

Crow Wing State Park Management Plan



**Minnesota Department of Natural Resources
Division of Parks and Recreation**

June 2002



Minnesota Department of Natural Resources

OFFICE OF THE COMMISSIONER

500 Lafayette Road
St. Paul, Minnesota 55155-4037

Department of Natural Resources Approval of Management Plan for Crow Wing State Park

Minnesota Statutes 86A §09, Subdivision 1, requires that a master plan be prepared for units of Minnesota's outdoor recreation system, including state parks and state recreation areas. The Laws of Minnesota for 1959 (Chapter 90, Section 4) established Crow Wing State Park as part of Minnesota's Outdoor Recreation System (MS 85.013, Subd. 20a).

The Minnesota Department of Natural Resources worked in partnership with Minnesota citizens and an interdisciplinary resource team to develop a management plan for Crow Wing State Park.

The management plan was approved by the Division of Parks and Recreation management team, and has been approved through the DNR's Statewide Interdisciplinary Review Service / Senior Managers' review process during May 2002.

A handwritten signature in black ink, appearing to read "Allen Garber", is written over a horizontal line.

Allen Garber, Commissioner
Minnesota Department of Natural Resources

A handwritten date "7/10/02" is written in black ink over a horizontal line.

Date



Crow Wing State Park Management Plan



State of Minnesota Department of Natural Resources Division of Parks and Recreation

This management plan has been prepared as required by 1999 Minnesota Laws Chapter 86A.09, Subdivision 1.

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EXECUTIVE SUMMARY

Crow Wing State Park provides over 2,000 acres of prairies, pine and hardwood forests located nine miles south of Brainerd, Minnesota. The park is situated in three counties - Crow Wing, Cass, and Morrison - at the confluence of the Mississippi and Crow Wing rivers. The park contains significant natural resources, including old growth red pine and floodplain forest stands, mixed hardwood forests and native prairies. This scenic natural area offers hiking trails, canoeing opportunities, fishing, camping, and winter recreation. Crow Wing is also rich in cultural history and has many interesting interpretive opportunities: the historic Crow Wing town site, Red River ox cart trail, cemeteries, and American Indian habitation and battle sites.

The park is situated in a region of central Minnesota that is currently experiencing an increase in destination tourism. This growth can be attributed to several factors: development of new hotel and motel units, more golf courses, local internet marketing and access, bike and snowmobile trails that are becoming significant travel destinations, and growing interest in scenic byways such as the Great River Road (Mississippi River) and the Paul Bunyan Scenic Byway.

The park staff has been working with the DNR Division of Trails and Waterways to develop a surfaced trail that will link the park with the rest of the Paul Bunyan State Trail. The Minnesota State Legislature has authorized the connection and plans are underway to develop a route. The next phase of the project is to acquire easements for the trail. When completed, the trail will provide additional recreational opportunities and be a regional tourism attraction. Inside the park, it is recommended that the new bike trail follow existing park trails where feasible.

As a part of this project, Crow Wing State Park and the Division of Parks and Recreation will seek funding to build a new visitor center/contact station, possibly in combination with a Paul Bunyan Trail Center. The plan also recommends that interpretive services and community outreach be expanded. Other recommendations include reviewing the nomination of the Crow Wing State Park Historic District (for accuracy and relevance); conducting a historic landscape evaluation; continue inventory, monitoring, and research of historic sites and cultural resources; addressing the riverbank erosion control problem; remodeling or replacing the shower building; adding a camper cabin with electricity and heat; adding playground equipment possibly tied with ox carts or other historical themes. The park staff will also be seeking landowner support and legislation to expand the park boundary to the northwest and northeast along both sides of the Mississippi River for additional river corridor protection and recreational opportunities. The approximately 1,000 acre expansion also would include the site of the Chippewa Indian Agency, an important historic site at the confluence of the Crow Wing and Gull rivers that includes a prehistoric American Indian village and burial mounds. (The plan recommendations are listed in each section and a complete list is in Appendix A.)

Crow Wing State Park has an experienced, knowledgeable, and dedicated management team and work force that are committed to efficiently and innovatively managing the resources, working with the neighbors and neighboring communities, and serving recreational users. The planning process resulted in the development of an integrated resource management plan utilizing extensive public involvement.

The following comprehensive management plan presents the mission, vision, goals, and key issues for Crow Wing State Park. There is a detailed assessment of resources and recreational opportunities that provide data for use in making management decisions. At the end of each chapter are the recommended future actions. This plan provides the basic management direction for the park and is not intended to provide specific management or development details. The Division will seek funding to complete trail and facility improvement and to initiate the next phase of natural and cultural resource management.

I. INTRODUCTION

Park Description

Crow Wing State Park is located in central Minnesota in Crow Wing, Cass, and Morrison counties. Most of Crow Wing State Park is located in southwestern Crow Wing County. It is approximately nine miles south of Brainerd, Minnesota and 22 miles north of Little Falls on U.S. Highway 371. The park entrance road is on County Road 27 and the office is one mile west of Highway 371. The Mississippi River flows through the park from north to south - its confluence with the Crow Wing River within the park boundary.

Crow Wing State Park was established by the Minnesota State Legislature in 1959. There are 2,200 acres of land within the statutory boundary of the park, of which 1,711 acres are under State Park jurisdiction. Of the remaining land, 172 acres of land are in private ownership and 317 acres are owned by Camp Ripley Military Reservation in Morrison County. Camp Ripley is one of nine National Guard training sites in the United States. At 53,000 acres, it is one of the largest state-owned military installations. The portions of the park within Camp Ripley are used for military training and are not open to the public.

The park offers visitors an opportunity to explore all three of the major biomes in Minnesota: prairie, pine forest, and hardwood forest. It also lies at the historically significant confluence of the Mississippi and Crow Wing rivers. There are beautiful views of the Mississippi River from the Chippewa Lookout and along park trails. Crow Wing State Park is rich in cultural history. The historic town site of Old Crow Wing contains the Clement Beaulieu House - the oldest standing structure in Minnesota north of St. Anthony Falls. The park contains a section of the historic Woods Trail, which was part of the Red River Ox Cart Trail system that connected the City of St. Paul to the Red River Valley settlements. Glaciation created the park's sandy soils, marshes, and high overlooks of the Mississippi and Crow Wing rivers. Although logging, farming and a historic town site occurred in the park, much of the area remains in a wild and relatively undeveloped condition.

The park includes numerous interpretation, recreation, and visitor use facilities:

- ▶ A campground with 59 semi-modern sites (including 12 electric sites), a camper cabin, and shower facilities
- ▶ One primitive group camp, with capacity for 50 people
- ▶ Two National Historic Districts - Crow Wing Townsite Historic District and the Red River Oxcart Trail Historic District - and related cultural resources
- ▶ Red River Ox Cart Trail exhibit
- ▶ Self-guiding trails
- ▶ Visitor orientation exhibit
- ▶ Two picnic areas, numerous tables, and one enclosed picnic shelter
- ▶ Boat access to the Mississippi and Crow Wing rivers
- ▶ 14 miles of summer and winter trails
- ▶ Wildlife observation areas.

Park Legislative History

Crow Wing State Park was established in 1959. The Crow Wing County Historical Society spearheaded the drive to establish the park in 1957. John "Pete" Humphrey, a Brainerd native, was instrumental in promoting the Old Crow Wing City site as a state park. The park was designated because of its significance in Minnesota history. The legislative history of the park is unusual because it was established as part of a general appropriations bill rather than through a separate piece of legislation. The act provided \$15,000 conditional upon receipt of gifts of cash or land of equal value. Organizations

such as the Izaak Walton League, the Brainerd Junior Chamber of Commerce, and the Knights of Columbus were active in soliciting contributions, and by April 1960 the entire sum had been collected. When Crow Wing State Park was dedicated, on July 8, 1962, only 448 acres of the 1,255 acres authorized as part of the park had been acquired. A campground along the Mississippi, two picnic areas, and a boat landing were among the earliest developments.

Crow Wing has been expanded four times - in 1963, 1965, 1971, and 1998 - to encompass the current statutory boundary of 2,200 acres. Today, most of the lands within the statutory park boundary have been acquired by the State of Minnesota.

Legislative Summary (Session Laws):

1959 - Chapter 90, Section 4, Subd. 3, [85.111]

Establishment of Crow Wing State Park to include parts of six sections in Crow Wing County, the island and parts three sections in Morrison County, and parts of two sections in Cass County. "All lands described in Subd. 3 when acquired . . . shall be perpetually dedicated for state park purposes and administered in the manner provided for other state parks, and shall be known as Crow Wing State Park." This law was part of an appropriations bill and included a stipulation of matching money. "The Commissioner of Conservation was appropriated \$15,000 for the purposes of this act, which shall remain available until expended, provided that no part of said sum shall be expended until there has been made available to the Commissioner, for the purposes of this act, gifts of cash or land of the value of \$15,000 as determined by the Commissioner."

1963 - Chapter 790, Article 5, Section 1, Subd. 1(6)

This article expanded the park boundaries in Cass County in parts of sections 33, 5, and 4. In Crow Wing County part of section 25 was added to the park boundary.

1965 - Chapter 810, Section 9, Subd. 2 and Chapter 901, Section 77, Subd. 5

Additional lands in Crow Wing County in parts of sections 25 and 26.

1971 - Chapter 859, Section 1, Subd. 5

Additional lands in Crow Wing County in part of section 24.

1998 - Chapter 391, Section 2, Subd. 1

Additional lands in Crow Wing County in part of section 25.

Role of Crow Wing State Park in the State Park System

The primary role of Crow Wing State Park is the preservation and interpretation of the cultural resources in the park. The park includes two Historic Districts on the National Register of Historic Places, and contains significant cultural resources related to American Indian and early settlement history of Minnesota, as well as other cultural and archaeological resources.

Secondary roles of the park include protecting natural resources and providing recreation opportunities. The park is located at the junction of the three biomes present in Minnesota, providing unique interpretive opportunities. Preserving the park's old growth forest stands and restoring prairie areas are two of the important natural resource goals for the park. The park also provides a variety of recreational opportunities including hiking, picnicking, camping, fishing, cross-country skiing, snowmobiling, and others. The connection of the Paul Bunyan State Trail to the park will further diversify the recreational opportunities at the park and increase park visits.

Mission and Vision Statements

Department of Natural Resources Mission

The mission of the Minnesota Department of Natural Resources is to work with citizens to protect 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.

Division of Parks and Recreation Mission and Vision

Mission

We will work with the people of Minnesota to provide a state park system which preserves and manages Minnesota's natural, scenic and cultural resources for present and future generations while providing appropriate recreational and educational opportunities.

Vision

We will continue to work with the people of Minnesota to ensure that the Minnesota State Park system will be sensitive to the needs of current and future generations and guided by the following principles and values:

- A commitment to ensure deliberate and effective natural and cultural (historical and archeological) resource management;
- A commitment to provide appropriate recreational opportunities;
- A commitment to maintain a proper balance between resource protection and recreational use of state park lands;
- A conscious recognition of our responsibility to the public for wise and prudent acquisition and development of state park lands;
- A recognition of our environmental education and interpretative roles;
- A pledge to provide high quality public service;
- A promise to consistently seek public involvement and support in decision making;
- A conscious and continuous effort to respect the valuable human resources embodied in our employees and the public;
- A commitment to manage state parks for the benefits that they provide to people, society, the environment and the economy;
- A continued desire to actively seek and adopt innovative, effective and efficient management practices; and
- A realization of our responsibility to secure and maintain the resources necessary to implement our mandates and mission.

Crow Wing State Park Mission, Vision, and Goals

The following statements were generated by planning process participants after reviewing the general Department of Natural Resources and Division of Parks and Recreation mission and vision statements.

Mission:

We will work with the people to preserve and manage Crow Wing's natural, scenic, and cultural resources for present and future generations while providing appropriate recreational and educational opportunities.

Twenty Year Vision:

- ▶ The park will preserve, restore, manage, and interpret the remnants of prairie, oak, and pine communities found in the park.
- ▶ The park will preserve the ecological integrity of the unfragmented river corridor and river confluence and their associated plant and animal communities, which are of national and international significance.
- ▶ The park will preserve opportunities to experience wildness, quiet, and solitude.
- ▶ The park will be seen as a place where people can connect with the past. The park will strengthen and expand interpretation and education on the natural and cultural (historic and archaeological) significance of Crow Wing State Park through a variety of interpretive services and facilities.

Goals:

- ▶ To follow resource management practices that focus on ecosystems and natural communities rather than single species management.
- ▶ To provide recreational opportunities, buildings, and facilities that are compatible with the park's natural and cultural resources and are visitor friendly.
- ▶ To provide a diversity of trail opportunities, from remote to multi-use recreational trails that are compatible with the resources.
- ▶ To explore the development of an accessible interpretive/trail center which will provide educational opportunities, meeting space, facilities for school groups and the general public in accord with divisional and unit interpretive plans.
- ▶ To increase educational opportunities through increased staffing and cooperative programs according to divisional and unit interpretive plans.
- ▶ To maintain the primitive aspects of the river corridor by keeping the view from the river surface as wild and natural as possible.
- ▶ To provide camping facilities which provide services for a variety of camping styles, and which complement existing private camping facilities in the area.
- ▶ To enhance day use of the park, especially by maximizing opportunities for wildlife watching, interpreting wildflower and biological diversity, and historical tour opportunities.
- ▶ To provide appropriate access to the neighboring network of multi-use recreational trails.

Planning Process

This management plan was developed through an open public process. A Citizens Advisory Committee and a Resource Management Advisory Team were used during the process to provide input into the development of the plan. The previous management plan for Crow Wing State Park was completed in 1981.

The Citizens Advisory Committee (CAC) provided public input throughout the planning process. The committee consisted of people that are primarily from the local area and have an interest in the future of the park. These individuals represent a variety of perspectives that are intended to represent the diversity of the public at large. The committee members spent many hours over the course of the planning process analyzing and providing recommendations on a variety of environmental, cultural, and recreational issues. Individuals involved in the Citizens Advisory Committee represented many groups, including:

- ▶ Local government officials
- ▶ Area businesses and resorts
- ▶ Crow Wing Historical Society
- ▶ Adjacent landowners
- ▶ Paul Bunyan Learning Center
- ▶ Bird club and recovery program
- ▶ Environmental and wildlife interests
- ▶ Minnesota State Office of Tourism
- ▶ Chamber of Commerce
- ▶ Snowmobile associations
- ▶ Paul Bunyan State Trail
- ▶ Boy Scouts of America - local troop
- ▶ Friends of Old Crow Wing
- ▶ County Extension Service
- ▶ Local legislators

The Friends of Old Crow Wing was established in 1987 - a revitalization of the Crow Wing State Park Association which began in 1959. The primary purpose of the group is to work with the park manager on park projects, such as reprinting historical books related to Crow Wing and the surrounding area. Members of this group were active throughout the planning process.

Meetings were held to discuss major planning issues on the following dates:

April 20, 2000	Initial open house public meeting
June 15, 2000	Develop list of park issues and concerns, mission, vision and goals
July 17, 2000	Natural resource management issues
August 15, 2000	Cultural resource management issues and interpretive services
September 11, 2000	Recreation resource issues
October 3, 2000	Land management, boundaries and acquisition
October 26, 2000	Open house to review directions document
November 9, 2000	Tourism and community linkages
December 6, 2001	Park boundary, proposed development, and significant areas mapping
January 30, 2001	Review of draft management plan.

An open house to review the management plan was held on April 4, 2002.

The Department of Natural Resources formed a Resource Management Advisory Team (RMAT) to assist in developing this park plan. This professional team included: personnel from the Division of Forestry, the Area Wildlife Supervisor, the Regional Nongame Wildlife Specialist, the Area Fisheries Supervisor, Area Conservation Officers, the Area Trails and Waterways Supervisor, the Area Hydrologist, Regional Parks and Recreation personnel, Crow Wing State Park personnel, MnDOT personnel, Camp Ripley personnel, and the Mississippi Headwaters Board.

The RMAT met formally on April 26, 2000, August 15, 2000, and October 5, 2000. There was also an additional sub-committee meeting on August 7, 2000 specifically to address natural and cultural resource

issues. Members also attended the Citizens Advisory Committee meetings and Open Houses that were appropriate to their discipline.

The recommendations in this plan are the result of this partnership-based planning process. This plan provides the basic management direction for the park and is not intended to provide specific management or development details.

A comprehensive park plan and planning process file documenting the 2000-2002 planning process and pertinent background information will be distributed to the following locations:

Crow Wing State Park, Brainerd, MN
State Parks Regional Park Manager's Office, Brainerd, MN
State Park Planning Section, St. Paul, MN.

II. REGIONAL ANALYSIS

The following section describes the regional population, tourism and resort industry, the regional supply and demand for recreational services, and the region's natural resources and landscape. Throughout this chapter, the plan will reference a 50 mile radius. This distance was chosen to represent an area roughly within a one hour drive of the park. (See Figure 1 - 50 Mile Radius for Recreation and Tourism Opportunities).

Crow Wing State Parks lies in north-central Minnesota and straddles three counties and the Mississippi and Crow Wing Rivers. The main use area of the park lies in Crow Wing County. The northwestern part of the park is in Cass County, and the portion of the park that is within Camp Ripley is in Morrisson County. The portions of the park within Camp Ripley are used for military training and are not open to the public.

Regional Landscape Description

Minnesota's Ecological Classification System (ECS) is part of a national classification that separates and describes units of different landscapes. This approach stresses the interrelationships and interactions among components of the ecosystem. These components include climate, geology, geomorphology, parent material, soils, vegetation, hydrology, and land use history. ECS divides Minnesota into 26 distinct units called subsections. Crow Wing State Park falls into two subsections: Anoka Sandplain and Pine Moraines and Outwash Plains. (See Figure 2 - Ecological Subsections.)

Anoka Sandplain Subsection

In Crow Wing State Park, all lands east of the Mississippi River (including the islands) lie in the Anoka Sandplain. The park is located in the far northwestern corner of the Anoka Sandplain.

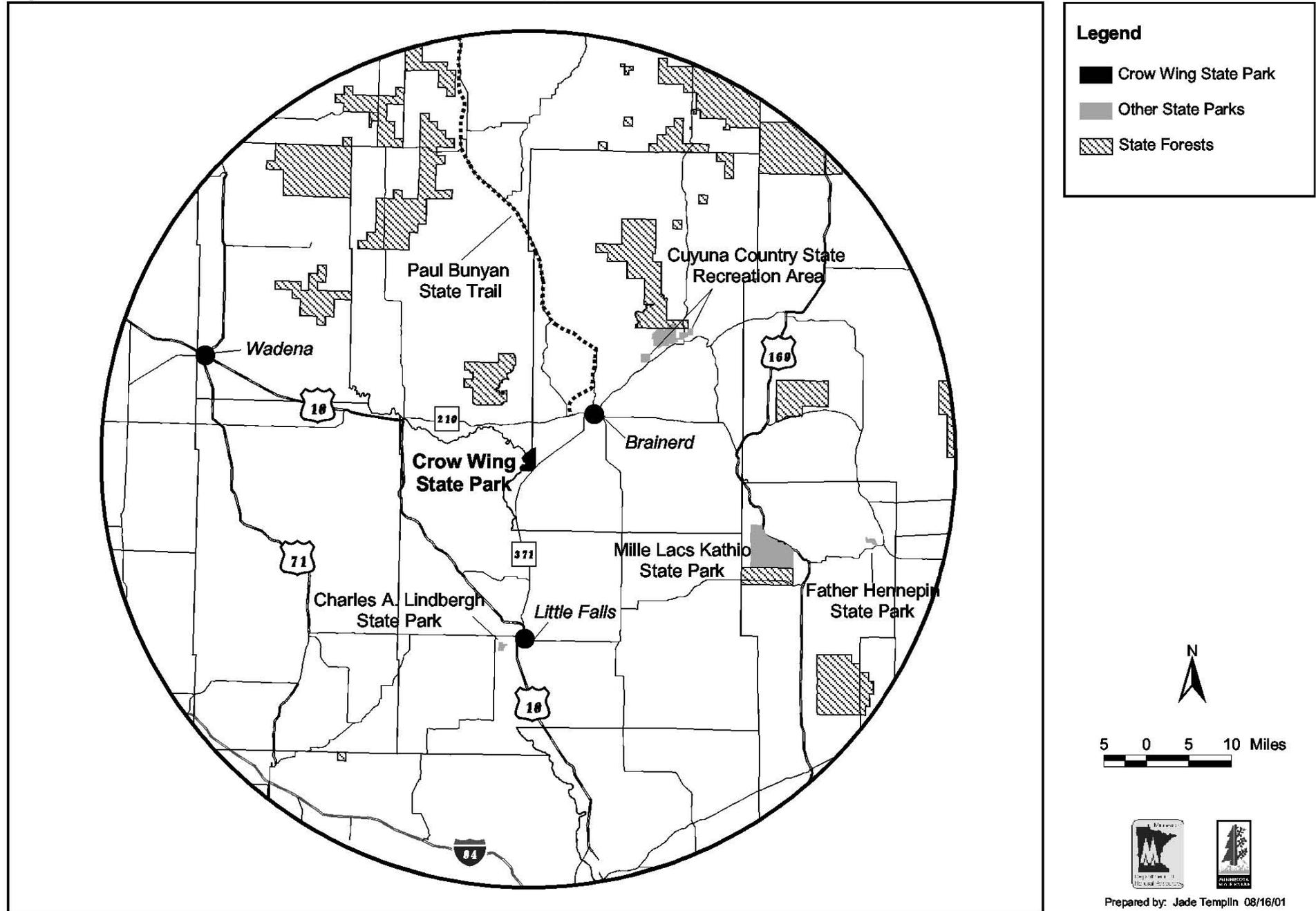
This subsection is characterized by a flat, sandy lake plain that terraces along the Mississippi River with a shallow water table. This plain contains small dunes, kettle lakes, and tunnel valleys. Topography is level to gently rolling. Soils are derived primarily from fine sands which are droughty, upland soils. There are organic soils in the ice block depressions and tunnel valleys, and poorly-drained prairie soils along the Mississippi River.

Prior to European settlement, the predominant vegetation on the droughty uplands was oak barrens and openings. Characteristic trees included bur oak (*Quercus macrocarpa*) and northern pin oak (*Quercus ellipsoidalis*). Jack pine (*Pinus banksiana*) was present locally along the northern edge of the subsection. Brushland characterized large areas of the sand plain. Upland prairie and floodplain forest formed narrow bands along the Mississippi River. Fire and drought were important factors impacting the vegetation of the sand plain. Drought caused mortality of the dominant species in the oak barrens and savannas - northern pin and bur oak. During severe periods of drought, vegetation cover was greatly reduced on portions of the sand plain, resulting in eolian erosion and sand dune movement.

Today, sod and vegetable crops are extensively grown on drained lowlands. Urban development is rapidly expanding into the subsection. The potential of rapid construction of homes and businesses to damage wetlands in the area is a major environmental concern.

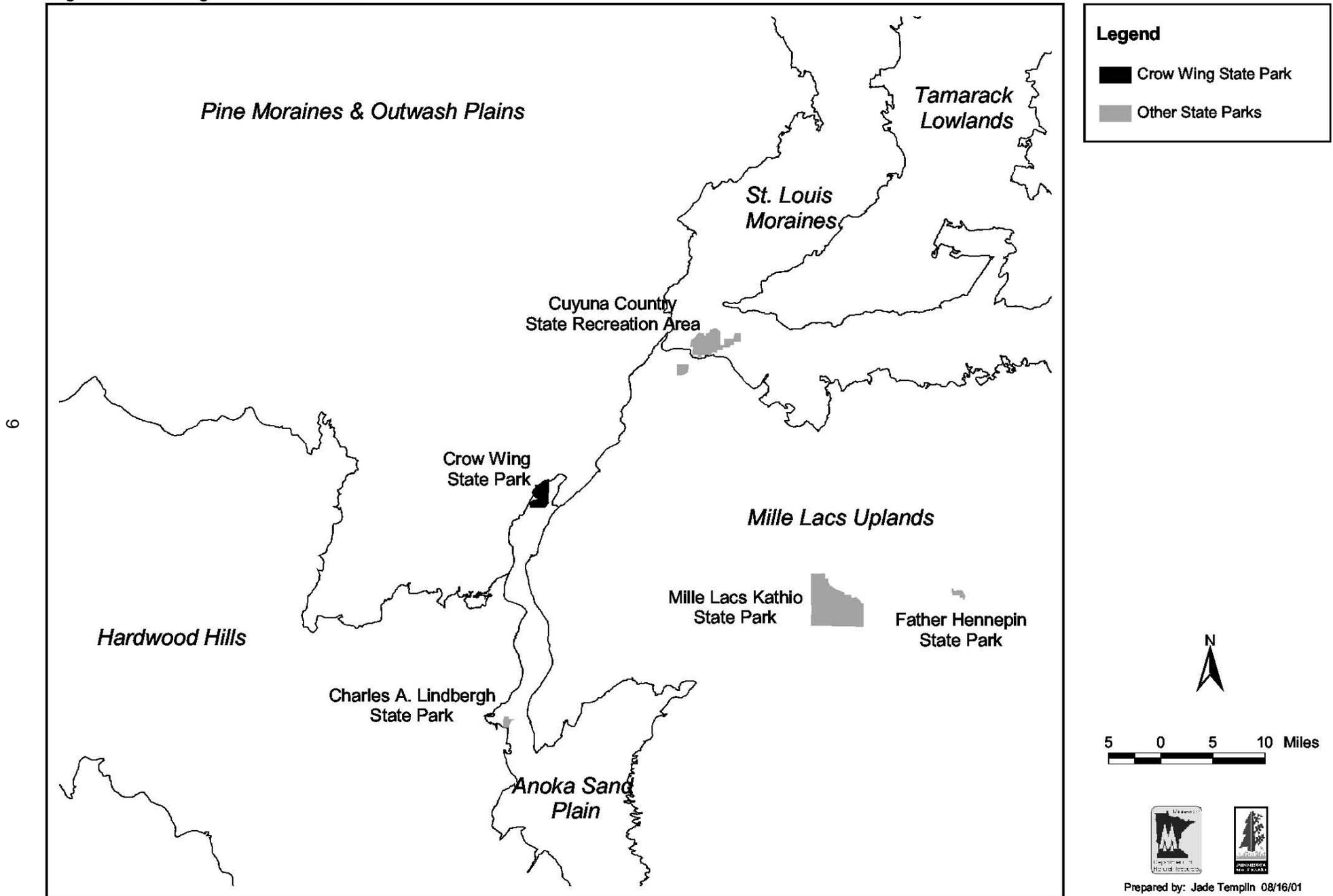
Crow Wing State Park

Figure 1 - 50 Mile Radius for Recreation and Tourism Opportunities



Crow Wing State Park

Figure 2 - Ecological Subsections



Legend

-  Crow Wing State Park
-  Other State Parks



5 0 5 10 Miles



Pine Moraines and Outwash Plains Subsection

The lands west of the Mississippi River and east of the Crow Wing River (excluding the islands) lie in the Pine Moraines and Outwash Plains. This portion is primarily in Cass County.

This subsection covers approximately 10 percent of Minnesota. It stretches from north of Bemidji to south of Wadena and Brainerd. This subsection is composed of a mix of end moraines, large outwash plains, narrow outwash channels, till plains and drumlin fields. Most of the subsection is covered by thick glacial drift with a Precambrian rock underlying. The till is generally sandy with some loamy drift in the northern portion of the subsection.

Topographic characteristics include irregular steep-sided knobs and ridges which typically rise 50-100 feet above the adjacent lowlands. The highest elevation in Morrison County exceeds 1,500 feet and occurs in Camp Ripley. In contrast to the rugged moraine topography, the eastern edge of the Camp Ripley (where Crow Wing's statutory boundary lies) is primarily a level terrace of alluvial deposits of the Crow Wing and Mississippi rivers.

Pre-European settlement vegetation consisted of a mix of jack pine and northern pin oak on the excessively drained areas of broad outwash plains. Aspen - birch (*Populus* sp. - *Betula papyrifera*) and pine forests dominated large areas of the other landforms. Red pine (*Pinus resinosa*) and white pine (*Pinus strobus*) forests were found on the rolling to irregularly sloped end moraines. Forests composed of a diverse mix of northern hardwoods and white pine were located in fire protected areas at the northern and eastern edges of the subsection. Irregular topography, broad wetlands, and large lakes provided protection from fire.

Lakes are common on the end moraines and outwash plains. Kettle lakes (lakes in depressions created by melting chunks of glacier ice), in particular, are found on pitted outwash plains and within stagnation moraines. Some of Minnesota's largest lakes are found in this subsection, as well as the headwaters of the Mississippi River. The other large rivers in the region are the Pine and Crow Wing rivers.

Present vegetation includes white and red pine, aspen-birch, mixed hardwoods, jack pine barrens, and conifer bog. Among the rare plants in the region are ram's-head lady's-slipper (*Cypripedium arietinum*), olivaceous spike-rush (*Eleocharis olivacea*), bog adder's mouth (*Malaxis paludosa*), slender naiad (*Najas gracillima*), and sheathed pondweed (*Potamogeton vaginatus*).

Watershed Description

Crow Wing County contains approximately 749,000 acres of land and water. Of this total, over fourteen percent (106,000 acres) is marsh or water. The county contains 202 lakes greater than 40 acres. The lakes are located in two areas: north of Brainerd is the Gull, Pelican, and Whitefish chain and in the southeastern part of the county is Bay Lake and Mille Lacs Lake. There are two major rivers in Crow Wing County, the Mississippi and the Pine. About 3% of the county is large wetlands. Preservation of wetlands, in the large west-central sandy outwash plain, is needed to maintain the groundwater table in the area.

In Cass County, many of the 517 lakes are connected by waterways that drain into six major rivers: Leech Lake, Willow, Pine, Gull, Boy, and Crow Wing rivers. All six rivers drain into the Mississippi River. The Mississippi River forms the northeastern border with Itasca County. It reenters the county at the southeast corner, at its confluence with the Crow Wing River. The highest point of elevation is 1,610 feet at Spider Lake Lookout Tower in the south-central part of the county. The lowest elevation is 1,150 feet at the southeast corner, just north of the point where the Crow Wing River flows into the Mississippi River.

Regional Population Analysis

Minnesota is the fastest growing state in the Midwest. Since the late 1980s, migration has played an increasingly important role in Minnesota's population growth. In addition to drawing more people from other states, Minnesota is also attracting more people from abroad.

Crow Wing State Park is located in Cass, Crow Wing, and Morrison Counties. All three counties have experienced growth in the last decade. The estimated total population of all three counties in 1999 was 110,098 - a 15.1% increase from 1990. Crow Wing, with the expanding Brainerd/Baxter area, is the fastest growing of these counties. Population estimates and projections are shown in Table 1.

Table 1. Population Estimates and Projections for Counties Surrounding Crow Wing State Park

County	1990	1999	2020	% Change 1990-1999	% Change 1999-2020
Cass	21,791	25,644	28,210	17.7%	10.0%
Crow Wing	44,249	52,698	59,750	19.1%	13.4%
Morrison	29,604	31,756	31,480	7.3%	-0.9%
Total	95,644	110,098	119,440	15.1%	7.8%

The area around Crow Wing State Park is expected to continue to grow, although at a slower rate, over the next two decades. The Minnesota State Demographers Office projects the population of the three counties to reach 119,440 by the year 2020. Crow Wing County is expected to continue to be the fastest growing area, while Morrison County is projected to decrease slightly in population.

Regional Land Use

About 1/4 of the land in Crow Wing County has been cleared and developed - 8% is cultivated, 10% is pastured, and 6% is urbanized or extractive. Most of the land cover change has taken place south of Brainerd, where agricultural land uses are concentrated. Some of these agriculture operations contain beef, dairy, or poultry operations. Irrigated farmland is found on the sandplains located in Crow Wing, Fort Ripley, and St. Mathias townships. The urban development has concentrated in the cities and lakeshore areas. Crow Wing County is an important center for both forest products production and processing. Wood production is concentrated on the public lands in the northern and eastern portions of the County. Private lands are also an important source of raw material. For example, Potlatch Corporation manages several large landholdings in the county for wood and pulp production.

Land use in Cass County centers around tourism, agriculture, and forestry. In Cass County, 66% of the land is commercial forest land. Forestry and forest products are among the county's leading industries. Tourism is also a major industry in Cass County. Seasonal businesses such as resorts, marinas, sports shops, and motels dominate northern and southeastern Cass County and bring \$110 million into the economy each year. Agriculture is also a significant land use in Cass County.

The portion of the park that is in Morrison County is entirely within Camp Ripley. The camp has been used by the Minnesota National Guard units since 1931 - one of nine National Guard training sites in the United States. At 53,000 acres, it is one of the largest state-owned military installations in the country, providing a training site used by over 40,000 troops each year. Camp Ripley is utilized throughout the year. It is the primary National Guard winter training site in the United States. It provides diversified terrain for training in the use of weapons and equipment. Training facilities include an airfield, rappel

tower, bridging site, two prisoner of war compounds, 95 training areas, two impact areas, and 45 established firing ranges. The Camp Ripley lands are not open to the public.

Socio-Economic Region

In the last 25 years, the economy of the Brainerd Lakes area has changed from a resource-based economy (commercial forestry, mining and tourism), to a more diverse service economy. There is still a strong resource-based economy, however retail sales, education, medical services, and regional government facilities now make up a larger share of the local economy than in previous years.

Another significant change has been in region's demographics. The population is on average older as the Brainerd area becomes a retirement area centered on the high quality lake and forest resources and accessibility to high quality medical care.

There are 14,000 non-homesteaded seasonal homes in the Brainerd area (approximately 40% of all homes in the area). Seasonal residents have a significant impact on the local economy. The area has experienced a 16% population increase since 1994. Approximately 50 new building permits are issued each month.

Brainerd is seeking more global opportunities for tourism and trade, especially with Japan and Germany. Rapid economic growth and tourism has lead to an employee shortage in the service sector. Many resorts are recruiting students from Europe in response to the local labor shortage.

Regional Recreational Opportunities

Crow Wing State Park is in a region of Minnesota that is well known for its abundant recreational resources. The region has a wide variety of federal, state, or county owned land that is available for a variety of outdoor recreational uses. City and privately owned facilities also contribute additional opportunities.

Approximately 1/3 of the land in Crow Wing County is accessible to the public for recreation purposes. The county manages the largest amount of land in recreation use - 14% of the total land area. The state owns four percent of the land area and is the principal manager for the 11% of the county that is water. Most recreation occurs on or near lakeshore.

Crow Wing County and the surrounding area is a popular recreation destination. There are numerous resorts and other recreational opportunities on the Whitefish Lake chain, Gull Lake, and other lakes in the area. The Cuyuna Country State Recreation Area was created by the Minnesota State Legislature in 1994. This facility includes a number of abandoned and flooded mine pits of the Cuyuna Iron Range. Property for the recreation area is currently being acquired. Other important recreation facilities include the French Rapids area near Brainerd and the Paul Bunyan State Trail.

Area Lakes and Rivers

There are numerous lakes within a 50 mile radius of Crow Wing State Park. Some of them are among the most popular fishing areas in Minnesota. In addition to lakes, there are several major rivers in the area. The Mississippi, Crow Wing and Pine rivers are designated canoe routes. There are 376 trailer-in boat launches and 79 carry-in boat launches within the 50 mile radius of the park.

State Forests

There are thirteen state forests within fifty miles of Crow Wing State Park. Five of these have campgrounds totaling 186 campsites and one group camp area. (See Table 2 for camping opportunities offered by various agencies in the Crow Wing State Park area.) The state forest campgrounds and day

use areas are currently managed by the Division of Parks and Recreation. A variety of recreation is permitted on these lands including: hunting, fishing, hiking, berry picking, birding, horseback riding, mountain biking, boating, photography, and to a limited extent, all terrain vehicle riding. There are extensive snowmobile trails in several of these state forests, as well as cross-country ski trails.

Table 2. Camping Opportunities Within Fifty Miles of Crow Wing State Park.

Managing Agency	# of Campgrounds	# of Sites			
		Drive-In w/ Electricity	Drive-In w/out Electricity	Walk-In/ Boat-In	Group
DNR State Parks	5	90	182	6	4
State Forest*	5	0	186	13	2
USACOE**	2	108	50	0	0
Counties	17	297	0	0	0
Municipal	3	58	39	0	0
Private	38	1026	59	0	0
Total	70	1579	516	19	6

*State Forest Campgrounds and day use areas are managed by the Division of Parks and Recreation

**United States Army Corps of Engineers

Trails

The Paul Bunyan State Trail is a multi-use (predominately snowmobile, bicycling, hiking) recreational trail from Baxter/Brainerd to Bemidji. When completed, it will be over 100 miles long. The Paul Bunyan State Trail and the connecting Blue Ox Trail will form the longest rail-to-trail conversion in North America, approximately 210 miles. The Minnesota Legislature authorized the extension of the Paul Bunyan State Trail from the current southern terminus in Baxter to Crow Wing State Park. Planning for the extension of the trail is underway. (See VI. Recreational Use and Visitor Services.)

The Heartland State Trail meets the Paul Bunyan Trail in the vicinity of Walker. From Walker, the Heartland State Trail extends west toward Park Rapids and northeast to Cass Lake.

