transient
Raccoon	*Procyon lotor*	X			
Red bat	*Lasiurus borealis*		SGCN		
Red fox	*Vulpes vulpes*	X			
Red squirrel	*Tamiasciurus hudsonicus*				
Richardson's ground squirrel	*Urocitellus richardsonii*		SPC		
River otter	*Lontra canadensis*	X			
Short-tailed shrew	*Blarina brevicauda*				
Short-tailed weasel	*Mustela erminea*	X			
Silver-haired bat	*Lasionycteris noctivagans*		SGCN		
Southern flying squirrel	*Glaucomys volans*				
Southern red-backed vole	*Clethrionomys gapperi*				
Striped skunk	*Mephitis mephitis*				
Thirteen-lined ground squirrel	*Ictidomys tridecemlineatus*				
Virginia opossum	*Didelphis virginiana*	X			
Western harvest mouse	*Reithrodontomys megalotis*		SPC		
White-footed mouse	*Peromyscus leucopus*				

Common Name	Scientific Name	Game Species	State Status	Federal Status	Occurrence in WMA
White-tailed deer	*Odocoileus virginianus*	X			
White-tailed jackrabbit	*Lepus townsendii*	X	SGCN		
Woodchuck	*Marmota monax*				

Game species may be taken only under DNR regulations.

THR = threatened, SPC = special concern, SGCN = Species of Greatest Conservation Need; all state-listed species and federally listed species that occur in Minnesota are SGCN, those listed as SGCN in the table are species not on Minnesota's endangered, threatened, and special concern list.

Appendix H. Fish species known to occur at Lac qui Parle WMA

Common Name	Scientific Name	Status
American eel	*Anguilla rostrata*	SPC
Bigmouth buffalo	*Ictiobus cyprinellus*	
Black bullhead	*Ameiurus melas*	
Black crappie	*Pomoxis nigromaculatus*	
Blackside darter	*Percina maculata*	
Bluegill	*Lepomis macrochirus*	
Bluntnose minnow	*Pimephales notatus*	
Bowfin	*Amia calva*	
Brassy minnow	*Hybognathus hankinsoni*	
Brook stickleback	*Culaea inconstans*	
Brown bullhead	*Ameiurus nebulosus*	
Carmine shiner	*Notropis percobromus*	
Channel catfish	*Ictalurus punctatus*	
Common carp	*Cyprinus carpio*	
Common shiner	*Luxilus cornutus*	
Creek chub	*Semotilus atromaculatus*	
Emerald shiner	*Notropis atherinoides*	
Fathead minnow	*Pimephales promelas*	
Freshwater drum	*Aplodinotus grunniens*	
Golden redhorse	*Moxostoma erythrurum*	
Golden shiner	*Notemigonus crysoleucas*	
Greater redhorse	*Moxostoma valenciennesi*	
Green sunfish	*Lepomis cyanellus*	
Iowa darter	*Etheostoma exile*	
Johnny darter	*Etheostoma nigrum*	
Lake sturgeon	*Acipenser fulvescens*	SPC
Largemouth bass	*Micropterus salmoides*	
Logperch	*Percina caprodes*	
Longnose gar	*Lepisosteus osseus*	

Common Name	Scientific Name	Status
Northern pike	*Esox lucius*	
Orangespotted sunfish	*Lepomis humilis*	
Quillback	*Carpiodes cyprinus*	
Rock bass	*Ambloplites rupestris*	
Sand shiner	*Notropis stramineus*	
Shorthead redhorse	*Moxostoma macrolepidotum*	
Silver redhorse	*Moxostoma anisurum*	
Slenderhead darter	*Percina phoxocephala*	
Spotfin shiner	*Cyprinella spiloptera*	
Spottail shiner	*Notropis hudsonius*	
Tadpole madtom	*Noturus gyrinus*	
Walleye	*Sander vitreus*	
White bass	*Morone chrysops*	
White crappie	*Pomoxis annularis*	
White sucker	*Catostomus commersonii*	
Yellow bullhead	*Ameiurus natalis*	
Yellow perch	*Perca flavescens*	

SPC = special concern; all of Minnesota's endangered, threatened, and special concern species are also Species of Greatest Conservation Need (SGCN).

Appendix I. Amphibian and reptile species known to occur at Lac qui Parle WMA.

