Maplewood State Park Management Plan

May 27, 1998

Minnesota Department of Natural Resources
Division of Parks & Recreation

Minnesota Department of Natural Resources

OFFICE OF THE COMMISSIONER
500 Lafayette Road
St. Paul, Minnesota 55155-4037

RE: DEPARTMENT OF NATURAL RESOURCES APPROVAL OF MANAGEMENT PLAN FOR MAPLEWOOD STATE PARK

Minnesota Statutes 86A.09 requires that a master plan be prepared for units of Minnesota's outdoor recreation system, including state parks and state recreation areas. Laws of Minnesota for 1963 established Maplewood State Park.

Over the past year and a half, the Department of Natural Resources (DNR) as worked in partnership with local citizens to develop a management plan for this park. The management plan was approved through the DNR's CTECH/Senior Managers' review process during February, 1998.

Rodney W. Sando
Commissioner

Maplewood State Park Management Plan

State of Minnesota, Department of Natural Resources, 1998

This Management Plan is a cooperative project. For more information please contact any of the following project participants.

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We would like to thank the 52 citizens and dozens of DNR staff who also particpated in this management planning process.

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INTRODUCTION

Executive Summary

Maplewood State Park provides a wide range of recreational opportunities and a large area of relatively undeveloped land. The park is situated in northwestern Otter Tail county and contains numerous lakes, streams, and wetlands; as well as northern hardwood forests and remnant prairies. Maplewood State Park is surrounded by small farms, numerous lakes, and resort areas which provide additional resources and recreational opportunities. The park is situated in a region of northern Minnesota that is currently experiencing an increase in destination tourism. This growth can be attributed to several factors: the new Otter Trail Scenic Byway; outstanding outdoor recreation including snowmobiling, hunting and fishing; the new Prairie Wetland Learning Center; and increased business traffic.

The park staff has been working with the City of Pelican Rapids to develop a surfaced bike trail that will link the two together. The project has been accepted through the Area Transportation Partnership. The Legislative Commission on Minnesota Resources (LCMR) gave Pelican Rapids the $250,000 needed to match the grant. The next phase of this project is to acquire easements. This bike trail, when completed, will provide additional recreational opportunities and be a regional tourism attraction. Inside the park, it is recommended that the park drive be paved and made one way with one-half of the road devoted to bike traffic.

As a result of this planning project, Maplewood State Park will be revising the park's 35 mile trail system. In general, trails will be utilized year round with skiing and hiking trails located more in the central part of the park. Snowmobile and horseback riding trails will generally be in the outer perimeters of the park. The Division of Parks and Recreation is also seeking funding to build a new trail center/visitor center to meet the increasing needs of trail users and organized groups. Through effective design, the trail center will allow all users easy access to trails and provide in-depth interpretation of area natural and cultural resources. Other recommendations include remodeling or replacing the shower building, adding a shower building in the horse camp, constructing a picnic shelter near Lake Lida, adding three camper cabins, developing a self-guided trail to Hallaway Hill, adding trail benches, and a diversity of natural and cultural resource management activities. The plan also recommends that interpretive services and community outreach be expanded and to seek landowner support and legislation to expand the park boundary to the east.

Maplewood 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 has 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. 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 DNR seeks funding to complete trail and facility improvements and to initiate the next phase of natural and cultural resource management.

Park Description & Legislative History

Maplewood State Park is located in northwestern Otter Tail County. The park is 8 miles east of Pelican Rapids on State Highway 108. It is located approximately 200 miles northwest of Minneapolis and St. Paul and 16 miles north of Fergus Falls. Currently, Maplewood State Park is the sixth largest Minnesota State Park, with a statutory boundary encompassing over 9,250 acres.

Glaciation created the park's rolling topography, lakes and wetland basins. Although extensive logging and farming took place in the park in the early part of the century, and some areas were drained, much of the park remains in a wild and relatively undeveloped condition. Most of the recreation facilities are currently concentrated in the center of the park. See Park Trail Map. The park includes:

- The scenic Hallaway Hill area and other overlooks that provide dramatic vistas.
- A variety of year round trails - 10 miles hiking, 25 miles horseback riding, 13 miles ski trails (4 miles groomed), 15 miles of snowmobile trails.
- Park Drive - a scenic winding drive past lakes, wetlands, and woods.
- Forest Demonstration Area and Grass Lake Interpretive Trail- two self-guided interpretive trails.
- Lake Lida Picnic Area and Swimming Beach - with a changing house and restrooms.
- Campgrounds - 61 semi-modern sites in three different locations, 32 sites with electricity, showers and flush toilets available, 15 rustic sites, 30 rustic horse camp sites, 3 backpack/canoe sites, 1 primitive group camp.
- Fishing on 8 major lakes for trout, walleye, muskellunge, bass, panfish, and other game fish.

Park Legislative History

Maplewood State Park was established in 1963 and the park boundaries were amended in 1965 and 1971. However, ideas for a park began in the 1920s. Through efforts of the Maplewood State Park association the idea became a reality. There were at least 138 individual property parcels within the statutory boundary when the park began. The association made the first few purchases of land and a park road system was started. Most of the land acquisition was done by state parks in the 1960s and 1970s.

State Park Statute Summary

1963 (Chapter 790-H.F. No. 1291, Section 1)

Establishment of Maplewood State Park to include a little over nine sections of approximately 5,600 acres. This legislation is part of the Omnibus Natural Resources and Recreation Act of 1963. This act established twelve additional parks in 1963: Grand Mound, Glacial Lakes, Forestville, Upper Sioux Agency, Sakatah Lake, Lake Louise, Lake Maria, Rice Lake, Little Elbow, Banning, O.L. Kipp, and Traverse des Sioux.

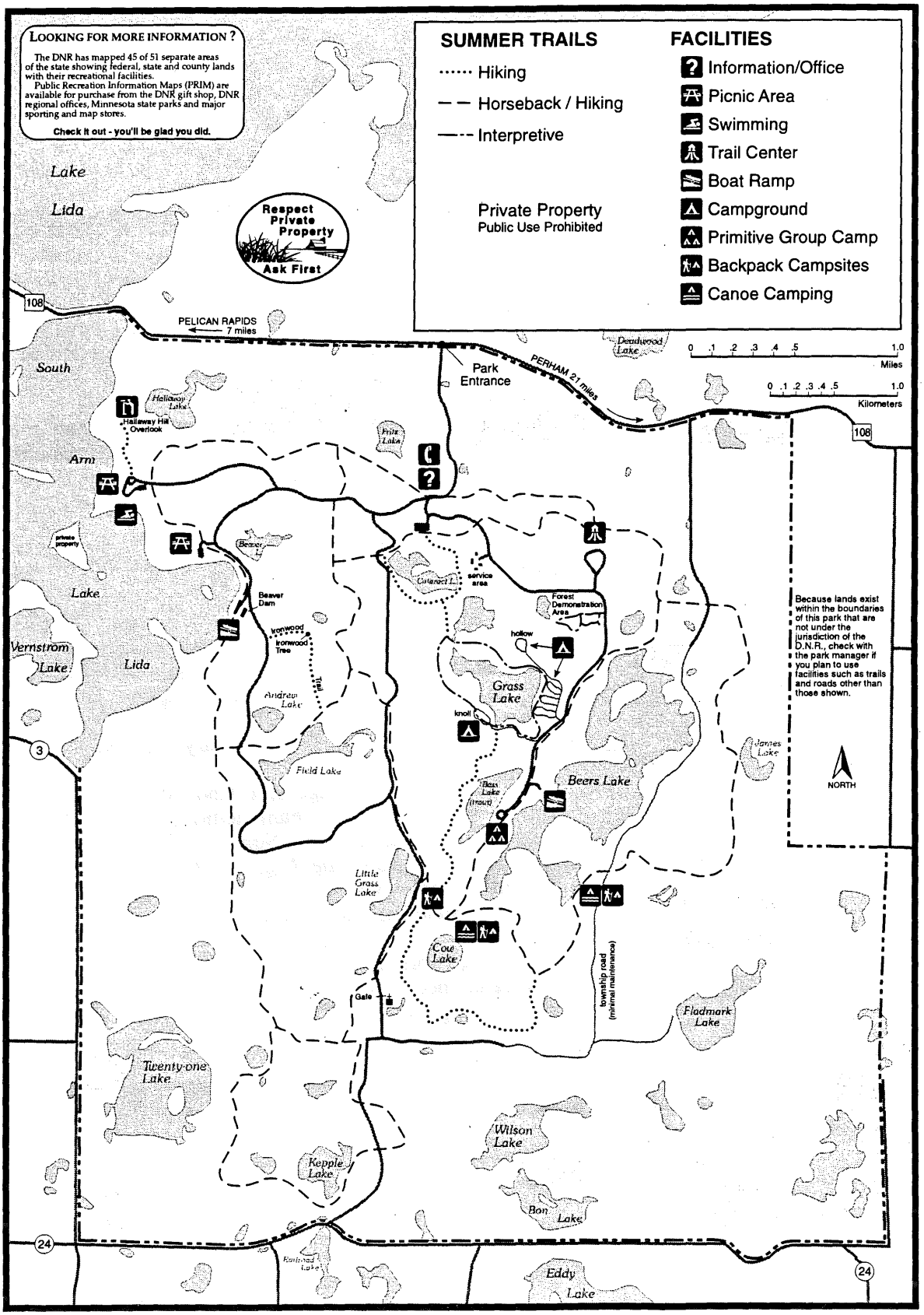
1965 (Chapter 8100H.F. No. 2206, Section 85.187)

Lands to the northeast and southwest (parts of sections 1, 2, 12, and 21) are added to Maplewood State Park.