The North Country National Scenic Trail crosses the Paul Bunyan State Trail between Hackensack and Walker. This 3,246 mile, federally managed trail will eventually connect the eastern Appalachian Trail to the Lewis and Clark Trail in North Dakota. While principally a rugged hiking trail, some segments are designated for horseback riding, cross-country skiing and mountain biking.

A network of almost 2,400 miles of snowmobile trails are within a 50 mile radius of Crow Wing SP. In addition, there are 243 miles of hiking trails and 126 miles of cross-country ski trails within the region. (See Table 3 for trail miles for various activities.)

Scenic Byways

The Great River Road is a 1,185 mile route featuring scenic, historic, and recreational opportunities along the Mississippi River. The Great River Road has two components, a federally designated national route and a state designated alternate route. The federal route follows Highway 371 to Brainerd past Crow Wing State Park.

Paul Bunyan Scenic Byway is a 48 mile loop route that follows six County-State Aid Highways around the Whitefish Lakes chain north of Brainerd and Crow Wing State Park. The Byway was designated in 1998. The route was developed and is being promoted by the Paul Bunyan Scenic Byway Association, a nonprofit group of local businesses and organizations.

Table 3. Trail Opportunities Within 50 miles of Crow Wing State Park*

Managing Agency	Hiking	Biking (Paved)	Mountain Bike (Off Road)	Cross-County Ski	Snow-mobile	ATV/OHV
DNR State Parks	63	0	0	31	25	0
DNR Trails & Waterways	73	73	73	28	73	103
Counties	106	37	102	73	2241	111
Municipal	5	22	6	30	15	0
Other	0	0	0	0	19	0
Total (miles)	247	132	181	126	2373	214

*Many of these trails are multi-use, summing across category totals will overestimate total trail miles.

Tourism and Marketing

The area surrounding Crow Wing State Park has a strong tourism base and potential for growth in tourism income. The North-central/West region of Minnesota has the highest travelers average income of any region in the state - \$59,000. This region also has the longest length of stay of any region in the state - 3.8 days. The average party size is 3.1 people, which is the highest of all regions. However, the average expenditure was only \$56 per person per day, the lowest expenditure among the regions in the state.

Communities and private organizations have been working to build tourism in the area. Expanding advertising - including Internet sites for area resorts, hotels, and chambers of commerce - have increased awareness of the attractions of the area. The Brainerd Lakes Chamber of Commerce, which had no internet presence three years ago, now averages 1,200 inquiries a year via its website.

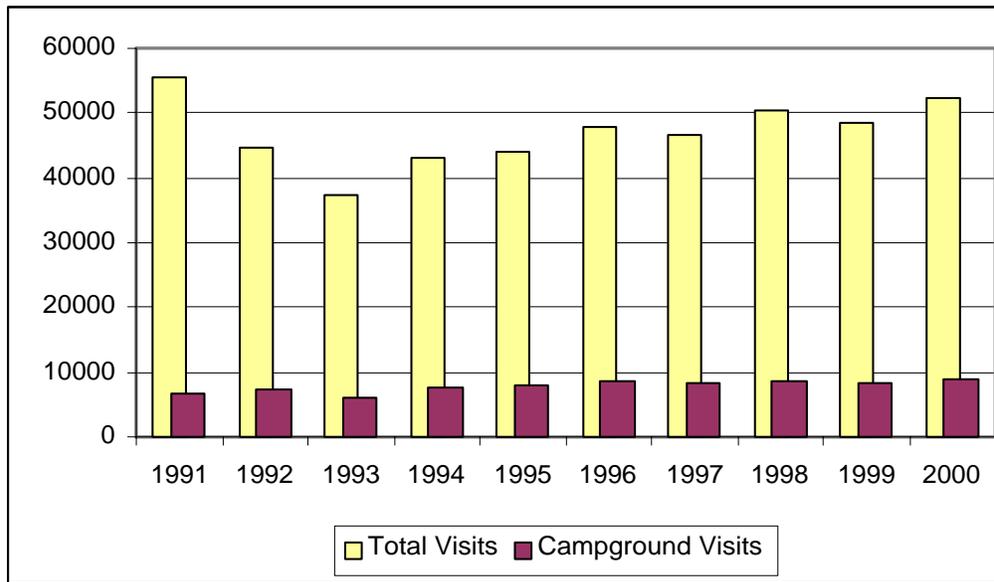
Other changes are also occurring that impact tourism in the area. Recreational developments - especially the advent of golf as a primary attraction for travelers to the area - are changing the reasons people travel to the Crow Wing State Park area as well as their expectations for accommodations, restaurants, etc. The mix of accommodations in the area is also changing. The Brainerd Lakes Chamber of Commerce reports a decrease in the number of small family resorts. From 1994 to 2000, 5% of the family resorts have closed. Every year the Brainerd area loses 2-3 resorts. Conversely, hotel accommodations are expanding - there are now 1,000 more hotel units in the area, 60% of them are open in the winter. Many campsites and resorts are converting to seasonal occupancy arrangements.

Park Visitor Analysis

Park visits at Crow Wing State Park have fluctuated between 45,000 and 50,000 people annually over the last decade. Total park visitation in 2000 was 52,194, with campground visits accounting for 9,012 of the total visits. The majority of park visits occur from mid-April to mid-October. Approximately 80% of the park users are day visitors, while the other 20% are campers. Chart 1 illustrates the total park visits and

campground visits for Crow Wing SP from 1991 to 2000. The park visit formula was revised in 1992, resulting in the significant change in estimated visits from 1991. Both park visits and campground use have been relatively stable, with park visits increasing overall since its low point in 1993.

Chart 1. Crow Wing State Park Visits and Campground Use, 1991-2000



Most of the camping activity at Crow Wing State Park takes place on weekends from mid-May through mid-September. The campground is regularly at capacity on holiday weekends and most weekends from mid-June through Labor Day. Campground use is much lower on weekdays. Figure 3 illustrates the place of origin for campers that stay at Crow Wing State Park - the local area accounts for approximately 12% of the camping visits, the Minneapolis-St. Paul metropolitan area generates over 43%.

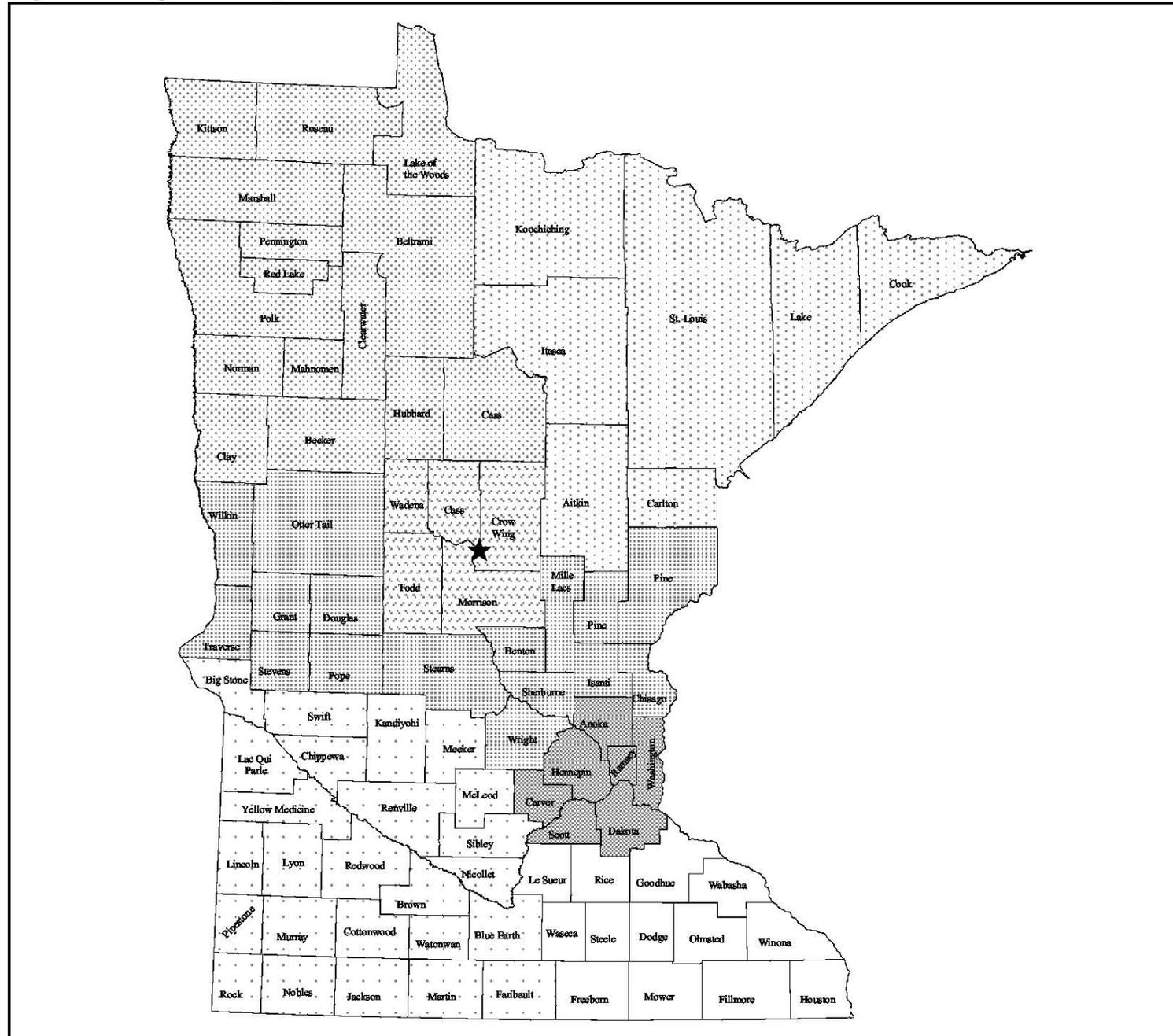
The most popular day-use activities are hiking, biking, picnicking, touring the historic sites, wildlife watching, visiting scenic overlooks, canoeing, boating and fishing. Park visitors can also experience weekend interpretive programs, self-guided trails, informational signs, and kiosks. Maps and brochures about natural resources and the history of the Crow Wing area are available. Park staff also received requests for additional natural and cultural history information. Park visitors use the Brainerd/Baxter area for shopping, swimming, bike trails and other entertainment opportunities.

The Brainerd-Baxter community, which is approximately 9 miles from the park, has grown significantly in recent years. Completion of the Highway 371 bypass in 2000 through the area provides a faster, more convenient link between the park and other attractions in the Brainerd area which may result in increased park visits in the future.

Park staff have identified an increase in visits from the St Cloud area over the last several years. These people have stated that they chose to visit Crow Wing because of its proximity (less than an hour drive) and it “seems like a wilderness setting.” Brainerd/Baxter’s promotion of the area as the “Gateway to the Northwoods” may also increase future attendance at the park.

Crow Wing State Park

Figure 3 - Origin of Campers



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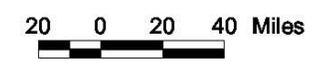
★ Crow Wing State Park

Percent of Campers

-  Metro 43.2%
-  Central 19.7%
-  Local 12.2%
-  North West 4.3%
-  North East 4.1%
-  South West 2.4%
-  South East 1.6%

Out of State 11.1%

International 1.4%



Crow Wing State Park Marketing Analysis

By seeking to answer a series of questions, a marketing program for Crow Wing State Park could be developed. This program could help the park tailor future programs and events to its visitor base.

Who is using the park?

People using the park currently are those familiar with state parks and a few locals who are familiar with its history and scenic beauty, quiet, and solitude.

Why are they coming?

They come to Crow Wing State Park for the historic sites, for the open space, for a natural area, for the scenic beauty, for camping, for a chance to canoe or just see the Mississippi River. It is a relatively short drive for people from the Minneapolis-St. Paul metropolitan area and St. Cloud.

What niche does the park provide in terms of beauty, resources, and recreation?

- Beauty - Vistas along the Mississippi and Crow Wing Rivers and from an historic old town site.
- Natural Resources - Major biomes of pinelands, hardwoods, and prairies; good examples in a central location.
- Recreation - Quasi-wilderness setting for urban residents, camping, family canoeing, hiking, state bike trail and multiple activities available in nearby Brainerd/Baxter.

How do people learn about the park?

People learn about the park mostly by word of mouth, some have found it on the internet, some are referred to the park for camping when their first choice for campsite reservations are full, others from the positive promotion by the local newspaper - Brainerd Daily Dispatch. Recently, the park is beginning to be associated with the Paul Bunyan State Trail.

Could the park provide more community events?

Community events that may be appropriate would be historical gatherings that focus on the frontier days, events that focus on the river, historic re-enactments and canoeing events that may tie into a major community event. This area is known as the Brainerd Lakes area - the rivers in the area have not received as much attention.

How is park visitation related to the Brainerd resort/cabin area?

As lakeshore gets more expensive, the smaller resorts are converted to other uses. Resorts that used to provide campsites on a daily rental basis are going to seasonal arrangements. State parks may soon be one of the few options where people can find a campsite for a shorter stay. The construction along Highway 371 has made it much safer and easier for visitors to get into the park. The Paul Bunyan bike trail connection to the park will increase visitation and provide more effective access to the park. A new highway wayside rest area planned for construction near the park entrance on Highway 371 will further increase the park's visibility to travelers passing through the area.

III. NATURAL RESOURCES MANAGEMENT

Climate

Crow Wing State Park has a continental type of climate. The mean annual temperature is 42 degrees F. The temperature variation over the season is quite large. The normal mean temperature for the four seasons: summer, 68 degrees F.; fall, 46 degrees F.; winter, 12 degrees F.; spring, 42 degrees F. Crow Wing State Park has an average summer (June-August) temperature range of 58 degrees F to 82 degrees F. The average winter temperatures (December – February) variation is from -6 degrees F to 25 degrees F.

There can be wide fluctuations in the weather patterns. Generally, prolonged periods of hot and humid weather are infrequent. The area averages 10 days a year over 90 degrees. Extremely hot days with temperatures of 100 degrees F. or higher occur only rarely.

The climate of the region is primarily controlled by the behavior and interaction of two air masses. The polar continental air mass centered in northern Canada results in prevailing winds from the northwest during the winter. During this time, it sends cold waves that spell bitter cold. In the summer, it is associated with cool, clear weather.

The tropical maritime air mass of the Gulf of Mexico brings southerly prevailing winds for the remainder of the year. During April, moist tropical maritime air from the Gulf of Mexico begins to reach Minnesota. It is associated with higher temperature and moderate to high humidity and occasionally with periods of hot and humid weather. By October, Minnesota is effectively cut off from Gulf moisture and is under the dominance of westerly and northwesterly winds. In general, northerly winds prevail from November until May, then switch to the south and remain southerly throughout the summer and early fall. The direction of these winds is slightly modified by the Crow Wing and Mississippi River valleys, a local climate phenomena.

The mean annual precipitation at Crow Wing is 26 inches. This precipitation is distributed over the year with about 6-8 inches falling in the months of March-May, 10-12 inches in June-August, 5-6 inches in September-November, and 2-3 inches in December-February. Yearly snowfall totals average 44 inches. The date of the first one inch of snow cover is approximately November 15-20th. Snow cover depth of six inches or more has an average duration of 85 days. The growing season is approximately 113 days - from April 13th to September 14th. The latest frosts in spring usually occur prior to May 15th and the earliest frosts in fall usually occur after September 15th.

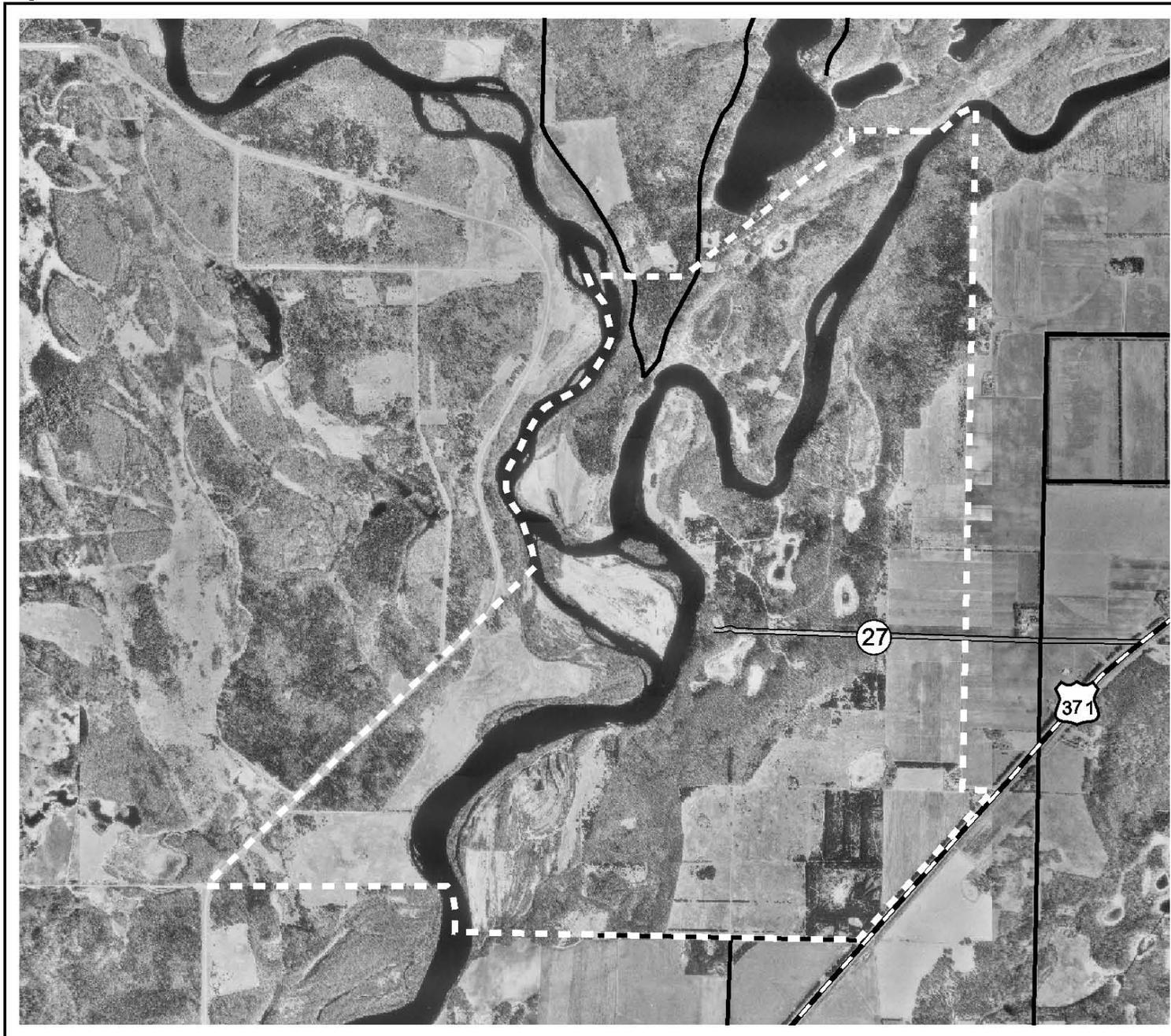
Topography

The park is located on level to gently rolling, sandy outwash plain. The topography varies from relatively large flat areas, such as the southeast corner of the park to the steeply sloped banks along the Mississippi and Crow Wing Rivers which rise from 30-40 feet above the water. Elevations range from approximately 1,150 to 1,190 feet above sea level. There are a few slopes of 12% or greater in the park - located along the Mississippi River. These slopes are subject to erosion, therefore, park facilities will be developed in a manner to minimize erosion potential. (See Figure 4 - Aerial Photo and Figure 5 - 10' Contours)

Crow Wing State Park

Figure 4 - Aerial Photo

20



Legend

-  State Park Boundary
- Roads
 -  State Highway
 -  County Highway
 -  Other Roads



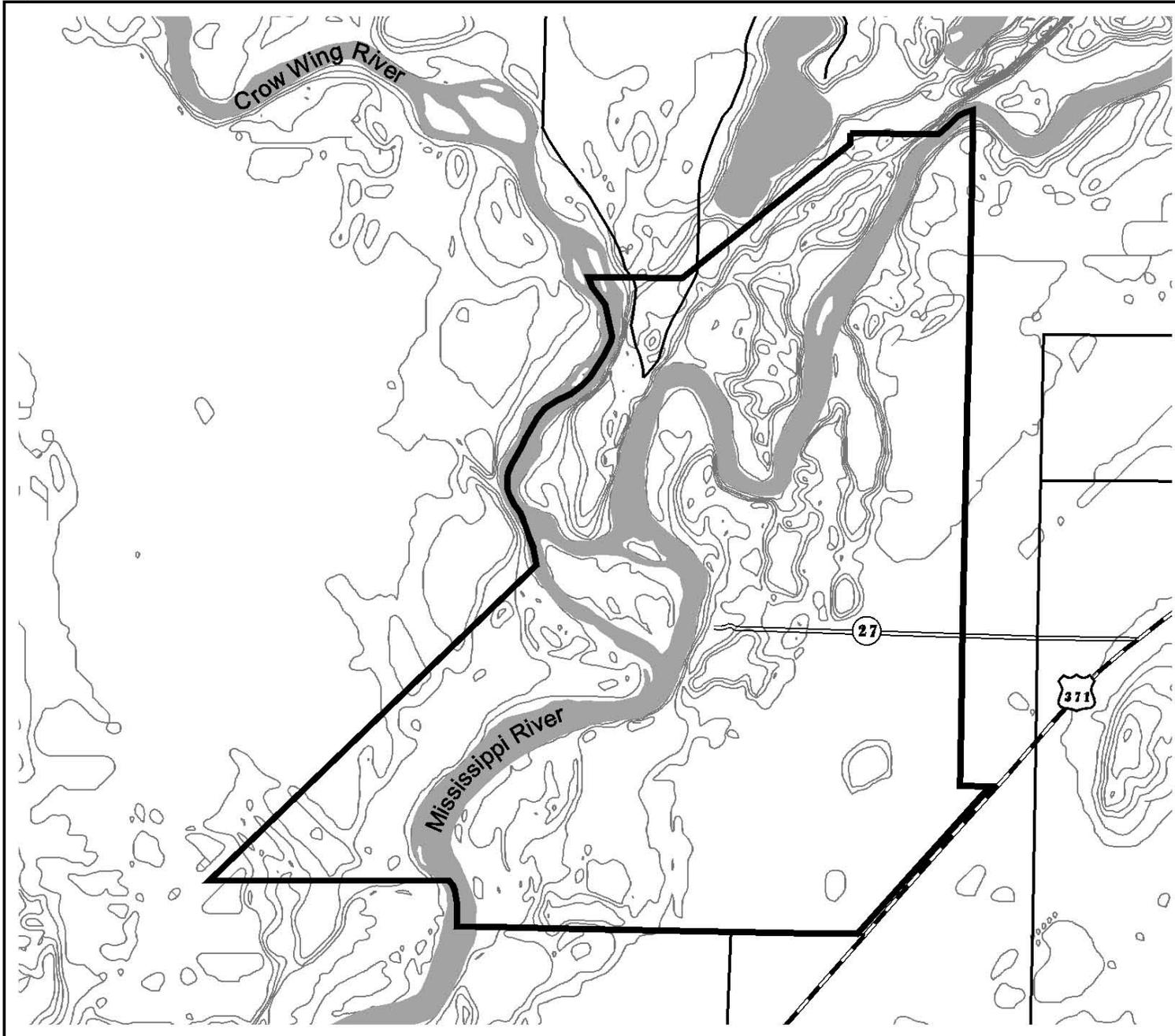
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Prepared by: Jade Templin 08/17/01

Crow Wing State Park

Figure 5 - 10 Foot Contours



Legend

- State Park Boundary
- 10' Contours
- Water
- Roads**
 - State Highway
 - County Highway
 - Other Roads

21



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Prepared by: Jade Templin 08/17/01

Geology

The landscape surrounding Crow Wing State Park displays a history of glaciers advancing and retreating through central Minnesota. (This and the following are from Knaeble, 2001). Several periods of glaciation passed through this area, creating layers of sediments and deposits. The Wisconsinan glaciation (from approximately 60,000 to 10,000 years ago) laid down the last deposits in the area, most notably the St. Croix moraine - a mixture of brown till and outwash visible as the hilly region extending north and southwest of Pillager. Other features in the area are also the result of glaciation - drumlins (ridges formed by glacial ice) that form a visible ridge to the east of the park, area lakes and wetlands which occupy depressions created by melting ice blocks, and flat plains formed by glacial meltwater distributing clay, sand and gravel

However, most of the landforms within the park are the result of more recent river deposition. The meltwater from the retreating glaciers cut channels in earlier sediments and deposits, creating the river valleys now occupied by the Mississippi and Crow Wing rivers. The wide channels, terraced banks, and sediment-laden flats of the Mississippi and Crow Wing river valleys are remnants of these large meltwater rivers. For example, the linear ridges in the south end of the park are braided river channels created by these earlier meltwater flows. The Crow Wing and Mississippi rivers continue this process of sedimentation and channelization, although on a much smaller scale than their glacier-age predecessors.

Soils

Most of the soils in the park are well-drained outwash plain, with sandy soils. They have a good percolation rate and pose few limitations to development.

The parent materials of the soil in the area were deposited by glaciers. Two major types of glacial till are found in the area. Brown sandy till of the Cary age is common in the Brainerd drumlin field and north of Whitefish Lake. The material has a sandy loam texture and is usually compact. Red clay till of the Mankato age occurs in the morainic hills in the east-central part of the county along the north and south shores of Mille Lacs Lake. It is mixed with outwash materials in places and is nearly free of large stones.

Outwash is common in the area; it ranges from well-sorted fine sand to poorly sorted coarse gravel. It is a mixture of material of both Cary age and Mankato age. A sizable area of well-sorted sandy outwash borders the Mississippi River. Some dunes have formed in this area.

There is not evidence of a great change in climate during the time the soils have been forming; thus, climate was not a major factor in producing differences among the soils. The age of the soils in Crow Wing County is estimated to be between 8,000 and 12,000 years. The soil types found in Crow Wing State Park are listed below. Descriptions of the soils are included in Appendix B.

Hubbard Series

- Hubbard loamy sand, 0 to 2 percent slopes (HuA)
- Hubbard loamy sand, 0 to 2 percent slopes, moderately wind eroded (HuA2)
- Hubbard loamy sand, 2 to 7 percent slopes (HuB)
- Hubbard loamy sand, 3-8% slope (7B)

Nymore Series

- Nymore loamy sand, 0 to 2 percent slopes (NyA)
- Nymore loamy sand, 2 to 7 percent slopes (NyB)
- Nymore loamy sand, 7 to 13 percent slopes (NyC)

Menahga Series

- Menahga Sandy Loam 3-8% slope (458B)
- Menahga Sandy Loam 8-15% slope (458C)
- Menahga Sandy Loam 15-40% slope (458E)

Seelyeville Muck (540)
Fluvaquents (1002)

The Hubbard and Menahga 3-8% and 8-15% slope soils have moderate limitations for recreational development. Moderate limitation means that limitations can be overcome or alleviated by planning, design, or special maintenance. These two soils tend to be too sandy for intensive recreation.

Three of the soils in this area have severe recreational development limitations: Menahga 15-40% slope (too steep of slope), the Seelyeville Muck (ponding and excess humus) and the Fluvaquents (wetness and flooding). The soil properties are unfavorable for development - their limitations offset only by costly soil reclamation, special design, intensive maintenance, limited use, or a combination of these measures. The islands and much of the southern portion of the peninsula between the Crow Wing and Mississippi rivers fall into this category. However, these areas represent only a small portion of the park and do not impinge existing or proposed development projects in the park.

Hydrology

Surface Water

The main surface water features in Crow Wing State Park are the Mississippi River and the Crow Wing River. There are also several small ponds within Crow Wing State Park. Although little is known about the environmental condition of these ponds, these are an important component of the landscape of the park.

The Mississippi River bank along the town site is eroding. Historical photos from the 1860s show a much different river bank, with a very gentle slope. Archaeologists report that since the 1970s the river bank has retreated between 8 and 10 feet. Each year, additional artifacts are dislodged or lost along the bank. Natural disturbances and processes are often viewed as vital to ecosystems in state parks. However, in this specific case it is questionable to what extent the occurrence is natural. Both the Crow Wing and Mississippi rivers are regulated by dams. The dam nearest the park on the Crow Wing River is the Sylvan Power dam and above it on the Gull River is the Gull River Dam. The Upper Mississippi is controlled by a series of flood control dams. Rapid development in the Brainerd area has also significantly changed the runoff patterns of the watershed. Hydrologic action is aggravated by park visitors going to the river and adding to the erosion problem. Visitor safety is a serious concern, especially during times of high water. In the short-term, a split rail fence has been installed in the worst area of erosion to discourage park visitors from accessing the river bank at this point.

A hydrologic model should be developed to determine where the impact is most likely occurring and what methods to control the erosion would be best. Vegetative bank stabilization techniques - in conjunction with minor riprap installations - will be investigated. The Division of Parks and Recreation will consult with the U.S. Army Corps of Engineers St. Paul District Office and Waterways Experiment Station in Vicksburg, Mississippi concerning the design and implementation of the control measures.

Additional research will be conducted to determine the most appropriate management practice to be used when the project is implemented. The primary items that will be taken into consideration are: 1) protection of the site, 2) aesthetically acceptable for the historic district, 3) does not impede the flow of either river, 4) meets wetland and protected waters criteria, 5) is acceptable for aquatic habitat enhancement, 6) does not contribute to the sediment moving downstream, 7) withstands the pressures of flow ice, and 8) is endorsed by the Army Corps of Engineers and the Mississippi Headwaters Board.

The Mississippi and Crow Wing rivers support an abundance of wildlife. There are many species of fish in both rivers, such as muskie, northern pike, smallmouth bass, walleye, and various pan fish. (See Appendix C.)

Ground Water

Water supplies are adequate to meet park visitor and resource management needs at the present time. However, increased development will result in more groundwater use and pressure on groundwater aquifers. Park staff should stay aware of future water use planning by local cities and counties and the potential impact on water quantity and quality at the park.

Vegetation

Historic Vegetation Pattern - General Land Office Survey Records

The pre-European settlement vegetation pattern in this area is complex because the park is located at the junction of all three biomes in the state - prairie, hardwood forests, and coniferous forests. Native prairie, oak savanna, jack pine barrens, white and red pines, conifer bogs, and swamps, and deciduous forests were all present in the Crow Wing area. The General Land Office Survey recorded the vegetation present in what would become Crow Wing State Park in 1870. The following description is based on the 1870 surveyors plat map, surveyors notes and bearing trees data.

The area lying in Cass County to the north of the Crow Wing River and west of the Mississippi River was described as a pine barrens consisting of jack pine and red pine. The area of Crow Wing State Park lying in Crow Wing County on the east side of the Mississippi River was described as a scattering of oak and pine with the species being primarily white oak (possibly burr), white and jack pine. The area of the park in the vicinity of the present day canoe campsite was described as lowland hardwoods along the river. The uplands were described as scattering oaks primarily identified as white oak (burr) and black oak (northern pin). The area to the east of the wooded areas was identified as prairie. Wetlands were a significant component in the natural vegetation. The vegetation on Crow Wing Island was not identified in the survey. (See Figure 6 - Presettlement Vegetation)

Present Vegetation

The existing vegetation in the park is primarily forest, prairie, and old fields. The forest community includes oak interspersed with aspen, jack, Norway, and white pine. Prairie areas include sand prairie, degraded sand prairie, and jack pine barrens.

The park lies in the transition area of the Laurentian Mixed Forest Province (Conifer-Hardwood Forest Zone) and the Eastern Broadleaf Forest Province (Deciduous Forest-Woodland Zone). These zones include both deciduous (oak) and coniferous (jack pine) savanna. One of these types, mesic oak savanna, is described by the County Biological Survey as "very rare" in Minnesota, and that it originally occurred on dry-mesic to mesic, gently undulating to moderately sloping sites that were on glacial till or outwash. A fire-maintained plant community, mesic oak savanna developed where fires were less frequent than in prairie areas.

The park appears to contain remnants of oak savanna, as well as remnants of jack pine barrens and jack pine woodlands. Each of these types is a fire-maintained community. Nineteenth-century documenters, including Zebulon Pike, noted the use of fire by American Indians in the vicinity of the park, as a hunting technique to control game animals such as elk and bison. It is becoming increasingly accepted among botanists that these types of landscape were culturally facilitated. (See Figure 7 - Present Vegetation.)

There are two stands of old growth identified within the park - a red pine community on the west bank of the Mississippi River and a lowland hardwood community along the east bank of the Mississippi River near the park's southern boundary. These old growth stands constitute a valuable reserve of increasingly rare natural communities. These stands have been identified and will be protected in accordance with the DNR's Old Growth Guidelines. Currently, there are no long-term management plans for the old growth stands within the park. (See Figure 8 - Old Growth Forest Stands and Buffer

Crow Wing State Park

Figure 6 - Presettlement Vegetation



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Legend

State Park Boundary

Vegetation Type

- Boggy Marsh
- Floodplain Forest
- Lowland Hardwoods
- Marsh
- Open Grass Marsh
- Pine Barrens
- Pine Thicket
- Plowed Field
- Prairie
- Scattered Oaks and Pine
- Scattered Oaks
- Tamarack Swamp
- Water
- White Pine Forest
- No Data

Roads

- State Highway
- County Highway
- Other Roads

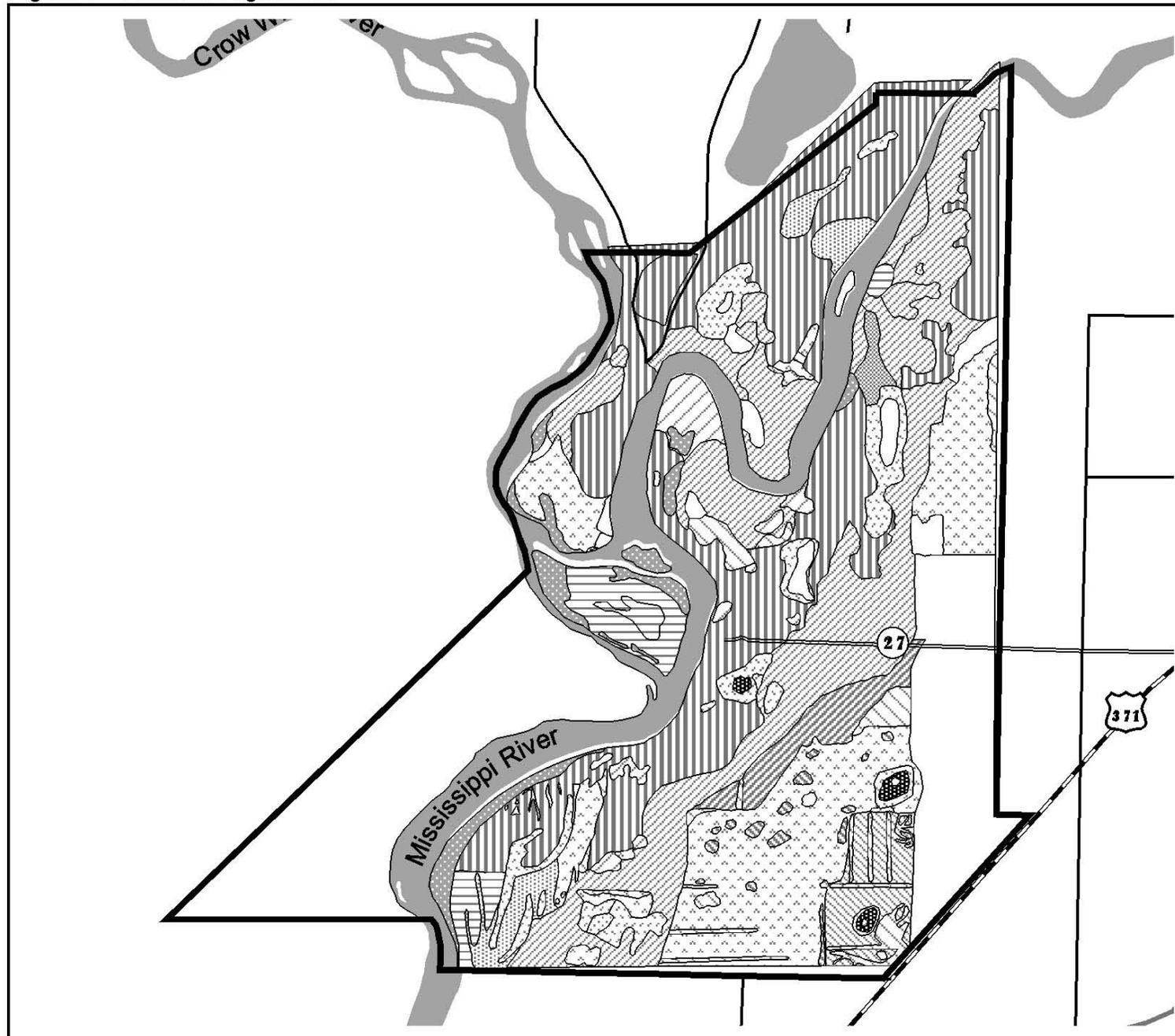


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Crow Wing State Park

Figure 7 - Present Vegetation



Legend

State Park Boundary

Natural Communities

- Bog
- Conifer Swamp Forest
- Coniferous Forest
- Coniferous Savanna
- Coniferous Woodland
- Deciduous Forest
- Deciduous Savanna
- Deciduous Woodland
- Emergent Marsh
- Floodplain Forest
- Hardwood Swamp Forest
- Mixed Coniferous-Deciduous Forest
- River Beach
- Shrub Swamp
- Upland Prairie
- Wet Meadow / Fen
- Unknown/No Data

Water

Roads

- State Highway
- County Highway
- Other Roads

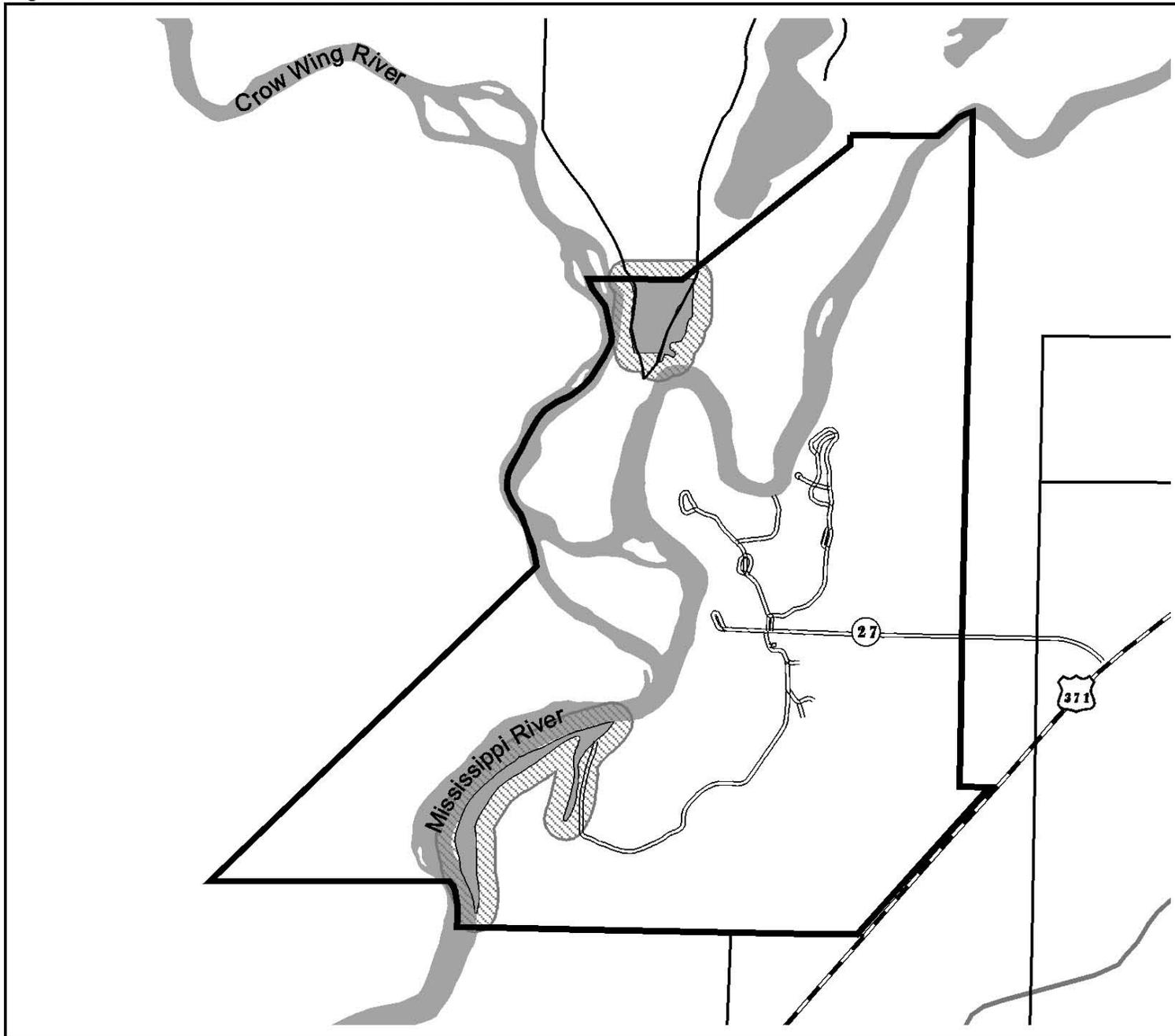


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Crow Wing State Park

Figure 8 - Old Growth Stands and Buffer Areas



Legend

- State Park Boundary
- Old Growth Stands
- Old Growth Stand Buffer
- Park Roads
- Water
- Roads
 - State Highway
 - State Highway
 - Other Roads

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Areas.)