Taxa	Common Name	Scientific Name	State Status
Amphibian	Western tiger salamander	*Ambystoma mavortium*	
Amphibian	Eastern tiger salamander	*Ambystoma tigrinum*	
Amphibian	Mudpuppy	*Necturus maculosus*	SPC
Amphibian	American toad	*Anaxyrus americanus*	
Amphibian	Great Plains toad	*Anaxyrus cognatus*	SPC
Amphibian	Canadian toad	*Anaxyrus hemiophrys*	
Amphibian	Boreal chorus frog	*Pseudacris maculata*	
Amphibian	Northern leopard frog	*Lithobates pipiens*	
Amphibian	Wood frog	*Lithobates sylvaticus*	
Reptile	Spiny softshell	*Apalone spinifera*	
Reptile	Snapping turtle	*Chelydra serpentina*	
Reptile	Painted turtle	*Chrysemys picta*	
Reptile	Prairie skink	*Plestiodon septentrionalis*	
Reptile	Plains hog-nosed snake	*Heterodon nasicus*	SPC
Reptile	Smooth greensnake	*Opheodrys vernalis*	SGCN
Reptile	Red-bellied snake	*Storeria occipitomaculata*	
Reptile	Plains gartersnake	*Thamnophis radix*	
Reptile	Common gartersnake	*Thamnophis sirtalis*	

SPC = special concern, SGCN = Species of Greatest Conservation Need; all of Minnesota's endangered, threatened, and special concern species are SGCN, those listed as SGCN in the table are species not on the Minnesota's endangered, threatened, and special concern list.

Appendix J. Mussel species known to occur at Lac qui Parle WMA

Common Name	Scientific Name	State Status
Elktoe	*Alasmidonta marginata*	THR
Spike	*Eurynia dilatata*	THR
Lilliput	*Toxolasma parvum*	
Cylindrical Papershell	*Anodontoides ferussacianus*	
Mapleleaf	*Quadrula quadrula*	
Black Sandshell	*Ligumia recta*	SPC
Creeper	*Strophitus undulatus*	
Pink Heelsplitter	*Potamilus alatus*	
Fragile Papershell	*Potamilus fragilis*	
Wabash Pigtoe	*Fusconaia flava*	
White Heelsplitter	*Lasmigona complanata*	
Giant Floater	*Pyganodon grandis*	
Plain Pocketbook	*Lampsilis cardium*	
Deertoe	*Truncilla truncata*	
Threeridge	*Amblema plicata*	
Fatmucket	*Lampsilis siliquoidea*	

THR = threatened, SPC = special concern; all of Minnesota's endangered, threatened, and special concern species are also Species of Greatest Conservation Need (SGCN).

Appendix K. Fur harvest on Lac qui Parle WMA, 2002-2022

Year	Muskrat	Mink	Weasel	Raccoon	Fox	Coyote	Beaver	Otter	Skunk	Badger	Opossum
2002	107	15	4	59	2	3	114		1		
2003	231	12	6	107			91		19		15
2004	38	19	6	97			89	1	19		28
2005	83	9	20	273			87		4		19
2006	260	26		264			203	1	10		36
2007	158	11	22	114		10	25		6	2	14
2008	133	16	7	230		2	4		26		18
2009	210	6	8	67		1	69		3		10
2010	151	9	5	52			35	1	15		4
2011	293	16	5	95		1	115	6	17		6
2012	69	20	3	33		1	23	5	11		1
2013	86	17	5	158		3	36	2	29		7
2014	74	3		25			33	7			
2015	25	7	4	94			33		6		7
2016	84	4		7			17		2		
2017	54	5	6	76		1	22	3	8		14
2018	70	13		34			30	2			
2019	39	11	7	27		13	33	2	2	1	
2020	27	4		16		4	5	1	7		1
2021	114	2	1	7			17	4	2		2
2022	13	1	5	1			29		3		

Appendix L. Climate Data for Lac qui Parle WMA

Precipitation by season for Lac qui Parle WMA (Minnesota Climate Explorer 2024).

Season	1895–1969 mean (inches)	1991–2023 mean (inches)	2080–2099 (inches) (modeled mean under a moderate emissions scenario)
Winter (December–February)	2.08	2.03	2.16
Spring (March-May)	6.35	6.84	6.14
Summer (June–August)	10.18	10.93	9.62
Fall (September–November)	4.74	6.19	8.04

Temperature by season for Lac qui Parle WMA (Minnesota Climate Explorer 2024).

Season	1895–1969 mean (°F)	1991–2023 mean (°F)	2080–2099 (°F) (modeled mean under moderate emissions scenario)
Winter (December–February)	13.31	16.08	22.13
Spring (March–May)	42.69	44.14	51.04
Summer (June–August)	69.12	70.09	75.17
Fall (September–November)	45.76	47.26	51.63