1971 (Chapter 859-S.F. No. 556, Section 1, Subd. 10)

Additional lands to the north and south (parts of section 35, 36, 1,2, 12, 13, 24, 25, 21, 22, and 23) are added to Maplewood State Park.

Existing Summer Trails Map



Park Advisory Committee & Planning Process

In December 1996 a public news release announced the beginning of the planning process. It noted that there would be several public "open houses" and a Park Planning Citizen Advisory Committee. The committee structure included representation from the following:

1. Local government official
2. Several area business people
3. Public school teacher
4. Retired minister
5. Farmer
6. Local environmentalist
7. Recreation interests

The Friends of Maplewood State Park group was established in early 1996, just before this planning process was initiated in late 1996. The primary purpose of the group is to work with the park managers on park projects, such as getting electricity installed in the campground and working on the bike trail. Members of this group were active throughout the planning process. Several dozen citizens from Fergus Falls, Pelican Rapids, Dent, Erhard, Perham, and Hawley attended one or more of the meetings.

The Citizen Advisory Committee decided to postpone any public meetings until the summer due to the large number of people who leave the area for the winter. Meetings were held to discuss major planning issues on the following dates (advertised and open to the public):

December 2, 1996	Develop list of park issues & concerns
January 28, 1997	Natural resource management issues
February 25, 1997	Cultural resource management issues
April 10, 1997	Recreation resources
May 20, 1997	Tourism and Community linkages
July 8, 1997	Interpretive services issues
August 12, 1997	Land management and boundaries issues
September 4, 1997	Assorted leftover trail and development topics

In addition, public "Open Houses" were held on October 9, 1997 and January 29, 1998.

The Department of Natural Resources formed an Resource Management Advisory Committee (RMAC) 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, the Area Conservation Officer, the Region 1 Planner, Division of Minerals personnel, the Area Trails and Waterways Supervisor, the Area Hydrologist, Regional Parks and Recreation personnel, and Maplewood State Park personnel.

The RMAC met formally on November 21, 1996, February 25, 1997, and December 9, 1997. Members also attended the Citizen Advisory Team meetings that were appropriate to their discipline. There were also several informal meetings with individual team members throughout the process.

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.

It should be noted that this is the second comprehensive management plan for Maplewood State Park. In 1978 a park plan was completed and approved.

A comprehensive park plan and "planning process file", documenting the 1996-1997 planning process and pertinent background information, will be distributed to the following locations: Maplewood State Park, Region 1 Parks and Recreation Manager, State Park Planning Section (St. Paul), and DNR Engineering (St. Paul). Park plans will also be located in the DNR Library and in the Pelican Rapids, Fergus Falls, Moorhead, Perham, and Detroit Lakes Libraries.

Mission/Vision/Goals & Visitor Experience

Maplewood State Park Mission:

To preserve and manage the diverse natural, scenic, and cultural resources of Maplewood State Park for present and future generations while providing appropriate recreational and educational opportunities.

Visitor Experience:

The maple forest turns brilliant shades of orange, gold, and red in the fall. Eight major lakes and many ponds offer water lovers places to swim, fish, boat, and simply relax. Lake Lida has a sandy beach and large picnic area for visitors. Drive along the scenic route to observe wildlife: the park is host to 150 bird species and 50 species of mammals. The extensive trail system attracts hikers, horseback riders, snowmobilers, and skiers. There is a variety of camping opportunities from primitive backpack sites to modern electric sites and includes lakeside, wooded, and open sites. The diverse history and vegetation is interpreted for park visitors.

Maplewood State Park 20 Year Vision:

- Maplewood State Park will be an area that provides a natural, educational, recreational, and historical sharing for generations to come.
- Restore, manage, and interpret the Hardwood Hills ecosystem in the park in order to enhance biodiversity and ecosystem integrity.
- Provide for expanded and appropriate recreational opportunities in the park.
- Functioning ecological communities and associated wildlife will be found in the park.
- Maintain part of the park in natural condition and cluster major use facility development.
- Education and interpretive services programs will be developed for the park and the area. Locally, this is viewed as a very high priority.
- Vista management will be practiced in order to maintain the aesthetic beauty of the park.
- Encourage tourism in the locality by being an active participant in tourism efforts with the communities of Otter Tail County.

Maplewood State Park Goals:

- Continue to provide a balance between natural environment and recreational interests.
- Appropriate recreational opportunities will be provided, such as: biking, cross country skiing, snowshoeing, fishing, wildlife viewing, horseback riding, snowmobiling, environmental education, improved road network with bike lanes, and unforeseen low impact uses. The strongest emphasis will be on "health" related recreation. As much as possible different trail users should be separated.
- Modify the existing road system in the park to improve the touring experience, improve traffic flow, and reduce the amount of backtracking.
- Promote, interpret, and provide additional opportunities for wildlife/bird watching, vegetation and ecosystem viewing.
- Provide an interpretive trail center for the park.
- Improve park facilities to accommodate visitors of all ages and abilities.
- Camping facilities should provide services for a variety of styles of camping that compliment existing private facilities in the area.
- The park will continue to seek acquisition of private land within the park boundary from willing sellers and boundary changes will be considered as part of the planning process.

BEYOND PARK BOUNDARIES

Regional Landscape & Watershed Description

Ecological Classification System

Minnesota's Ecological Classification System (ECS) is a means of separating and describing units of a landscape. This approach stresses the interrelationships and the results of interactions among components of the ecosystem. These components include climate, geology, geomorphology, parent material, soil, vegetation, hydrology, and land use history. The ECS approach handles each component in relation to the others, rather than treating each one separately (Hargrave, 1992).

The ECS approach divides Minnesota into 23 distinct units called subsections (see ECS map). Maplewood State Park is located in the Hardwood Hills landscape subsection.

The Hardwood Hills Subsection

The Hardwood Hills Landscape is characterized by steep slopes, high hills and lakes formed in glacial end moraines and outwash plains characterize this subsection. The Alexandria Moraine forms a high ridge which is the headwaters region of many rivers and streams flowing east and west. The drainage network is young and undeveloped throughout this subsection. Major rivers include the Chippewa, the Long Prairie, the Sauk, and the Wing Rivers. The Mississippi River forms a portion of the east boundary. The Continental Divide splits this subsection. North of the divide, water eventually flows into the Hudson Bay. South of the divide, water flows into the Mississippi River system. It is an area where there are numerous lakes. There are over 400 lakes that are greater than 160 acres in size. The majority of these are found on end moraines and pitted outwash plains. Presettlement vegetation included maple-basswood forests interspersed by oak savannas, tallgrass prairies, and oak forests. Irregular topography and presence of numerous lakes and wetlands provided a partial barrier to fire, resulting in woodland or forest rather than prairie vegetation. Along the prairie boundary to the west is a mosaic of tallgrass prairie, aspen-oak land, and oak openings or savanna (Marschner 1974). Mixed forests of oaks, sugar maple, basswood, and other hardwoods were found in fire protected sites farther east. Tallgrass prairie grew on more level terrain within the subsection. Much of this region is currently farmed. Where lakes are present, tourism is common. One conservation concern is loss of wetlands and/or restoration of wetlands. This subsection had thousands of acres of wetlands before settlement that were heavily used by waterfowl. Waterfowl numbers are very low presently, so a major emphasis is to restore their habitat. Other concerns include lakeshore development and water quality issues