The park is host to a number of non-native plants. Non-native species compete with native species and can reduce the populations of native vegetation in an area. Non-native species that aggressively replace native plants also reduce the habitat and food sources available to wildlife. Several aggressive non-native species are being actively managed in the park - amur maple (*Acer ginnala*), leafy spurge (*Euphorbia esula*), and caragana (*Caragan arborescens*). One native plant species - poison ivy (*Toxicoderdron radicans*) - is also managed, not for natural resource reasons but for the convenience and safety of park visitors. Poison ivy management is focused in the campground and group camp areas, along trails, and other parts of the park frequently visited by the public.

Fire Management

Old-growth pine and oak communities are made up of trees and other organisms that require fire to persist. Fire is necessary for the regeneration of tree seedlings, to remove competition from shrubs and late-successional tree species that increase in the absence of fire, and for the survival of a suite of fire-dependent organisms. Historically, oak openings and barrens - such as Jack Pine barrens - were maintained, in part, by frequent fires that were often set by the American Indians. Fire suppression in more recent times has changed the extent and character of the vegetation, creating fewer open areas and more dense forests. Jack Pine have a rapid age cycle - about 45 years to a climax stage followed by collapse. The lack of fire has resulted in dense Jack Pine stands with less age and species diversity than was historically present. The use of fire for Jack Pine management maintains open areas with greater tree age diversity, resulting in a more healthy forest. Prescribed fire is a necessary management tool to emulate the natural process of wildfire in old growth pine and oak communities.

Vegetation Management Practices

The focus of vegetation management will be to restore oak savanna and jack pine barrens and manage prairie communities. Pine plantations within the park will be subject to thinning or removal. The specific vegetation management actions and procedures will be identified in a Resource Management Plan, which is currently being developed. This plan will identify management actions, including the restoration of oak savanna and jack pine barrens. Resource management projects are planned and administered by the regional resource specialist in concert with the park manager. Techniques include tree removal and/or planting and prescribed burning. Currently, several areas within the park are being managed using these techniques. (See Figure 9 - Vegetation Management Areas) Vegetation management, including control of non-natives, will not be conducted to the detriment of rare or endangered species as per Minnesota Statutes. What natural communities are to be restored on new lands brought into the park will be determined from the soil surveys, original land surveys and line notes.

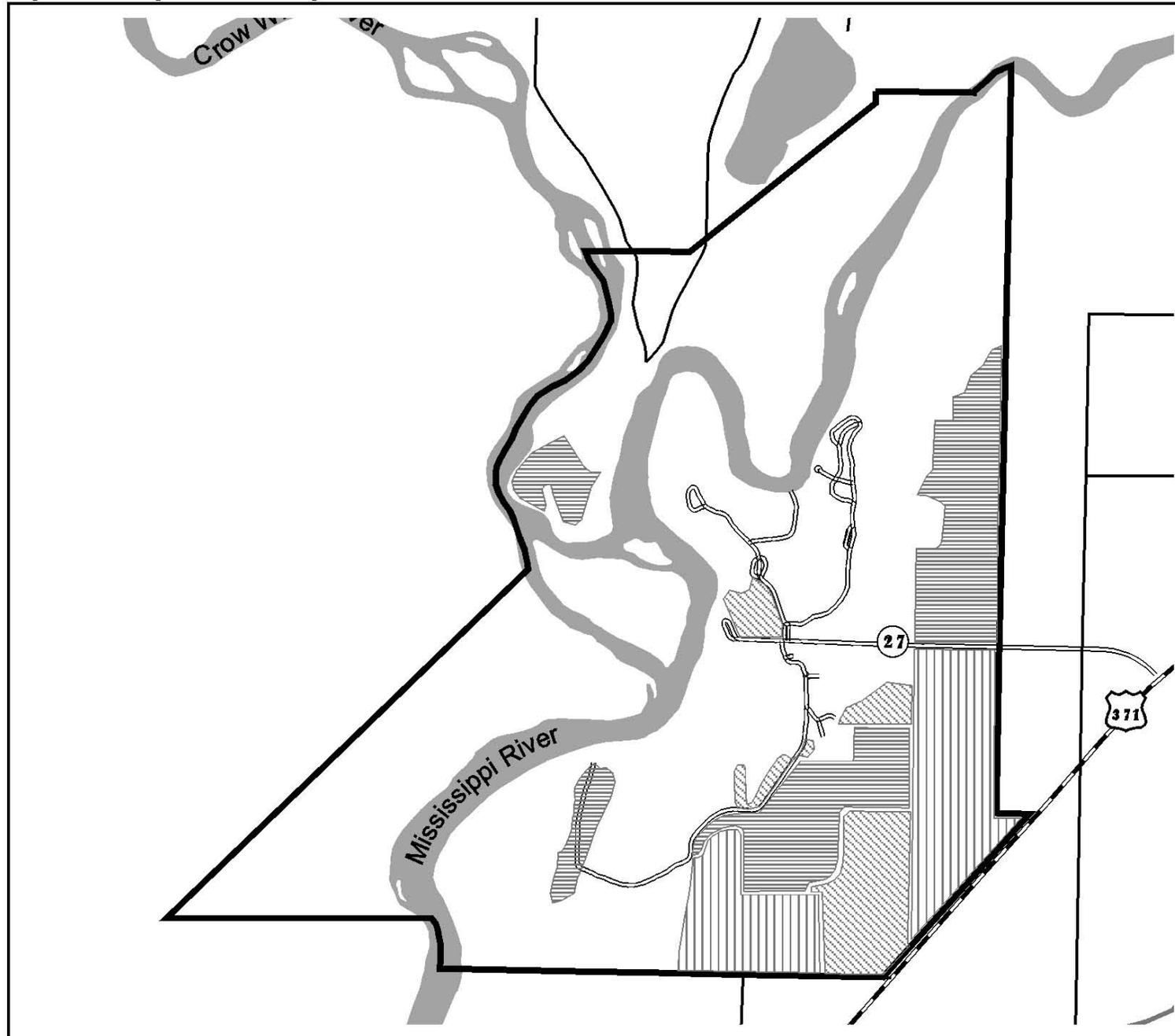
Wildlife

William Warren, in his nineteenth-century oral history research and subsequent publication [History of the Ojibway People](#), notes the abundance and variety of wildlife, particularly mammals, in the vicinity of the park. He notes that the American Indians hunted a wide range of animals, both large and small - bison, deer, elk, and other species. The variety of species illustrates the area's location on the boundary between major forest and prairie biomes.

The Department of Natural Resource Natural Heritage Program has identified several wildlife species that are in need of special management consideration which include: gray wolf, bald eagle, sandhill crane, red shouldered hawk, soft shell turtle, snapping turtle, and Blandings turtle.

Crow Wing State Park

Figure 9 - Vegetation Management Areas



Legend

- State Park Boundary
- Vegetation Management
 - Pine Thinning
 - Prairie Restoration (Burning and Plantings)
 - Future Prairie Restoration
- Park Roads
- Water
- Roads
 - State Highway
 - State Highway
 - Other Roads



1000 0 1000 2000 Feet



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Other species which require special management strategies because of their large numbers and impact on natural resources and visitor use areas include white-tail deer and Canada geese. A list of wildlife species present in the park and surrounding area can be found in Appendix D.

Fisheries

The Park Resource Management Plan lists fish species in the Crow Wing and Mississippi rivers. Data was assembled from the 1989 DNR Parks & Recreation survey and other sources. These surveys identified a total of 63 species in the rivers, of which 2 were introduced (brown trout, common carp) and one (greater redhorse) which is a state natural heritage element. A list of fish species can be found in Appendix C.

Endangered, Threatened, and Special Concern Species

There are 13 species on the Minnesota List of Endangered, Threatened, and Special Concern Species that are found within a two mile buffer of Crow Wing State Park. Two of these 13 species - the bald eagle and gray wolf - are also federally listed as threatened under the Federal Endangered Species Act. The species and their status are listed below.

<u>Species</u>	<u>MN Status</u>	<u>Federal Status</u>
Animals		
<i>Actinoniasias ligamentina</i> (Mucket)	Special concern	
<i>Buteo lineatus</i> (red-shouldered hawk)	Special concern	
<i>Canis lupus</i> (gray wolf)	Special concern	Threatened
<i>Chelydra serpentina</i> (snapping turtle)	Special concern	
<i>Corturnicops noveboracensis</i> (yellow rail)	Special concern	
<i>Cygnus buccinator</i> (trumpeter swan)	Threatened	
<i>Emydoea blandingii</i> (Blanding's turtle)	Threatened	
<i>Grus canadensis</i> (sandhill crane)	Non-listed	
<i>Haliaeetus leucocephalus</i> (bald eagle)	Special concern	Threatened
<i>Heterodon nasicus</i> (western hognose snake)	Special concern	
<i>Lasmigona compressa</i> (creek heelsplitter)	Special concern	
<i>Ligumia recta</i> (black sandshell)	Special concern	
<i>Pituophis catenifer</i> (gopher snake)	Special concern	
<i>Spilogale putorius</i> (spotted skunk)	Threatened	
Plants		
<i>Lycopus virginicus</i> (virginia water horehound)	Non-listed	

The two species identified as Non-listed on the Minnesota List are not considered endangered, threatened or special concern, but are included on the list for tracking purposes. Species can be identified in this category for several reasons: the species was removed from the list but still is tracked to monitor population size and health, the species serves as an indicator for another species or the health of a specific natural community, or it is a newly identified species for which more research is needed to establish population size and health.

Inventories and Research

Effective management and educational programs require adequate and accurate information and knowledge. Natural systems are dynamic - being changed by natural succession, climate fluctuations,

pest cycles, and human disturbance. To effectively manage this unique area will require effective research, and inventory and monitoring programs to document existing resources, develop and evaluate management strategies, monitor impacts of human activity (particularly recreational use) and other factors impacting the area's resources. The Natural Resource Management Recommendations section has some of the future research needs as recommended by a variety of Department of Natural Resources personnel. Several major inventory projects already completed in the park are listed below, with additional research projects listed in Appendix E.

Old Growth Forest

Two old growth forest stands have been identified with Crow Wing State Park. These stands will be protected in accordance with the DNR's Old Growth Guidelines. Long-term management of the old growth stands within the park will be addressed as part of the resource management plan.

County Biological Survey

The Minnesota County Biological Survey has been completed for Cass and Morrison Counties. The vegetation survey has been completed for Crow Wing County and preliminary work on the animals began during 2000. Intensive work on animals was conducted during the summer of 2001. See the Endangered, Threatened, and Special Concern Species section above for details concerning the findings of the surveys.

University of Minnesota Herbarium

The University of Minnesota Herbarium maintains a vascular plant checklist of species collected from the park.

Camp Ripley

Camp Ripley has a staffed resource management program. Staff biologists conduct research and resource management throughout the reserve. Ongoing research includes projects on deer, wolves, bird populations, and deer ticks (*Ixodes dammini*). They readily supply printed material on their studies, and operate a research center/interpretive center on the base. The facility includes animal mounts, displays and access to printed information. Visits to the center and personal interpretation is also provided to area schools.

Natural Resource Goals

The following Natural Resource Management goals were developed during the planning process:

- ▶ Re-establish and manage for natural communities representative of those from the time of the Crow Wing Town Site - including prairies, pine barrens, and jack pine forests.
- ▶ Manage natural resources within the town site to preserve remnant vegetation associated with the town site settlement.
- ▶ Preserve, restore, and monitor the significant natural resources found in the park.
- ▶ Use resource management techniques that will perpetuate the park's natural ecosystems.
- ▶ Protect and enhance habitats for plant and animal species that are listed as endangered, threatened, or special concern, or are regionally uncommon.
- ▶ Identify, monitor, and manage invasive exotic species including plants, insects, and animals.
- ▶ Manage old growth communities as per Department of Natural Resources Old Growth Guidelines.
- ▶ Develop an ongoing natural resource research and monitoring program.

Natural Resource Management Recommendations

The recommendations that follow are intended to provide general direction for the natural resource management activities that will be conducted in the park.

Recommendations:

Research Issues

Inventory plants and animal species within the park. A comprehensive natural resource inventory of the park will assist in the development of priorities for managing and restoring flora and fauna. It will establish a baseline inventory of species within the park. It will also be valuable information for evaluating potential facility sites and recreational use areas.

Research presettlement vegetation composition and develop management goals for lands purchased as part of future park expansions. As new areas are added to the park, desired natural communities and future management techniques will be determined using the original surveyors notes and soils data.

Vegetation Management

Manage the vegetative communities in the park as a transition zone between Pine Moraines subsection west of the Mississippi River and the Anoka Sand Plains subsection on the east side of the Mississippi River. Management and restoration of smaller areas will be conducted to follow this general guideline.

Pursue prairie restoration for areas within the park that were historically prairie. Restoration areas will be identified within the park - adjacent to remnant prairies, etc. Seeds and plants from both internal and external sources should be collected for restoring these areas. The prescribed fire program should be enhanced so that a regular cycle of fire can be incorporated into the management of prairie, barrens, and savanna areas. As part of this effort, work with MnDOT continue to salvage prairie species from the Highway 371 expansion area (and on other future roadway projects in the area) to be relocated in prairie restoration areas in the park.

Manage identified old growth stands consistent with the statewide Old Growth Management Guidelines. Two areas of old growth forest have been identified in the park - lowland hardwoods east of the Mississippi River and Red Pine west of the Mississippi River. The Division is developing management plans for the old growth stands within the park as part of the broader resource management plan.

Manage hardwood stands and savannas as interface community adjacent to pine forest areas. Maintain and encourage oak savannas south of the entrance road primarily in conjunction with the jack pine barrens as the savannas served as an interface between the jack pine barrens and the oak forests. Management techniques should be investigated which can be used to perpetuate these forest types.

Maintain jack pine barrens especially in areas where they are occurring naturally. Jack pine barrens are one of the most threatened natural communities in the region. Develop a prescribed fire program to maintain the barrens. A fire program will also maintain the viability of the jack pine community as these communities evolved in the presence of fire.

Maintain and encourage existing white pine areas following the White Pine Management Guidelines document. White pine management will follow the full range of techniques outlined in the guidelines.

Wildlife Management

Identify and protect habitat for rare, endangered, or threatened species within the park. Habitat used by the species listed above should be identified and managed help preserve them within the park.

Develop management strategies for supporting desirable species. Park staff and the regional resource specialist will seek to balance aesthetics, historical integrity, and habitat improvement when considering management strategies for supporting desirable species.

Exotic Species/Aggressive Non-Native Species/Pest Species

Remove or control exotic species by utilizing integrated pest management techniques. Introduction of additional exotic species as control measures will be intensively reviewed. Use of pesticides will be in accordance with Minnesota Department of Agriculture, Pesticide Control Law Chapter 18B.

Develop management strategies to control pest species - including deer and geese. The increasing populations of deer and geese have negative impacts on natural resources and visitor experience. Populations should be kept within acceptable levels for the park and adjacent landowners. The park manager and the resource specialist will work with the area wildlife manager to develop these strategies. Enclosures may be used for interpretive and educational opportunities. Other species should be monitored for the potential to be a problem species.

Visitor Use Areas and Cultural Sites

Locate park development to avoid impacts to existing old growth stands or further fragmenting old growth stands. The Division will follow the Old Growth Management Guidelines for protecting old growth stands and buffer areas. Park facilities, trails or other development should be located with sensitivity to protecting these forest stands. Areas between closely spaced old growth stands should also be protected to allow these areas, in time, to grow into continuous stands.

Limit activities that cause erosion or trample understory vegetation. Promiscuous trails, informal trail widening, or other activities that widen openings in the forest canopy will be limited to protect interior habitat and reduce negative edge effects.

Manage red pine plantation areas to restore historic vegetation and cultural aspects of the park. The management goal for red pine is to naturalize the plantations north of the entrance road and to consider the appropriateness of the plantations south of the entrance road. The vegetation north of the entrance road was identified as a mixed pine/hardwood forest in the Original Land Survey Notes. The red pine plantation north of the Beaulieu house will continue to be thinned and kept as a backdrop for the house.

Maintain natural vegetation composition in the campground. The campground area was historically mixed pine and hardwoods forest stands. Vegetation management efforts should be directed to restore this community and minimize mowed areas.

Manage the entrance to the park for aesthetics and natural vegetation features. The entrance to the park serves as a first impression of the park - park structures and contact area blended with the natural vegetation will introduce park visitors to the natural resource base of the park.

Identify appropriate scenic vistas to the river from visitor use areas. The Mississippi and Crow Wing rivers are significant elements in the natural and cultural history of the Crow Wing area. Potential locations include the amphitheater area and the picnic areas. The construction of observation decks may be appropriate for this purpose. Vegetation plantings or cuttings may enhance the view. Vista management may be given direction in the process of reviewing the National Register nomination.

Water Issues

Develop a hydrologic model to aid in developing an erosion control program for the park. Work with the Division of Waters and the U.S. Army Corps of Engineers to develop a model for the sections of the Mississippi and Crow Wing rivers impacting Crow Wing State park.

Control erosion of river banks adjacent to the Crow Wing Village site. Erosion of the river bank is uncovering artifacts and threatening the lower portions of the town site. Data from the hydrologic model will be used to develop the erosion control program. Bank stabilization options should be evaluated in light of aesthetics, protection of cultural contexts and artifacts, and visitor safety. Vegetative bank stabilization techniques - in conjunction with minor riprap installations - will be investigated. The Division will also minimize park development on floodplain areas throughout the park to limit future erosion issues and damage to facilities.

Cooperative Efforts

Continue to work with the Environmental Program of Camp Ripley on natural resource research and management projects. Cooperation with Camp Ripley will help place Crow Wing State Park in the context a broader landscape. The Camp Ripley program can be a partner for managing area resources.

Explore possible cooperative projects to research and investigate groundwater quality and quantity issues. Continued development in the Brainerd/Baxter area raises groundwater use and protection issues. Groundwater levels and aquifers may also be affected by the creation of additional non-permeable surfaces.

IV. CULTURAL RESOURCES

Crow Wing has long been a place of habitation - the confluence of the Mississippi and Crow Wing rivers placed it along the routes of travel and trade. The first evidence of habitation dates to people of the Woodland Tradition, sometime after 700 B.C. Burial mounds and pottery are evidence of these people in the Crow Wing area.

In more recent times, both the Dakota and Ojibwe peoples lived in the Crow Wing area. Before the arrival of Europeans to the area, the Ojibwe moving south and west from the shores of Lake Superior began forcing the Dakota out of what was to become central Minnesota - from around Lake Mille Lacs, Crow Wing and nearby lands. One of the last battles in this conflict was fought in 1768, within the boundaries of the present state park.

Crow Wing embodied many of the phases of frontier development on its way to becoming a village - a fur trade post, a trading center and trade route stop-over, a logging community, and a home to several missions. It was also the main trading depot for the Minnesota bands of the Ojibwe and home to influential American Indian leaders such as Hole-in-the-Day the Younger. Crow Wing became a town, at its peak home to nearly 600 people. For more than a century it was the northernmost European-American settlement on the Mississippi River, yet over one half of its population were American Indians.

The end of the 1860s saw the downward side of the town's history. The Ojibwe were relocated to the White Earth Reservation in 1868, resulting in the loss of a large number of the village's residents and trade. The location of the Mississippi River railroad crossing to the north at Brainerd, not at Crow Wing, marked the end of the town. By 1880, the remaining buildings that had not been relocated to Brainerd were in ruins and the town had ceased to exist. (See Appendix F - Archaeology and History of the Crow Wing Area for more detailed discussion of the history of the Crow Wing area and town site.)

National Register of Historic Places - Historic Districts

Crow Wing State Park encompasses two historic districts on the National Register of Historic Places - the Crow Wing Town Site and the Red River Oxcart Trail. (See Figure 10 - National Register of Historic Places - Historic Districts)

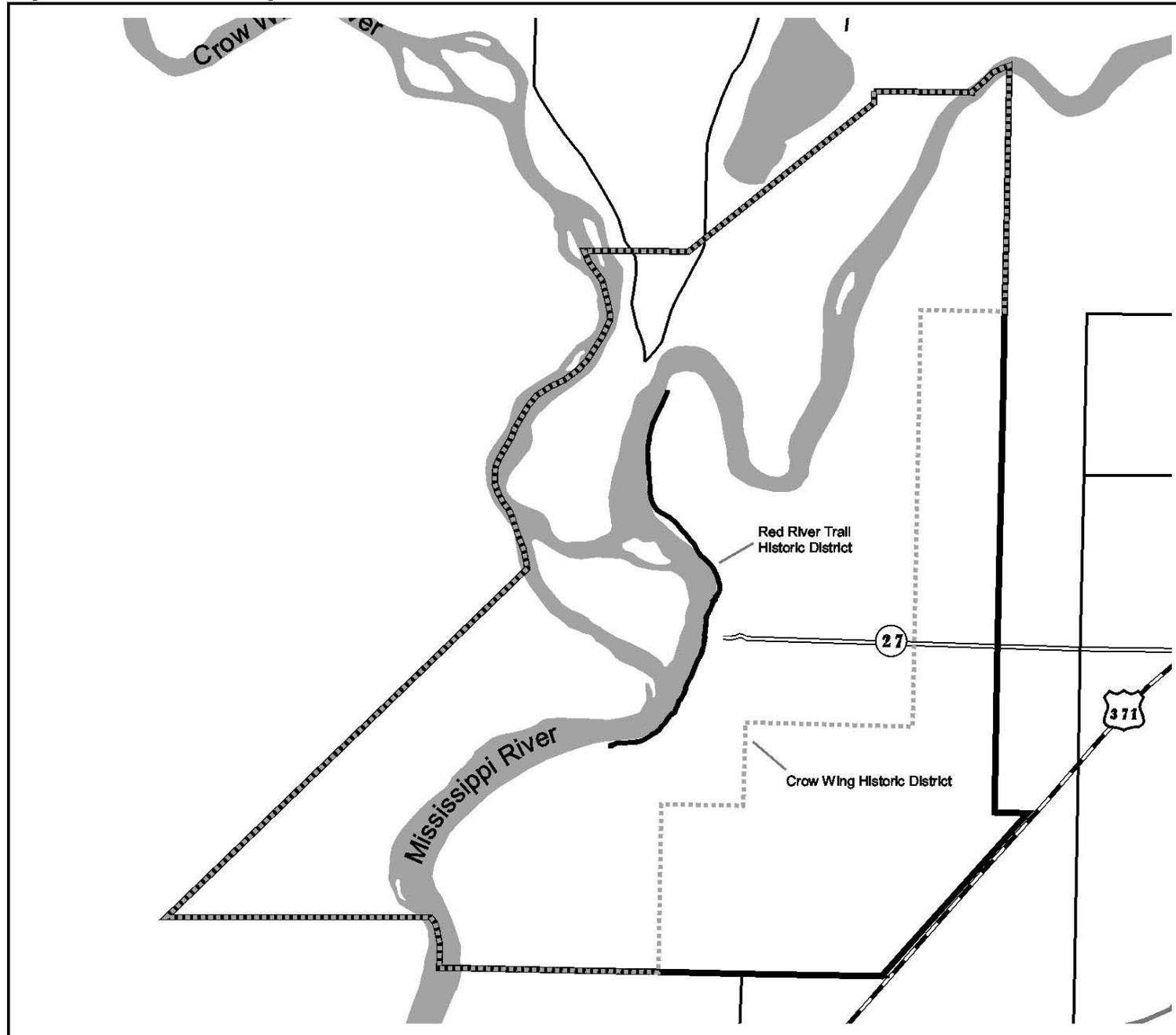
The Crow Wing Town Site was entered onto the National Register of Historic Places (NRHP) in 1970. The nomination focused on the town site period of Crow Wing's history - the 18th and 19th century existence of the village as a trade and transportation center - although reference is also made to the prehistoric and historic American Indian use of the area. The boundary of the Historic District follows the 1970 park statutory boundary. The Crow Wing Historic District nomination identified 15 cultural resources:

Allen Morrison House	Brown's Hotel
Clement Beaulieu House	Catholic Church and Cemetery
Schoolmaster House	Episcopal Church and Cemetery
Hole-in-the Day Campsite	School House
Morrison Trading Post	Ferry Landing
William Aitkin Trading Post	Government Warehouse
Beaulieu Trading Post	Red River Ox Cart Trail
Fairbanks Store	

At the time of the nomination, none of these resources existed intact on the site - with the exception of portions of the Red River Trail and the cemeteries. The majority were identifiable only as cellar

Crow Wing State Park

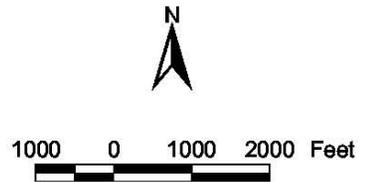
Figure 10 - National Register of Historic Places - Historic Districts



Legend

- State Park Boundary
- Red River Trail Historic District Boundary
- Crow Wing Town Site Historic District Boundary
- Water
- Roads
 - State Highway
 - County Highway
 - Other Roads

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depressions. Other cultural resources known to be associated with the Crow Wing Historic District but not named in the nomination include:

- Bailey Sawmill
- Lutheran Mission
- Oxcart Ford
- Indian Rifle Pits
- Dakota Encampment Site

Many of these sites have not been accurately located within the park. Several buildings can be associated with specific depressions with some degree of certainty. However, the location of most of the structures listed in historical accounts of the town site to date are unknown. (See Figure 11 - Cultural and Archaeological Resources)

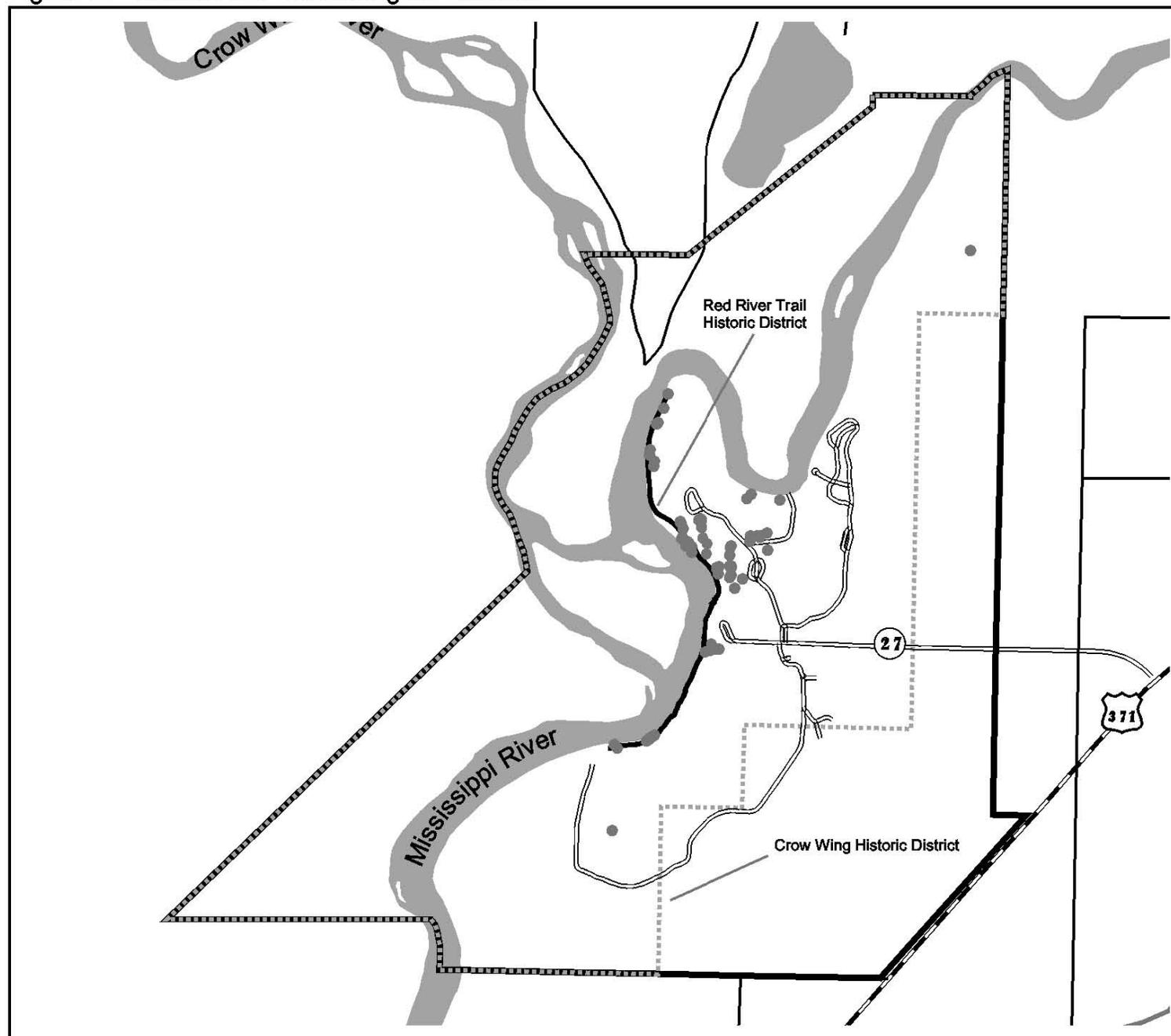
The second Historic District at Crow Wing State Park is related to the Red River Trail. Entered onto the NRHP list in 1991, the Red River Trail Historic District encompasses a 10 foot wide corridor 1 ½ miles long from the southern portion of the park, through the town site, to a ford site on the Mississippi River. Also called the Woods Trail, this trail was one of three ox cart trails that were the main trade routes between St. Paul and Pembina and the communities in the Red River valley. The Woods Trail was first used in 1844, intended as a route to avoid contact with the sometimes hostile Dakota Indians who lived along the other ox cart routes further west. The trail passed directly through Crow Wing, the village becoming a transfer point and resupply stop along the trail. In 1857, the United States Army constructed a road connecting Fort Ripley to Crow Wing over a portion of the Woods Trail. The ox cart routes were abandoned after the first railroad connection between St. Paul and the Red River valley in 1871.

A significant cultural resource in the park today is the Clement H. Beaulieu house. The house was not present on the site when either of the Historic Districts were nominated - it had been removed from the town site in the 1800s, and was returned in 1993. It is the only building in the park remaining from the Crow Wing Town Site era. The house was built in 1849 - a very large home by frontier standards. Additions and structural changes were made to the home over time. In 1880 with the end of the settlement at Crow Wing, the original portion of the house (minus its later additions) was moved to a nearby farmstead. The house was "rediscovered" in the 1980s and donated to the park by its owners and moved to the park in 1988. The exterior of the house was restored and in 1993 it was placed back at its historic location in the town site. (See Appendix F - Archaeology and History of the Crow Wing Area for more detail concerning the Beaulieu House history and restoration.)

A third National Register of Historic Places site - the Chippewa Indian Agency - is located at the confluence of the Crow Wing and Gull rivers outside the current park boundary. (See Figure 15 - Proposed Boundary Expansion) The Chippewa Indian Agency was located here from 1851, having moved from Sandy Lake, until 1869 when it was relocated to the White Earth Reservation. The fortunes of the Crow Wing settlement were closely linked to relocation of the Chippewa Indian Agency. The arrival of the agency nearby brought people, money, and trade to Crow Wing, increasing its importance as a frontier town. However, the relocation of the Agency to White Earth eighteen years later meant the loss of much of the village's trade and many of its prominent citizens - both American Indian and Euro-American - also moved to White Earth. The site contains significant cultural resources including building depressions and fields of the agency, remains of a prehistoric American Indian village, and several burial mounds. The site was entered on the National Register of Historic Places in 1973. The property is currently owned by Minnesota Power and Light Company. Given its close historic ties to Crow Wing and important cultural resources, the Agency site is recommended for inclusion into Crow Wing State Park. (See VII. Boundary Expansion.)

Crow Wing State Park

Figure 11 - Cultural and Archaeological Features



Legend

-  State Park Boundary
-  Red River Trail Historic District Boundary
-  Crow Wing Town Site Historic District Boundary
-  Cultural and Archaeological Resources (building depressions, gravestones, etc.)
-  Park Roads
-  Water
- Roads**
 -  State Highway
 -  County Highway
 -  Other Roads



600 0 600 1200 Feet




Current Cultural Resource Management

The park has undertaken several cultural resource management efforts and actions. Archaeological investigation and clearance is sought before any construction or project or other activity that may disturb or impact cultural artifacts. Improving trails and pathways throughout the town site to an aggregate surface has made them more durable - encouraging visitors to remain on the trail which minimizes informal trail widening and impacts on buried cultural artifacts and native plants. Erosion along the Mississippi River continues to expose and dislodge cultural artifacts. Temporary fences were placed along the riverbank in the town site to discourage visitors from walking on the bank and worsening the current erosion problem. (See Natural Resource Management Recommendations for further discussion of permanent erosion control measures.) Park staff also continue to monitor existing cultural resource areas and identify new sites and artifacts.