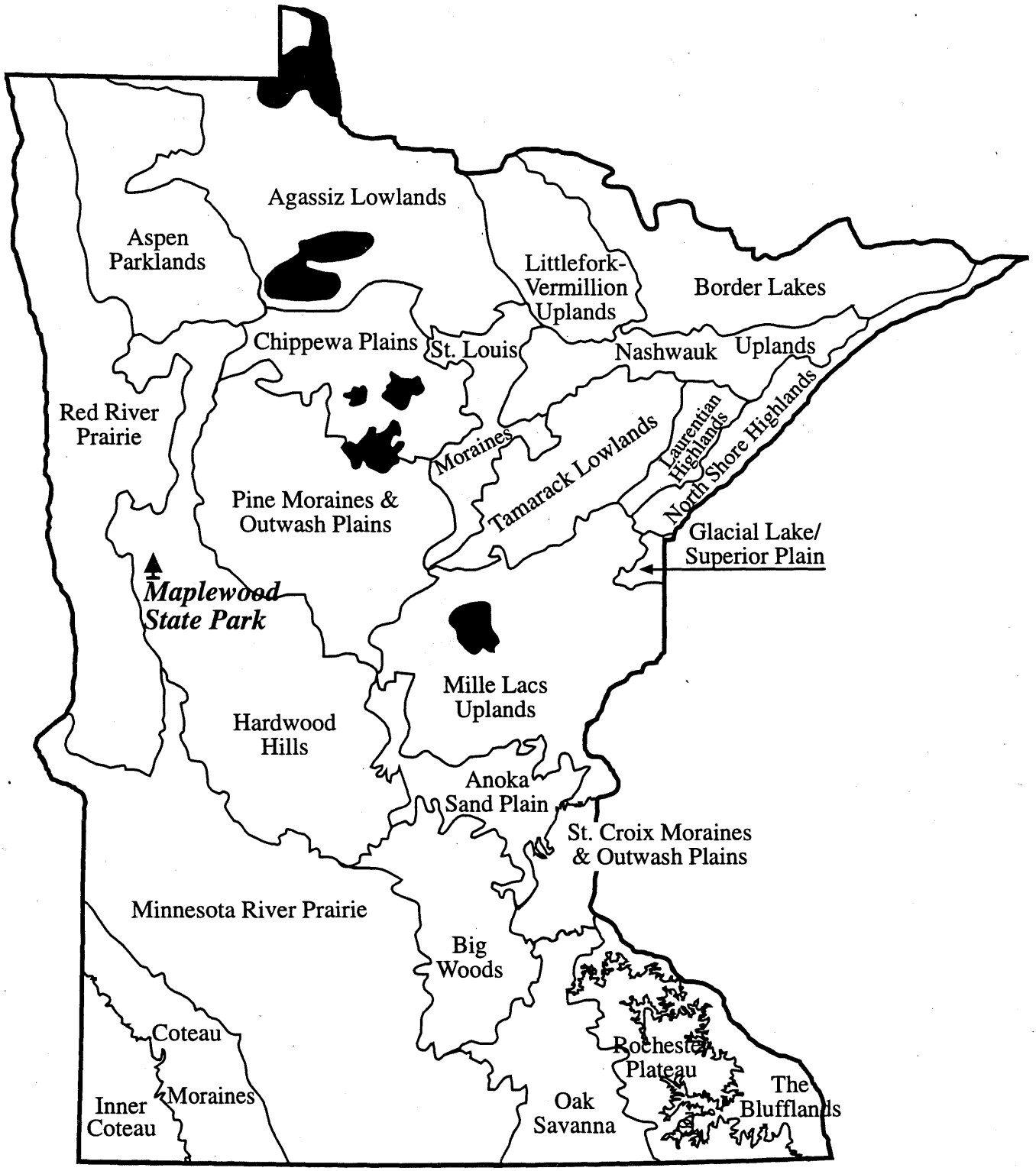
Watershed Description

Maplewood State Park is located in the west-central portion of the Otter Tail River Watershed. The watershed drains 1,920 square miles and includes parts of Becker, Clearwater, Otter Tail and Wilkin Counties. The watershed flows into the Red River of the North and is part of the Hudson Bay drainage. The Red River is formed by the Otter Tail and Bois de Sioux Rivers at their junction near Breckenridge, Minnesota, from there it continues almost due north along the boundary between Minnesota and North Dakota until it crosses the international boundary into Canada. In Canada it continues northward into Lake Winnipeg from which its waters flow by way of the Nelson River into Hudson Bay.

The park lies in portions of five minor watersheds. Approximately two-thirds of the park is located in two minor watersheds that flow north to Lake Lida and then connect with the Pelican River. The eastern third of the park has three minor watersheds that generally flow eastward towards Star Lake and Dead Lake which empty into the Otter Tail River.

ECOLOGICAL CLASSIFICATION SYSTEM (ECS)

Subsection Map of Minnesota



Regional Context and Issues

Maplewood State Park is located 8 miles east of Pelican Rapids and 20 miles north of Fergus Falls. It is 200 miles northwest of the Twin Cities.

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 as the area roughly within a one hour drive of the park. See Fifty-mile Region Map.

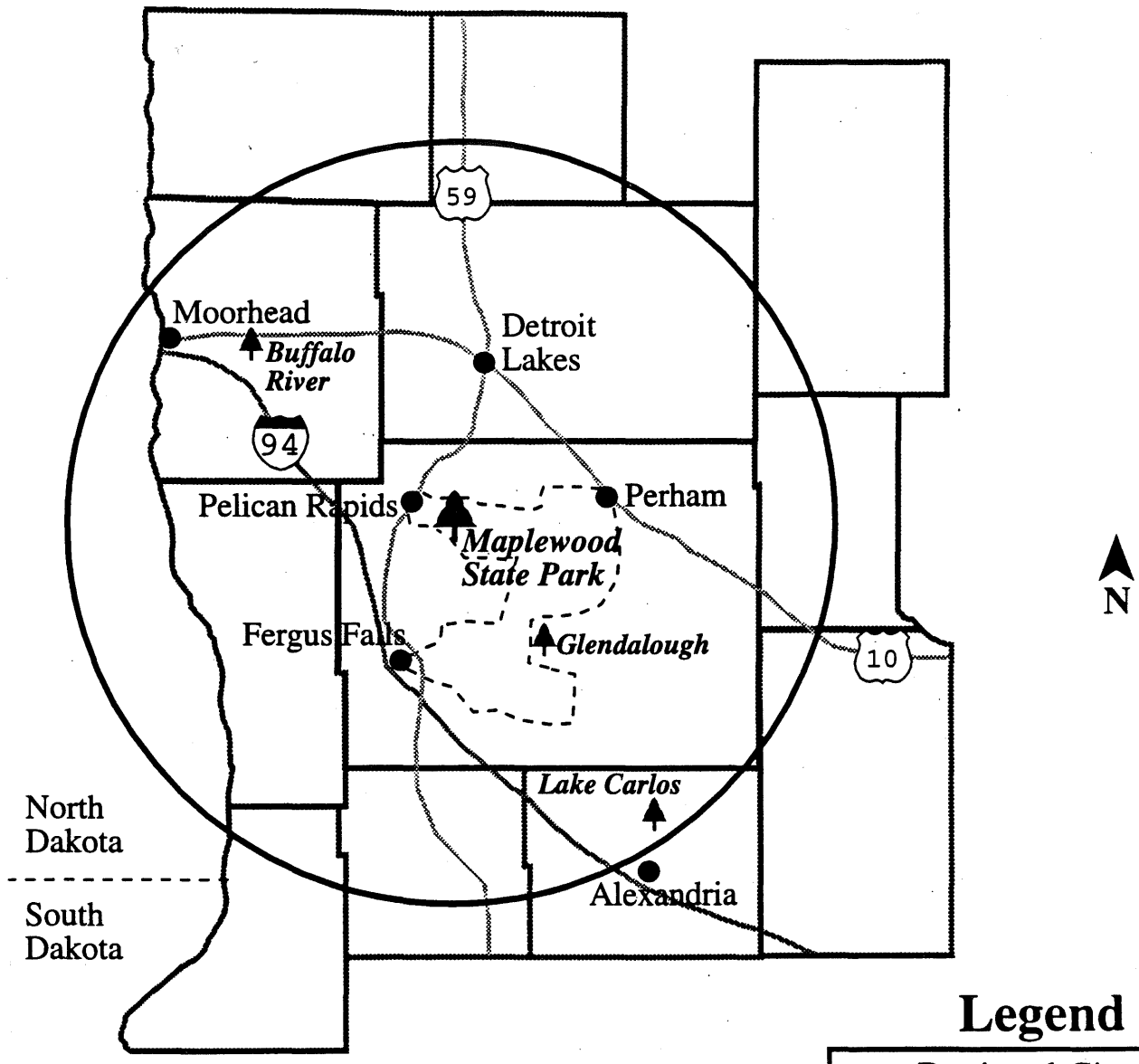
This region's economy is based heavily on travel and tourism. These recreational economic impacts are dependent upon maintaining water quality, fisheries and wildlife resources, and esthetic qualities of the region's waterways and shores.