A landscape plan will be developed for the town site. The plan will assist in identifying new cultural resources and proper techniques for managing the natural and cultural landscape components in the town site. Recommendations from the landscape plan will be integrated with the natural resource management program at the park.

Research Needs and Priorities

Additional information is necessary to further identify, protect, and restore the cultural resources in Crow Wing State Park. Providing a list of specific research needs would be helpful in directing and encouraging future studies. The following cultural resource research projects are identified in the Crow Wing State Park Interpretive Services Plan. At this time, these projects have not been funded nor have timelines for their completion been determined. Several of these projects could be greatly aided by working with the American Indian Bands. The Division will seek to work with interested Ojibwe and Dakota Bands on these and other interpretation projects related to Crow Wing State Park.

Clement Beaulieu House

A research team consisting of State Parks and Minnesota Historical Society personnel gathered valuable information about the evolution of the interior of the Clement Beaulieu house. Much of the research concerning the interior structure of the house is complete. The next step is to determine the interpretive focus for the interior and prepare an interpretive plan for the house. If the interpretive focus is placed on the materials and construction techniques used in the house, little additional research may be needed. However, if the interpretive focus is to restore the interior to period appearance, additional research on the structure - as well as on furnishings and other details - will be necessary.

Land Ownership and Use History

Further research and documentation on land ownership and use within the park following the demise of the town of Crow Wing is needed. Land use history will be important in determining plans for vegetative restoration, management of plant communities and interpretation of continuing human interaction with the landscape.

Oral Histories

Oral history interviews should be conducted with the family members of those who resided within or near the park boundaries, as well as with those involved in the establishment of the park. A program should be established which includes transcribing, indexing and archiving the interviews. Involvement of American Indian communities will be essential for this effort. The Crow Wing County Historical Society, Morrison County Historical Society, Central Lakes College and interested Dakota and Ojibwe Bands are potential partners for this project. Grant funding through the Minnesota Historical Society may be available.

Continuation of Town Site Mapping Project

The town site mapping project involves the interpretation of aerial photography in mapping cultural resources, such as cellar depression and road features. This data has contributed greatly to the identification of cultural resources in the town site. The mapping project should be extended to the rest of the park, including the Chippewa Indian Agency site to help identify cultural resources outside of the town site.

Analysis of Historic Photographs

Historic photographs of the town site provide important information on the layout of the town and location of specific structures. Spatial analysis techniques should be used to extrapolate an accurate depiction of the historic landforms, structures, and vegetation of the town site area.

There are several other research projects that would add to the understanding and interpretation of the cultural resources at Crow Wing State Park. Additional projects identified include:

- ▶ Research and locate the Bailey sawmill. Historic records indicate that the sawmill was located on the west bank of the river, however the exact site has not been identified.
- ▶ Research county records on the cemeteries located in the park. Some grave stones have settled and others have been brought back up from frost action. Cemetery internments continued until the 1940s.
- ▶ Compile a bibliography of all publications about Crow Wing.
- ▶ Conduct a cultural resource inventory of the Eastman property and Crow Wing Island.
- ▶ Prepare background material for interpretive signing of cultural resources. New finds will need to be signed, as well as any inaccurate existing signage corrected.

Cultural Resource Goals

For purposes of this management plan, cultural resources are defined as those archaeological sites, cemeteries, historic structures, historic areas, cultural landscapes or traditional use areas that are of cultural or scientific value. Cultural resources differ in at least one very significant way from most natural resources: once they are disturbed or destroyed, they are lost forever. The following goals have been identified to guide cultural resource management at Crow Wing State Park:

- ▶ Identify, evaluate, protect, and preserve the park's archaeological and historical resources.
- ▶ Follow appropriate state and federal laws governing cultural resource management.
- ▶ Provide interpretive opportunities for the park's cultural resources.
- ▶ Work with Division of Parks and Recreation archaeologists to ensure that park development activities do not negatively impact cultural resources.
- ▶ Develop an ongoing research and monitoring program.

Cultural Resource Management Recommendations

Note: Because the majority of Crow Wing State Park is within a National Register Historic District, any disturbance of the ground requires an archaeological investigation.

Recommendations:

Planning Actions

Conduct a cultural resource survey of the entire park. Historic District boundaries, cultural resources and other historic features within the park should be inventoried and mapped. Many of the cultural resources within the town site have been identified - however many sites throughout the park have

not been accurately identified and mapped. Two areas of special interest will be the Chippewa Indian Agency site and the west bank of the Mississippi River across from the town site and ferry crossing.

Evaluate the need to revise the National Register of Historic Places - Historic District nomination for the Crow Wing Town Site. The nomination adopted the 1970 statutory boundary of the park as the Historic District boundary. Therefore, there are significant areas within the Historic District that do not contain any historic or cultural features of importance. These areas should be removed from the Historic District. Also, the relocated Beaulieu House should be accounted for in the amended Historic District nomination. This revision may be possible as part of a larger review of National Register of Historic Place nominations throughout the State Park system, possibly funded as an LCMR project.

Develop a landscape plan for managing the cultural and natural resources of the town site. Typical goals for vegetation management in a state park, namely pre-European settlement vegetation conditions, may not be appropriate for the town site landscape. Reestablishment of vegetation as it was during the town site occupation is more in keeping with the Historic District nomination and interpretation goals for the park. The landscape evaluation of the town site should also determine significant viewsheds, if present, and how they should be maintained.

An initial inventory of the vegetation in the town site has been completed. It shows some plants of cultural significance - such as grape arbors, lilacs, oak trees, and possibly goatsbeard - related to dwellings or gardens in the town site. Most current grasses and clover are non-native. There are also some aggressive exotic species that have become established since the town site was abandoned, such as honeysuckle and Canadian thistle. While developing the landscape plan, known vegetation related to the historic occupation of the town site should be preserved. However, other vegetative management efforts should be continued. (i.e. red pine plantation thinning, blue spruce removal, noxious weed removal, etc.) It is likely not possible or even desirable to fully restore the vegetation of the entire town site to a specific period. The goal should be to maximize the interpretive potential for the visitors. For example, visibility from the Beaulieu house is an important theme to the visitors' experience - thinning existing pine and spruce stands in the town site will help restore the historic appearance of the area while maintaining a "park-like" setting. (See also pine thinning recommendation in this section.)

Management Actions

Conduct cultural resource reviews for new development proposals. Cultural resource surveys will be completed prior to development activities. Recommendations for avoiding or minimizing adverse effects to the cultural resources of the park will be made.

Control riverbank erosion to protect cultural artifacts and appearance of the town site. The continued erosion of the town site along the Mississippi River shoreline impacts numerous cultural resources - dislodging artifacts and threatening several depressions near the waterline. Specific techniques for stabilizing the bank are discussed in the Natural Resources Management Recommendations section.

Thin pine and spruce plantation trees to restore viewsheds and historic appearance of the town site. In the area near the Beaulieu house, keep plantation pines as a backdrop while continuing to thin approximately every five years, using the recommendations in "Sustaining Minnesota Forest Resources - Voluntary Site Level Forest Management Guidelines." Small pines in other areas may need to be cut back to maintain vistas in the town site. Spruce trees should also be removed from the Red River Ox Cart trail crossing in this area.

Preserve the undeveloped character of the river bank and islands opposite the town site and other cultural locations in the park. The vista across the river is part of the cultural experience of the park. Any non-period development should not be visible from the river or from the town site.

Manage the Hole-In-The-Day farmsite for future interpretation. The only visible remains at this site is the cellar depression. The site is relatively stable with sandy soils. Some artifacts have worked their way to the surface and been recovered. This site has no known cultural landscaping of significance (lilacs, flowers, etc.) Hole-In-The-Day was known to have gardens associated with his home in Crow Wing. The 1870s vegetation map shows the site as prairie. Currently, it is jack pine barrens with some shortgrass prairie understory. This site will be promoted as a hiking destination. A small area will be cleared for interpretive signage and picnic table.

V. INTERPRETIVE SERVICES

The Division of Parks and Recreation mission for its interpretive services is:

To provide accessible interpretive services which create a sense of stewardship for Minnesota's natural and cultural heritage by illuminating the changing relationships between people and landscapes over time.

In pursuing this mission, the Division of Parks and Recreation designs its interpretive programs to achieve four goals:

1. Promote increased understanding, appreciation, and enjoyment of natural and cultural resources in Minnesota.
2. Assist in protecting each state park's resources.
3. Promote public understanding of, involvement in, and support for the Minnesota Department of Natural Resources and its Division of Parks and Recreation.
4. Increase public awareness of critical environmental problems on a local, state, national and worldwide scope.

This chapter identifies and describes interpretive themes for Crow Wing State Park based on its natural, cultural and recreational resources. The resources listed in this chapter reflect the importance of these themes as they fit in with the Minnesota State Park System's Interpretive Services Plan (1995).

Interpretive Services Plan

An Interpretive Services Plan was developed for Crow Wing State Park in 1999. The plan identified interpretive themes, research needs, and project and program recommendations. The Interpretive Services Plan is the basis for the interpretive chapter of the management plan. The themes and recommendations were reviewed by the Citizen Advisory Committee during the planning process.

Interpretive Themes

The interpretive themes outlined below are taken from the 1999 Crow Wing State Park Interpretive Services Plan.

Primary Resource: Oak Savanna & Jack Pine Barrens remnants

Themes:

1. Fires maintained these plant and animal communities, and since prehistoric times humans initiated and utilized fires for subsistence activities.
2. To restore and maintain these plant communities, the park uses fire as a management tool.

Primary Resource: The park's geographic position between major biomes of Minnesota.

Themes:

1. "Where Minnesota Comes Together:" Crow Wing is located where prairies and woodlands meet, where two rivers meet, and where people have met, for centuries.
2. Overlapping biomes provide habitat for a wide variety of wildlife in a relatively small geographic area.
3. Overlapping biomes provide opportunities for park visitors to experience the plants and animals associated with Minnesota's three biomes; Prairie, Hardwood Forest and Pine Forest.
4. Overlapping biomes have provided varied and abundant subsistence resources for people throughout history.

Primary Resource: Confluence of the Mississippi and Crow Wing Rivers

Themes:

1. Where these two ancient transportation routes meet, people also met to hunt, to trade, together as one nation, together as more than one nation, in peace and war. Thus began the settlement of Crow Wing.
2. Here, where two rivers meet, the drainage of two watersheds join. Here also we in both watersheds must join as responsible stewards, for the water flows to those below.

Primary Resource: Red River Oxcart Trail

Themes:

1. The Woods Trail provided safe travel within Ojibwe territory for oxcart traffic between Pembina and St Paul. In 1844 this trail was cut through Crow Wing, as it was already a settlement and mercantile center. Oxcart traffic continued into the 1860s.
2. Park visitors can walk the same trail traveled by cart drivers and other travelers of the 19th century, and "connect" with the past.
3. The Red River Trail provided another transportation-oriented economic base for the town of Crow Wing as the beaver trade dwindled.
4. The trail added to the multi-national, multi-racial social and political fabric of the settlement of Crow Wing.

Primary Resource: Crow Wing Town Site

Themes:

1. Having developed from fur trade beginnings, and being on the "frontier" of America, Crow Wing was a community of racial, social and political diversity.
2. Many persons who helped shape the early statehood of Minnesota either resided at, traded at, or traveled through Crow Wing. Recognizable names include Hole-in-The-Day II, Henry Rice, William Aitkin, William Warren, Allan Morrison, Clement Beaulieu.
3. In the mid-nineteenth century, Crow Wing was a point of furthest "settlement" incursion into the interior of what is now Minnesota.
4. The town had its economic base rooted in transportation, from the transport of furs and trading goods up and down the rivers, to the river transport of logs for the timber industry, to the Red River Oxcart travel trade. The town's demise is also rooted in transportation. The railroad chose its Mississippi crossing at a point upriver, instead of at Crow Wing, and the town of Brainerd grew as Crow Wing died.
5. The town was the main depot for trade with the Mississippi Bands of Ojibwe, and was home to influential leader Hole-In-The-Day II.
6. The frontier town was known nationally, following illustrated articles in journals such as Harpers.
7. Crow Wing was the major trade and residential community of the region in the 1850s and 60s, serving also nearby Fort Gaines (now Fort Ripley.)

Primary Resource: The Clement Beaulieu House

Themes:

1. Placement of the house within the town; appears as a "palace" overlooking the village. A place of prominence, symbolizing the social position of its owner.
2. Architectural style of the house, Greek Revival, symbolizes the bringing in of materials and cultural values from outside the area.
3. The house symbolizes the site as a "bridge" joining the use of local resources with the desire for, and developing dependence on imported goods and services.
4. The house, as a recognizable habitat necessity, is a tool to help visitors connect the past with their own lives.
5. The house, used as a dwelling from 1849 to 1987, reflects changing lifestyles and interaction with the landscape through time.
6. Historical and archaeological research toward restoration has added to our understanding of the lifestyles of the inhabitants of early Minnesota.

7. The house was moved from the town in 1880, and returned to the park in 1988. Archaeological research conducted to find the original placement of the house yielded valuable information about the layout of the town, the Beaulieu family and other residents of Crow Wing.

Other resources and themes include the glaciation impacts on the landscape, the landscape's connection to plant and animal habitat, Camp Ripley botanical & faunal research projects, park historic sites outside of the town site, and the mission/church history in Crow Wing.

Interpretive Clientele

Crow Wing State Park is located 9 miles from Brainerd, 22 miles from Little Falls, 52 miles from St. Cloud, placing it in a geographic position of relatively high potential for visitation, interpretive program attendance and interaction with non-personal interpretive efforts.

The Minnesota State Park System Interpretive Services Plan rated state parks according to the following criteria: landscape region resemblance, unique natural resources, cultural resource significance, park visitation, and potential interpretive use based on area population. The individual parks were then grouped into five levels of interpretive service effort based on the above criteria - Group #5 warranting the most effort, group #1 the least. Crow Wing State Park is rated to group #3. The System Interpretive Plan defines the interpretive program for parks in this rating as follows:

Resource significance is medium to high and visitor use is high but with seasonal peaks. Merits programming four to seven days a week during peak season. Merits a seasonal interpretive center; indoor displays and exhibits; audio-visual programming; self-guiding trails and wayside exhibits.

Potential educational audiences include Brainerd School District, with 7,600 students, and Little Falls Public Schools, with 3,600 students. Central Lakes College, a community college located in Brainerd, is a potential post-secondary audience.

A new highway by-pass has been built around Brainerd. This in effect, brings the park "closer" to the Brainerd community and makes the park more accessible from resorts north of Brainerd. Part of the by-pass project includes construction of a wayside rest just south of the current park entrance road. This facility, which will include kiosks and other information about local attractions like Crow Wing State Park, will bring more people to the park. The extension of the Paul Bunyan Trail from Baxter to the park will also increase park visits.

The area surrounding Crow Wing State Park also contains many different types of interpretive services and environmental education facilities, each with a unique type of program and mission. Crow Wing State Park and the Division of Parks and Recreation have cooperated with many of these facilities to promote regional education opportunities and arrange trips. An overview of other area interpretive services is included in Appendix G.

Existing Interpretive Services

Personal (guided):

Since 1987, summer season interpretive programming has been a satellite effort of the area naturalist based at Mille Lacs Kathio State Park. The job priorities of the area naturalist are Mille Lacs Kathio State Park, Crow Wing State Park, then to Father Hennepin State Park. The number of programs offered at Crow Wing SP have varied, dependant on funding for seasonal and other staff. Past programs have included hikes, demonstrations, campfire talks and guest presenters. From 1992 to 1996 with the special summer program series and limited seasonal staff hours, an average of 12

programs (8 to 9 campfire-style Saturday night special programs, 3 to 4 naturalist-led programs) were held, attended by an average of 550 people.

Old Crow Wing Family Canoe Day is a popular annual special event held on State Parks Open House Day, the first Sunday in June. The event has great community support and, though dependant upon weather conditions, has an average annual attendance of 800 people. The event includes a canoe excursion from Brainerd to the Crow Wing, with historical reenactments and craft demonstrations presented at the park by the Crow Wing County Muzzle Loaders Club.

Non-personal (self-guided):

The parking area near the park office contains several non-personal interpretive resources: the Minnesota Historical Society historic marker concerning the Crow Wing town site, a four-panel interpretive exhibit, and a self-guided trail. The trail and accompanying brochure are focused on natural resources.

There are several interpretive signs associated with town site. New signs related to the village layout are located at either end of a boardwalk along the river. Other interpretive signs identify individual resources in the town site. Additional signs and corrections to existing signs are planned for this area.

The Red River Oxcart Trail interpretive kiosk is located next to the picnic shelter, along the hiking trail access to the Crow Wing town site area. Funded by the LCMR as a component of the Heritage Trails project, the kiosk was a joint effort of the Minnesota Historical Society and Minnesota State Parks.

The Crow Wing State Park Traveling Exhibit has been displayed at the park for special events, at Crow Wing County Historical Society special events, at the Crow Wing County Fair, Boy Scout gatherings, heritage fair and other events throughout the year. The three-panel display interprets the park's natural & cultural resources, scenic beauty and recreational opportunities, interpretive events such as Canoe Day and Exploring Minnesota History special program series and the research and restoration of the Beaulieu House.

Information and Publicity:

Publicity for personal interpretive services and updates on nonpersonal services are administered out of the Kathio Interpretive Center. Each spring, a summer special program series distributed through local media, as a supplement to the Crow Wing County Historical Society's quarterly newsletter, at the Kathio Interpretive Center, Crow Wing County Museum, Brainerd Chamber of Commerce, and Crow Wing State Park office. The flyers are also displayed and distributed at area events with the aid of the Crow Wing State Park traveling exhibit. The program series flyers and posters publicizing individual interpretive programs are also posted on bulletin boards in the park.

Park Interpretive Staff:

- ▶ Regional Naturalist: Administers and oversees the interpretive program in all 11 of Region 3's state parks, including solicitation, interviews and hiring of college interpretive interns, planning and overseeing implementation of non-personal interpretive projects, monitors and evaluates personal and nonpersonal interpretive services.
- ▶ Naturalist: Beginning the summer of 2001, a seasonal naturalist was appointed to Crow Wing State Park. In the past, Mille Lacs Kathio State Park's naturalists administered interpretive operations as an outreach effort. The naturalist contracts with special presenters, presents campfire programs, leads hikes, demonstrations and other programs, supervised college interns, and designs nonpersonal interpretive efforts.

- ▶ Interns: Under the supervision of the Mille Lacs Kathio Park Naturalist and Crow Wing State Park Seasonal Naturalist, assists with research, design and implementation of personal and nonpersonal interpretive services. Work station is at the Kathio Interpretive Center, summer season, length of season determined by academic calendar of cooperating college, financial aid work-study agreement, and regional budget for interpretive intern program.

Coordination with American Indian Bands

The American Indian Bands in Minnesota are a potential partner for developing interpretive programs and materials at Crow Wing State Park. During the management plan update process, the Division contacted the Bands and the Indian Affairs Council to discuss if the Bands wished to have a role in the planning process. Several Bands indicated an interest in participating in the process. Division staff met with representatives of the Bands and discussed a range of issues, including natural and cultural resource management, traditional cultural properties, and interpretive programming. Developing interpretive programs and materials was identified by both parties as an area of interest for future cooperation. Division staff shared information and draft versions of the plan with Band representatives during the management plan update process.

Interpretive Services Recommendations

The region and the park are constantly evaluating the interpretive program and developing new proposals and projects for the park. These recommendations are general in nature - more specific direction for individual interpretive projects and programs are detailed in the Crow Wing Interpretive Services Plan.

The recommendations outlined in this plan will be evaluated on an ongoing basis by the park management team, regional naturalist and interpretive operations coordinator. This plan is intended to be a guide for planning and implementing interpretive services. Position descriptions and work plans will need to be developed and consulted as necessary.

Recommendations:

Planning

Work with American Indian Bands, as appropriate, to develop direction for the interpretation of American Indian history in the Crow Wing area. American Indians have an established history at Crow Wing prior to the arrival of Euro-Americans, and were an influential component of the Crow Wing village. Park staff and the regional naturalist will work with representatives from the bands to develop appropriate interpretive services for the park. Possible topics could include American Indian views of the local landscape and environment, trade and transportation, relations among the bands and with Euro-Americans, and current resource management activities and views from bands in the area.

Investigate working with Camp Ripley to develop interpretive opportunities about Fort Gaines. The historic fort played a significant role in the settlement and life at Crow Wing. This role should be interpreted as part of the story of Crow Wing.

Consider providing additional interpretation of the Red River Oxcart Trail and the Crow Wing town site by developing an oxcart replica, video interpretation and touch screen interpretation. This is an additional opportunity to make the link between the history of the town site and the oxcart trail.

Develop an interpretive plan for the interior of the Beaulieu House. The plan should address building security, electrical supply, and interpretation themes. Currently the park interprets the exterior

architecture of the building. The public has expressed an interest in access to the interior of the Beaulieu house. Possible interpretive directions include construction techniques and period restoration and refurbishment.

Non-Personal Interpretation (self-guided)

Develop interpretive signs and brochures with maps for the following primary resources: remnants of oak savanna jack pine barrens, prairie, jack pine woodlands, the park's geographic position at the interface of three major biomes, and the confluence of the Mississippi and Crow Wing rivers. These brochures and signs will expand the non-personal interpretive program to cover the main natural resources in the park.

Develop several wildlife viewing platforms or blinds in the park. Appropriately located, these facilities will improve wildlife watching opportunities and wildlife interpretation in the park.

Develop interpretive material concerning the ferry crossing. Interpretation should focus on its role in trade and travel at Crow Wing, including the Red River Oxcart Trail.

Develop the Hole-in-the-Day site as a hiking destination with interpretive signs. The site should have interpretive signage about Hole-in-the-Day, as well as benches or tables.

Pursue appropriate interpretation of cemeteries and church sites. Division of Parks and Recreation should work with the church organizations related to the cemeteries to investigate appropriate signs and materials.

Personal Interpretation (guided)

Develop interpretive programming and materials for target audiences. Target audiences identified in the Interpretive Services Plan and through the management plan process include: school groups and teachers, senior citizens, American Indians, day users, campers, and youth groups.

Consider developing additional programs for special events at the park. Members of the Citizen Advisory Committee expressed an interest in special event programs. Potential programs mentioned included a pageant of the meeting of Lincoln emissary with the Ojibwe, restoring the ferry crossing, and an American Indian history tour of the area including Crow Wing State Park.

Pursue partnerships with various entities for interpreting area historical and environmental sites as joint efforts. Sites to be considered through these partnerships may include: Camp Ripley, Fort Gaines, the Little Elk site, the Great River Road, and the Crow Wing County Historical Museum.

Facilities

Explore the feasibility of a visitor center, possibly in combination with the Paul Bunyan State Trail trailhead. The combination visitor center/trailhead facility could also accommodate contact station and office space functions for Division of Parks and Recreation personnel. Division of Parks and Recreation will work with Division of Trails and Waterways to meet the needs of future users of the Paul Bunyan State Trail and Crow Wing State Park.

Consider the feasibility of a river overlook near the park's existing amphitheater. The overlook site could be designed for both causal use by visitors as well as to host interpretive programs. Proximity to the campground will also make it convenient for hosting programs for the overnight visitors.

VI. RECREATIONAL USE AND VISITOR SERVICES

Existing Facilities

Crow Wing State Park has a mix of visitor use and recreation facilities. The park office includes staff offices and a public service counter. There are 20 buildings within the park - including 7 vault toilets. The majority of the buildings were constructed in the 1960s and 1970s.

Park Facilities and Programs

- Hiking Trails (18 miles)
- Cross Country Ski Trails (6 miles)
- Snowmobile Trails (6 miles)
- Interpretive Trail and Boardwalk
- Campground
- Watercraft Campsite
- Group Camp
- Amphitheater
- Interpretive Displays
- Picnic Shelter and Grounds
- Boat Launch

The campground includes 59 sites - 12 with electric hookups - and one camper cabin. The group camp can accommodate up to 50 people. (See Figure 12 - Existing Development.)

The last management plan was completed in 1981. The road improvements and campground redesign recommended in the plan were completed. Other plan recommendations that were completed include a surfaced trail through the historic site and new interpretive signs.

Demand for Facilities/Visitor Expectations

In a recent survey of park visitors conducted by the Division of Parks and Recreation, park visitors were asked what they wanted for Crow Wing State Park in the way of facilities, recreational opportunities, and natural resources. The items mentioned most often by survey respondents included:

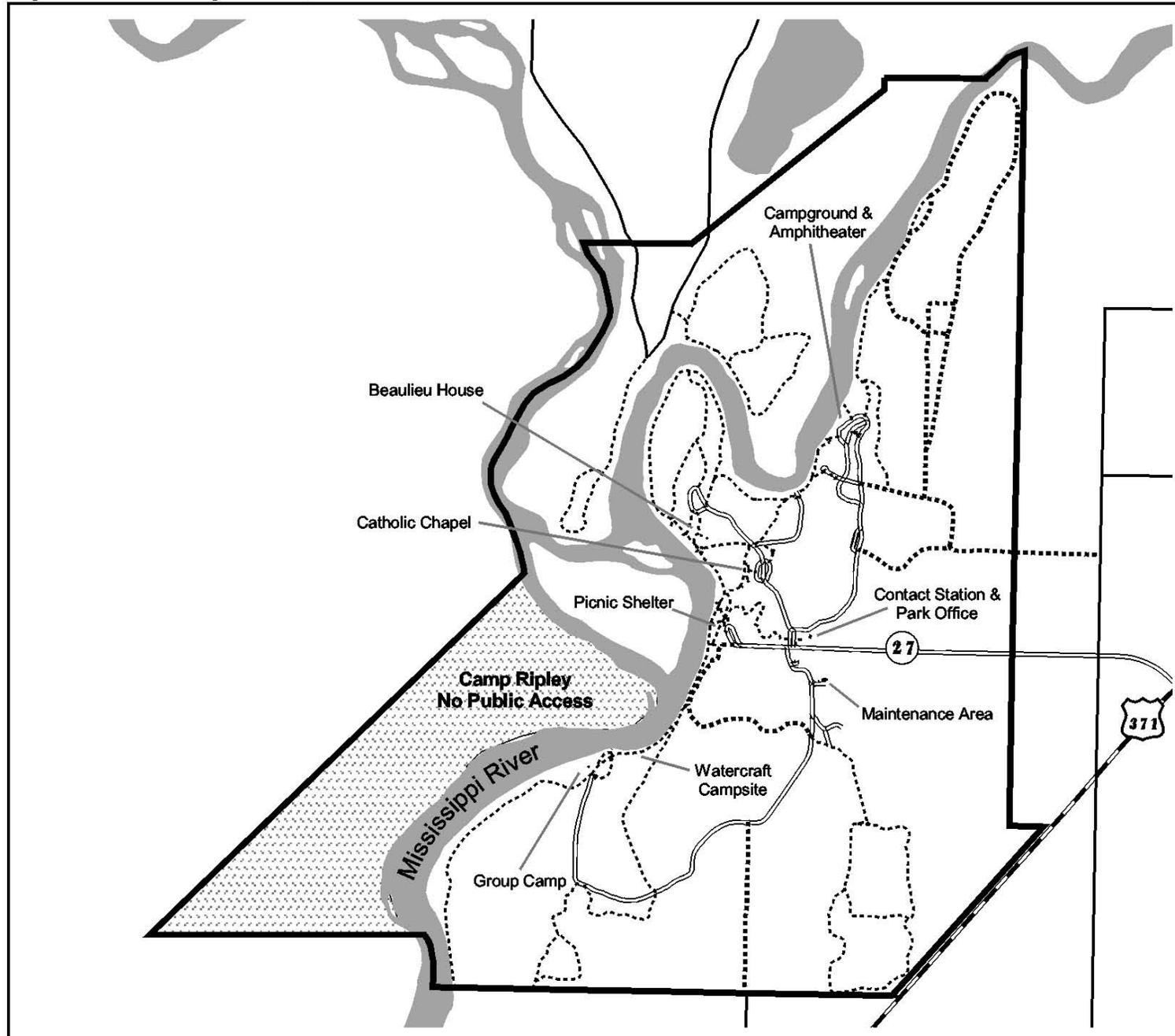
- Hiking
- Natural recreation areas
- Natural vistas
- Viewing native plants and animals
- Clean waterways
- Undeveloped shorelines
- Visitor/trail center
- Picnic shelters
- Flush toilets
- Self-guided interpretive trails
- Naturalist programs
- Interpretive displays

Over 70% of all respondents mentioned the above items. Crow Wing already provides most of the things that its visitors would like at this park.

This is supported by the information gathered through park visitor comment cards. Most of comment cards that the park receives are complimentary. Several issues have been raised - including requests for additional electric sites and more playground equipment for the campground, as well as swimming opportunities at the park. Past attempts to provide swimming were not successful, and currently people are referred to Whipple Beach, within a nearby Baxter city park.

Crow Wing State Park

Figure 12 - Existing Development



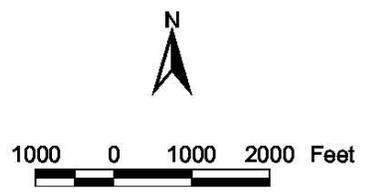
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Legend

- State Park Boundary
- Hiking Trails
- Snowmobiling Trails
- Camp Ripley - Restricted No Public Access
- Park Roads
- Buildings
- Water

Roads

- State Highway
- County Highway
- Other Roads



Partnerships and Public Involvement

There are several groups and organizations with which park staff can work to promote the interpretive and recreation opportunities at Crow Wing State Park. Some of these organizations include:

Minnesota Department of Transportation (MnDOT)

Division of Parks and Recreation and MnDOT have a cooperative agreement to salvage prairie plants within the Highway 371 project area. Prairie plant seed collected from the highway right-of-way will be used as part of a seed bank to grow and harvest prairie seed for use in highway projects across the state. The park is also exploring the possibility of a partnership with DOT involving a wayside rest area that is being planned for construction near the park entrance. The Division, along with other DNR divisions, may provide materials and possibly exhibits.

Camp Ripley

Camp Ripley shares research information about natural resources with Crow Wing State Park. Crow Wing displays brochures for the Minnesota Military Museum, located at Camp Ripley.

Friends of Old Crow Wing

The Friends of Old Crow Wing is a citizens park support group, whose mission is to promote historical education at Crow Wing State Park. They have raised funds for projects - including the picnic shelter enclosure (see Proposed Development below) and was instrumental in re-publishing the booklet "Old Crow Wing."

Crow Wing County Historical Society

The Crow Wing County Historical Society has provided funding to co-sponsor a summer interpretive series. The Historical Society also has provided research materials used in developing interpretive programs and displays.

Mississippi Headwaters Board

The Mississippi Headwaters Board co-sponsors the annual Crow Wing Family Canoe Day event and sponsor Minnesota Archaeology Week events.

Local Communities

Park staff are involved in the community in several ways including local schools that visit the park and area chambers of commerce.

Non-Profit and Volunteer Groups

Many non-profit groups utilize the park facilities and also provide services for the park. Scout groups, church groups, Soakers (a local group of the MN Camping Association), Crow Wing County Muzzleloaders, Brainerd Rotary Club, and the Mid-Minnesota Builders are several examples.

Private Business

Private businesses can play a role in promoting the park by including it when they market their facilities. Evergreen Press assisted in republishing the "Old Crow Wing" booklet. Touchstone Energy completed several projects for the park. Private businesses also provide services for park users such as food, lodging, gasoline and repair. The park provides information to visitors about the location and hours of local businesses.

Trail User Groups

User groups provide information and promotional materials about trails to their members. They can also play a role in educating their members about trail courtesies and safe behavior. The local Brainerd Snodeos snowmobile club groom snowmobile trails in the park as part of the grant-in-aid trail system.

Adjacent Landowners

Crow Wing strives to be a good neighbor by including neighbors in discussions concerning such as fencing, trails crossings, planting projects and prescribed burns. Adjacent landowners can assist Crow Wing by reporting violations or problems.

Proposed Development

There are currently three projects under development within or near Crow Wing State Park that will enhance recreational use and visitor services. (See Figure 13 - Proposed Development.)

Picnic Shelter Improvements

The picnic shelter located south of the town site was remodeled in 2001. The open-sided shelter was enclosed to facilitate more shoulder season and winter use. The shelter will not be heated at this time, other than by the existing fireplace. The Division is currently exploring the possibility of replacing the fireplace with an enclosed wood stove. Additional work, including the consideration of a new heating system, may be needed in the future.

Paul Bunyan State Trail

The Paul Bunyan State Trail will be extended to connect to Crow Wing State Park. The trail will have a ten-foot wide bituminous surface with gravel shoulders. The trail will support non-motorized uses in the summer, including hiking, bicycling, in-line skating, etc. and primarily snowmobiling in the winter. When completed, the trail will extend 100 miles from Lake Bemidji State Park to Crow Wing State Park, connecting 16 communities in four counties. Approximately 53 miles of the trail has been paved, with the southern end point currently in Baxter.

The Division of Trails and Waterways is the lead agent in developing the trail. The route from Baxter to Crow Wing State Park has not been determined. The Division of Trails and Waterways is currently in discussions with potential partner organizations and landowners for the trail route, and has the support of Crow Wing Township to use township road right-of-way as an alternate alignment if necessary.

As part of the management plan process, the Division of Parks and Recreation identified potential routes for the Paul Bunyan State Trail, a paved surface route and a snowmobile route. The potential routes cross lands not owned by the Division but within the current or proposed statutory boundary for the park. Planning these connections across currently private land is a necessary part of the planning process. However, no trail development would occur until the lands are acquired from the landowners or the owners allow development of the trail on their property via easements granted to the Division of Trails and Waterways. (The potential routes for the trail within the proposed park boundary are illustrated in Figure 13 - Proposed Development). The routes identified during the management plan process are potential routes. The final trail route will need to be determined based on detailed resource analysis prior to construction. Division of Trails and Waterways will be responsible for working with private landowners to route the trail across the gaps in the proposed park boundary. (See Figure 13 - Proposed Development.)

The picnic area south of the Crow Wing town site was identified as the appropriate site for the State Trail trailhead. Locating the trailhead within the park would provide trail users with access to park facilities and other services, as well as offer greater security. A number of support facilities, including a parking area and picnic shelter, are already in place at the site and can serve trail users as well as park visitors. As development of the State Trail progresses, Division of Parks and Recreation will continue to work with the Division of Trails and Waterways on trail routing within the park and planning other support facilities for trail users.

Highway 371 Wayside Rest

Minnesota Department of Transportation (MnDOT) is planning to build an wayside rest as part of the Highway 371 reconstruction project. Preliminary designs place the wayside between the northbound and southbound lanes just south of County Road 27, the park entrance road. The project will include realignment of the park entrance road, which would improve the visibility of the park and safety for vehicles entering and leaving the park road. Display space may be available at the wayside to promote the park and various park programs. The wayside will also provide additional parking for Paul Bunyan Trail users. Division of Parks and Recreation will continue to work with MnDOT on road realignment, display space, and other issues.

There are four other development projects identified in the plan recommendations for Crow Wing State Park: new visitor center/contact station, campground road surfacing, west bank carry-in boat access and parking, and various campground improvements. (See Figure 13 - Proposed Development.)

Visitor Center/Contact Station

The extension of the Paul Bunyan State Trail to the park as well as other park improvements will bring more visitors to the park. Trailhead facilities such as bike racks, parking, restrooms, and water will be needed to support trail users. Currently, the park does not have a visitor center. The small contact station serves as the park office with little space for interpretive displays or nature store merchandise. A new visitor center can serve multiple functions for the park: a trailhead for the state trail, contact station for the park, improved interpretive display and nature store space, and park staff office space. Four-season bathrooms were also identified by multiple groups during the management plan process as a need for the park. The bathrooms could be developed either as part of the visitors center or at the picnic shelter.

Campground Road Surfacing

Paving the campground road, including the campground loops, is recommended to reduce long-term maintenance costs and improve accessibility within the campground. The campground spurs would remain aggregate surfaced.

West Bank Carry-in Boat Access and Parking

A carry-in boat access with a small parking area is proposed for the west bank of the Mississippi River. Currently, there is a hiking trail loop accessed from the roadway. No parking is available - vehicles must park along the narrow roadway. Previously there was an informal drive-in boat access in this location. However, vehicle traffic has resulted in erosion of the steep slopes and sandy soils of the bank. The road is no longer passable for vehicles. The management plan recommends the development of a carry-in boat access connected by the hiking trail to a small parking area along the road edge for three to five vehicles. A carry-in boat access would complement the drive-in boat access already available in the park, providing park users a more rustic experience while protecting the erosion-prone banks along the river. The parking area would be available for people seeking to use the hiking trail or the boat access.