There are more National Wildlife Refuges and National Wildlife Districts in this part of Minnesota than any other part of the state.

Regional Environmental Issues:

- Protecting both groundwater and surface water resources, including protection of shore topography, vegetation, and bluff impact zones. (Phosphorus loading is a major issue on many of the region's tributaries and lakes).
- Protecting the region's wetlands and minimizing activities which change drainage patterns.
- Providing a high quality sustainable fisheries in the region's lakes and rivers.
- Controlling the spread of exotic species.
- Identifying and managing unique natural and cultural resources.
- Realizing "desired future conditions" where there is a balance between natural resource management and strong local/regional economy.
- Maximizing biological diversity and minimizing fragmentation of natural habitats.
- Protecting and managing for native wildlife and plant species in order to enhance biodiversity in the landscape.

Maplewood State Park
Fifty-mile Region



Legend

- Regional City
- State Park
- 94 Interstate
- 10 U.S. Highway
- Otter Trail Scenic Byway
- 50 mile radius

Regional Population

Maplewood State Park is located in northwestern Otter Tail County. In 1990, Otter Tail County had a population of 50,714. Becker County had a population of 27,881, Clay County had a population of 50,422 and Wilkin County had a population of 7,516. Nearby cities in Minnesota with a population over 2, 000 are shown below. (North Dakota statistics are not shown).

Cities Over 2,000	1990 Population
Moorhead	32,295
Fergus Falls	12,362
Detroit Lakes	6,635
Wadena	4,131
Breckenridge	3,708
Perham	2,075

Although the 50 mile radius surrounding the park is fairly heavily populated, the towns in the immediate area of the park are quite small. The countryside is sparsely populated with large areas of lakes and wetlands. Pelican Rapids, the nearest town by road, had a population of 1,886 in 1990. Other nearby towns and villages include: Erhard 181 people and Dent 177 people in 1990. The town of Fergus Falls, which is the Otter Tail County Seat, had a population of 12,362.

The Minnesota Population Projections 1990-2020 report shows a 6% decline for Otter Tail County over the next 20 years. Otter Tail County Projected Populations are in the year: 2000: 49,270; 2005: 48,590; 2010: 48,230.

In this region it should be noted that a very high percentage of the residences are seasonal. In Otter Tail County 26% of the improved parcels were classified as seasonal residences in 1996.

In Minnesota, the median age rose from 29.2 years in 1980 to 32.5 in 1990. This follows a nationwide trend of aging of the "baby boom" generation.

Unemployment rates in Otter Tail County tends to be slightly higher than the statewide average. In April 1997, Otter Tail County had an unemployment rate of 5.8%; compared to the statewide average of 3.5%; while the metro area unemployment rate was only 2.2%. According to the Department of Economic Security the lowest unemployment rate in Otter Tail County was in August, 1995 at 3%. The highest unemployment rate was 14.4% in January of 1994.

Tourism and Marketing

The Maplewood State Park area is accessible from several principal highways and the nearest major interstate highway is 25 miles away. There is a wide variety of tourism attractions in this area. Otter Tail County has an active Tourism Association that produces annual publications. Pelican Rapids Press prints an annual Vacationland publication that promotes Pelican Rapids as the gateway to Maplewood State Park. Maplewood State Park is located in the Northcentral/Western Minnesota Office of Tourism region. The nearest Travel Information Center is located in Moorhead. Two, relatively new, routes that connect Maplewood with other area attractions are the Otter Trail Scenic Byway and the North Country National Scenic Trail.

Otter Trail Scenic Byway

Approximately 150 miles of county and state roads in Otter Tail County have been designated as a Minnesota Scenic Byway. The Scenic Byway Program is intended to highlight Minnesota's most outstanding scenic roads. There are eleven scenic byways in Minnesota at this time (two more are anticipated by spring 1998). Highlights on the "Otter Trail" include Inspiration Peak, Phelps Mill, Glendalough (within 1 mile), all around Maplewood State Park, Prairie Wetlands Learning Center and the towns of Perham, Pelican Rapids, Fergus Falls, and several smaller communities. Part of the route coincides with the county's fall color Leaf Route.

The Fergus Falls Convention and Visitor Bureau has recently received an additional $48,000 in federal grant money to do a brochure on the scenic byway route. They may also have some kind of a car tape tour that people can listen to as they tour the route. This scenic byway should bring additional people into the area. This is not the same route that the Otter Tail Historical Society has as their driving tour of the county.

North Country National Scenic Trail

When completed, the North Country National Scenic Trail (NST) will become the longest continuous trail in the United States. It will travel through seven states from New York to North Dakota, for a total of over 3,200 miles open to public use. Unlike the Appalachian, Pacific Crest, and Continental Divide NSTs, which follow mountain ranges, the North Country NST will travel through a variety of environments in the northeastern and north central United States. In Minnesota, when complete, the North Country NST will extend 375 miles. From Breckenridge, it runs eastward t o Fergus Falls before turning northeast to Maplewood State Park, then through Tamarac National Wildlife Refuge, White Earth State Forest and Itasca State Park. From Itasca, the trail passes through Paul Bunyan State Forest, the Chippewa National Forest, Savanna Portage State Park to Jay Cooke State Park. From Jay Cooke, the trail turns south to St. Croix State Park and then crosses into Wisconsin. Certified segments of the North Country NST are signed with the NST logo. All segments of the trail will be open to travel by foot for walking, hiking, and backpacking. Other uses may be permitted on some segments. The North Country NST is administered by the National Park Service in cooperation with many other public agencies, private organizations, and landowners.

Sample tourism-related statistics for 1993 (Several other counties, with state parks, are given for comparison):

- Total tourism receipts (including direct, indirect and induced spending).

Aitkin Co.	$13.4 million
Crow Wing Co.	$200 million
Otter Tail Co.	$57 million
Statewide total	$6.3 billion.

- Estimated number of jobs in the travel and tourism industry; and some show the percent of the county's population employed in the tourism industry.

Aitkin Co.	266 jobs, or approximately 2% of the population
Crow Wing Co.	4,138 jobs, or 9% of the population
Otter Tail Co.	1,122 jobs, or over 2% of the population
Statewide total	123,540 jobs.

- Wages earned in tourism and travel

Aitkin Co.	$5 million
Crow Wing Co.	$78.65 million
Otter Tail Co.	$19.2 million
Statewide total	$2.5 billion

- It is quite likely that the Otter Tail County figures are underestimated, since the Office of Tourism bases its calculations on overnight lodging statistics. The area between Moorhead, Fergus Falls and Detroit Lake tends to experience a lot of day trip usage.

Supply and Demand of Recreational Facilities

The following table shows an estimate of selected recreational facilities within a 50 mile radius of Maplewood State Park. Fifty miles is a one-hour drive from the park. This chart primarily shows Federal, State, and County level amenities. The source of data for most of the chart are Public Recreation Information Maps (PRIM). Private facility information in this plan is supplemented by information from the Office of Tourism, local publications and phone books (1997).

Day Use

Source: PRIM Maps

PRIM Maps not published for Ada and Wheaton areas, therefore that data is not represented.

Area	Forest	Parks and Rec	Major Trails	Wildlife and Waterfowl	Scientific/Natural areas
Detroit Lakes	0	2	0	9	0
Lake Itasca	4	5	0	37	0
Moorhead	0	2	0	25	3
Fergus Falls	0	1	0	19	1
Battle Lake	0	5	0	16	0
Alexandria	0	1	0	20	0
Totals	4	16	0	126	4

Area	Public Water Access	Fishing Piers	Fishing	Hunting	Swimming	Picnic areas
Detroit Lakes	53	2	60	9	3	8
Lake Itasca	65	1	104	44	7	16
Moorhead	20	0	33	26	3	1
Fergus Falls	14	2	19	19	1	0
Battle Lake	72	0	79	16	2	6
Alexandria	7	0	16	17	1	3
Totals	231	5	311	131	17	34

Camping

Area	Vehicle	Horseback	Canoe	Group	Other (Not defined)
Detroit Lakes	2	1	1	1	1
Lake Itasca	4	0	5	3	1
Moorhead	2	0	0	1	0
Fergus Falls	0	0	0	0	0
Battle Lake	3	2	1	2	1
Alexandria	0	0	0	0	0
Totals	11	3	7	7	3

Number of Trails

Area	Hiking	Biking	Horseback	Snowmobile	Skiing	ATV
Detroit Lakes	1	0	2	2	1	0
Lake Itasca	1	0	0	3	1	0
Moorhead	26	0	0	0	1	0
Fergus Falls	19	0	0	0	0	0
Battle Lake	17	0	2	2	3	0
Alexandria	16	0	0	0	0	0
Totals	80	0	4	7	6	0

Supply of Area Recreational Facilities

Boat Accesses - There are approximately 231 public boat accesses within 50 miles of Maplewood State Park. There are also five fishing piers nearby.