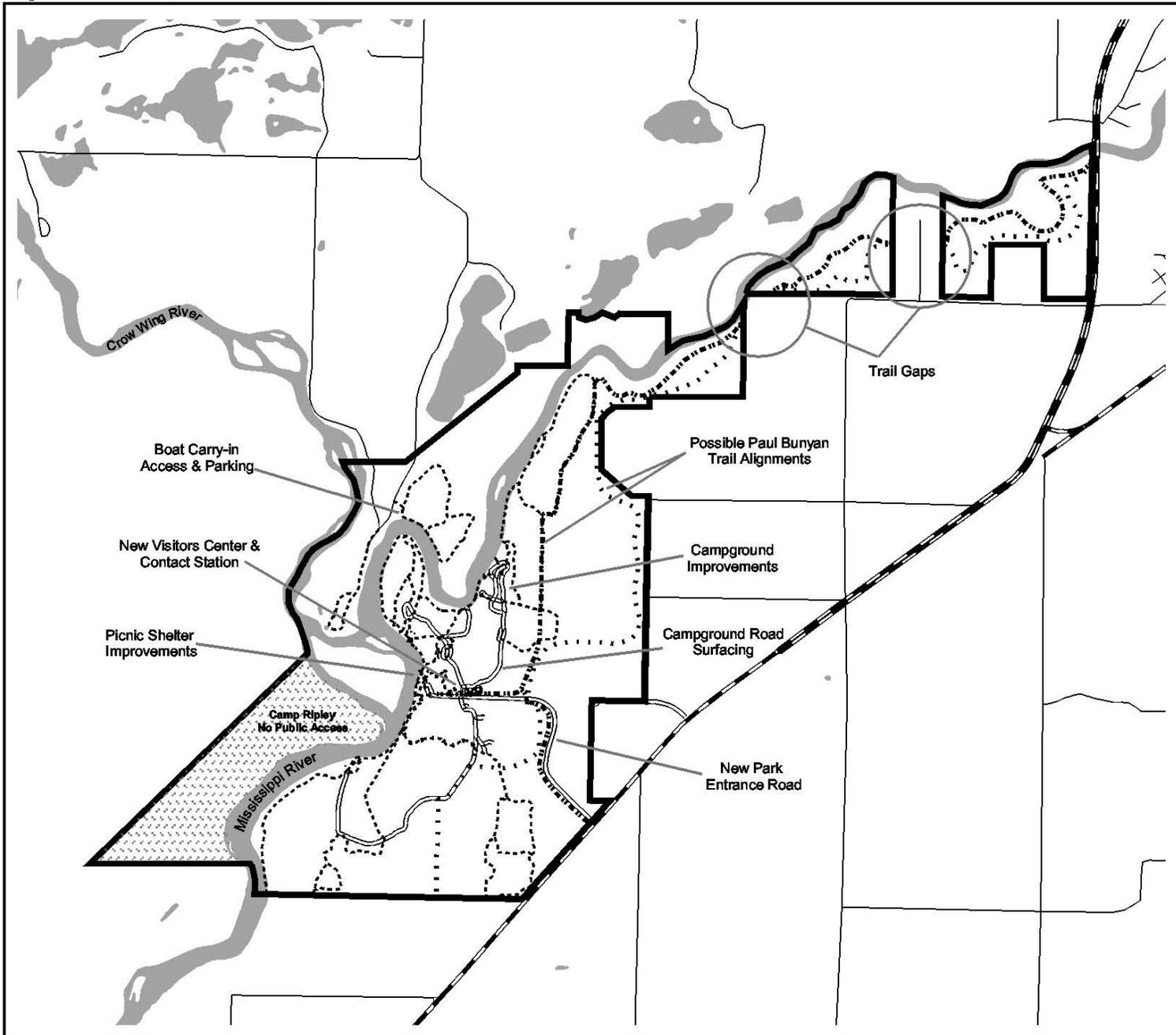
Campground Improvements

Several improvements related to the campground were recommended through the management plan process. Additional playground equipment has been a common request from campground users. An appropriate location will need to be identified for placing the new equipment. Updating the bathroom/shower building at the campground would provide a higher level of service for campground users. The addition of a second camper cabin with electricity and heat was identified as a way to lengthen the campground season and provide more variety in the campground's facilities.

Crow Wing State Park

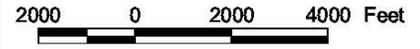
Figure 13 - Proposed Development

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Legend

- State Park Boundary (Proposed)
- New Visitor Center & Contact Station
- Possible Paul Bunyan State Trail Alignments -**
 - Paved Route
 - Snowmobile Route
 - Hiking Trails
- Camp Ripley - Restricted No Public Access
- Park Roads
- Buildings
- Water
- Roads**
 - State Highway
 - County Highway
 - Other Roads



Prepared by: Jade Templin 02/08/02

Recreation Management, Community and Marketing Goals

This set of goals will guide the park plan and its recommendations toward sustainable use of natural and economic resources.

- Provide a range of recreational opportunities for visitors to enjoy the natural environment.
- Locate and design facilities to minimize human impact on the park's natural and cultural resources.
- Provide reasonable access and accommodations for persons with disabilities.
- Promote the safety and security of park users.
- Promote increased understanding, appreciation, and enjoyment of natural and cultural resources in the park by providing interpretive services.
- Preserve the park's natural scenic beauty, old growth communities, noncommercial atmosphere, and historic character.
- Minimize and concentrate park development in order to preserve the remaining portions of the park.
- Complement the resources and facilities of the neighboring communities and resorts.

Community and Marketing Recommendations

Recommendations:

Encourage the continued involvement of Friends of Old Crow Wing, Crow Wing Historical Society, and other similar groups in Crow Wing State Park. These groups have a mission to promote the history of the region and can provide concepts on the educational aspects of the Old Crow Wing Village and early Minnesota cultures. Their access to historical information, cultural resources, and community contacts can be very beneficial in support of the park.

Encourage the development of a private canoe and bicycle shuttle service. Canoe rental is a growing business on the Mississippi and Crow Wing rivers. Requests for shuttle service has also grown. With the development of the Paul Bunyan State Trail, similar requests for one-way bicycle shuttles may also develop. Potential private groups that could operate the service include seasonal businesses such as resorts or skiing operators.

Increase exposure of the park to local residents as well as tourists. Increased awareness in the local community could significantly increase park visits, especially in the spring and fall seasons. Brochures should be placed with local businesses, information centers, chambers of commerce, and wayside rests. Special promotions with local businesses such as free day passes could also be considered.

Provide information about area businesses that provide services to park visitors. Displays or information available at the park will aid park users as well as promote local businesses.

Coordinate marketing and community outreach with Camp Ripley. Camp Ripley's Minnesota Military Museum and other historical programs would benefit from many of the same outreach efforts as the park. Coordinating efforts may increase the exposure for both units while sharing costs.

Recreational Use and Visitor Services Recommendations

Recommendations:

Campground and group camp

Consider expanding playground equipment at the campground. Campground visitors have requested additional playground opportunities at the campground. These improvements would make the campground more family oriented. An appropriate location for the equipment will need to be determined.

Update shower and bathroom facilities in campground. Renovated facilities would provide a higher level of service for park visitors and meet Americans with Disabilities Act (ADA) standards.

Consider electrification of additional existing sites within the campground. Electric campsites are in high demand. The changing demographics of campers at the park (more older campers, more RV campers) will result in greater demand for electric sites in the future.

Consider adding a camper cabin. A second cabin, possibly with electricity and heat, would expand the campground season and provide a greater variety in camping experience.

Maintain the rustic nature of the group camp. Group camp users support the existing level of development at the group camp.

Trails

Cooperate with Division of Trails and Waterways in locating the Paul Bunyan State Trail route and support facilities within the park. The route should follow existing trails where feasible and relate to park facilities, such as a trail link with the campground. Support facilities should be located for joint use by trail visitors and park visitors to avoid providing duplicate facilities. Prairie restoration or other appropriate natural community restoration along the trail corridor should be part of the trail construction project.

Consider adding bike trails within the park if demand warrants. Connection to the Paul Bunyan State Trail will bring more bicycle-interested people to the park. Development of small, loop-style trails within the park may be desirable in the future.

Consider adding benches along trails within the park. Sites such as overlooks or the Hole-in-the-Day farmsite could be popular resting or stopping points along the trail system where benches would be appropriate.

Other Facilities

Consider providing four-season bathrooms in the park. Four-season bathrooms would encourage more park visits, especially in the shoulder and winter seasons. Possible locations include the picnic shelter or visitor center/trailhead building.

Explore the feasibility of a visitor center, possibly in combination with a Paul Bunyan State Trail trailhead. The heated, four-season facility with modern restrooms would serve both park visitors and future Paul Bunyan State Trail visitors. The combination visitor center/trailhead facility could also accommodate contact station and office space functions for Division of Parks and Recreation personnel. (This recommendation can also be found under V. Interpretive Services.)

VII. PARK BOUNDARY

There are 2,200 acres within the current statutory boundary of the park. Of that acreage, 2,028 acres are in public ownership - 1,711 acres owned and administered by the Division of Parks and Recreation and 317 acres owned and administered by Camp Ripley (Minnesota National Guard). One hundred seventy two acres within the boundary are in private ownership. (See Figure 14 - Land Ownership) Forty acres of the 172 remaining private acres within the boundary were recently acquired by the Minnesota Parks and Trails Council. Division of Parks and Recreation will work with the Council to purchase this parcel for the park.

Table 4. Crow Wing State Park Land Ownership and Location*

	Park-Owned Acres	Private/Other Owned Acres	Total Acres
Morrison County	59	317**	376
Cass County	425	84	509
Crow Wing County	1,227	88	1,315
Total	1,711	489	2,200

* Land ownership as of August 2001.

** Land owned by the State of Minnesota - Camp Ripley (Minnesota National Guard)

Ownership of the acreage within the current statutory boundary that is not owned by the Division of Parks and Recreation:

Morrison County	317 acres	(Camp Ripley)
Cass County	84 acres	(Private Ownership)
Crow Wing County	88 acres	(Private Ownership including Diocese of St. Cloud Catholic Chapel)

In 2001, 2.55 acres in the southeast corner of the current statutory boundary - SE 1/4 of the SW 1/4 of S25, T44, R32 - was removed from the park and transferred to the Minnesota Department of Transportation (MnDOT) for the Highway 371 expansion project. This boundary adjustment was part of the State Park Boundary Bill for the 2001 Legislative Session.

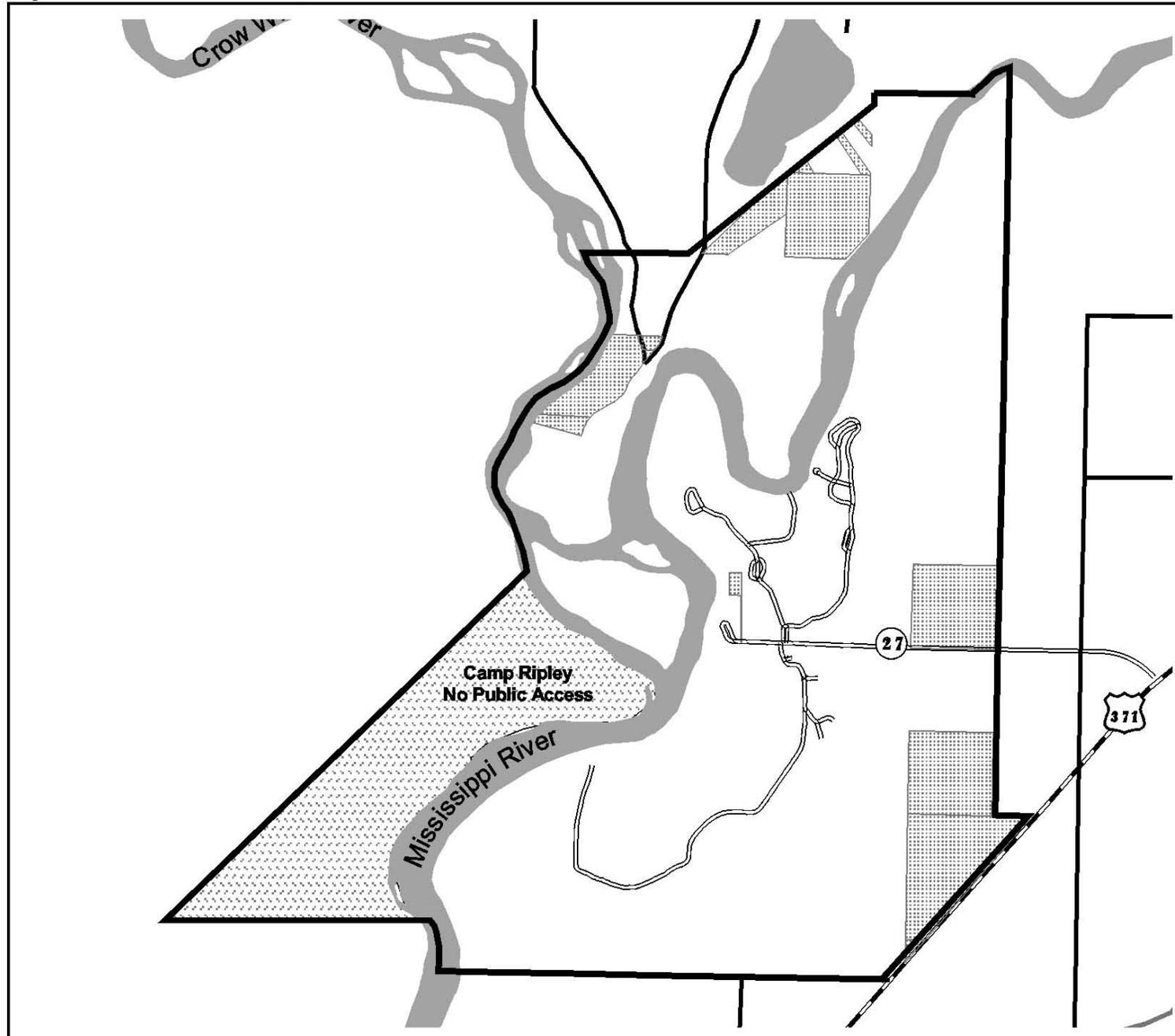
As part of the Highway 371 project, MnDOT is also negotiating with three landowners within the current statutory boundary to acquire their property. Portions of the property along Highway 371 will be included in the expanded road right-of-way. MnDOT will acquire the entire parcels. The Division will work with MnDOT to transfer management of the remaining property to the park. The Division is also working with MnDOT and Crow Wing County on realigning the park entrance road over these parcels as part of the highway project and construction of a wayside rest. (IX. See Buildings and Facility Management.)

Proposed Boundary Modifications

State Park boundaries are established by the Minnesota Legislature. Statutory boundaries serve to identify lands appropriate for inclusion in the park. The Division of Parks and Recreation is authorized to negotiate acquisition of land only within the boundary. The Division does not have the authority to acquire

Crow Wing State Park

Figure 14 - Land Ownership



Legend

- State Park Boundary
- Privately Owned Property
- Camp Ripley - Restricted No Public Access
- Water
- Park Roads

Roads

- State Highways
- County Highways
- Other Roads

58



1000 0 1000 2000 Feet



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park land except from willing sellers nor can landowners be required to sell to the state. Inclusion in a park boundary does not limit what a private landowners can do with their property.

Boundary modifications are considered during all state park management planning processes. Management plans recommend boundary changes, which must be approved by the Minnesota State Legislature. All boundaries are legally described in Minnesota Statutes. When an addition to a park statutory boundary is considered, the Division of Parks and Recreation will contact private landowners that would be within the proposed boundary and ask for their documented support. Without the support of the landowner, the Division will not request a statutory boundary change from the Minnesota State Legislature.

Several boundary adjustments were developed through the planning process. The recommended changes would add approximately 1,001.62 acres to the park statutory boundary. The lands recommended to be added to the statutory boundary are described below and illustrated in Figure 15 - Proposed Boundary Expansion.

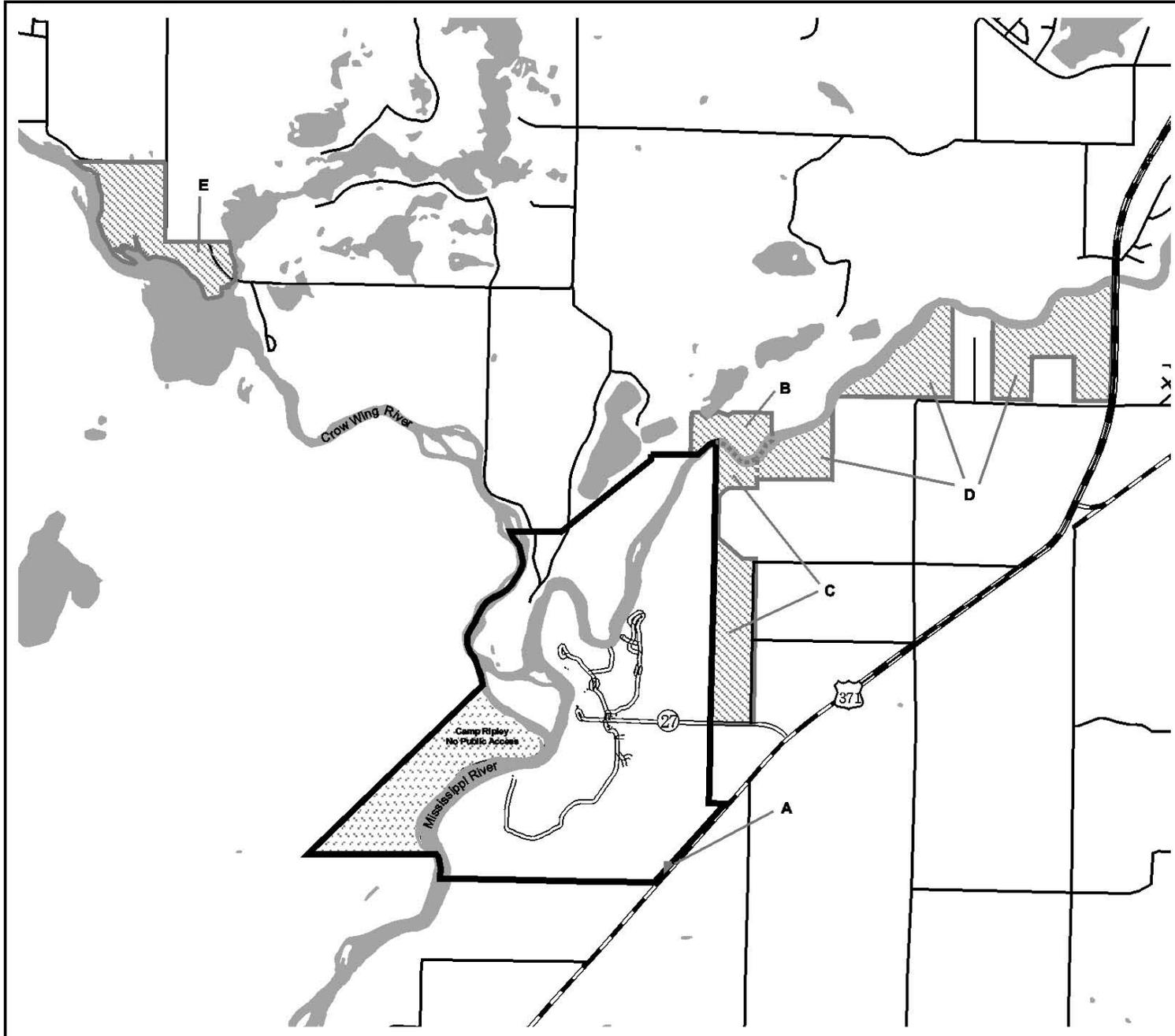
- A. Add approximately 1 acre to the southeast corner of the current statutory boundary - SW 1/4 of the SE 1/4 of S25, T44, R32. The land will align the park boundary with the edge of Highway 371 - creating a clearly-defined boundary that will simplify management and enforcement activities. MnDOT is negotiating to purchase the property as part of the Highway 371 project.
- B. Add approximately 56.75 acres on the west bank of the Mississippi River, north of the current statutory boundary - Government Lots 3 and 4 of S27, T133, R29. These parcels have steep riverbanks and would provide additional riparian habitat and preserve undeveloped views of the river.
- C. Add approximately 205.86 acres adjacent to the eastern edge of the current statutory boundary - Government Lot 1 of S13, T44, R32 and the NE and SE 1/4 of the E 1/2 of S13, T44, R32 and the E 1/2 of the E 1/2 of S24, T44, R32. The northern portion of this area was recommended for inclusion into the park boundary in the 1981 park management plan, but no official statutory boundary change was enacted. This parcel includes river frontage and woods. The remaining property is currently agricultural and would provide habitat restoration opportunities and potential for future recreation.
- D. Add approximately 470.56 acres in four parcels along the east bank of the Mississippi River between the current statutory boundary and Highway 371 bridge. Three parcels are owned by Potlatch Corporation and one is in private ownership. These parcels would protect additional river frontage on the Mississippi and provide a portion of the trail corridor for the Paul Bunyan State Trail to connect to the park.

The Division is working with the Conservation Fund and the Parks and Trails Council of Minnesota in negotiating for the purchase of the parcels from Potlatch Corporation and the private owner. In 2002, Conservation Fund and Potlatch Corporation are negotiating an option agreement for the three parcels under Potlatch Corporation ownership. The Division will work with Conservation Fund and the Parks and Trails Council of Minnesota to acquire all four parcels and transfer them to state ownership.

- E. Add approximately 267.45 acres northwest of the existing park at the confluence of the Crow Wing and Gull Rivers - Government Lots 3, 4, and 5 and SE1/4 of the NE 1/4 and NE1/4 of the SE 1/4 of S24, T133N, R30W; Government Lot 4 and pt. of SE 1/4 of the SW 1/4 of S19, T133N, R29W; and Government Lot 2 of S30, T133N, R29W. This property was the site of the Chippewa Indian Agency from 1851 to 1869. The property is owned by Minnesota Power and Light Company. The site contains significant cultural resources - including building depressions and fields of the agency, remains of a prehistoric American Indian village, and several burial mounds. The site was entered on the National Register of Historic Places list in 1973. (Of the 267.45 acres, approximately 212 are above the ordinary high water mark - the remainder are portions of government lots submerged by the Sylvan Dam impoundment.)

Crow Wing State Park

Figure 15 - Proposed Boundary Expansion



Legend

- State Park Boundary
- Proposed Boundary Expansion
- Camp Ripley - Restricted No Public Access
- Park Roads
- Buildings
- Water
- Roads
 - State Highway
 - County Highway
 - Other Roads



2000 0 2000 4000 Feet



Prepared by: Jade Templin 08/20/01

The Division of Wildlife is leading DNR's discussions with Minnesota Power and Light about acquiring the company's lands along the Crow Wing and Gull rivers which includes the Chippewa Indian Agency site. The Division of Wildlife plans to acquire the property and designate it as a wildlife management area. However, designation and management as a wildlife management area is not the optimal fit for a cultural resource site like the Chippewa Indian Agency site. The Division of Wildlife approached the Division of Parks and Recreation about taking over management of the agency site when the property is purchased. Including the agency property within the park's statutory boundary will position the Division of Parks and Recreation to take ownership of the property after it is acquired by the State.

Park Boundary Recommendations

Recommendations

Maintain Camp Ripley lands within the statutory boundary of the park. Division of Parks and Recreation does not intend to pursue transfer of this property to the park while it continues to be utilized by the Minnesota National Guard. However, retaining the land in the boundary positions the Division to purchase the property if in the future the lands are no longer considered essential for the operation of Camp Ripley.

Expand the statutory boundary to include an additional 1,001.62 acres as described in points A through E above. This expansion will protect significant additional river frontage on the Mississippi, provide additional wildlife habitat (both existing and lands with restoration potential), provide for future recreation including the connection of the Paul Bunyan State Trail to the park, and preserve the Chippewa Agency historic site.

Work with Conservation Fund and Parks and Trails Council to purchase the three Potlatch Corporation parcels and one privately-owned parcel described in point D. The Division of Parks and Recreation will seek funding to purchase the parcels from Conservation Fund and transfer them to state ownership.

Monitor the negotiations between Minnesota Power and Light and Division of Wildlife. Division of Wildlife is the lead agency in discussions with Minnesota Power and Light concerning acquisition of the company's holdings, including the Chippewa Agency property.

Encourage sustainable land management and conservation options with private landowners within the current statutory boundary and the proposed boundary expansion area. Division and Department staff will work with landowners to protect water quality and native habitat, and to ease development pressure through land protection programs.

VIII. SIGNIFICANT AREAS MAPPING (SAM)

Significant areas mapping (SAM) is an integrated approach by which the natural and cultural resources in a park are first identified in terms of their regional significance and then assessed in terms of their capability to provide opportunities for visitor experiences.

The SAM process has two parts: assessing present conditions and assessing future conditions. In each part there are three steps: identifying significant natural and cultural resources, identifying levels of visitor use and experience, and overlaying the first two steps to assess opportunities and conflicts related to park resources and park visitors. Future conditions are those anticipated at the end of the 20 year lifetime of the management plan. Visitor use and experience is defined on a park-specific scale of low, medium, and high use based on the number and density of visitors using the area.

The purpose of the SAM process is to help identify areas for improvement in the way the Division manages how resources and people interact in the parks. It will aid the Division in addressing existing problems as well as in planning to avoid creating new ones. It also can help point out how the Division can take better advantage of the places where the interaction between people and the resources are positive, through interpretation and education.

With input from the public, the SAM process can lead to a discussion of how to resolve conflicts between resource protection and visitor use, possibly be relocating (or modifying) visitor use or by monitoring resource impact and defining impact management strategies. Appropriate strategies for managing impacts can be determined using the SAM analysis along with the park's mission as guides. Specific management strategies may include:

- ▶ *site management* (facility design, site hardening, site closure, vegetation barriers, etc.)
- ▶ *rationing and allocation* (reservations, queuing, pricing)
- ▶ *regulation* (the number of people, the location or timing of visitors, visitor behavior)
- ▶ *deterrence and enforcement* (signs, sanctions)
- ▶ *visitor education* (interpretation that promotes appropriate behavior or provides information regarding use conditions).

Assessing Present Conditions

Significant Natural and Cultural Resources (Figure 16)

Red River Trail and Crow Wing Village Historic District boundaries

These two historic districts are listed on the National Register of Historic Places. The historic district boundaries were defined as part of the site nominations. The Crow Wing Village boundary follows the 1970 era park boundary. It includes all the known cultural resources in the park but also includes large areas of the park which contain no known resources. The Red River Trail boundary is a 10 foot wide corridor generally following the river from the group camp, through the town site, to the river ford. Other portions of the trail within the park have not been formally identified - including the trail sections south from the group camp and north from the river ford on the west bank of the river.

Cultural and archaeological sites

These are sites containing cultural or archaeological resources - cellar depression, cemetery markers, and other sites - identified during surveys or from historical documents. Many of these resources have not been positively linked to specific structures that once existed at the town site. Other resources are suspected to exist within the park but to date have not been located.

Cultural resources protection zone

This zone comprises two areas that include the majority of the known cultural resources in the park. These areas will be managed to promote preservation and interpretation of cultural resources and landscapes. Management actions in these areas will focus on cultural resource preservation and interpretation goals. For example, pine plantations near the town site are thinned to more closely reflect the landscape as it was during the town site era. Cultural resources outside these zones will also be protected, however the majority of effort for preservation and interpretation will be focused in this area.

Shoreline protection zone

The undeveloped shoreline along the Mississippi and Crow Wing Rivers is an important natural and cultural resource feature. The zone includes significant natural and cultural resources. A stand of old growth floodplain forest extends along the shoreline. The shoreline and adjacent shallows is also important fisheries habitat and turtle nesting habitat. There are significant cultural resources within the zone - mainly associated with the town site area. The undeveloped vista to the river is also an important part of the cultural landscape of the town site. Future park development and visitor impacts will be evaluated against the goal of protecting this area.

Old growth forests and buffer areas

Old growth stands and buffer areas have been identified in Crow Wing State Park following state statute. Two stands were identified - a red pine stand on the west bank of the Mississippi River and hardwood floodplain forest on the east bank. They will be managed and protected in accordance with the Department of Natural Resources Old Growth Guidelines.

Tamarack swamp

A tamarack swamp is located in the southern portion of the park. A tamarack swamp is a unique feature to be located in Crow Wing State Park given its soil and hydrological conditions. Public ownership offers the opportunity for interpretation of this natural resource feature.

Visitor Use Levels and Experience (Figure 17)

High visitor use areas

Areas identified as high visitor use include the town site, picnic area, open play area north of the town site, and the campground. These areas support the majority of park visits. Visitors can expect to encounter other people in these areas.

Medium visitor use areas

Areas identified as medium visitor use include the peninsula north of the town site and play area, the group camp, the trail leading from the group camp to the town site, and the snowmobile trails in the north and south ends of the park. Several of these areas are medium level of use only seasonally - the group camp in summer and the snowmobile trails in winter.

Low visitor use areas

Areas identified as low visitor use are those portions of the park with no formal access or facilities (trails, picnic shelters, etc.) and currently support no or little visitor use. These areas include the islands and lands on the west bank of the Mississippi River, as well as much of the southern end of the park.

Overlay - Identifying Existing Opportunities and Conflicts (Figure 18)

There are four areas of existing opportunities or conflicts identified through the SAM process. All four involve monitoring and management options, none of which lead to a recommendation for closure of an area or relocation of visitor use. Recommendations for addressing these areas are included in the related sections of the management plan.

Old growth stands and trails

Several trails cross through or adjacent to old growth stands and buffer areas. Potential resource impacts include stand fragmentation and introduction of non-native species. These trails are also an interpretive opportunity - a chance to educate park visitors about old growth forests. Management strategies will include minimizing trail treadways and discouraging promiscuous trails, monitoring non-native species, and developing interpretive signage about the old growth ecology and ways to limit visitor impacts.

Crow Wing town site

This area contains the largest concentration of known cultural resources and highest level of visitor use in the park. Although there are potential resource impacts, bringing people to this area is the central purpose of the park. Management strategies include designating walkways to direct visitor movements, monitoring impacts on cultural resources, and developing interpretive signage to educate visitors on archaeology and resource preservation.

Red River Trail

A pedestrian trail follows the Red River Trail along its designated route through the park. Staff will monitor the treadway to ensure long-term compatibility of the current walkway and the historic trail. Interpretive signs are also placed to educate visitors about the trail.

Riverbank erosion

The Mississippi River is eroding the river bank at the town site, impacting the cultural landscape and displacing artifacts. Bank stabilization options should be evaluated in light of aesthetics, protection of cultural contexts and artifacts, and visitor safety. Interim methods include signs and fencing to reduce the portion of the erosion problem caused by park visitors.

Assessing Future Conditions

Significant Natural and Cultural Resources (Figure 19)

The resource management efforts during the lifetime of the plan will be targeted at qualitative changes. Management directions for each resource are described below.

Red River Trail, Crow Wing Town Site, and Chippewa Agency Historic District boundaries

A modification of the Crow Wing Town Site Historic District boundary is recommended to remove those areas in the current district that do not contain any cultural resources related to the town site. No change is currently recommended for the Red River Trail Historic District. However, the district boundary could be amended if significant cultural resources were identified outside of the current boundaries - for example, portions of the Red River Trail south of the group camp or on the opposite bank of the Mississippi River - as part of future archaeological studies. No change is recommended for the Chippewa Agency Historic District boundary.

Cultural and archaeological sites

Further on-site study and historic record research may help identify specific depressions or sites with buildings known to exist in the town site. Additional archaeological work will also be needed to further identify the cultural resources at the agency site. Continued restoration and interpretation of the Beaulieu House will be the main focus of future cultural resource work at the park.

Cultural resources protection zone

A new cultural resources protection zone will identify the core resource area for management at the agency site. Continued thinning of pines surrounding the town site and in other nearby areas will be the central management action within the town site portions of the zone. The development of a landscape plan for the town site area will be a major component for identifying other management actions within the protection zone.

Shoreline protection zone

The Crow Wing and Gull River shoreline at the agency site will be added to the protection zone. Guiding development projects away from the river shorelines will help minimize negative impacts on scenic views and wildlife habitat.

Old growth forests and buffer areas

The Division is developing resource management plans for the old growth stands within the park. The intent is to manage the stands and buffer areas to perpetuate these old growth communities.

Tamarack swamp

At this time, no management actions are necessary related to the tamarack swamp. Park staff and regional resource staff will monitor the swamp for non-native and invasive species that may impact the tamarack and develop management actions if warranted.

Vegetation management areas

Vegetation is being actively managed in several areas to restore the natural communities that were present at the time of European-American settlement. Pine plantations are being thinned or removed in several locations, and prairie restoration - both plantings and burning activities - is underway in much of the south and east sections of the park. (See Figure 9 - Vegetation Management Areas and Figure 19 - Future Conditions - Significant Natural & Cultural Resources.) Other pine thinning activities near the town site are conducted as cultural resource management actions. As new land is acquired, what natural communities are to be restored will be determined from the soil surveys and original land surveys and line notes.

Visitor Use Levels and Experience (Figure 20)

High visitor use areas

The future high visitor use area is anticipated to be very similar to the existing conditions. The new park entrance road will relocate a portion of the high visitor use area to the south, with the area along the abandoned road section becoming low visitor use.

Medium visitor use areas

The potential alignments for the paved route and snowmobile route for the Paul Bunyan State Trail are the main changes to the medium level visitor use area of the park. The alignments extend west from the Hwy 371 right-of-way through the newly added portions of the park, then follow a combination of existing trails and new routes into the current area of the park. Use of the alignments will be highly seasonal - the paved route seeing most of its use in the summer, while the snowmobile route being used in the winter. (Both alignments are shown on Figure 20 - Future Conditions - Visitor Use & Experience.)

Low visitor use areas

The low visitor use area continues to encompass the remote areas of the park, and will include much of the areas added to the statutory park boundary, including the agency site.

Overlay - Identifying Future Opportunities and Conflicts (Figure 21)

The opportunities and conflicts identified under Present Conditions will still be relevant in the future and management options for these areas will continue to be followed. In addition, three primary areas will also present themselves as opportunities and conflicts in the future. Recommendations for bringing these future conditions about are included in the related sections of the management plan.

New park entrance road

The new entrance road will be routed through current and future prairie restoration areas. The relocation of the park entrance road is an opportunity for interpretation and natural resource

restoration. Prairie restoration work can be coordinated with the road project. Interpretive displays about the restoration work can also be developed at pull-outs along the road.

Paul Bunyan State Trail extension

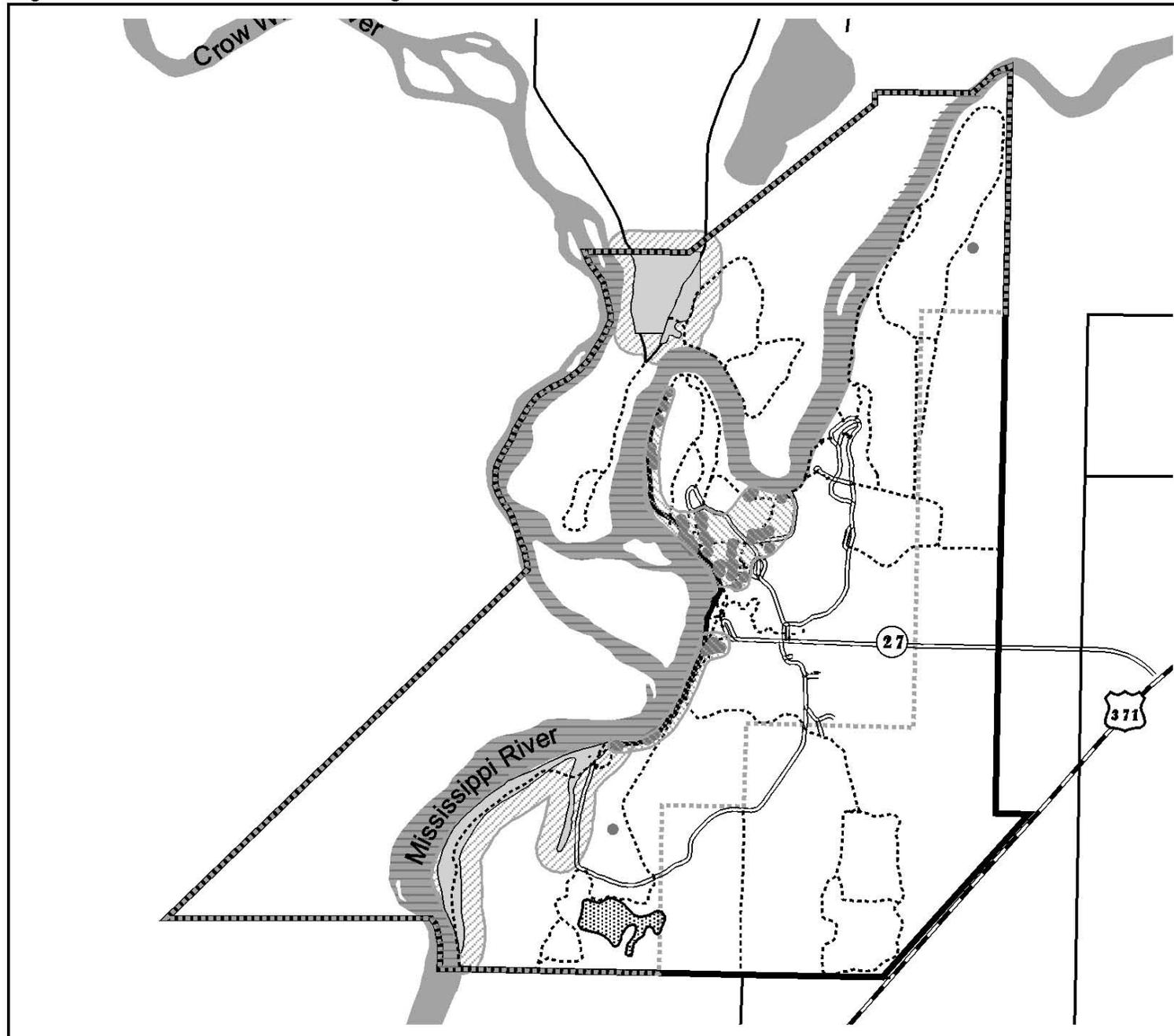
The Paul Bunyan State Trail extension into the park is a potential interpretation and natural resource restoration opportunity. Resource restoration can be done in conjunction with trail construction with interpretive signs and displays planned at benches or stopping points to educate trail users about the prairie restoration program and other natural resource projects.

New Visitor Center/Contact Station

A new visitor center/contact station is a most important future opportunity for the interaction of park visitors and resources. It will offer increased space for interpretive signage and programming, as well as serving as a trailhead for the Paul Bunyan State Trail and other park trails from where visitors can collect brochures and other information concerning the parks natural, cultural, and recreational resources.

Crow Wing State Park

Figure 16 - Present Conditions - Significant Natural & Cultural Resources



89

Legend

-  State Park Boundary
-  Cultural Resources Protection Zone
-  Cultural and Archaeological Resources
-  Red River Trail Historic District Boundary
-  Crow Wing Town Site Historic District Boundary
-  Shoreline Protection Zone
-  Old Growth Stands
-  Old Growth Buffer
-  Tamarack Swamp
-  Water
-  Buildings
-  Park Roads
-  Trails
- Roads**
-  State Highway
-  County Highway
-  Other Roads



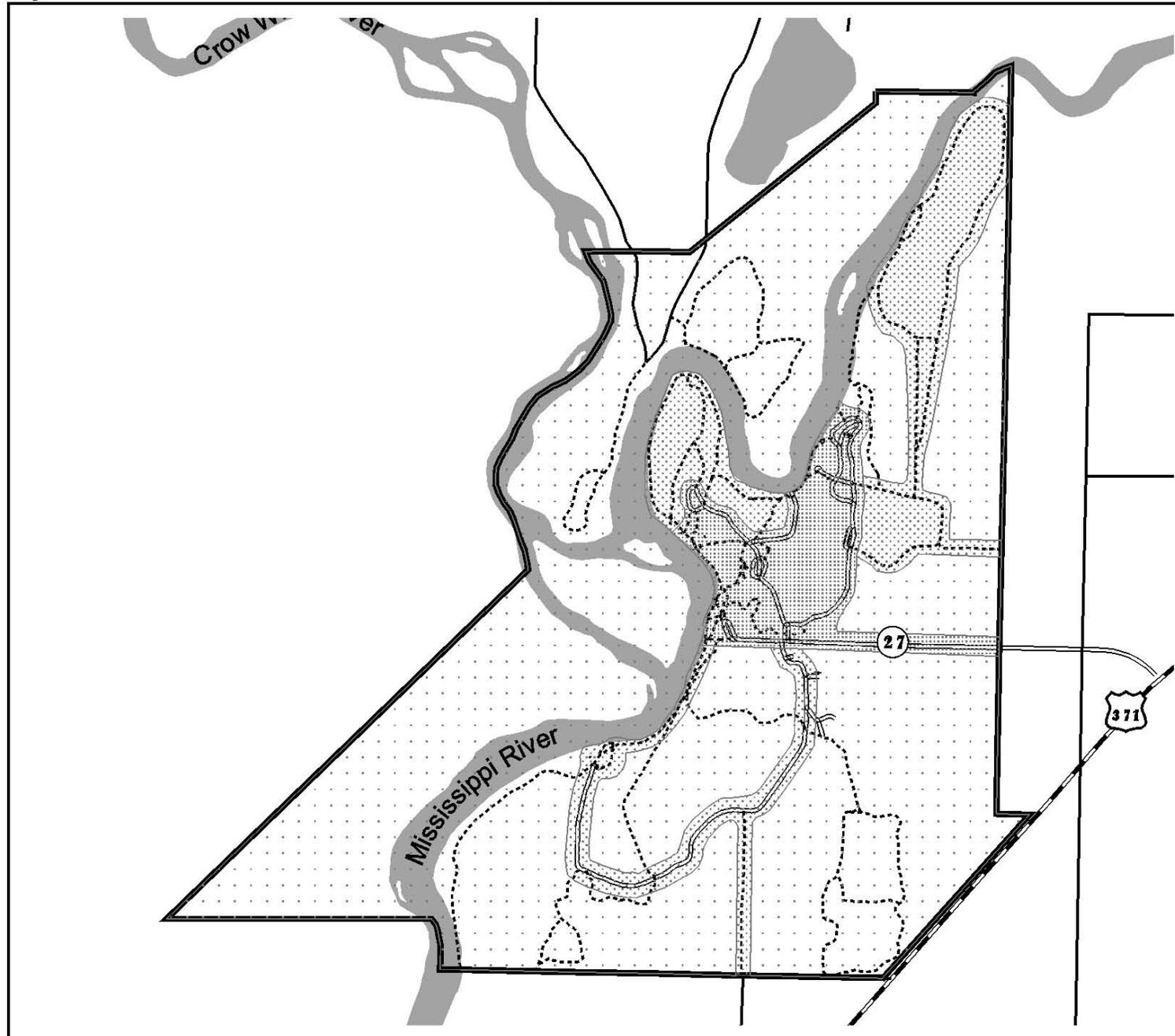
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Crow Wing State Park

Figure 17 - Present Conditions - Visitor Use & Experience



Legend

- State Park Boundary
- Visitor Use
 - High
 - Medium
 - Low
- Water
- Buildings
- Park Roads
- Trails
- Roads
 - State Highway
 - County Highway
 - Other Roads

69

N

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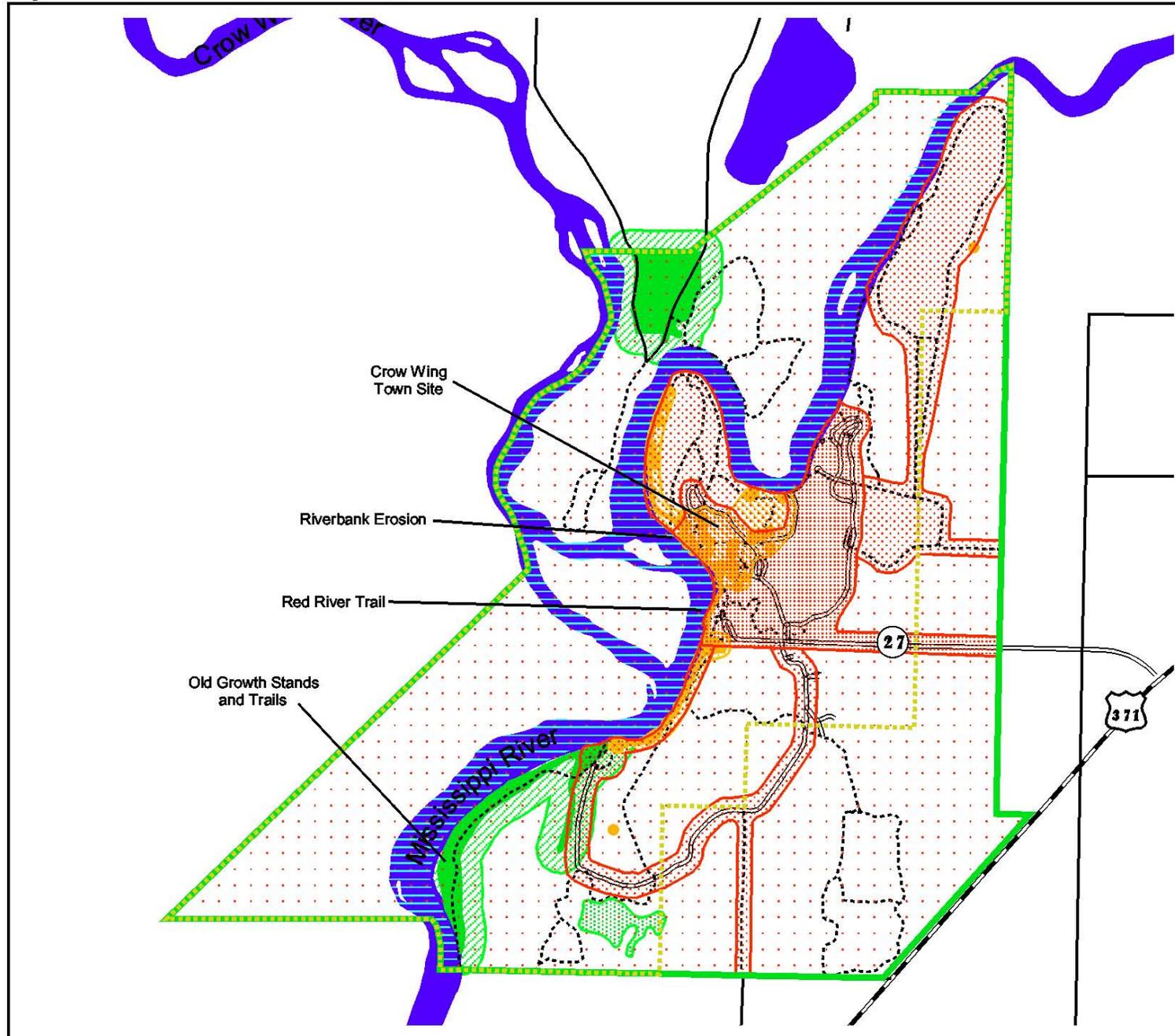


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Crow Wing State Park

Figure 18 - Present Conditions - Opportunities & Conflicts

70



Legend

- State Park Boundary
- Visitor Use**
 - High
 - Medium
 - Low
- Cultural Resources Protection Zone
- Cultural and Archaeological Resources
- Red River Trail
- Historic District Boundary
- Crow Wing Town Site
- Historic District Boundary
- Shoreline Protection Zone
- Old Growth Stands
- Old Growth Buffer
- Tamarack Swamp
- Water
- Buildings
- Park Roads
- Trails
- Roads**
 - State Highway
 - County Highway
 - Other Roads

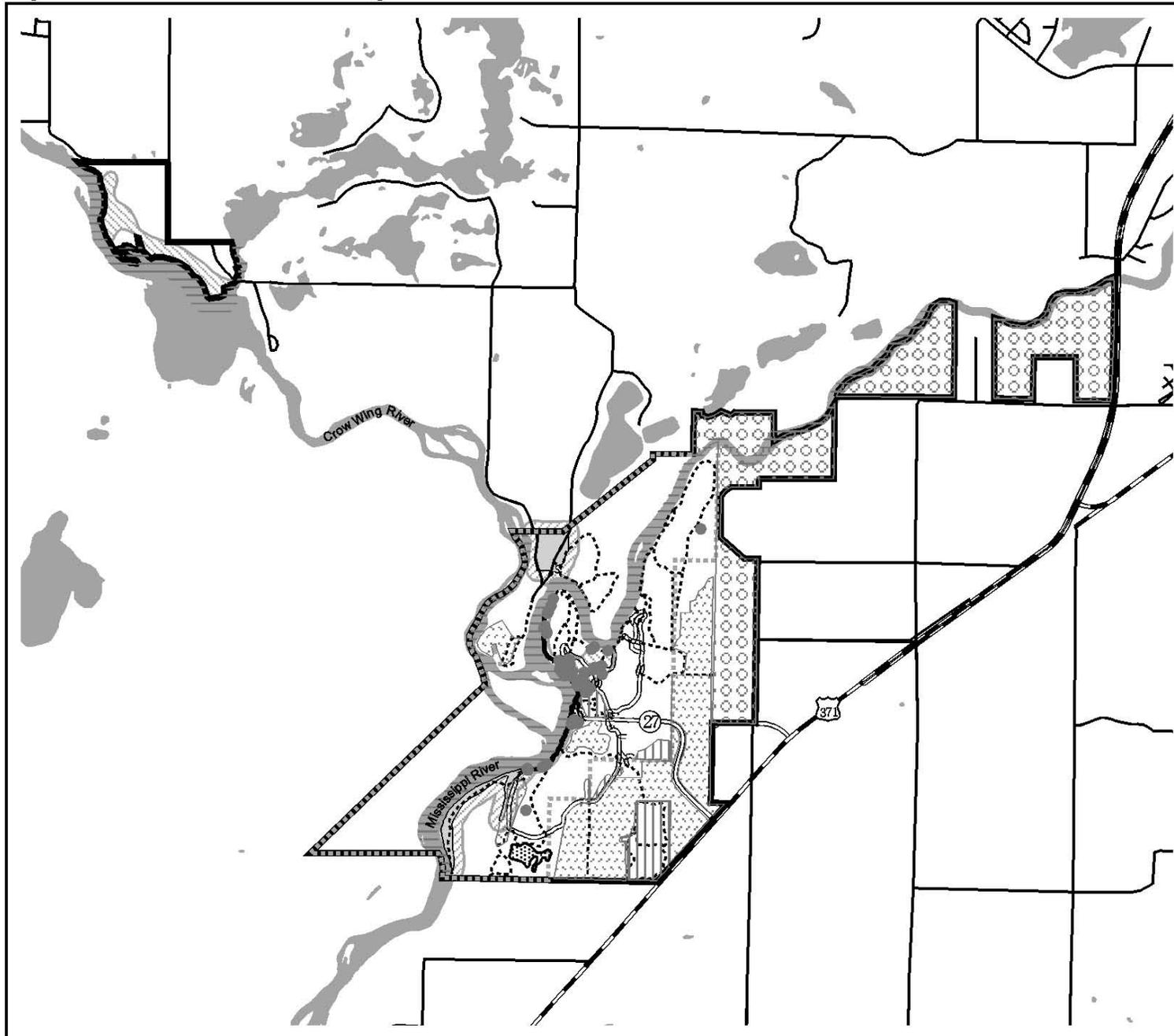


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Crow Wing State Park

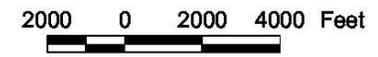
Figure 19 - Future Conditions - Significant Natural & Cultural Resources

71



Legend

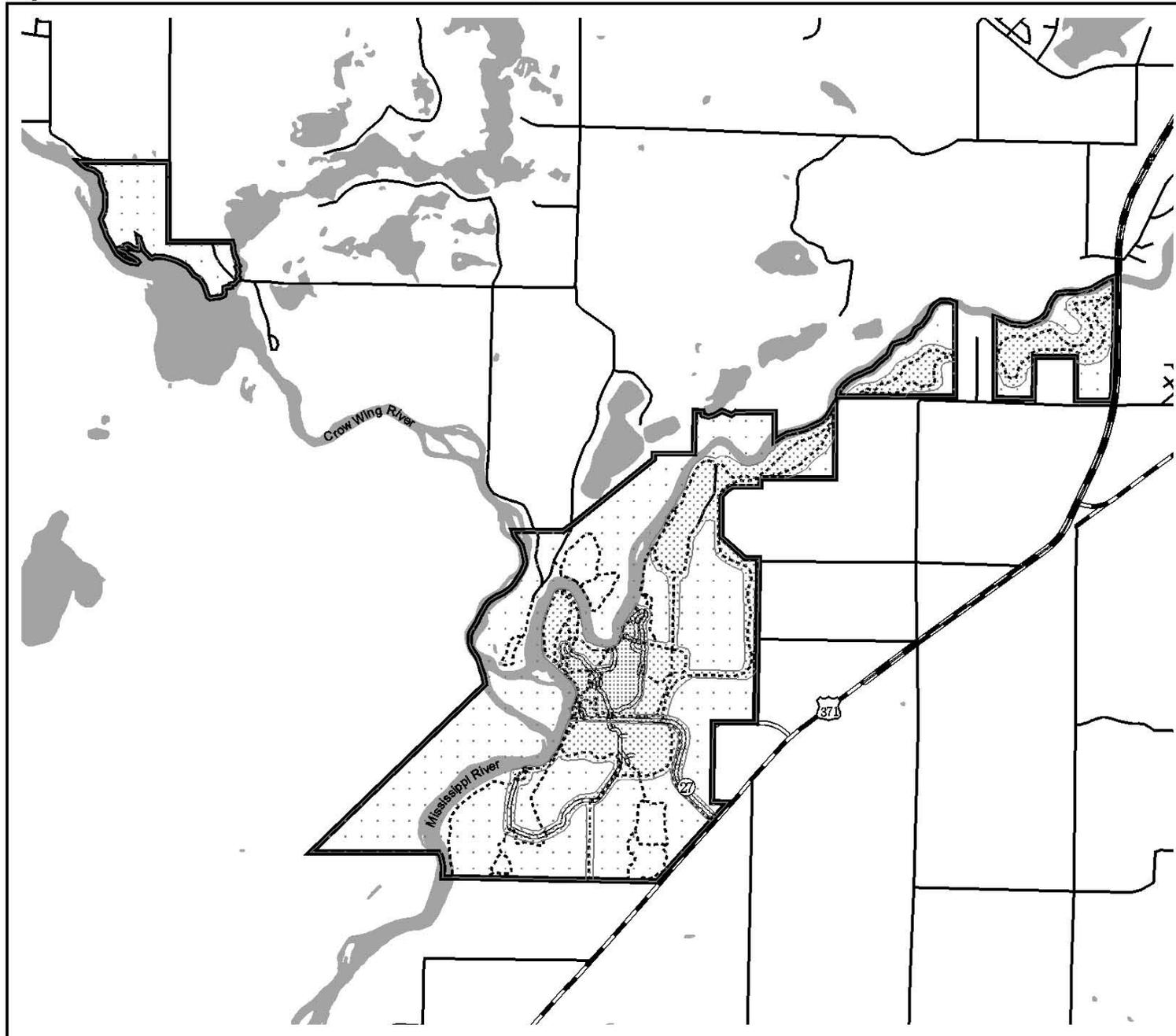
- State Park Boundary
- Vegetation Management**
 - Pine Thinning
 - Prairie Restoration
 - To Be Determined
- Cultural Resources Protection Zone
- Cultural and Archaeological Resources
- Red River Trail Historic District Boundary
- Crow Wing Town Site Historic District Boundary
- Shoreline Protection Zone
- Old Growth Stands
- Old Growth Buffer
- Tamarack Swamp
- Water
- Buildings
- Park Roads
- Trails
- Roads**
 - State Highway
 - County Highway
 - Other Roads



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Crow Wing State Park

Figure 20 - Future Conditions - Visitor Use & Experience



Legend

-  State Park Boundary
- Visitor Use**
-  High
-  Medium
-  Low
-  Water
-  Buildings
-  Park Roads
-  Trails
- Roads**
-  State Highway
-  County Highway
-  Other Roads

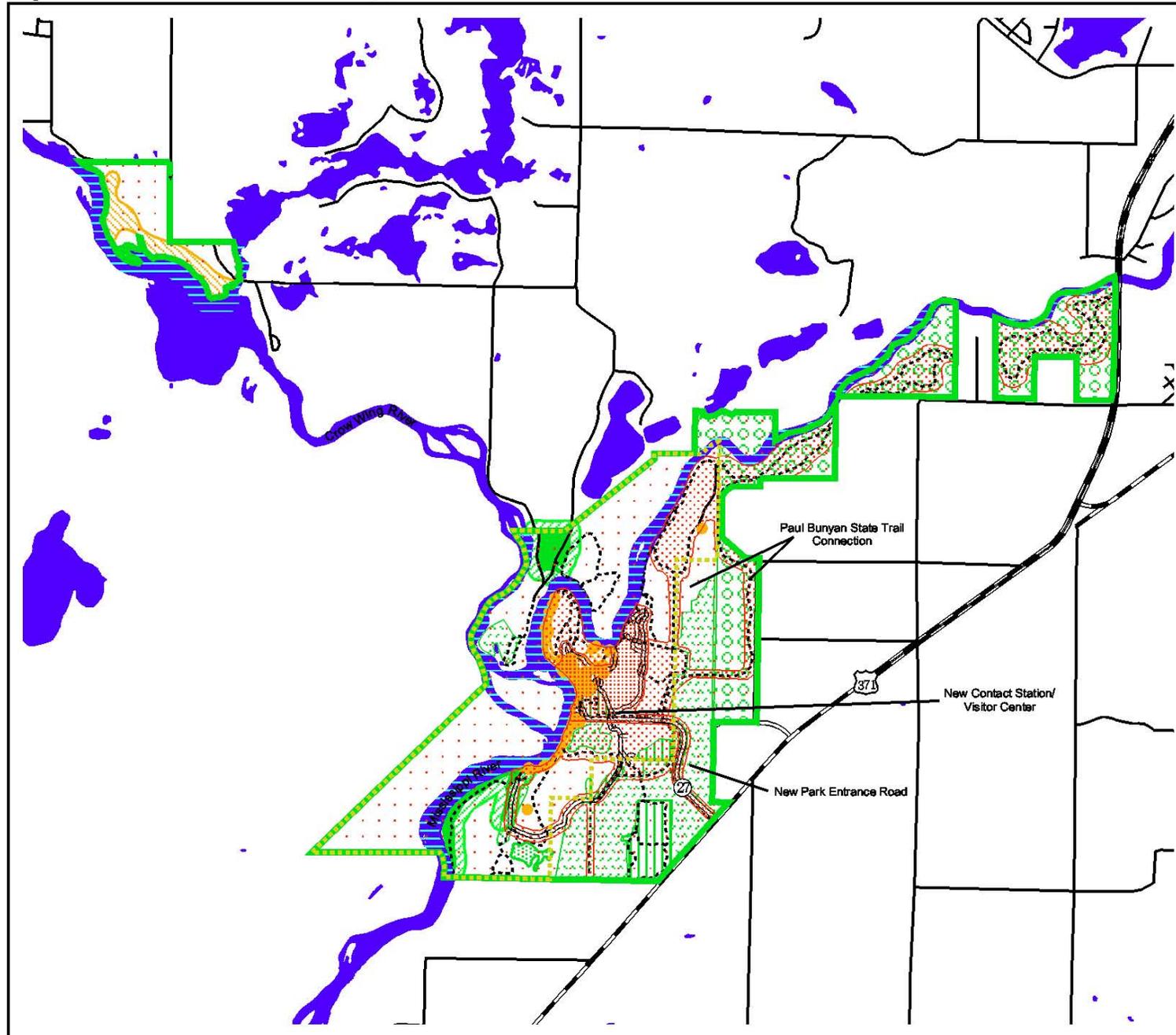


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Crow Wing State Park

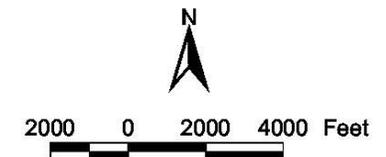
Figure 21 - Future Conditions - Opportunities & Conflicts



73

Legend

- State Park Boundary
- Visitor Use**
 - High
 - Medium
 - Low
- Cultural Resources Protection Zone
- Cultural and Archaeological Resources
- Red River Trail Historic District Boundary
- Crow Wing Town Site Historic District Boundary
- Vegetation Management**
 - Pine Thinning
 - Prairie Restoration
 - To Be Determined
 - Shoreline Protection Zone
 - Old Growth Stands
 - Old Growth Buffer
 - Tamarack Swamp
 - Water
 - Buildings
 - Park Roads
 - Trails
- Roads**
 - State Highway
 - County Highway
 - Other Roads



IX. BUILDINGS AND FACILITY MANAGEMENT

Management Goals

Building and facilities management goals for Crow Wing State Park are:

- ▶ Provide buildings and facilities for the safe use and enjoyment of park visitors.
- ▶ Maintain park infrastructure that protects the public investment in the park.
- ▶ Provide buildings and facilities that are compatible with the park's natural and cultural resources.
- ▶ Consider the use of environmentally-friendly building materials, energy efficient structures and the principles of reduce, reuse, and recycle.

Americans with Disabilities Act Requirements

The Department of Natural Resources follows the Americans with Disabilities Act of 1992 to make public facilities accessible. All new development follows the building and facilities guidelines presented by the U.S. Architectural and Transportation Barriers Compliance Board and the U.S. Department of Transportation. In addition, DNR recreational development follows the recommendations and guidelines presented by the U.S. Architectural and Transportation Barriers Compliance Board to address those outdoor facilities that are not adequately covered in the general building and facilities guidelines. (The recreation-related guidelines are currently in draft form.) As revisions are made in the federal guidelines, they will be incorporated into DNR's development projects.

Transportation and Utilities

There are several transportation-related projects under consideration or development that will impact Crow Wing State Park.

Reconstruction of Highway 371

Minnesota Department of Transportation (MnDOT) is reconstructing and widening Highway 371, including the relocation the park entrance road. A 2.55 acre parcel has been removed from the park and transferred to MnDOT for the project. (See VII. Park Boundary) In the short term, construction may reduce park visits during the road work by making access to the park more difficult. The long term impact will be positive - a faster, more convenient route to the park especially from the Brainerd/Baxter area, as well as a safer, more visible entrance to the park from Highway 371. The Division will work with MnDOT to include vegetation management projects (prairie plant relocation and restoration) as part of the road construction project.

MnDOT Wayside Rest

MNDOT is planning to construct a wayside rest near the park as part of the Highway 371 project. Preliminary plans are for the standard wayside amenities - parking, picnic area, bathrooms, information area - as well as the possibility for other organizations to have a presence including State Patrol, Brainerd Area Chamber of Commerce, and DNR. A DNR presence at the wayside rest - informational displays, park brochures, and directions to local parks like Crow Wing State Park - would increase the park's visibility to travelers and increase park visits.

Paul Bunyan State Trail

The state trail is intended to serve both transportation and recreation functions. The trail will increase recreational opportunities within Crow Wing SP and connect the park to other recreational and interpretive locations. Visits to the park will increase, particularly for bicycles and snowmobiles. These uses may necessitate more enforcement operations in the park, especially for snowmobile

operation violations (speed, operating under the influence) and bicycle/pedestrian conflicts. As visits increase and trail uses change, the park may also consider developing an emergency response plan with local police and Emergency Medical Service (EMS) providers.

X. ADMINISTRATION AND OPERATIONS

Current Staffing

Crow Wing State Park has two full-time year-round positions, the park manager and assistant manager. There are also several seasonal positions at the park:

- 1 Buildings and Grounds Worker (FT April-October)
- 2 Parks Workers (90% May-September & 90% June-August)
- 2 Greenview workers (80% June-September & 20% May-September)
- 1 Natural Resources Worker (60% June-August)

The Greenview program is a partnership between Division of Parks and Recreation and GreenView, Inc. a nonprofit organization that hires elderly people. These individuals work in the park under a contract between the Division and GreenView, Inc. doing limited labor tasks appropriate for their skills and physical abilities.

A new position of seasonal naturalist began in the spring of 2001. The 1995 Division of Parks and Recreation Statewide Interpretive Plan recommended the placement of a seasonal naturalist at Crow Wing State Park. The recommendations developed during this plan support the need for a seasonal naturalist at the park.

The park manager and assistant park manager are authorized by the Department of Natural Resources to enforce rules and regulations within the park boundary. They call on other law enforcement agencies, particularly DNR Conservation Officers, as necessary to assist with law enforcement within Crow Wing State Park. DNR Conservation Officers primarily help enforce fishing, hunting, and trail use rules and regulations.

Staffing and Funding Recommendations

Staffing

There are a number of recommendations which will result in the need for additional staff, mainly to account for additional maintenance hours for facilities such as the visitor center/trail center, a remodeled campground shower building, parking area on the west side of the river, and additional camper cabins. Resource management staff time, both regional and park level, will need to be expanded to fully implement the resource management recommendations. Currently, enforcement problems are minimal in the park. Future enforcement and visitor service efforts should be focused on heavy-use weekends and interpretive efforts and should emphasize ways to protect the park's natural and cultural resources and reduce impacts on the resources. The new facilities - including the extension of the Paul Bunyan State Trail to the park - will likely increase visits to the park and associated visitor service and enforcement needs.

The Division of Parks and Recreation will experience increased staffing needs and work loads as a result of plan implementation. Other DNR disciplines may also experience some increased work load in the implementation of certain recommended actions. For example, the Division of Enforcement, the Bureau of Engineering, and the Bureau of Real Estate Management may experience increased work loads as a result of increased recreational opportunities and land acquisition. Local representatives of these and other disciplines participated in the planning process and are familiar with what their role may be in the future.

Funding

Operational Costs

If all the recommendations in this park plan were implemented, the parks annual operational costs would need to be increased. The level or amount of this increase is difficult to estimate - many of the recommendations are too general to base estimates on at this time. However, the new development projects outlined below and anticipated increase in park visits suggests the park's annual operating budget may need to be increased by 15% to 20% over its current level.

Development Costs

The following list represents those actions which have development cost implications. The total cost to implement these actions is estimated at \$3.5 million. (Acquisition costs are detailed separately below). This estimate was generated as part of the planning process and has a significant margin of error because a variety of assumptions were made related to unknown variables (site specific soil conditions, decisions related to site design, septic system selection, disturbance to electrical service). The list of development and program actions are grouped into general categories:

Development Actions

1. Design and construct a new four season accessible visitor center/trail center facility that will also include park contact station and staff office space.
2. Update shower building and flush toilet system.
3. Install new playground equipment for the campground.
4. Add camper cabin with electricity and heat.
5. Construct three wildlife blinds.
6. Develop a carry-in boat access and small parking area on west side of river.
7. Construct a bike trail that will connect the campground to the Paul Bunyan State Trail.
8. Add facilities for a bike trail head such as lockers, racks, benches, and water fountain.
9. Place three to five additional benches along park trails.
10. Pave the campground road.
11. Construct observation deck(s) along river to provide scenic vista opportunities and protect riverbanks.

Natural Resource Actions

12. Design and implement town site landscape plan.
13. Continue prairie restoration by seed collections and planting of seeds and plants from both internal and external sources.
14. Conduct prescribed burn program in designated prairie, oak savanna, and jack pine communities.
15. Naturalize designated red pine plantations in park through cutting programs.
16. Investigate and implement management techniques that will protect and perpetuate butternut trees found in the park.
17. Remove or control exotic species by utilizing integrated pest management techniques.
18. Plant tree and shrub species in campgrounds to strive to maintain natural vegetation composition.
19. Inventory plant and animal species and ecological communities within the park.
20. Research, identify, and protect habitat for turtles of special concern in the park.
21. Continue Bluebird Recovery program.
22. Construct deer enclosure(s) for interpretive and educational opportunities.
23. Monitor potential overpopulation problem species of wildlife (deer, geese, etc.).
24. Develop a hydrological computer model to study erosion on the Mississippi River bank within the town site. Based on the model results, implement appropriate erosion control measures.

Research Actions

25. Research and investigate water quality, groundwater, and aquifers through cooperative projects.
26. Conduct a review of the National Register nomination for Crow Wing State Park Historic District, including a historic landscape evaluation, significance of Beaulieu House and amend nominations accordingly.
27. Complete a systematic cultural resource survey and inventory of the entire park and islands, including digital mapping of National Register historic properties, cellar depressions, and cultural sites.
28. Research and document the creation of the park including its advocates and completing oral histories.
29. Research county records on the cemeteries in the park.
30. Research the sawmill on the west side of the river.
31. Develop a bibliography of publications about Crow Wing.

Interpretive Actions

32. Based on new research, develop additional interpretive materials and signs.
33. Develop interpretive signs, supporting brochures and maps for five to six primary resources within the park.
34. Complete the interior interpretive plan for the Beaulieu House and implement the building security plan, electrical plan, and interpretation.
35. Develop additional interpretation of Red River Oxcart Trail and Crow Wing town site by developing an oxcart replica, video interpretation, and touch screen interpretation.
36. Modify Hole-in-the-Day site for a hiking destination, with interpretation and picnic tables.
37. Develop appropriate interpretation of cemeteries and church sites.
38. Construct three wildlife observation blinds/decks with accompanying interpretation within the park.

Acquisition Actions

All acquisition projects will be placed in priority order with other state park acquisition projects. The total cost to complete acquisition is estimated at \$1.75 million (2001 dollars).

39. Complete acquisition of lands within the current statutory boundary.
40. Purchase 1,001.62 acres of private land as detailed in VII. Park Boundary.

State Forest Campgrounds and Day Use Areas

The Division of Parks and Recreation has assumed management of state forest campgrounds and day use areas previously managed by the Division of Forestry. These campgrounds present logistic challenges and cost issues for the Division. Many of the campgrounds are remote from any state park site. Managing these areas will place additional oversight and cost burdens on individual parks and the Division operations budget as a whole.

Crow Wing State Park is responsible for overseeing several state forest day use and campground areas. The park administers the Rock Lake Forest campground (48 campsites), the Walter Stark Horse Campground (75 campsites), and the day use areas at Shafer Lake, Green Bass Lake, and Beauty Lake. Staff hours for enforcement, maintenance, and facility management are being taken from existing staff resources. Additional equipment beyond what the park currently possesses may be necessary to maintain these additional campground facilities.

Enforcement

Law enforcement within the park will comply with guidelines in the Minnesota Department of Natural Resources Park Enforcement Manual (March 2001) and with Minnesota State Park Rules (2000).

The park manager and assistant park manager have peace officer status within the Crow Wing Park boundary. For assistance, they may call on other law enforcement agencies including DNR conservation officers and the Crow Wing County Sheriff's Department. The Division of Parks and Recreation will continue to work with local authorities to assure effective law enforcement in the park.

XI. PLAN MODIFICATION PROCESS

State Park Management Plans document a partnership-based planning process, and the recommended actions resulting from that process. These comprehensive plans recognize that all aspects of park management are interrelated, and that management recommendations should also be interrelated.

Over time, however, conditions change that effect some of the plan recommendations or even an entire plan. Plans need to acknowledge changing conditions, and be flexible enough to allow for modifications as needed.

There are two scales or types of plan modifications: plan revisions and plan amendments. Minor plan revisions concern less controversial issues and can generally be made within the Division of Parks and Recreation as plan modifications. Larger issues that represent changes in management direction or involve other portions of the Department or other state agencies are addressed as plan amendments. The Division of Parks and Recreation Planning Manager will make the decision of whether a plan amendment or plan revision is appropriate.

To maintain consistency between plans and processes, all revisions and amendments should be coordinated through the Division of Parks and Recreation planning section. Requests for planning assistance should be directed to the Division of Parks and Recreation Planning Manager in the Central Office, St. Paul.

Plan Amendments

Plan Amendment Criteria

If a proposed change meets any of the following criteria, it must be approved through the management process below.

The proposed change:

1. Alters the park mission, vision, goals, specific management objectives, or proposed development plans outlined in the plan;
2. Is controversial between elected officials and boards, park user groups, the public, adjacent landowners, other DNR divisions or state agencies; or
3. Directly affects other state agencies (e.g., Minnesota Historical Society).

Plan Amendment Process

The plan amendment process has a series of steps.

1. Review the proposed change at the park and regional level. Determine which stakeholders potentially have a major concern and how those concerns should be addressed. If the major concerns are within the Division of Parks and Recreation, the issue should be resolved within the Division, with input from the public. The proposed change is then reviewed with the Division Central Office Management Team.
2. If the proposed change issue involves different DNR Divisions, the issue should be resolved by staff and approved by the Division Directors. This may require one or two area/regional integrated resource management team meetings. The proposed change will be reviewed through the Department's review process (Statewide Interdisciplinary Review Service or SIRS).

3. If the proposed change issue involves other state agencies, the issue should be resolved by staff and approved by the Division Central Office Management Team - with input from the public - and reviewed by SIRS.
4. If the proposed change is potentially controversial among elected boards, park user groups, adjacent landowners or the public, an open house will be held that is advertised in the local and regional area.
5. All plan amendments should be coordinated, documented, and distributed by the Division of Parks and Recreation planning staff.

Plan Revisions

If a plan change is recommended that does not meet the amendment criteria above, and generally follows the intent of the park management plan (through mission, vision, goals, and objectives), the Division of Parks and Recreation has the discretion to modify the plan without a major planning process.

Revisions related to Physical Development Constraints and Resource Protection

Detailed engineering and design work may not allow the development to be completed exactly as it is outlined in the plan. A relatively minor modification, such as moving a proposed building site to accommodate various physical concerns, is common. Plans should outline a general direction and document the general "areas" for development rather than specific locations. For the most part, plans are conceptual, not detail-oriented. Prior to development, proposed development sites are examined for the presence of protected Minnesota Natural Heritage Program elements and historical/archeological artifacts. If any are found, the planned project may have to be revised to accommodate the protection of these resources.

Program Revisions

The resource management and interpretive services plan sections should be updated periodically as needed. The Division of Parks and Recreation's Resource Management and Interpretive staff will determine when an update is needed, and coordinate the revision with the park planning section. Program sections should be rewritten in a format consistent with the plan as originally approved by the DNR. To retain consistency, park planning staff should be involved in chapter revision review, editing and distribution.

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XIII. APPENDICES

Appendix A - Management Plan Recommendations

Natural Resource Management Recommendations

Research Issues

Inventory plants and animal species within the park. A comprehensive natural resource inventory of the park will assist in the development of priorities for managing and restoring flora and fauna. It will establish a baseline inventory of species within the park. It will also be valuable information for evaluating potential facility sites and recreational use areas.