Picnic Grounds/Beaches - There are over 34 public picnic areas and approximately 17 public swimming areas within 50 miles of Maplewood State Park. There are many more privately owned picnic grounds/beaches that are primarily associated with lake resorts.

Campgrounds - There are approximately 11 public campgrounds and 3 horse camps within 50 miles of Maplewood State Park. The DNR - Trails and Waterways Unit also administers 7 individual boat-in campsites. Smoky Hills State Forest does not have campsites, however, the White Earth State Forest does have six campsites at the Arrow Point Campground on Big Rock Lake, and Two Inlet State Forest has 14 campsites at Hungry Men Lake Campground. There are many privately owned campgrounds , most are associated with the lake resorts and lodging industry in Otter Tail, Douglas and Becker Counties. Most of these campgrounds have about half of their sites available for seasonal occupancy and most offer individual electric/sewer/water hookups at their campsites. Most private campgrounds offer relatively few tenting campsites. State park campgrounds within 50 miles of Maplewood State Park are listed in the table below.

State Park Campgrounds in a 50 Mile Radius

Park	Drive-In Sites	Electric Sites	Cart-In	Backpack/Canoe
Buffalo River	44	8	0	0
Glendalough	0	0	20	0
Lake Carlos	124	68	0	2 Walk-In
Maplewood	**60**	**32**	**0**	**3**

Camping Cabins - Of the 12 Camping Cabins available for rent in Minnesota State Parks, Glendalough's four cabins are the only ones available within 50 miles of Maplewood State Park. The Camping Cabins are manufactured in rural Pelican Rapids, a short distance from the park.

Resorts - There are 240 parcels listed as resorts in Otter Tail County in 1997, according to the Assessors Office (actual number of resorts is less, since some resorts own more than one parcel).

Hiking Trails - There are over 80 hiking trails of a variety of lengths within 50 miles of Maplewood State Park.

Bike Trails - There are no major State Bike Trails or other surfaced bike trails within 50 miles of Maplewood State Park. Approximately four miles of surfaced trail are proposed for Glendalough State Park. An additional four miles of trail are proposed to connect Glendalough to the City of Battle Lake. Funding has been received to develop a paved bike trail to connect Maplewood State Park to the City of Pelican Rapids. Funding will also be sought to connect Maplewood to Glendalough State Park. Mountain biking is permitted on most state forest roads and trails, unless posted closed.

Cross-County Ski Trails - There are 6 cross-country ski trails of a variety of lengths within 50 miles of Maplewood State Park. County governments and cities in the area as well as DNR divisions offer cross country ski trail miles. There is also a private cross-country ski area just south of the park.

Horse Trails - There are approximately 4 horse trails of a variety of lengths within 50 miles of Maplewood State Park. Maplewood State Park has 20 miles of horse trails and Lake Carlos State Park has 8 miles of horse trails. Only three state parks in Minnesota have more miles of horse trails than Maplewood: St. Croix (75 mi.); Minnesota Valley (35 mi.); and Mille Lacs Kathio (25 mi.). None of the three state forests in the area offer horse trails, however, Huntersville State Forest, slightly more than 50 miles east of the park, offers 24 miles of horse trails.

Snowmobile Trails - There are 7 Grant-In-Aid (GIA) snowmobile trails of a variety of lengths within 50 miles of Maplewood State Park. GIA trails are funded by snowmobile registration and unrefunded gas taxes through the Minnesota DNR to local units of government who in turn distribute the funds to local snowmobile clubs for trail development and maintenance. Most of the snowmobile trails are owned and operated by the individual counties. Maplewood State Park has 15 miles of snowmobile trails and Lake Carlos State Park has 9 miles of trails. The largest trail systems in this area are the Douglas Area Trail Association (approx. 495 miles) and the Todd Trail system in Todd County (350 miles). These two systems are connected by the Otter County Trail (88 miles) which goes through Maplewood State Park. The Lake Runners Association grooms 38 miles of trails which connect to the Becker County trails.

ATV Trails - There are approximately 750 miles of forest road available in the Bemedji Region for riding motorcycles or ATV's. This includes forest areas such as Buena Vista, Mississippi Headwaters, Paul Bunyan (north unit), Welsh Lake, White Earth State Forest, Lost River, Beltrami Island (west part), Warroad, Wannaska, Bagley, Smoky Hills, Blackduck and others.

Demand for Recreational Facilities

There are three state parks, and one state wayside within 50 miles of Maplewood State Park. Although these state parks offer contrasting recreation experiences, attendance at these parks is still a good indicator of existing, expressed demand for natural resource based out-door recreation experiences in the Maplewood area. The campground at Glendalough will not be open until late summer 1997 and there is no camping at Inspiration Peak state wayside, so data for these is not presented here.

Attendance at state parks within 50 miles of Maplewood State Park.

Park	1996 Day Use	1996 All Camping	92-94 Summer Weekend Occupancy	1996 Total Visitors
Buffalo River	71,497	7,469	54%	78,966
Glendalough	No Data Available 4-97			
Lake Carlos	151,017	34,496	79%	185,513
Maplewood State Park	**87,700**	**15,814**	**86%**	**103,514**

Park Visitor Analysis

Day Use

In a three year average of total visitor attendance, Maplewood State Park ranked 28th out of the 65 Minnesota State Parks.

Maplewood State Park Attendance	
1994 Total Visitors	101,883
1995 Total Visitors	101,881
1996 Total Visitors	103,504

For both campers and day visitors, the most popular recreational activities are fishing, swimming, picnicking, hiking, fall color sight seeing, wildlife observation, and biking along the roadways. Day use is heavy; especially during the Muskie and bass openers. During the summer months visitation is heaviest on weekends. There has been an increase in hiking recently and a slight drop-off with horse groups.

The three busiest weekends of the year are during the peak fall colors, especially day use traffic. Approximately 20% of the park users come in the three fall weeks. Maplewood sells more daily permits than Itasca in the fall color season. The park has had as many a 1,000 cars a day on a nice autumn Sunday; many of these are elderly people out touring the park and there are some bus tours that come out of Fargo.

Winter snowmobile traffic remains high, with continuing requests for more trails. Most snowmobilers using the park enter on the trails. Cross country ski visitation has dropped significantly over the recent years. This may be due in part to the expansion of the private cross country ski facility nearby and also to the fact that many cities and counties have now developed local trails, making it less necessary to travel to state park ski trails. There is also no warming shelter in the park.

Overnight Use

Camping is a major activity at Maplewood State Park. Among campers, 28% are from over 100 miles away (including the Twin Cities Metropolitan area). Over 26% of the campers are from North Dakota and 24% are from the nearby area, less than 50 miles away from the park. Approximately 15% are from 50-100 miles away and less than 1% are from South Dakota. Other states and countries account for 6% of the campers. (See Origin of Campers map).