Research presettlement vegetation composition and develop management goals for lands purchased as part of future park expansions. As new areas are added to the park, desired natural communities and future management techniques will be determined using the original surveyors notes and soils data.

Vegetation Management

Manage the vegetative communities in the park as a transition zone between Pine Moraines subsection west of the Mississippi River and the Anoka Sand Plains subsection on the east side of the Mississippi River. Management and restoration of smaller areas will be conducted to follow this general guideline.

Pursue prairie restoration for areas within the park that were historically prairie. Restoration areas will be identified within the park - adjacent to remnant prairies, etc. Seeds and plants from both internal and external sources should be collected for restoring these areas. The prescribed fire program should be enhanced so that a regular cycle of fire can be incorporated into the management of prairie, barrens, and savanna areas. As part of this effort, work with MnDOT continue to salvage prairie species from the Highway 371 expansion area to be relocated in prairie restoration areas in the park.

Manage identified old growth stands consistent with the statewide Old Growth Management Guidelines. Two areas of old growth forest have been identified in the park - lowland hardwoods east of the Mississippi River and Red Pine west of the Mississippi River. The Division is developing management plans for the old growth stands within the park as part of the broader resource management plan.

Manage hardwood stands and savannas as interface community adjacent to pine forest areas. Maintain and encourage oak savannas south of the entrance road primarily in conjunction with the jack pine barrens as the savannas served as an interface between the jack pine barrens and the oak forests. Management techniques should be investigated which can be used to perpetuate these forest types.

Maintain jack pine barrens especially in areas where they are occurring naturally. Jack pine barrens are one of the most threatened natural communities in the region. Develop a prescribed fire program to maintain the barrens. A fire program will also maintain the viability of the jack pine community as these communities evolved in the presence of fire.

Maintain and encourage existing white pine areas following the White Pine Management Guidelines document. White pine management will follow the full range of techniques outlined in the guidelines.

Wildlife Management

Identify and protect habitat for rare, endangered, or threatened species within the park. Habitat used by the species listed above should be identified and managed help preserve them within the park.

Develop management strategies for supporting desirable species. Park staff and the regional resource specialist will seek to balance aesthetics, historical integrity, and habitat improvement when considering management strategies for supporting desirable species.

Exotic Species/Aggressive Non-Native Species/Pest Species

Remove or control exotic species by utilizing integrated pest management techniques. Introduction of additional exotic species as control measures will be intensively reviewed. Use of pesticides will be in accordance with Minnesota Department of Agriculture, Pesticide Control Law Chapter 18B.

Develop management strategies to control pest species - including deer and geese. The increasing populations of deer and geese have negative impacts on natural resources and visitor experience. Populations should be kept within acceptable levels for the park and adjacent landowners. The park manager and the resource specialist will work with the area wildlife manager to develop these strategies. Enclosures may be used for interpretive and educational opportunities. Other species should be monitored for the potential to be a problem species.

Visitor Use Areas and Cultural Sites

Locate park development to avoid impacts to existing old growth stands or further fragmenting old growth stands. The Division will follow the Old Growth Management Guidelines for protecting old growth stands and buffer areas. Park facilities, trails or other development should be located with sensitivity to protecting these forest stands. Areas between closely spaced old growth stands should also be protected to allow these areas, in time, to grow into continuous stands.

Limit activities that cause erosion or trample understory vegetation. Promiscuous trails, informal trail widening, or other activities that widen openings in the forest canopy will be limited to protect interior habitat and reduce negative edge effects.

Manage red pine plantation areas to restore historic vegetation and cultural aspects of the park. The management goal for red pine is to naturalize the plantations north of the entrance road and to consider the appropriateness of the plantations south of the entrance road. The vegetation north of the entrance road was identified as a mixed pine/hardwood forest in the Original Land Survey Notes. The red pine plantation north of the Beaulieu house will continue to be thinned and kept as a backdrop for the house.

Maintain natural vegetation composition in the campground. The campground area was historically mixed pine and hardwoods forest stands. Vegetation management efforts should be directed to restore this community and minimize mowed areas.

Manage the entrance to the park for aesthetics and natural vegetation features. The entrance to the park serves as a first impression of the park - park structures and contact area blended with the natural vegetation will introduce park visitors to the natural resource base of the park.

Identify appropriate scenic vistas to the river from visitor use areas. The Mississippi and Crow Wing rivers are significant elements in the natural and cultural history of the Crow Wing area. Potential locations include the amphitheater area and the picnic areas. The construction of observation decks may be appropriate for this purpose. Vegetation plantings or cuttings may enhance the view. Vista management may be given direction in the process of reviewing the National Register nomination.

Water Issues

Develop a hydrologic model to aid in developing an erosion control program for the park. Work with the Division of Waters and the U.S. Army Corps of Engineers to develop a model for the sections of the Mississippi and Crow Wing rivers impacting Crow Wing State park.

Control erosion of river banks adjacent to the Crow Wing Village site. Erosion of the river bank is uncovering artifacts and threatening the lower portions of the town site. Data from the hydrologic model will be used to develop the erosion control program. Bank stabilization options should be evaluated in light of aesthetics, protection of cultural contexts and artifacts, and visitor safety. Vegetative bank stabilization techniques - in conjunction with minor riprap installations - will be investigated. The Division will also minimize park development on floodplain areas throughout the park to limit future erosion issues and damage to facilities.

Cooperative Efforts

Continue to work with the Environmental Program of Camp Ripley on natural resource research and management projects. Cooperation with Camp Ripley will help place Crow Wing State Park in the context a broader landscape. The Camp Ripley program can be a partner for managing area resources.

Explore possible cooperative projects to research and investigate groundwater quality and quantity issues. Continued development in the Brainerd/Baxter area raises groundwater use and protection issues. Groundwater levels and aquifers may also be affected by the creation of additional non-permeable surfaces.

Cultural Resource Management Recommendations

Planning Actions

Conduct a cultural resource survey of the entire park. Historic District boundaries, cultural resources and other historic features within the park should be inventoried and mapped. Many of the cultural resources within the town site have been identified - however many sites throughout the park have not been accurately identified and mapped. Two areas of special interest will be the Chippewa Indian Agency site and the west bank of the Mississippi River across from the town site and ferry crossing.

Evaluate the need to revise the National Register of Historic Places - Historic District nomination for the Crow Wing Town Site. The nomination adopted the 1970 statutory boundary of the park as the Historic District boundary. Therefore, there are significant areas within the Historic District that do not contain any historic or cultural features of importance. These areas should be removed from the Historic District. Also, the relocated Beaulieu House should be accounted for in the amended Historic District nomination. This revision may be possible as part of a larger review of National Register of Historic Place nominations throughout the State Park system, possibly funded as an LCMR project.

Develop a landscape plan for managing the cultural and natural resources of the town site. Typical goals for vegetation management in a state park, namely pre-European settlement vegetation conditions, may not be appropriate for the town site landscape. Reestablishment of vegetation as it was during the town site occupation is more in keeping with the Historic District nomination and interpretation goals for the park. The landscape evaluation of the town site should also determine significant viewsheds, if present, and how they should be maintained.

An initial inventory of the vegetation in the town site has been completed. It shows some plants of cultural significance - such as grape arbors, lilacs, oak trees, and possibly goatsbeard - related to

dwellings or gardens in the town site. Most current grasses and clover are non-native. There are also some aggressive exotic species that have become established since the town site was abandoned, such as honeysuckle and Canadian thistle. While developing the landscape plan, known vegetation related to the historic occupation of the town site should be preserved. However, other vegetative management efforts should be continued. (i.e. red pine plantation thinning, blue spruce removal, noxious weed removal, etc.) It is likely not possible or even desirable to fully restore the vegetation of the entire town site to a specific period. The goal should be to maximize the interpretive potential for the visitors. For example, visibility from the Beaulieu house is an important theme to the visitors' experience - thinning existing pine and spruce stands in the town site will help restore the historic appearance of the area while maintaining a "park-like" setting. (See also pine thinning recommendation in this section.)

Management Actions

Conduct cultural resource reviews for new development proposals. Cultural resource surveys will be completed prior to development activities. Recommendations for avoiding or minimizing adverse effects to the cultural resources of the park will be made.

Control riverbank erosion to protect cultural artifacts and appearance of the town site. The continued erosion of the town site along the Mississippi River shoreline impacts numerous cultural resources - dislodging artifacts and threatening several depressions near the waterline. Specific techniques for stabilizing the bank are discussed in the Natural Resources Management Recommendations section.

Thin pine and spruce plantation trees to restore viewsheds and historic appearance of the town site. In the area near the Beaulieu house, keep plantation pines as a backdrop while continuing to thin approximately every five years, using the recommendations in "Sustaining Minnesota Forest Resources - Voluntary Site Level Forest Management Guidelines." Small pines in other areas may need to be cut back to maintain vistas in the town site. Spruce trees should also be removed from the Red River Ox Cart trail crossing in this area.

Preserve the undeveloped character of the river bank and islands opposite the town site and other cultural locations in the park. The vista across the river is part of the cultural experience of the park. Any non-period development should not be visible from the river or from the town site.

Manage the Hole-In-The-Day farmsite for future interpretation. The only visible remains at this site is the cellar depression. The site is relatively stable with sandy soils. Some artifacts have worked their way to the surface and been recovered. This site has no known cultural landscaping of significance (lilacs, flowers, etc.) Hole-In-The-Day was known to have gardens associated with his home in Crow Wing. The 1870s vegetation map shows the site as prairie. Currently, it is jack pine barrens with some shortgrass prairie understory. This site will be promoted as a hiking destination. A small area will be cleared for interpretive signage and picnic table.

Interpretive Services Recommendations

Planning

Work with American Indian Bands, as appropriate, to develop direction for the interpretation of American Indian history in the Crow Wing area. American Indians have an established history at Crow Wing prior to the arrival of Euro-Americans, and were an influential component of the Crow Wing village. Park staff and the Regional Naturalist will work with representatives from the bands to develop appropriate interpretive services for the park. Possible topics could include American Indian views of the local landscape and environment, trade and transportation, relations among the bands and with Euro-Americans, and current resource management activities and views from bands in the area.

Investigate working with Camp Ripley to develop interpretive opportunities about Fort Gaines. The historic fort played a significant role in the settlement and life at Crow Wing. This role should be interpreted as part of the story of Crow Wing.

Consider providing additional interpretation of the Red River Oxcart Trail and the Crow Wing town site by developing an oxcart replica, video interpretation and touch screen interpretation. This is an additional opportunity to make the link between the history of the town site and the oxcart trail.

Develop an interpretive plan for the interior of the Beaulieu House. The plan should address building security, electrical supply, and interpretation themes. Currently the park interprets the exterior architecture of the building. The public has expressed an interest in access to the interior of the Beaulieu house. Possible interpretive directions include construction techniques and period restoration and refurbishment.

Non-Personal Interpretation

Develop interpretive signs and brochures with maps for the following primary resources: remnants of oak savanna jack pine barrens, prairie, jack pine woodlands, the park's geographic position at the interface of three major biomes, and the confluence of the Mississippi and Crow Wing rivers. These brochures and signs will expand the non-personal interpretive program to cover the main natural resources in the park.

Develop several wildlife viewing platforms or blinds in the park. Appropriately located, these facilities will improve wildlife watching opportunities and wildlife interpretation in the park.

Develop interpretive material concerning the ferry crossing. Interpretation should focus on its role in trade and travel at Crow Wing, including the Red River Oxcart Trail.

Develop the Hole-in-the-Day site as a hiking destination with interpretive signs. The site should have interpretive signage about Hole-in-the-Day, as well as benches or tables.

Pursue appropriate interpretation of cemeteries and church sites. Division of Parks and Recreation should work with the church organizations related to the cemeteries to investigate appropriate signs and materials.

Personal Interpretation

Develop interpretive programming and materials for target audiences. Target audiences identified in the Interpretive Services Plan and through the management plan process include: school groups and teachers, senior citizens, American Indians, day users, campers, and youth groups.

Consider developing additional programs for special events at the park. Members of the Citizen Advisory Committee expressed an interest in special event programs. Potential programs mentioned included a pageant of the meeting of Lincoln emissary with the Ojibwe, restoring the ferry crossing, and an American Indian history tour of the area including Crow Wing State Park.

Pursue partnerships with various entities for interpreting area historical and environmental sites as joint efforts. Sites to be considered through these partnerships may include: Camp Ripley, Fort Gaines, the Little Elk site, the Great River Road, and the Crow Wing County Historical Museum.

Facilities

Explore the feasibility of a visitor center, possibly in combination with the Paul Bunyan State Trail trailhead. The combination visitor center/trailhead facility could also accommodate contact station

and office space functions for Division of Parks and Recreation personnel. Division of Parks and Recreation will work with Division of Trails and Waterways to meet the needs of future users of the Paul Bunyan State Trail and Crow Wing State Park.

Consider the feasibility of a river overlook near the park's existing amphitheater. The overlook site could be designed for both casual use by visitors as well as to host interpretive programs. Proximity to the campground will also make it convenient for hosting programs for the overnight visitors.

Community and Marketing Recommendations

Encourage the continued involvement of Friends of Old Crow Wing, Crow Wing Historical Society, and other similar groups in Crow Wing State Park. These groups can bring information, ideas, volunteer labor, and other resources in support of the park.

Encourage the development of a private canoe and bicycle shuttle service. Canoe rental is a growing business on the Mississippi and Crow Wing rivers. Requests for shuttle service has also grown. With the development of the Paul Bunyan State Trail, similar requests for one-way bicycle shuttles may also develop. Potential private groups that could operate the service include seasonal businesses such as resorts or skiing operators.

Increase exposure of the park to local residents as well as tourists. Increased awareness in the local community could significantly increase park visits, especially in the spring and fall seasons. Brochures should be placed with local businesses, information centers, chambers of commerce, and wayside rests. Special promotions with local businesses such as free day passes could also be considered.

Provide information about area businesses that provide services to park visitors. Displays or information available at the park will aid park users as well as promote local businesses.

Coordinate marketing and community outreach with Camp Ripley. Camp Ripley's Minnesota Military Museum and other historical programs would benefit from many of the same outreach efforts as the park. Coordinating efforts may increase the exposure for both units while sharing costs.

Recreational Use and Visitor Services Recommendations

Campground and group camp

Consider expanding playground equipment at the campground. Campground visitors have requested additional playground opportunities at the campground. These improvements would make the campground more family oriented. An appropriate location for the equipment will need to be determined.

Update shower and bathroom facilities in campground. Renovated facilities would provide a higher level of service for park visitors and meet Americans with Disabilities Act (ADA) standards.

Consider electrification of additional existing sites within the campground. Electric campsites are in high demand. The changing demographics of campers at the park (more older campers, more RV campers) will result in greater demand for electric sites in the future.

Consider adding a camper cabin. A second cabin, possibly with electricity and heat, would expand the campground season and provide a greater variety in camping experience.

Maintain the rustic nature of the group camp. Group camp users support the existing level of development at the group camp.

Trails

Cooperate with Division of Trails and Waterways in locating the Paul Bunyan State Trail route and support facilities within the park. The route should follow existing trails where feasible and relate to park facilities, such as a trail link with the campground. Support facilities should be located for joint use by trail visitors and park visitors to avoid providing duplicate facilities. Prairie restoration or other appropriate natural community restoration along the trail corridor should be part of the trail construction project.

Consider adding bike trails within the park if demand warrants. Connection to the Paul Bunyan State Trail will bring more bicycle-interested people to the park. Development of small, loop-style trails within the park may be desirable in the future.

Consider adding benches along trails within the park. Sites such as overlooks or the Hole-in-the-Day farmsite could be popular resting or stopping points along the trail system where benches would be appropriate.

Other Facilities

Consider providing four-season bathrooms in the park. Four-season bathrooms would encourage more park visits, especially in the shoulder and winter seasons. Possible locations include the picnic shelter or visitor center/trailhead building.

Explore the feasibility of a visitor center, possibly in combination with a Paul Bunyan State Trail trailhead. The heated, four-season facility with modern restrooms would serve both park visitors and future Paul Bunyan State Trail visitors. The combination visitor center/trailhead facility could also accommodate contact station and office space functions for Division of Parks and Recreation personnel. (This recommendation can also be found under V. Interpretive Services.)

Pave the campground access road. Paving the campground road would improve visitor access and reduce maintenance costs.

Consider developing a roadside parking area and carry-in boat access on the west bank of the Mississippi River. This parking area would serve park visitors who want to access the trail loops on the west bank of the river. The area should be small - sized to accommodate several vehicles. Currently, cars must park along the shoulder of the roadway. Vehicle access to the river should not be allowed because of steep slopes and unstable soils. A carry-in boat access would allow greater use of the river for canoes and small boats and complement the drive-in access already available within the park.

Consider the addition of playground equipment near the picnic area. Picnic area users have requested playground opportunities in the picnic area. These improvements would make the picnic area more family oriented. An appropriate location for the equipment will need to be determined, taking into account cultural resource issues and scenic vista preservation.

Park Boundary Recommendations

Maintain Camp Ripley lands within the statutory boundary of the park. Division of Parks and Recreation does not intend to pursue transfer of this property to the park while it continues to be utilized by the Minnesota National Guard. However, retaining the land in the boundary positions the

Division to purchase the property if in the future the lands are no longer considered essential for the operation of Camp Ripley.

Expand the statutory boundary to include an additional 1,001.62 acres as described in points A through E above. This expansion will protect significant additional river frontage on the Mississippi, provide additional wildlife habitat (both existing and lands with restoration potential), provide for future recreation including the connection of the Paul Bunyan State Trail to the park, and preserve the Chippewa Agency historic site.

Work with Conservation Fund and Parks and Trails Council to purchase the three Potlatch Corporation parcels and one privately-owned parcel described in point D. The Division of Parks and Recreation will seek funding to purchase the parcels from Conservation Fund and transfer them to state ownership.

Monitor the negotiations between Minnesota Power and Light and Division of Wildlife. Division of Wildlife is the lead agency in discussions with Minnesota Power and Light concerning acquisition of the company's holdings, including the Chippewa Agency property.

Encourage sustainable land management and conservation options with private landowners within the current statutory boundary and the proposed boundary expansion area. Division and Department staff will work with landowners to protect water quality and native habitat, and to ease development pressure through land protection programs.

Appendix B - Soil Descriptions

Hubbard Series

This series consists of dark-colored prairie soils that developed from sandy glacial outwash that is non calcareous for the most part. These soils are leached to a depth of 4 to 6 feet in most places. They occur mainly in the vicinity of Barrows and Crow Wing, which are southwest of Brainerd. The topography generally is nearly level to gently undulating, but in some places near the edges of stream terraces it is somewhat rolling. The native vegetation is mostly scattered bur oak or clumps of jack pine and tall prairie grasses.

Hubbard loamy sand, 0 to 2 percent slopes (HuA)

This is the most extensive Hubbard soil in the county. It occurs mostly southwest of Brainerd, in the vicinity of Barrows and Crow Wing. Doughtiness is a major management problem and wind erosion can be a serious hazard in a dry year. The surface layer is dark colored; it grades to sand at a depth of 24 to 30 inches. The surface is nearly level to undulating and the soils are excessively drained, sandy soils.

Hubbard loamy sand, 0 to 2 percent slopes, moderately wind eroded (HuA2)

This soil occurs in scattered places within the areas of other Hubbard soils. As a result of wind erosion, it has a somewhat shallower surface layer than the surrounding soils. Sandy material has accumulated in sheltered areas. The surface layer is dark colored; it grades to sand at a depth of 24 to 30 inches. The surface is nearly level to undulating. The soils are excessively drained, sandy soils.

Hubbard loamy sand, 2 to 7 percent slopes (HuB)

This soil occurs as small areas within larger areas of other Hubbard soils. Some of the areas are along the edges of outwash pits or on escarpments along the Mississippi River. Water erosion is not a serious problem, because of the rapid permeability of this soil. The surface layer is dark colored; it grades to sand at a depth of 24 to 30 inches. The soils are nearly level to undulating, excessively drained and sandy.

Hubbard loamy sand 3 to 8 percent slopes (7B)

This soil occurs on shoulder and side slopes on outwash plains and valley trains. The soil consists of a very dark brown loamy sand top horizon which grades into a yellowish brown sand. It is excessively drained has low water availability and is vulnerable to wind erosion.

Nymore Series

This series consists of moderately dark colored, excessively drained, sandy soils that occur mainly on outwash plains. These soils are level to undulating in most places and rolling in some small areas. The native vegetation consists of jack pine, red pine, and some grass. Bur oak is common in some places.

The surface layer of these soils is gray to very dark gray, very friable to loose loamy sand or loamy fine sand. It is 6 to 12 inches thick and abruptly overlies a layer of dark grayish-brown to very dark grayish-brown loamy fine sand or loamy sand that is very friable and is slightly cohesive in place. Some profiles lack this subsurface layer. The subsoil is 14 to 18 inches below the surface. It consists of brown to dark-brown, loose, single-grained sand. It grades into the substratum, which is pale brown to very pale brown, loose, single-grained, medium acid sand. Surface runoff is slow. Internal drainage and permeability are rapid.

Nymore soils are associated with Hubbard soils. They are not as dark colored. These soils support a fair growth of trees, especially of jack pine. The hazard of wind erosion is a limitation of this soil.

Nymore loamy sand, 0 to 2 percent slopes (NyA)

This is the most common Nymore soil in the county. The largest area is west of Barrows, which is southwest of Brainerd. Most of the acreage is in trees, generally either scrub oak or jack pine. This soil is low in productivity because it has low water-holding capacity. Wind erosion can be a major hazard. The surface layer is moderately dark colored. These soils grade to sand at a depth of 18 to 24 inches. The soils are nearly level to undulating, excessively drained and sandy.

Nymore loamy sand, 2 to 7 percent slopes (NyB)

This soil is associated with Nymore loamy sand, 0 to 2 percent slope, and is used and managed in about the same way. It makes up only a small part of the acreage of Nymore soils in the county. The surface layer is moderately dark colored. These soils grade to sand at a depth of 18 to 24 inches. The soils are nearly level, excessively drained, and sandy.

Nymore loamy sand, 7 to 13 percent slopes (NyC)

This soil occurs as small areas scattered on breaks between the outwash flats and the Mississippi River. Most of this soil is used for production of trees, generally jack pine. The soils are rolling, light-colored and dark-colored, and moderately well drained to excessively drained. They are very droughty and strongly sloping. Best suited for jack and red pine production.

Menahga-Markey-Friendship soil

The portion of the park that lies in Cass County is generally Menahga-Markey-Friendship soil. The county detailed soil map shows six different soil units and slopes. They are: 7B - Hubbard Loamy Sand 3-8% slope (see description under Hubbard Series); 458B - Menahga Sandy Loam 3-8% slope; 458C - Menahga Sandy Loam 8-15% slope; and 458E - Menahga Sandy Loam 15-40% slope.

The Menahga series of soils consists of somewhat excessively drained or excessively drained, forested soils that developed from sandy outwash. The native vegetation consisted of jack pine and scattered red pine. Second-growth trees are jack pine and some aspen and white birch. A few red oaks are found.

Menahga sandy loam 3 to 8 percent slopes (458B)

This soil occurs on knolls and sides of slopes on outwash plains. The soil consists of a very dark grayish brown loamy sand top horizon which grades into dark yellowish brown sand. The soil is excessively drained has low water availability and is vulnerable to wind and water erosion

Menahga sandy loam 8 to 15 percent slopes (458C)

This soil occurs on knolls and sides of slopes on outwash plains. The soil consists of a black moderately decomposed forest litter which grades into pale brown coarse sand. The soil is excessively drained has low water availability and is vulnerable to water erosion.

Menahga sandy loam 15 to 40 percent slopes (458E)

This soil occurs on ridges side slopes and shoulder slopes on outwash plains. This soil consists of a dark brown loamy sand top horizon and grades into a brown sand. This soil is excessively drained has low water availability and is vulnerable to water erosion.

Seelyeville muck (540)

This soil occurs in depressions and broad flats on outwash plains, valley trains and moraines. This soil consists of a black muck top horizon which grades into a dark brown muck. This soil is very poorly drained and has high water availability. Management concerns include wetness.

Fluvaquents (1002)

This soil occurs adjacent to streams on flood plains. This soil consists of black silt loam top horizon which grades into a dark grayish brown, mottled fine sandy loam. This soil is poorly drained and has high to low water availability. Management concerns include wetness and frequent flooding. This soil is well suited for wetland habitat.

Appendix C - Fisheries

The following studies have been completed on this segment of the Mississippi and Crow Wing watersheds:

- 1) University of Minnesota/Bell Museum (Crow Wing River watershed) 1963-67
- 2) Minnesota Department of Natural Resources/Ecological Services (Crow Wing Watershed) 1964-65
- 3) MDNR/Ecological Services (Mississippi River B Brainerd to Elk River) 1965
- 4) MDNR/Fisheries (Crow Wing River) 1986
- 5) MDNR/Fisheries (Mississippi River B Brainerd to St. Cloud Dam) 1987
- 6) MDNR/Parks (Crow Wing State Park) 1989*
- 7) MDNR/Ecological Services (Crow Wing River) 1989*
- 8) MDNR/Ecological Services (Mississippi River) 1989*
- 9) MDNR/Ecological Services (Mississippi River) 1992*

*The surveys during 1989 and 1992 were shore surveys and did not record the deep water game fish.

Common Name	Species	Survey
Family Amiidae (Bowfins)		
Bowfin	<i>Amia calva</i>	2,3,4,5
Family Salmonidae (Trouts)		
Cisco	<i>Coregonus artedii</i>	2
Brown trout	<i>Salmo trutta</i>	2
Brook trout	<i>Salvelinus fontinalis</i>	2
Family Umbridae (Mudminnows)		
Central mudminnow	<i>Umbra limi</i>	1,2,4,5
Family Esocidae		
Northern pike	<i>Esox lucius</i>	1,2,3,4,5,9
Muskellunge	<i>Esox masquinongy</i>	3
Family Cyprinidae (Minnows)		
Common carp	<i>Cyprinus carpio</i>	2,3,4
Silvery minnow	<i>Hybognathus nuchalis</i>	2
Silver chub	<i>Hybopsis storeriana</i>	6,8
Hornyhead chub	<i>Nocomis biguttatus</i>	1,2,4,5,6,7,8,9
Golden shiner	<i>Notemigonus crysoleucas</i>	1,4
Emerald shiner	<i>Notropis atherinoides</i>	2,5
River shiner	<i>Notropis biennius</i>	2
Common shiner	<i>Notropis cornutus</i>	1,2,4,5,6,7,8,9
Bigmouth shiner	<i>Notropis dorsalis</i>	1,9
Blackchin shiner	<i>Notropis heterodon</i>	1,2,4
Blacknose shiner	<i>Notropis heterolepis</i>	1,2,5
Spottail shiner	<i>Notropis hudsonius</i>	1,5,9
Spotfin shiner	<i>Notropis spilopterus</i>	1,2,6,7,8,9
Sand shiner	<i>Notropis stramineus</i>	4,6,7
Redfin shiner	<i>Notropis umbratilis</i>	4,5
Mimic shiner	<i>Notropis volucellus</i>	1,2,9
Northern redbelly dace	<i>Phoxinus eos</i>	1
Bluntnose minnow	<i>Pimephales notatus</i>	1,2,4,6,7,8,9
Fathead minnow	<i>Pimephales promelas</i>	1,2

Blacknose dace	<i>Rhinichthys atratulus</i>	1,2
Longnose dace	<i>Rhinichthys cataractae</i>	2,5
Creek chub	<i>Semotilus atromaculatus</i>	1,2,9
Pearl dace	<i>Semotilus margarita</i>	2
Family Catostomidae (Suckers)		
White sucker	<i>Catostomus commersoni</i>	1,2,3,4,5,6,7,9
Northern hog sucker	<i>Hypentelium nigricans</i>	3
Bigmouth buffalo	<i>Ictiobus cyprinellus</i>	5
Silver redhorse	<i>Moxostoma anisurum</i>	2,3,4,5
Golden redhorse	<i>Moxostoma erythrurum</i>	3,4,5
Shorthead redhorse	<i>Moxostoma macrolepidotum</i>	2,3,4,5
Greater redhorse	<i>Moxostoma valenciennesi</i>	2
Family Ictaluridae (Bullhead/Catfishes)		
Black bullhead	<i>Ictalurus melas</i>	1,2,4,5
Yellow bullhead	<i>Ictalurus natalis</i>	2,3,4
Brown bullhead	<i>Ictalurus nebulosus</i>	2
Tadpole madtom	<i>Noturus gyrinus</i>	1,2,4,5,6,8
Family Percopsis (Trout perches)		
Trout-perch	<i>Percopsis omiscomaycus</i>	2,5,6,8,9
Family Gadidae (Codfishes)		
Burbot	<i>Lota lota</i>	2,3,4,5
Family Cyprinodontidae (Killifishes)		
Banded killifish	<i>Fundulus diaphanus</i>	1,2,6,7,8
Family Atherinidae (Siversides)		
Brook silversides	<i>Labidesthes sicculus</i>	5,6,8,9
Family Gasterosteidae (Sticklebacks)		
Brook stickleback	<i>Culaea inconstans</i>	1
Family Centrarchidae (Sunfishes)		
Rock bass	<i>Ambloplites rupestris</i>	1,2,3,4,5,6,7,8,9
Green sunfish	<i>Lepomis cyanellus</i>	1
Pumpkinseed	<i>Lepomis gibbosus</i>	1,2,3,4,5
Bluegill	<i>Lepomis macrochirus</i>	2,3,4,5,6,7,8
Smallmouth bass	<i>Micropterus dolomieu</i>	2,3,4,5,9
Largemouth bass	<i>Micropterus salmoides</i>	1,2,4,5
White crappie	<i>Pomoxis annularis</i>	5
Black crappie	<i>Pomoxis nigromaculatus</i>	2,3,4,5,6,8
Bluespotted sunfish	<i>Enneacanthus gloriosus</i>	8
Family Percidae (Perches)		
Iowa darter	<i>Etheostoma exile</i>	1
Least darter	<i>Etheostoma microperca</i>	1,2
Johnny darter	<i>Etheostoma nigrum</i>	1,2,5,6,7,8,9
Yellow perch	<i>Perca flavescens</i>	1,2,3,4,5,6,7,9
Logperch	<i>Percina caprodes</i>	1,2,4,5,9
Walleye	<i>Stizostedion vitreum</i>	2,3,4,5,9

Family Cottidae (Sculpins)

Mottled sculpin

Cottus bairdi

1,2,4,6,8

Slimy sculpin

Cottus cognatus

1,2

A total of 62 species were recorded during these surveys. Of these, two were introduced (brown trout and common carp) and one is a natural heritage element (greater redhorse).

Appendix D - Wildlife

BIRDS

This is a general list of birds that may be found in the Mississippi River flyway. The flyway is a major migration corridor for the central United States. Crow Wing State Park is located in the Mississippi flyway. Birds marked with an asterisk (*) were recorded at Camp Ripley during the field seasons of 1991-1994.

LOONS - Order: Gaviiformes

Family: Garviidae

*Common loon

Gavia immer

GREBES - Order: Podicipediformes

Family: Podicipedidae

*Pied-billed grebe

Podilymbus podiceps

*Horned grebe

Podiceps auritus

*Red-necked grebe

Podiceps grisegena

*Eared Grebe

Podiceps nigricollis

PELICANS, CORMORANTS & ANHINGA - Order: Pelecaniformes

Family: Pelecanidae

*American white pelican

Pelecanus erythrorhynchos

Family: Phalacrocoracidae

*Double-crested cormorant

Phalacrocorax auritus

HERONS & IBIS - Order: Ciconiiformes

Family: Ardeidae

*American bittern

Botaurus lentiginosus

*Least bittern

Ixobrychus exilis

*Great blue heron

Ardea herodias

*Green-backed heron

Butorides striatus

*Great Egret

Casmerodius albus

*Black-crowned night-heron

Nycticorax nycticorax

SWAN, GOOSE & DUCKS - Order: Anseriformes

Family: Anatidae

Tundra swan

Cygnus columbianus

*Trumpeter swan

Cygnus buccinator

Snow goose

Chen caerulescens

*Canada goose

Branta canadensis

*Wood duck

Aix sponsa

*Green-winged teal

Anas crecca

American black duck

Anas rubripes

*Mallard

Anas platyrhynchos

*Northern pintail

Anas acuta

*Blue-winged teal

Anas discors

*Gadwall

Anas strepera

American widgeon

Anas americana

*Northern shoveler

Anas clypeata

Canvasback

Aythya valisineria

*Redhead

Aythya americana

*Ring-necked duck

Aythya collaris

Greater scaup

Aythya marila

*Lesser Scaup	<i>Aythya affinis</i>
*Common goldeneye	<i>Bucephala clangula</i>
*Bufflehead	<i>Bucephala albeola</i>
*Hooded merganser	<i>Lophodytes cucullatus</i>
Common merganser	<i>Mergus merganser</i>
Red-breasted merganser	<i>Mergus serrator</i>

NEW WORLD VULTURES - Order: Falconiformes

Family: *Canthartidae*

*Turkey Vulture	<i>Cathartes aura</i>
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EAGLES & HAWKS - Order: Falconiformes

Family: *Accipitridae*

*Sharp-shinned Hawk	<i>Accipiter striatus</i>
*Cooper's Hawk	<i>Accipiter cooperii</i>
*Northern goshawk	<i>Accipiter gentilis</i>
*Red-shouldered Hawk	<i>Buteo lineatus</i>
*Red-tailed Hawk	<i>Buteo jamaicensis</i>
*Broad-winged hawk	<i>Buteo platypterus</i>
Rough-legged hawk	<i>Buteo lagopus</i>
*Bald Eagle	<i>Haliaeetus leucocephalus</i>
*Northern Harrier	<i>Circus cyaneus</i>
*Osprey	<i>Pandion haliaetus</i>
*Golden Eagle	<i>Aquila chrysaetos</i>

FALCONS - Order: Falconiformes

Family: *Falconidae*

*American Kestrel	<i>Falco sparverius</i>
Merlin	<i>Falco columbarius</i>

GROUSE, TURKEY & QUAIL - Order: Galliformes

Family: *Phasianidae*

*Ruffed grouse	<i>Bonasa umbellus</i>
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>
*Ring-necked Pheasant	<i>Phasianus colchicus</i>
*Grey Partridge	<i>Perdix perdix</i>
*Wild Turkey	<i>Meleagris gallopavo</i>

RAILS & CRANE - Order: Gruiformes

Family: *Gruidae*

*Sandhill crane	<i>Grus canadensis</i>
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Family: *Rallidae*

*Sora	<i>Porzana carolina</i>
*Yellow rail	<i>Coturnicops noveboracensis</i>
*Virginia rail	<i>Rallus limicola</i>
*American coot	<i>Fulica americana</i>

PLOVERS - Order: Charadriiformes

Family: *Charadriidae*

Semipalmated plover	<i>Charadrius semipalmatus</i>
Killdeer	<i>Charadrius vociferus</i>

Family: *Scolopacida*

Greater yellowlegs	<i>Tringa melanoleuca</i>
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Lesser yellowlegs	<i>Tringa flavipes</i>
*Spotted sandpiper	<i>Actitis macularia</i>
Sanderling	<i>Calidris alba</i>
Semipalmated sandpiper	<i>Calidris pusilla</i>
Least sandpiper	<i>Calidris minutilla</i>
White-rumped sandpiper	<i>Calidris fuscicollis</i>
Baird's sandpiper	<i>Calidris bairdii</i>
Pectoral sandpiper	<i>Calidris melanotos</i>
Dunlin	<i>Calidris alpina</i>
Stilt sandpiper	<i>Micropalama himantopus</i>
*Short-billed dowitcher	<i>Limnodromus griseus</i>
Long-billed dowitcher	<i>Limnodromus scolopaceus</i>
*American Woodcock	<i>Scolopax minor</i>
Solitary Sandpiper	<i>Tringa solitaria</i>
*Wilson's phalarope	<i>Phalaropus tricolor</i>
Red phalarope	<i>Phalaropus fulicarius</i>
*Upland sandpiper	<i>Bartramia longicauda</i>
*Common Snipe	<i>Gallinago gallinago</i>

GULLS & TERNS - Order: Charadriiformes

Family: Laridae

Bonaparte's gull	<i>Larus philadelphia</i>
*Ring-billed gull	<i>Larus delawarensis</i>
Herring gull	<i>Larus argentatus</i>
*Caspian tern	<i>Sterna caspia</i>
Common tern	<i>Sterna hirundo</i>
*Forster's tern	<i>Sterna forsteri</i>
*Black tern	<i>Chlidonias niger</i>

DOVES - Order: Columbiformes

Family: Columbidae

* Rock Dove	<i>Columba livia</i>
*Mourning Dove	<i>Zenaidura macroura</i>

CUCKOOS & ROADRUNNER - Order: Cuculiformes

Family: Cuculidae

*Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>
*Yellow-billed Cuckoo	<i>Coccyzus americanus</i>

OWLS - Order: Strigiformes

Family: Strigidae

Eastern Screech Owl	<i>Otus asio</i>
*Great Horned Owl	<i>Bubo virginianus</i>
Snowy owl	<i>Nyctea scandiaca</i>
*Barred Owl	<i>Strix varia</i>
Great gray owl	<i>Strix nebulosa</i>
*Long-eared owl	<i>Asio otus</i>
Short-eared owl	<i>Asio flammeus</i>
*Northern saw-whet owl	<i>Aegolius acadicus</i>