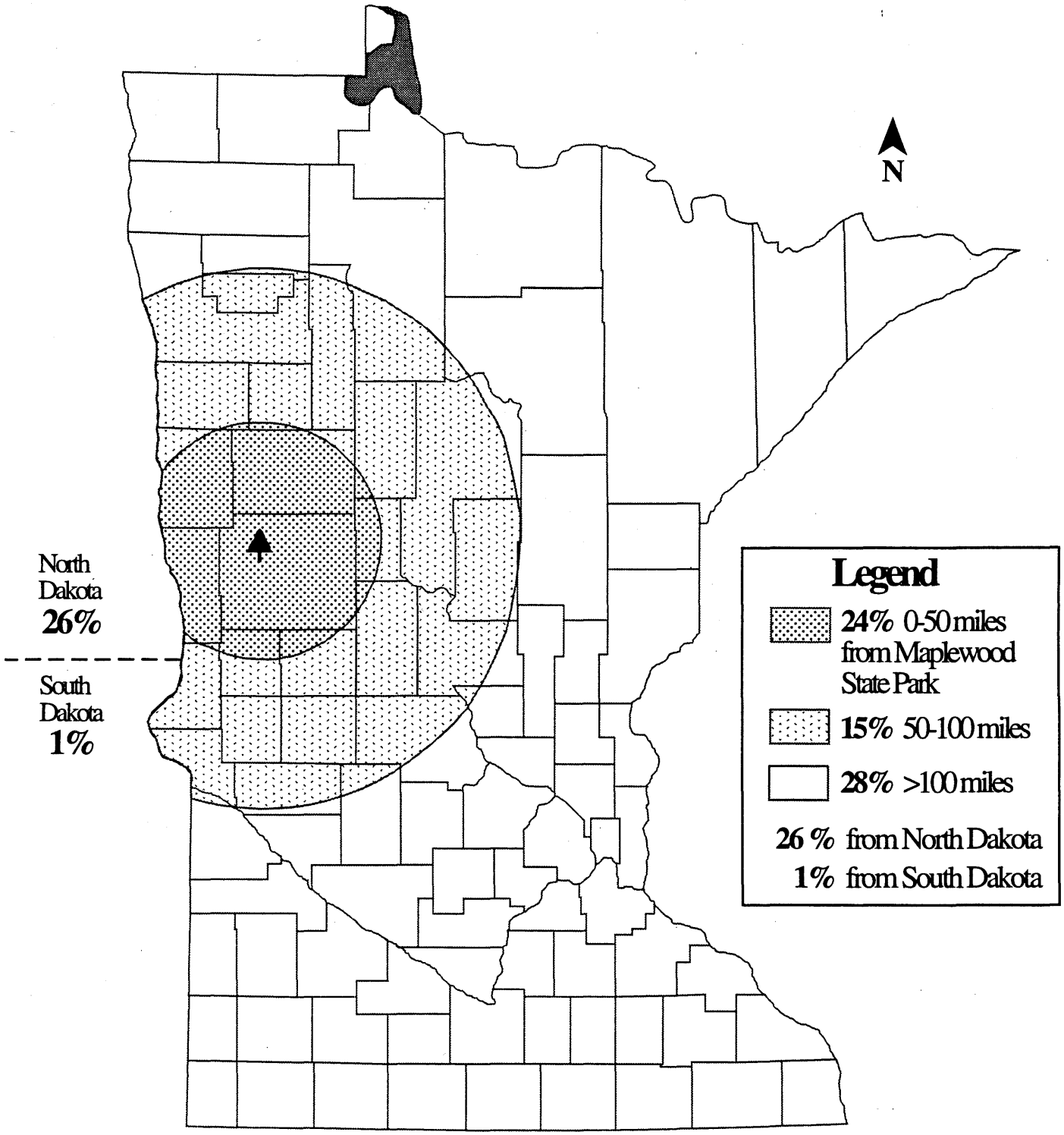
The semi-modern campground is usually filled to capacity on holiday weekends and near to capacity during July and August weekends. Peak fall color weekends can also be near capacity. The three year average of May - August weekend campground occupancy is 86%, which is the highest of any of the nearby state parks.

As shown in the table below, camping attendance continues to steadily increase at Maplewood State Park. The average group size per camper unit has remained fairly constant at approximately 3.2 people per semi-modern site. (Camper registration statistics).

Maplewood State Park Semi-modern Camping Data 1992-1996
(Does not include horse camp or group camp numbers)

	Number of Campers	Campsites Occupied
1992	11,791	3,660
1993	10,597	3,219
1994	12,890	3,985
1995	13,018	3,953
1996	13,818	4,215

Maplewood State Park
Origin of Campers



Source: DNR-Division of Parks and Recreation, 11/97

Horse camp

Prior to 1997, horse camp data was compiled with other rustic camping data. Therefore, trends cannot be shown other than by managers observations. Horse camp use has increased slightly in the last two years. Trail conditions and weather can often determine the number of users. May and September are the heavy use months. Park staff have noticed an increase in horse camp use during July and August. This increase in summer horse trail use may be due in part by the milder weather. In 1997 approximately 40% of the rustic camping registration cards (162 total cards) were for the horse camp. The remaining rustic campsites were for Lake Lida overflow (picnic area) or in the regular campgrounds during the off-season. In 1996 approximately 3,200 horses were recorded in Maplewood. In 1997, there were 3,414 horses.

Group Camp

Group camp occupancy has dropped slightly in the recent years. Group camp visitors tend to be scout groups and church groups from Fergus Falls, Moorhead and a few from the Twin Cities area and South Dakota.

Number of Group Camp Visitors at Maplewood State Park

1992	1,988
1993	1,934
1994	2,141
1995	1,908
1996	1,412

The Department of Natural Resources (DNR) made the decision in 1996 to close the rental cabin in the park. It was determined that the facility would need a minimum of $20,000 worth of renovation, in addition to the $7,000 yearly maintenance costs. In a typical year the rental fees only grossed $11,000. In its last year of operation the cabin was rented about 100 days of the year.

Community and Marketing Recommendations

Tourism

- **Action 1: Continue to have businesses offer coupons to the park and then reimburse the park.** This has been a successful program. It was generally agreed that this should be continued, possibly with some modifications on acceptance dates.

- **Action 2: A promotional event might be good during non-peak times**. Some kind of special event in the park.

- **Action 3: Partner with resorts or local kids to organize kids coming on week days to the park** and have nature hikes with a volunteer, or a resort naturalist, or an intern.

- **Action 4: Once a year, organize a park tour for resort owners and businesses**. This could be organized by the Friends of Maplewood and highlight what is new in the park and what is coming up in the future.

- **Action 5: Develop a joint brochure/flyer to interpret the Westbe House**, early settlers and the site in the park. The historic Westbe house is in Perham now, but it used to be in the park. In the park, a plaque should interpret the site.

- **Action 6: Tie in with the new Otter Trail Scenic Byway - 150 mile driving route**. Assist as needed with proving information for the new driving guide and/or audio tape.

Park Participation in Local Events

- **Action 7: Develop some kind of Host program to bring new arrivals out to the park**. (The turkey plant brings many new immigrants to the area, many with limited transportation). Invite churches to bring new members to the park by van or bus or work with a New Neighbors group.

- **Action 8: Work with the Detroit Lakes bird watching club to develop a bird watching special event** in the park (maybe several times a year) to do bird watching and help develop a good species check list for the park. Maybe it could be done like a March For Parks where people raise donations for the number of birds/species that are seen. Nationwide, in 1991, $5.2 billion was spent by bird enthusiasts for a variety bird watching goods and services. Recreational enjoyment of birds supports 234,230 jobs (International Association of Fish and Wildlife Agencies and Ducks Unlimited).

Goals/needs of Friends of Maplewood

- **Action 9: Continue to seek corporate/business sponsors for park projects**. Friends of Maplewood could take the lead in working on this. The park and Friends group could then continue to work on the "wish list" of park projects.

- **Action 10: Develop literature on the park to hand out to visitors and to distribute to resorts, chambers, and at special events**. This might be a project for the Friends of Maplewood. Other brochures could have bird lists and bird watching information since this recreation is increasing tremendously.

NATURAL & CULTURAL RESOURCES

Introduction

The Natural and Cultural Resources chapter provides detailed sections which inventory and describe the resources of the area. The Plan Recommendations section, at the end of this chapter, will serve as the resource management plan for the area; this section can be revised periodically as described in the last chapter of this plan.

History and Cultural Resources

Prehistoric Evidence

There are 77 recorded archaeological sites in Otter Tail County, three of which are within the park boundary. Most of these sites in the county are from the Woodland tradition (Malmo and Kathio focus), dating from approximately 1000 B.C. to 1400 A.D. Some sites in the county are also from the older Archaic period. After the last glaciers, Paleo-Indian or Big-Game Hunters moved northward into what is now Minnesota. The only known remains, in Minnesota, from this period in history comes from a burial site in Browns Valley, Minnesota. This site has been dated at approximately 6000 B.C. Paleo-Indians lived in small groups and moved frequently to follow the large game animals, such as woolly mammoth and giant bison. Climate changes eventually lead to changes in vegetation and wildlife which caused a change in the lifeway of the people inhabiting the region.