GOATSUCKERS - Order: Caprimulgiformes

Family: Caprimulgidae

*Common Nighthawk	<i>Chordeiles minor</i>
*Whip-poor-will	<i>Caprimulgus vociferus</i>

SWIFTS & HUMMINGBIRDS - Order: Apodiformes

Family: Apodidae

*Chimney Swift

Chaetura pelagica

Family: Trochilidae

*Ruby-throated Hummingbird

Archilocus colubris

KINGFISHER - Order: Coraciiformes

Family: Alcedinidae

*Belted Kingfisher

Ceryle alcyon

WOODPECKERS - Order: Piciformes

Family: Picidae

*Red-bellied Woodpecker

Melanerpes carolinus

*Red-headed Woodpecker

Melanerpes erythrocephalus

*Yellow-bellied Sapsucker

Sphyrapicus varius

*Downy Woodpecker

Picoides pubescens

*Hairy Woodpecker

Picoides villosus

*Northern Flicker

Colaptes auratus

*Pileated Woodpecker

Drycopus pileatus

Order: Passeriformes

Family: Tyrannidae

*Olive-sided flycatcher

Contopus borealis

*Eastern wood Pewee

Contopus virens

*Yellow-bellied flycatcher

Empidonax flaviventris

*Alder flycatcher

Empidonax alnorium

*Least flycatcher

Empidonax minimus

*Eastern Phoebe

Sayornis phoebe

*Great Crested Flycatcher

Myarchus crinitus

*Western kingbird

Tyrannus verticalis

*Eastern Kingbird

Tyrannus tyrannus

Family: Alaudidae

*Horned Lark

Eremophila alpestris

Family: Hirudinidae

*Purple martin

Progne subis

*Tree Swallow

Tachycineta bicolor

*Northern rough-winged swallow

Stelgidopteryx serripennis

*Bank swallow

Riparia riparia

*Cliff swallow

Hirundo pyrrhonota

*Barn Swallow

Hirundo rustica

Family: Corvidae

*Blue Jay

Cyanocitta cristata

*American Crow

Corvus brachyrhynchos

Common raven

Corvus corax

Family: Paridae

*Black capped chickadee

Parus atricapillus

Family: Sittidae

*White-breasted Nuthatch

Sitta carolinensis

*Red-breasted nuthatch

Sitta canadensis

Family: Certhiidae * Brown Creeper	<i>Certhia americana</i>
Family: Troglodytidae *House Wren *Winter Wren *Sedge wren *Marsh Wren	<i>Troglodytes aedon</i> <i>Troglodytes troglodytes</i> <i>Cistothorus platensis</i> <i>Cistothorus palustris</i>
Family: Muscicapidae Golden-crowned Kinglet Ruby-crowned Kinglet *Blue-gray Gnatcatcher *Eastern Bluebird *Veery Gray-checked thrush Swainson's Thrush *Hermit Thrush *Wood Thrush *American Robin Varied thrush	<i>Regulus satrapa</i> <i>Regulus calendula</i> <i>Polioptila caerulea</i> <i>Sialia sialis</i> <i>Catharus fuscescens</i> <i>Catharus minimus</i> <i>Catharus ustulatus</i> <i>Catharus guttatus</i> <i>Hylocichla mustelina</i> <i>Turdus migratorius</i> <i>Ixoreus naevius</i>
Family: Mimidae *Gray Catbird *Brown Thrasher	<i>Dumetella carolinensis</i> <i>Toxostoma rufum</i>
Family Bombycillidae *Cedar Waxwing Bohemian waxwing	<i>Bombycilla cedrorum</i> <i>Bombycilla garrulus</i>
Family: Sturnidae *European Starling	<i>Sturnus vulgaris</i>
Family: Laniidae Northern shrike *Loggerhead shrike	<i>Lanius excubitor</i> <i>Lanius ludovicianus</i>
Family: Vireonidae Philadelphia vireo Solitary Vireo *Yellow-throated Vireo *Warbling Vireo *Red-eyed Vireo	<i>Vireo philadelphicus</i> <i>Vireo solitarius</i> <i>Vireo flavifrons</i> <i>Vireo gilvus</i> <i>Vireo olivaceus</i>
Family: Emberizidae, Subfamily: Parulinae *Blue-winged warbler *Golden-winged Warbler Tennessee Warbler Orange-crowned warbler *Nashville Warbler *Northern Parula *Yellow Warbler *Chestnut-sided Warbler Magnolia Warbler	<i>Vermivora pinus</i> <i>Vermivora chrysoptera</i> <i>Vermivora peregrina</i> <i>Vermivora celata</i> <i>Vermivora ruficapilla</i> <i>Parula americana</i> <i>Dendroica petechia</i> <i>Dendroica pensylvanica</i> <i>Dendroica magnolia</i>

Cape May Warbler
*Black-throated Blue Warbler
*Myrtle Warbler (Yellow rumped)
Black-throated Green Warbler
*Blackburnian Warbler
*Pine warbler
Palm Warbler
*Bay-breasted Warbler
*Blackpoll warbler
*Cerulean Warbler
*Black-and-White Warbler
*American Redstart
*Ovenbird
*Northern Waterthrush
Louisiana Waterthrush
*Connecticut Warbler
*Mourning warbler
*Common Yellowthroat
Wilson's Warbler
*Canada Warbler
*Hooded Warbler

Dendroica tigrina
Dendroica caerulescens
Dendroica coronata
Dendroica virens
Dendroica fusca
Dendroica pinus
Dendroica palmarum
Dendroica castanea
Dendroica striata
Dendroica cerulea
Mniotilta varia
Setophaga ruticilla
Seiurus aurocapillus
Seiurus novaboracensis
Seiurus motacilla
Oporornis agilis
Oporornis philadelphia
Geothlypis trichas
Wilsonia pusilla
Wilsonia canadensis
Wilsonia citrina

Family: Emberizidae, Subfamily: Thraupinae
*Scarlet Tanager

Piranga olivacea

Family: Emberizidae, Subfamily: Cardinalinae
*Northern Cardinal
*Rose-breasted Grosbeak
*Indigo Bunting
Snow bunting

Cardinalis cardinalis
Pheucticus ludovicianus
Passerina cyanea
Plectrophenax nivalis

Family: Emberizidae, Subfamily: Emberizinae
*Chipping Sparrow
*Clay-colored sparrow
*Field Sparrow
*Vesper sparrow
*Savannah sparrow
*Grasshopper Sparrow
*LeConte's sparrow
*Sharp-tailed Sparrow
Fox sparrow
*Song Sparrow
Lincoln's sparrow
*Swamp Sparrow
*White-throated Sparrow
White-crowned Sparrow
Harris' sparrow
American Tree Sparrow
Slate-colored junco
Lapland longspur

Spizella passerina
Spizella pallida
Spizella pusilla
Pooecetes gramineus
Passerculus sandwichensis
Ammodramus savannarum
Ammodramus leconteii
Ammodramus caudacatus
Passerella iliaca
Melospiza melodia
Melospiza lincolnii
Melospiza georgiana
Zonotrichia albicollis
Zonotrichia leucophrys
Zonotrichia querula
Spizella arborea
Junco hyemalis
Calcarius lapponicus

Family: Emberizidae, Subfamily: Icterinae
*Bobolink
*Red-winged Blackbird
*Eastern Meadowlark

Dolichonyx oryzivorus
Agelaius phoeniceus
Sturnella magna

*Western meadowlark
 *Yellow-headed blackbird
 Rusty blackbird
 *Brewer's blackbird
 *Common Grackle
 *Brown-headed Cowbird
 Orchard Oriole
 *Northern Oriole

Sturnella neglecta
Xanthocephalus xanthocephalus
Euphagus carolinus
Euphagus cyanocephalus
Quiscalus quiscula
Molothrus ater
Icterus spurius
Icterus galbula

Family: Fringillidae

Pine grosbeak
 *Purple finch
 *House Finch
 Red crossbill
 White-winged crossbill
 Common redpoll
 Hoary redpoll
 *American Goldfinch
 Pine siskin
 Evening grosbeak
 *Dickcissel
 *Rufous-sided Towhee
 *Lark bunting

Pinicola enucleator
Carpodacus purpureus
Carpodacus mexicanus
Loxia curvirosta
Loxia leucoptera
Carduelis flammea
Carduelis hornemanni
Carduelis tristis
Carduelis pinus
Coccothrustes vespertinus
Spiza Americana
Pipilo erythrophthalmus
Calamospriza melanocorys

Family: Passeridae

*House Sparrow

Passer domesticus

MAMMALS

This is a general list of mammals that may be found in the Mississippi River corridor. The mammals marked with an asterisk (*) were recorded at Camp Ripley during the field seasons of 1991-1994.

Family Didelphidae (Opossums)

Opossum

Didelphis marsupialis

Family Soricidae (Shrews)

*Shorttail Shrew
 *Pygmy Shrew
 *Arctic Shrew
 *Masked Shrew
 *Northern Water Shrew

Blarina brevicauda
Microsorex hoyi
Sorex arcticus
Sorex cinereus
Sorex palustris

Family Talpidae (Moles)

*Star-nosed Mole
 Eastern Mole

Condylura cristata
Scalopus aquaticus

Family Vespertilionidae (Plain-nosed bats)

*Big Brown Bat
 *Silver-haired Bat
 *Red Bat
 *Hoary Bat
 *Little Brown Myotis
 Eastern Pipistrelle

Eptesicus fuscus
Lasionycteris noctivagans
Lasiurus borealis
Lasiurus cinereus
Myotis lucifugus
Pipistrellus subflavus

Northern Myotis	<i>Myotis septentrionalis</i>
Family Ursidae (Bears)	
*Black Bear	<i>Ursus americanus</i>
Family Procyonidae (Raccoons)	
*Raccoon	<i>Procyon lotor</i>
Family Mustelidae (Weasels, skunks, etc.)	
*River Otter	<i>Lutra canadensis</i>
Marten	<i>Martes americana</i>
Fisher	<i>Martes pennanti</i>
*Striped Skunk	<i>Mephitis mephitis</i>
*Shorttail Weasel	<i>Mustela erminea</i>
Longtail Weasel	<i>Mustela frenata</i>
Least Weasel	<i>Mustela rixosa</i>
*Mink	<i>Mustela vison</i>
Spotted Skunk	<i>Spilogale putorius</i>
*Badger	<i>Taxidea taxus</i>
Family Canidae (Dogs, wolves, foxes)	
*Gray Wolf	<i>Canis lupus</i>
*Coyote	<i>Canis lutrans</i>
Gray Fox	<i>Urocyon cinereoargenteus</i>
*Red Fox	<i>Vulpes fulva</i>
Family Felidae (Cats)	
Mountain Lion	<i>Felis concolor</i>
Lynx	<i>Lynx canadensis</i>
*Bobcat	<i>Lynx rufus</i>
Family Sciuridae (Squirrels)	
Franklin Ground Squirrel	<i>Citellus franklini</i>
*Least Chipmunk	<i>Eutamias minimus</i>
*Northern Flying Squirrel	<i>Glaucomys sabrinus</i>
*Southern Flying Squirrel	<i>Glaucomys volans</i>
*Woodchuck	<i>Marmota monax</i>
*Eastern Gray Squirrel	<i>Sciurus carolinensis</i>
*Eastern Fox Squirrel	<i>Sciurus niger</i>
*Eastern Chipmunk	<i>Tamias striatus</i>
*Red Squirrel	<i>Tamiasciurus hudsonicus</i>
*Thirteen-lined Ground Squirrel	<i>Spermophilus tridecemlineatus</i>
Family Geomyidae (Pocket gophers)	
*Plains Pocket Gopher	<i>Geomys bursarius</i>
Family Heteromyidae (Kangaroo mice, pocket mice)	
Plains Pocket Mouse	<i>Perognathus flavescens</i>
Family Castoridae (Beaver)	
*Beaver	<i>Castor canadensis</i>
Family Cricetidae (Mice, muskrats, lemmings, voles)	
*Southern red-backed vole	<i>Clethrionomys gapperi</i>
*Prairie Vole	<i>Microtus ochrogaster</i>

*Meadow Vole	<i>Microtus pennsylvanicus</i>
*Muskrat	<i>Ondatra zibethica</i>
Northern Grasshopper Mouse	<i>Onychomys leucogaster</i>
*White-footed Mouse	<i>Peromyscus leucopus</i>
*Prairie Deer Mouse	<i>Peromyscus maniculatus bairdii</i>
*Woodland Deer Mouse	<i>Peromyscus maniculatus gracilis</i>
Eastern Harvest Mouse	<i>Reithrodontomys humulis</i>
Western Harvest Mouse	<i>Reithrodontomys megalotis</i>
Southern Bog Lemming	<i>Synaptomys cooperi</i>

Family Muridae (Old World rats and mice)

*House Mouse	<i>Mus musculus</i>
*Norway Rat	<i>Rattus norvegicus</i>

Family Zapodidae (Jumping mice)

Woodland Jumping Mouse	<i>Napaeozapus insignis</i>
*Meadow Jumping Mouse	<i>Zapus hudsonicus</i>

Family Erethizontidae (Porcupines)

*Porcupine	<i>Erethizon dorsatum</i>
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Family Leporidae (Hares, rabbits)

*Snowshoe Hare	<i>Lepus americanus</i>
*Whitetail Jackrabbit	<i>Lepus townsendi</i>
*Eastern Cottontail	<i>Sylvilagus floridanus</i>

Family Cervidae (Deer)

*Moose	<i>Alces alces</i>
*Whitetail Deer	<i>Odocoileus virginianus</i>

AMPHIBIANS AND REPTILES

Gerholdt, James E. and Pamela J. [A Guide to the Reptiles and Amphibians of Minnesota State Parks, Central Area, Region 3](#) (Crow Wing State Park) Webster, MN 55088. 1994-1955.

SALAMANDERS

Family Ambystomatidae

Blue-spotted Salamander	<i>Ambystoma laterale</i>
Tiger Salamander	<i>Ambystoma tigrinum</i>

Family Plethodontidae

Redback Salamander	<i>Plethodon cinereus</i>
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FROGS AND TOADS

Family Bufonidae

American Toad	<i>Bufo americanus</i>
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Family Hylidae

Cope's Gray Treefrog	<i>Hyla chrysoscelis</i>
Gray Treefrog	<i>Hyla versicolor</i>
Spring Peeper	<i>Pseudacris crucifer</i>
Chorus Frog	<i>Pseudacris triseriata</i>

Family Ranidae	
Mink Frog	<i>Rana septentrionalis</i>
Wood Frog	<i>Rana sylvatica</i>
Green Frog	<i>Rana clamitans melanota</i>
Northern Leopard Frog	<i>Rana pipiens</i>

TURTLES

Family Chelydridae (Snapping turtles)	
Snapping Turtle	<i>Chelydra serpentina</i>

Family Emydidae (Pond turtles)	
Painted Turtle	<i>Chrysemys picta</i>
Blanding's Turtle	<i>Emydoidea blandingii</i>
Common Map Turtle	<i>Graptemys geographica</i>

Family Trionychidae - (softshell turtles)	
Spiny Softshell	<i>Apalone spinifera</i>

SNAKES

Family Colubridae (colubrid snakes)	
Western Hognose Snake	<i>Heterodon nasicus</i>
Eastern Hognose Snake	<i>Heterodon platirhinos</i>
Smooth Green Snake	<i>Opheodrys vernalis</i>
Gopher Snake	<i>Pituophis catenifer</i>
Redbelly Snake	<i>Storeria occipitomaculata</i>
Plains Garter Snake	<i>Thamnophis radix</i>
Common Garter Snake	<i>Thamnophis sirtalis</i>

SKINKS

Family Scincidae	
Prairie Skink	<i>Eumeces septentrionalis</i>

BUTTERFLIES (Crow Wing County)*

Whites and Sulphurs (Family Pieridae)

Whites (Subfamily Pierinae)	
Mustard White	<i>Pieris oleracea</i>
Olympia Marble	<i>Euchloe olympia</i>

Sulphurs (Subfamily Coliadinae)	
Pink-edged Sulphur	<i>Colias interior</i>

Gossamer-wing Butterflies (Family Lycaenidae)

Harvesters (Subfamily Miletinae)	
Harvester	<i>Feniseca tarquinius</i>

Coppers (Subfamily Lycaeninae)	
Gray Copper	<i>Lycaena dione</i>
Purplish Copper	<i>Lycaena helloides</i>

Hairstreaks (Subfamily Theclinae)	
Edwards' Hairstreak	<i>Satyrium edwardsii</i>

Banded Hairstreak
Hoary Elfin
Henry's Elfin

Satyrium calanus
Callophrys [Incisalia] polios
Callophrys [Incisalia] henrici

Blues (Subfamily Polyommatae)

Western Tailed-Blue
Silvery Blue
Northern Blue
Greenish Blue

Everes amyntula (incl. herrii)
Glaucopteryx lygdamus
Lycaeides idas (=argyrognomon)
Plebejus saepiolus

Brush-footed Butterflies (Family Nymphalidae)

Heliconians and Fritillaries (Subfamily Heliconiinae)

Aphrodite Fritillary
Atlantis Fritillary

Speyeria aphrodite
Speyeria atlantis

True Brush-foots (Subfamily Nymphalinae)

Gorgone Checkerspot
Silvery Checkerspot
Compton Tortoiseshell
Common Buckeye

Chlosyne gorgone
Chlosyne nycteis
Nymphalis vau-album
Junonia coenia

Satyrs (Subfamily Satyrinae)

Northern Pearly Eye
Common Ringlet
Common Wood Nymph

Enodia anthedon
Coenonympha tullia
Cercyonis pegala

Monarchs (Subfamily Danaeinae)

Monarch

Danaus plexippus

Skippers (Family Hesperidae)

Spread-wing Skippers (Subfamily Pyrginae)

Silver-spotted Skipper
Sleepy Duskywing
Columbine Duskywing
Common Checkered-Skipper

Epargyreus clarus (incl. huachuca)
Erynnis brizo
Erynnis lucilius
Pyrgus communis

Grass Skippers (Subfamily Hesperinae)

Arctic Skipper
Common Branded Skipper
Peck's Skipper
Crossline Skipper
Long Dash
Delaware Skipper
Hobomok Skipper
Dun Skipper

Carterocephalus palaemon
Hesperia comma
Polites peckius (=coras)
Polites origenes
Polites mystic
Anatrytone logan (=delaware)
Poanes hobomok
Euphyes vestris (=ruricola)

*Opler, Paul A., Harry Pavulaan, and Ray E. Stanford (coordinators).
1995. Butterflies of North America. Jamestown, ND: Northern
Prairie Wildlife Research Center Home Page.
<http://www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/bflyusa.htm>
(Version 17AUG2000).

Appendix E - Research Projects

Research Projects within Crow Wing State Park

A number of research projects have been conducted at Crow Wing State Park. Detailed records are available from the State Parks Resource Management Coordinator in St. Paul. A list of the research permit requests is included below.

- 2000 - Small Mammals of Crow Wing State Park by Brock McMillian, Dept. of Biological Sciences, University of Minnesota.
- 1999 - Status Survey for Special Concern & Endangered Dragonflies of Minnesota by Wayne Steffans, Two Harbors, MN.
- 1999 - A Search for Three Rare Endemic Minnesota Mushroom Species by Dr. David McLaughlin, Dept. of Plant Biology, University of Minnesota.
- 1999 - Home Range and Habitat Use of Northern Goshawks by Clint Boal, MN Cooperative Fish and Wildlife Research Unit, University of Minnesota.
- 1996 - Lichens of Minnesota by Dr. Clifford Wetmore, Dept. of Plant Biology, University of Minnesota.
- 1996 - Dragonfly and Burying Beetle Distribution by Mark Carroll, Big Lake, MN.
- 1996 - Listed and Selected Nongame Fish Surveys by Konrad Schmidt, St. Paul, MN
- 1996 - Minnesota's Moss Flora - County Checklist by Dr. Jan A. Janssens, Minneapolis, MN.
- 1994 - Collection of Nongame Fish by Konrad Schmidt, St. Paul, MN. (Additional research completed in 1987, 1990, 1992, 1993).
- 1989 - Conduct Cultural Resource Surveys as Requested by DOT for Trunk Highway Projects by Leslie Petersen, Minnesota Historical Society.
- 1987 - Collect Butterflies by Bryan L. Olson, Anoka, MN.
- 1982 - U of M Herbarium Collection related to pending publication Atlas of the Flora of Minnesota by William Klein, Botanist with University of Minnesota.
- 1982 - Collecting Specimens of Mosses and other Non-vascular Plants for the U of M Herbarium by Dr. Jan A. Janssens, University of Minnesota, Limnological Research Center.

Appendix F - Archaeology and History of the Crow Wing Area

Pre-Contact Period

Only a few Pre-Contact period artifacts have been documented in Crow Wing State Park and they are of an undetermined age. However, numerous indications of human life have been found at many sites in Mille Lacs Kathio State Park only 30 miles away, and at dozens of sites in Cass, Crow Wing, and Morrison counties.

The first portion of the Pre-Contact period is known as the Paleoindian Tradition (ca. 9500 - 6000 B.C.). Spear points from this tradition have been found across the state, suggesting that there may have been populations in east-central and northern Minnesota during this time.

The Archaic Tradition (ca. 6000 - ca. 500 B.C.) followed the Paleoindian Tradition and was marked by the manufacture of ground-stone (in addition to chipped stone) tools. During this time, Minnesota was dominated by prairies. The Itasca Bison site is from this period. The use of native copper in Minnesota is part of a distinctive complex usually called the Old Copper Complex (5000 B.C. until nearly 1000 B.C.). One of the best known copper complex sites, the Petaga Point site, is located in Mille Lacs-Kathio State Park. The copper may have come from the Snake or Kettle River area.

The Woodland Tradition appeared in Minnesota in approximately 500 B.C. This tradition was marked by the use of pottery and the burial of human remains in earthen mounds. To the west of the park in Sylvan Township is the largest single Indian mound grouping in the Mississippi Headwaters and one of the largest in the state of Minnesota. There are also mound groups in Crow Wing County, Mission Township, Mission Lake area. Mounds from this Woodland Tradition are also found in Mille Lacs-Kathio State Park and several locations near the shores of Mille Lacs Lake. Distinctive pottery was also found at the Malmo site on the northeast shore of Mille Lacs Lake. These cultural groups were small - moving about and occupying fairly large territories based on seasonally available food. The Woodland peoples frequently buried their dead in earthen mounds, although the style of mounds and burial placement varied. In northern Minnesota, the Woodland Tradition persisted until A.D. 1650.

Contact and Post-Contact Periods

When seventeenth century French explorers first reached east-central Minnesota, in the region of Mille Lacs and Big Sandy lakes, they found groups of American Indians, known later as the Santee or Eastern Dakota. The central and northern Minnesota American Indian groups depended upon wild food resources for their sustenance; they were the historic representatives of the Woodland archaeological tradition. Over time, however, the Dakota were forced out of these areas by the Ojibwe Indians who moved south and west from their traditional territory of northern Minnesota. Crow Wing would become an important hub along the trade and travel routes of the Ojibwe. Crow Wing also became the home of great Ojibwe leaders, including *Be-be-sig-aund-dib-way* (Curly Head), *Bug-o-na-ge-shig* (Hole-in-the-Day), and *Song-uk-um-eg* (Strong Ground).

Ojibwe Displace the Dakota and the Battle of 1768

Crow Wing State Park was the scene of a major battle between the Dakota and Ojibwe Indians, as related by William Warren in History of the Ojibways. Even before the coming of European settlers to the area, the Dakota people had been forced from their villages on Mille Lacs Lake and Knife Lake by the Ojibwe and they relocated on the Rum River. In 1768 the Dakota decided to attempt to force the Ojibwe back to the shores of Lake Superior. The Dakota gathered about 500 warriors together. Their primary destination was the Ojibwe village on the shores of Sandy Lake, however, they attacked enemies along the route as well. The Ojibwe were able to repel the Dakota from Sandy Lake, however 30 young Ojibwe women were taken prisoner.

Ojibwe warriors returning from enemy territory learned of the attack. They gathered at the junction of the Crow Wing and Mississippi rivers to make a counterattack. About one-half mile below the mouth of the Crow Wing, near what later became Allan Morrison's Trading Post, the Ojibwe dug long trenches or rifle pits, each holding about eight to ten warriors. At this location, high above the river, the current forced canoes against the eastern bank of the river. As the Dakotas neared the bend in the Mississippi River, the Ojibwe opened fire. At the same time the women prisoners capsized the canoes. A great number of Dakotas were killed or drowned. The next day the Dakota counterattacked but lacked ammunition and lost heavily. Not long after this battle, the M'de'wakanton Band of the Dakota were forced to leave the Rum River area and established their villages along the Minnesota River.

Although this and other conflicts did take place between the Ojibwe and Dakota, this should not lead to the conclusion that they were always at war. Rather, the Ojibwe and Dakota have a long history of living at peace in close proximity with each other. Along transition areas between their territories, like at Crow Wing, the tribes found ways other than war to resolve disputes. Trade and intermarriage between the tribes was more common than warfare.

Fur Trade Era

Several explorers and fur traders traveled along the Mississippi in the late 1700s. James McGill wintered at Crow Wing as early as 1771. Jean Baptiste Perrault wintered there in 1790. In 1792, Jean Baptiste Cadotte visited the Dakota and Ojibwe trading stations along the Mississippi. It was based on his report that the Northwest Fur Trading Company became involved in the trade along the Mississippi, Lake Superior and other lakes in the region, as far west as Leech Lake. These posts were sold to the American Fur Company in 1816.

Allan Morrison explored this region as early as 1820. He established his post for the American Fur Company below the southern outlet of the Crow Wing River in 1823. Soon to follow were John H. Fairbanks, Paul H. Beaulieu, and Clement H. Beaulieu, Henry M. Rice, C.W. Borup, and William Aitkin. Minnesota was supposedly closed to white settlement until 1837, except to a few settlers near Fort Snelling. The Treaty of 1837 opened the land south of the mouth of the Crow Wing River to white settlement. However, it was not until the Treaty of 1847 that the settlement of Crow Wing was established. In 1849, Fort Gaines (later called Fort Ripley) was established as a military reservation to keep peace among the Dakota to the south and the Ojibwe to the north, with the Winnebagos in between.

Clement H. Beaulieu played an important role in early Central Minnesota history. Born in 1810, he was a fur trader in Wisconsin and Minnesota. He is said to be responsible for outfitting a number of American Fur Company posts in northern Minnesota while in charge of the company's Fond du Lac department. His first recorded visit to Crow Wing was in 1837. He began building a trading post at Crow Wing in 1849, according to best information. The site was just north of the new military reservation – then called Fort Gaines.

Red River Oxcart Trail

A branch of the Red River Trail, known as the Woods Trail, forded the Mississippi River at Crow Wing, bringing its thriving oxcart traffic on the heels of the canoe era. This was an important part of the Red River Trail from about 1844 to 1871. This route was known as the Woods Trail because it crossed the forested central region of Minnesota, at the time known to the Ojibwe. The other trail branches crossed the prairie south of Crow Wing through Dakota lands before turning north to the Red River valley. The Dakota were at times hostile and threatened the safe passage of the oxcart trains, resulting in the establishment of the northern route. The first group of eighty Red River ox carts left St. Paul, lead by Philip Beupre and came through Crow Wing in 1844. In the 1850s some 2,500 carts could be moving on these trails each day. For many years the ox cart trains came into Crow Wing for stop-overs on their journeys to Pembina and on the return trips to St. Paul. An article in Harpers Magazine, 1859, states in Crow Wing, "Allan Morrison was the postmaster, farmer, trader, hotel keeper, and agent for a line of stage coach. He spoke English, Cree, and Chippewa." The ox carts were made entirely of wood and leather

and could be heard from miles away. During the round trip journey of nine hundred miles, the ox carts would average twenty miles a day. Travel by ox cart continued until the Civil War. The coming of the railroad marked the end of these trails.

Logging Era

The first logging operations on the upper Mississippi River in this area began in 1847. Hole-in-the-Day the Younger, sold timber for fifty cents per tree, and loggers began to cut timber a few miles below the mouth of the Crow Wing River. By 1848, Crow Wing settlement was in a transition from a fur economy to one based on logging - voyageurs were replaced by lumberjacks. Logging of the huge pines continued to change the face of the land until the early 1900s. Lumber companies began to advertise farming land for sale and the next generation of people began to settle the land.

Missionaries at Crow Wing

Missionaries founded several churches in Crow Wing during the settlement's existence. In August 1852, Reverend Father Francis X. Pierz established the Catholic mission, St. Francis of Xavier. The Reverend E. Steele Peak erected an Episcopal mission in 1860. After the burning of the church at Mission Lake during the Indian uprisings of 1862, Reverend Ottomar Cloeter moved his Lutheran mission to Crow Wing. None of the structures from the original missions survive. At the site of the original Catholic mission, the Knights of Columbus built a chapel using private funds on land owned by the Catholic dioceses. The chapel was completed in 1968 and still stands within the boundary of the park.

Peak of the Townsite

Crow Wing village flourished in the 1850s and 1860s. At its peak the town had a population of 700 and many business establishments. The town had stood sentinel for well over a century as the northernmost settlement of European-American immigrants on the Mississippi River. Half of its population was Ojibwe during the territorial and early statehood periods of Minnesota. *Bug-o-na-ge-shig* II (Hole-in-the-Day the younger) made his home near Crow Wing and was an important leader of the Ojibwe and powerful figure during the height of the Crow Wing village.

Decline of the Townsite

The local Ojibwe were relocated to the White Earth Reservation in 1868, taking much of the settlements population and many of its prominent citizens. In the 1870s Crow Wing was bypassed by the railroad in favor of Brainerd. The decision not to place the transcontinental railroad's Northern Pacific crossing of the Mississippi at Crow Wing but rather a few miles to the north at present-day Brainerd, was the economic demise of Old Crow Wing. Beaulieu's stubbornness with railroad land agents may have been partly responsible for the selection of a northern crossing at Brainerd. Over the next 10 years, the town died. Some buildings were demolished; others moved to Brainerd. By 1880, the village of Crow Wing had become a ghost town.

Restoration of the Beaulieu House

A cultural resource management project that has been ongoing since 1988 is the research and restoration of the house of Clement Beaulieu. The Beaulieu house was built in 1849 and is the oldest standing timber frame structure north of St. Anthony Falls in Minnesota. The Clement Beaulieu house was built 150 years ago at Crow Wing. This house is believed to be the sole surviving structure from the town site.

The original cellar was a wood plank or puncheon cribbed structure measuring approximately 3.1 x 4.3 meters with a depth of nearly 2.7 meters. The cellar floor was made of planks laid on and nailed to sleepers set in the sand subsoil. Walls were cribbed to a height of at least 1.2 meters above the floor and probably much higher, but collapse above this level prevented identification of such construction.

The two story house appears to be built primarily of white pine. Plaster is supported by willow boughs, not lath. The house measures 25 x 31 feet. The original house was palatial by frontier standards. An addition was added in 1856. After Beaulieu abandoned the house in the early 1870's, two of his nephews, in 1880, cut it in two and moved the halves, by oxen team, to their farms in Morrison County. Both parts were subsequently sold. One portion went to the farm of Joe Bellefeuille in Ripley Township and burned in 1923. The original portion of the home, was placed on what was then the John Branchaud farm, where it remained until February, 1988.

In the 1980s the original house was discovered to be intact. State Parks personnel, the Institute for Minnesota Archaeology and the non-profit group Friends of Old Crow Wing began plans in 1986 to return the historic structure to its original location. The house was donated by owners Larry and Joyce Moran, and it was returned to the park in 1988. A new roof was placed on the structure and the original site excavated with a complete archaeological study. Artifacts were collected and cataloged.

In 1993, the house was placed in its original location on a modern, but historically authentic-looking foundation. In 1994, a structural study and preservation planning workshop was conducted by State Parks and the Minnesota Historical Society. Results of this study provided specifications for exterior renovation - including new siding and historically accurate doors and windows. The exterior renovation, funded by the Brainerd Rotary Club and conducted as a volunteer effort by the Mid-Minnesota Builders Association, took place in 1996. For more detail, see [The Clement Hudon Beaulieu Mansion: Some Interesting Facts](#), Ron Miles, 1996.

Appendix G - Overview of Area Interpretive Services

There are many different types of interpretive services and environmental education facilities in the area around Crow Wing State Park. Each of these facilities has its own unique type of program and mission. Crow Wing State Park and the Division of Parks and Recreation have cooperated with many of these facilities to promote regional education opportunities and arrange trips. A list of the area interpretive and environmental education facilities follows:

Interpretive and Environmental Education Facilities:

Charles A. Lindbergh State Park Little Falls, MN

Charles A. Lindbergh State Park does not have a staff-led interpretive program run by the Division. The Lindbergh House and History Center is operated by the Minnesota Historical Society. These facilities are open during the spring, summer and autumn seasons. The Interpretive Center features displays and a theater presentation interpreting the life and historical contributions of Charles H. Lindbergh, Jr. The house adjacent to the interpretive center is Charles H. Lindbergh, Jr.'s boyhood home. The Minnesota Historical Society also maintains a self-guided nature trail at the site. Minnesota Historical Society staff have provided outreach program in the form of interpretive talks with audio-visual aids at the park as part of the summer special program series.

Mille Lacs Kathio State Park Onamia, MN

Mille Lacs Kathio State Park has a year-round interpretive center, personal interpretive programs, self-guiding trails, and outdoor interpretive displays. Mille Lacs Kathio interpretive program has provided personal and non-personal services at Crow Wing State Park as a satellite location.

Cuyuna State Recreation Area Crosby, MN

This new recreation area is currently under development by the Division of Parks and Recreation. There is an established interpretive facility within the recreation area. The Croft Mine Historical Park includes a museum with artifacts and exhibits interpreting Cuyuna Range mining heritage, and a simulated mine experience. The Croft Mine is staffed by an executive director/educator and volunteers. The Director and volunteer staff offer guided tours, interpretive talks and demonstrations during their summer season open hours, as well as school tours in spring and autumn.

Weyerhauser Museum Little Falls, MN

Located just outside the boundary of Charles A. Lindbergh State Park, the Weyerhauser Museum is operated by the Morrison County Historical Society. The museum is open year-round, featuring exhibits interpreting county history.

The Paul Bunyan Nature Learning Center Brainerd, MN

The Paul Bunyan Nature Learning Center is an interpretive center facility which employs staff naturalists who conduct regularly scheduled hikes, demonstrations, and workshops, using their wetland setting to illustrate area ecology and stewardship. They also have an active year-round program for area schools in the form of classroom and field trip activities.

The Northland Arboretum Brainerd, MN

The Northland Arboretum has outdoor displays and trails, and provides classes and workshops on the subjects of horticulture and natural resource stewardship. The arboretum is staffed with an executive director/educator, support staff and an active team of volunteer specialists and special presenters.

Crow Wing County Historical Museum
Brainerd, MN

The Crow Wing County Historical Museum is operated by the Crow Wing County Historical Society. The museum features permanent and changing displays interpreting county history, a lecture/audio-visual auditorium, and research library. It is open year-round. The society also has a team of volunteer specialists who provide tours and interpretive presentations at the museum and outreach programs. The museum co-sponsors a summer special program series with Crow Wing State Park. The Friends of Old Crow Wing park support group is a chapter of the Crow Wing County Historical Society.

Minnesota Military Museum
Camp Ripley, MN

The Minnesota Military Museum, which is open regularly during the summer season and occasionally during other seasons, features exhibits interpreting Minnesota's military history, with special emphasis on the history of Fort Gaines/Fort Ripley/Camp Ripley. The facility is staffed by a director and military personnel from Camp Ripley.

Little Elk Heritage Preserve
Little Falls, MN

Little Elk Heritage Preserve is located at the confluence of the Mississippi and Little Elk Rivers. It includes the Little Elk archaeological site, a mid-1700s French wintering post. The preserve is owned and operated by the Institute for Minnesota Archaeology. The preserve is open by appointment for school classes and groups. Both personal and non-personal interpretation are provided.

Mississippi Headwaters Board
Walker, MN

The Mississippi Headwaters Board is a joint powers board of area counties. It provides non-personal resource management and interpretive materials in the form of books, travel guides, and pamphlets pertaining to the "Headwaters Region" of the Mississippi River watershed. They also co-sponsor the annual Crow Wing Family Canoe Day event, and sponsor Minnesota Archaeology Week events.

Mille Lacs Indian Museum
Onamia, MN

The Mille Lacs Indian Museum, operated by the Minnesota Historical Society, is located on the Mille Lacs Band Reservation, approximately 30 miles from Crow Wing State Park. The newly-renovated museum is the largest and most heavily-visited interpretive facility in the Brainerd/Mille Lacs area. The museum features exhibits interpreting the history and present culture of the Mille Lacs Band of Ojibwe. The facility is open year round. Staff includes a site manager, collections specialists and interpreters. Interpreters conduct guided tours and give demonstrations of traditional crafts and cultural activities.

Humphrey Center
Brainerd, MN

Central Lakes College in Brainerd is in the process of developing a museum and anthropology learning center. The Humphrey Center will be based on a collection of American Indian artifacts and a library donated to the college by the late John (Pete) Humphrey.