In 1931, one of the oldest remains of Native Americans in the country, was found seven miles west of the park near Pelican Rapids. The site is officially known as Minnesota Man (Woman) 210T3. Archeologist have dated her remains at about 4000 B.C. Experts believe she may have drown in Glacial Lake Pelican at about the age of 15 years old. An elk antler dagger and a conch shell pendant were also found with the remains of the girl. The date of the deposits where remains were found is in the transition time from Paleo-Indian to the more recent Archaic period. Most archaeologists place "Minnesota Woman" in the Archaic period. The Archaic people in Minnesota adjusted to a new environment and way of life. Hunting continued to be important, however, fishing and gathering wild vegetables became more common and helped to determine the movement to seasonal camps. A change in tools reflect the Archaic peoples change in culture adapting to the change in the local environment. Approximately 25 miles east of Maplewood State Park, a bone harpoon was found in the bottom of East Leaf Lake.

The Archaic period lasted about 4,500 years (approximately from 6000 B.C. to 1500 B.C.). The Woodland period began about 1500 B.C. with its culture being distinguished by the first presence of pottery and burial mounds. The Woodland culture in Otter Tail County essentially lasted until historic times. Woodland culture in north-central Minnesota made use of plentiful supplies of wild rice which enabled people to establish more permanent villages. Tools of bone and antler are common in the Woodland archaeological sites. In western Minnesota, people depended more on bison. Bison remains, associated with sites of this period, have been found on the shores of Lake Lida in Maplewood State Park and in Orwell Township, near Fergus Falls.

The first record of archaeological work in Maplewood was that done by Dr. A.E. Jenks of the University of Minnesota Department of Anthropology in 1933. Dr. Jenks and Professor Lloyd Wilford obtained a collection of artifacts given to them by a local farmer who had collected the material from the fields next to Lake Lida. Later archaeological survey, investigation, and excavation work was conducted on this site by University of Minnesota crews lead by: Peter Bleed in 1967, Alan Boras in 1968, and Charles Watrall in 1969.

This site was listed on the National Register of Historic Places on December 18, 1978. The Maplewood Archaeological District is located in the park near the picnic area along the shores of Lake Lida. Artifacts indicate that the site represents a seasonal habitation site which was extensively occupied during portions of the Middle Woodland period (circa. 650-900 A.D.) and the Late Woodland period (circa. 1450-1650 A.D.). Artifacts found in the park give evidence of both plains and woodland cultures. Features such as fire hearths, pits, postholes, and activity centers were numerous. A village size of several hundred or more individuals is possible. The native vegetation of this area was probably a mixture of prairie, brushland, and hardwoods.

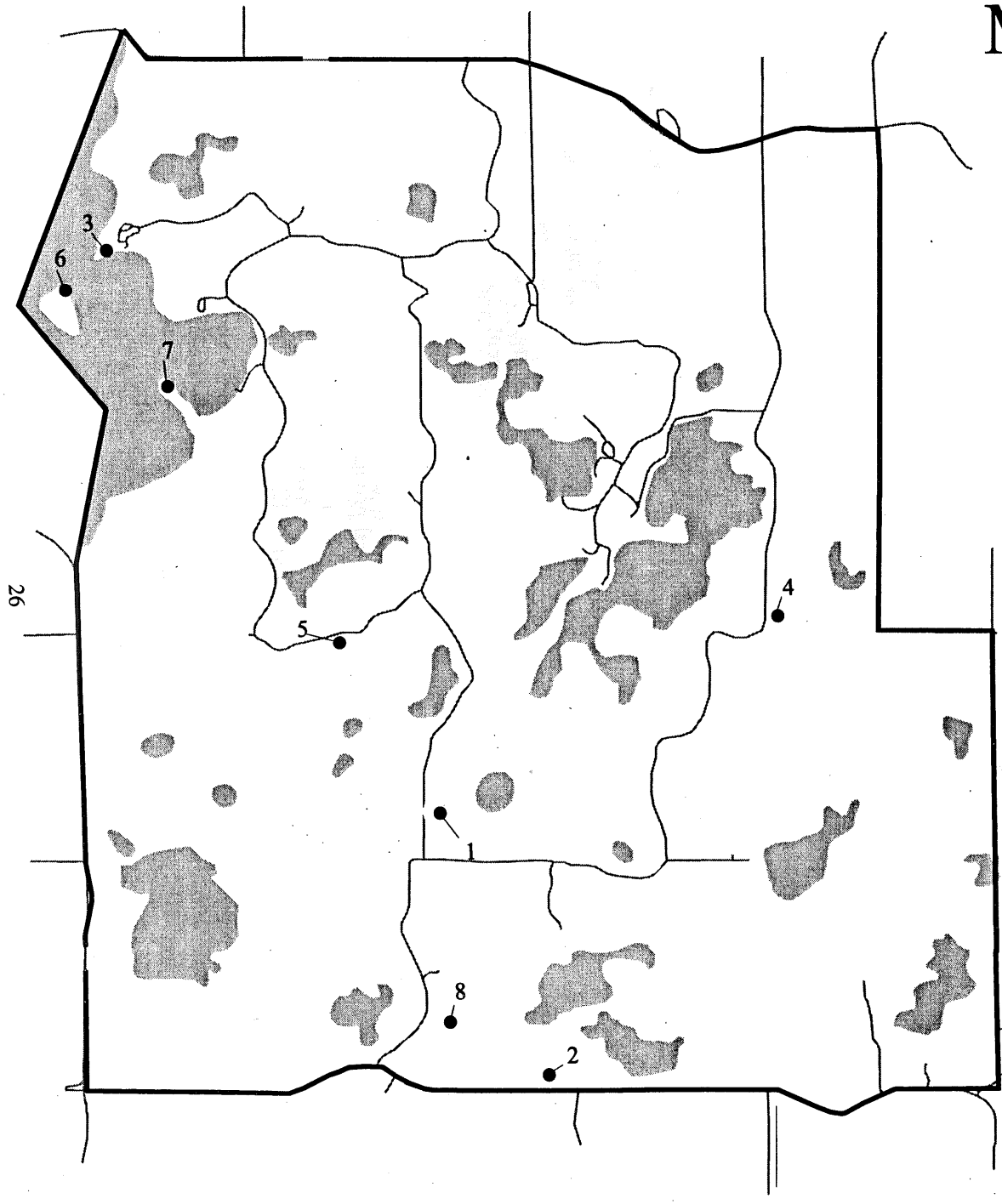
Another archaeological site in the park is where a small campsite located at the end of a long peninsula projecting from the east shore of Lake Lida, field tests in 1967 yielded very few artifacts. A third site is described as a ring of boulders on a flat terrace, which probably marked the presence of a campsite, on the northeast end of the large island adjacent to the Maplewood site. Subsequent archaeological work conducted in the park in conjunction with development has proved negative, with only a few isolated artifacts found in former plowed fields.

No burial mounds have been found in Maplewood State Park, however, there are four significant mound sites in Otter Tail County. The Morrison Mound Group is a State Historic Site and lies approximately 12 miles southeast of the park at the outlet of Otter Tail Lake. The Graham Lake Mound Group is located approximately 15 miles northeast of the park. The third site, Peterson Mound Group, is in the southwest corner of the county, approximately nine miles east of Inspiration Peak. The fourth site is in southwest of Fergus Falls, in Orwell Township along the south bank of the Otter Tail River . These sites are all contain circular or conical shaped mounds, clustered with three to 19 individual mounds in a group, and are located near a lake or river. These types of simple secondary burials in conical mounds have an extremely long history in Minnesota. All of these mound sites have been identified as belonging to the Malmo focus. A radiocarbon date of 690 B.C. was obtained on charred logs included in the Morrison Mound. The Morrison and Peterson mounds have shallow central burial pits, with some evidence of partial cremation in place, and log or pole arrangements over the burial pit. This is one of the earliest modes of burial known for Minnesota. The Orwell site has mounds and a ditched enclosure on the river bank. The Graham Lake Mounds seems distinctive, and the associated pottery vessel is probably Early Woodland. It has been speculated that these type of secondary mound burials may have been an adaptation to Minnesota winters.

Another significant archaeological site is located approximately eight miles east of Maplewood State Park along the banks of the Dead River. Archaeologists found this site in 1977 and discovered the remains of a prehistoric campsite with abundant stone tools and broken pottery. Prehistoric pottery and the way it is decorated is used by archaeologists, along with radiocarbon dating, to date the period of habitation. The Dead River site was radiocarbon dated at 780-855 A.D. Four kinds of pottery were found at the site, with the most abundant being from the Blackduck type vessel from the late Woodland Period.

The Woodland culture survived in this part of Minnesota into the historic period. When the first Euroamerican traders and settlers reached north-central Minnesota, they found Dakota Indians still hunting, fishing and gathering food. Agricultural planting of corn or squash probably did not occur to any extent this far north in Minnesota.

Maplewood State Park
Archaeological Sites



Legend

Archaeological Sites

1. Church and Cemetery
2. School
3. Maplewood Site
4. School, District 189
5. School, District 224
6. South Lida Lake Campsite
7. South Lida Lake Prehistoric Site
8. Worden Post Office

Maplewood State Park Statutory Boundary
Roads
Water

Source: DNR, Division of Parks and Recreation, 11/1997

Historical Records

American Indians used the Maplewood area for hunting, fishing and dwelling sites. The early Indians used two kinds of shelters, a portable teepee made of buffalo hides and a semi-permanent wigwam made with birchbark and bulrush matting. During the late 1700s and early 1800s, the Ojibwe (Chippewa) from the eastern states were being pushed westward by the white settlers. They in turn, pushed the Dakota (Sioux) from their home area. When the fur traders came to the Otter Tail County area, the two American Indian tribes were in constant conflict in this area. Battle Lake is named for the fierce battle which took place on its shores.

It was not until 1800 that the first recorded Euroamericans entered the region. John Hay led a group through the area in 1800 to be followed six years later by a British fur trader named Col. Robert Dickson who established a post in the southeastern part of what is now Otter Tail County. French and British fur traders were the first to set up trading posts on the Leaf Lake and Otter Tail Lake. These fur posts were abandoned because of the conflict between the Ojibwe and Dakota. In 1826, the U.S. Government attempted to divide the territory, but this was unsuccessful. Eventually, many of the Dakota were driven across the Red River and the Ojibwe moved further northward.

The first Europeans to settle the area came during the last half of the nineteenth century. Otter Tail County was established in 1858 by the Minnesota territorial legislature. At this time Otter Tail City was named as county seat. Fur traders, voyageurs, wagoners, and land speculators were the main Europeans in the area at that time. Due to the U.S.-Dakota Conflict of 1862 it became depopulated and lost the title of county seat to Tordenskjold in 1870. But in 1871 the county seat reverted back to Otter Tail City. Then, in 1873, Fergus Falls became the county seat.

Census data reveals that in 1870 the population of Otter Tail County was 2,000. There was such a large influx of immigrants at that time that four major European languages were spoken; German, Norwegian, Swedish, and English.

Logging and Agriculture

Major industry at the time was lumber and agriculture. About two-thirds of the county was forested at the time of settlement. Northeastern Otter Tail County had conifer forests. White pines were in greatest demand at the time, and the pines in the county (some over 125 feet tall) were depleted by 1890. Most of the central part of county (including the Maplewood area) was hardwood forests with white, red, and black oak, elm, basswood, maple and birch. Logging took place in the winter, with the logs being hauled out of the woods by horse and sleigh to nearby rivers or lakes. The logs were then floated to the sawmills in the spring. The pine and hardwood forests, transportation system, and markets were key in the development of Fergus Falls into a lumber center.

Agriculture followed the logging and farming became the county's main industry. In the beginning of the county's development, agriculture was devoted entirely to raising wheat. The grasshopper plague of 1877 had a disastrous effect on agricultural production. It was so serious that at one point there were bounties placed on the pests. A contraption named the 'Hopper Dozer' was created which consisted of a trough filled with oil into which the insects were funneled and killed. There were also grasshopper outbreaks in 1911 and 1912, but they were much less serious than the 1877 episode.

It was not until 1905 that other crops such as corn, barley, clover, rye, and potatoes were considered. The first silos were constructed in this area in 1910. In more recent history the county holds an impressive agricultural standing in the state. In 1994, Otter Tail County ranked first in hay, oats, and dry edible beans produced, and ranked second in stock sheep and lambs, number of

milk cows and milk production, cattle and calves and total livestock in the state of Minnesota. Otter Tail County ranked third in the state for overall receipts. In 1994, about 2,950 farms were in the county, with an average size of about 335 acres. Approximately 550,000 acres in the county are in crop production.

The Minnesota Agriculture Statistics for the 1994 growing season show the following: 148,100 acres were planted to corn for grain; 37,700 acres of corn silage; 130,600 acres growing hay of which 107,300 acres was alfalfa hay; 45,100 acres of oats; 62,500 acres of spring wheat; 72,700 acres of soybeans; 20,100 acres of barley; 14,900 aces of dry edible beans; 11,500 acres of sunflowers; and 2,600 acres of sugar beets. Other crops of minor acreage extent, but worth mentioning, are potatoes, buckwheat, and rye.

Today in Otter Tail County, 20% of the land is covered by forest and the remaining land is used for crop land, pasture, residential, and urban areas. Approximately 80,000 acres of Otter Tail County farmland has been entered into the Conservation Reserve Program for which provisions were made in the 1985 Food and Security Act.

Maplewood and Lida Townships - Stage Coach Routes, Schools, and Post Offices

Maplewood State Park is located mainly in Maplewood township, with a small northern portion in Lida township. Lida township was established in 1879 and Maplewood township in 1890. Maplewood township was originally designated as St. Agnes but changed in 1882. Dissatisfied citizens petitioned to have the name changed to Forest Lake or Maplewood and since there was already a Forest Lake in Minnesota it became Maplewood. Then in 1890, citizens tried again to have the name changed to either St. Johnsbury or St. Agnes. The commissioner, however, refused to grant this request. After the organization of the Lida and Maplewood townships, the area population rose to 1,169 by 1900.

There has never been a village in Maplewood township. Before the introduction of rural free delivery a post office was maintained at Arthur and later at Worden, the former being in section 12 and the latter in section 22. The present town hall is southwest of the park, in section 29.

Lida township actually has more water than land. Two lakes, Lida and Lizzie, cover more than half of the township. The first store and post office in the township was on the northeast shore of Lake Lida. Another post office, called Bessie, was kept at the house of Benson L. Brown in section 34 (inside the park boundary). It was called Bessie in honor of his wife. The township has one of the most unique bridges or causeways in the county. It is built across the narrows of Lake Lida in sections 32 and 33 and is about a half mile in length. The causeway is flanked on either side with large granite boulders and filled up with dirt and sand to a height of three or four feet above the lake level.

The 1884 plat of Maplewood Township shows 25 homesteads were located within the current park boundary. The St. Paul-Minneapolis and Manitoba Railroad Company owned over 3,090 acres inside the park boundary at that time and the U.S. Government owned over 81 acres. Section 16, set aside as School Trust Land in every county, had already begun to be homesteaded, with two settlers owning 185 acres of the land (the remaining portion of section 16 was still School Trust Fund Land). Two crooked roads cut through the park, an east-west road just north of Lake 21; and a north-south road just east of Beers Lake. There were also roads along the southern and eastern edges of the park. No schools, post offices, churches or town halls are shown on the 1884 map. However, Harrison Worden already owns the land that will eventually become the Worden post office and town hall site. By the 1870s The Northern Pacific Railway had trains running through Perham every day, however, no tracks were laid through Maplewood township.

The 1902 map does not show individual homestead sites, however, the number of landowners has increased. The St. Paul-Minneapolis and Manitoba Railroad Company no longer owns any land, instead, the Northern Pacific Railroad Company owns 300 acres scattered in three parcels. The School Trust Fund Land is down to 80 acres remaining in public ownership. The 1902 map shows three schools, one church, and one post office/town hall, and a second post office (Bessie Post Office in Lida township) within the park boundary. At one time a stage coach relay station was located in the south end of the park, the Worden Post Office and Town Hall was supposedly a stage coach stop. It could be assumed that the stage went to Fergus Falls and possibly Perham, but the reminder or the route cannot be determined at this time. There is also a church located across the road from the park on the west side, another school across the road on the southwest corner of the park, a church across the road on the south side of the park, and the Arthur Post Office just outside the park boundary on the east side. The D.S.B. Johnston Land Company owned several large blocks of land in the northeastern part of the park, and considerable holdings outside the park.

By 1912, Maplewood Township maps show 27 homesteads, three schools, one church, and one town hall located within the park boundary. Section 16 is now completely in private ownership and all railroad lands have been sold off. The most striking change in the 1912 map is the tremendous increase in roads throughout the park. The D.S.B. Johnston Land Company still owns land in the park.

In 1933, only two schools remain in the park (the school on the eastside no longer appears). The church remains the same, however, the Worden Town Hall is gone and a new Town Hall appears just south of Kepple lake in the park boundaries. A few of the roads have been realigned or closed since the 1912 map.

The following historic sites in the park have been located on various maps and atlases:

Site	Date of Map or Atlas
School	1902, 1912, 1921, 1933
School	1902, 1912, 1921
Worden Post Office & Town Hall	1902, 1912, 1921
Church and Cemetery	1902, 1912, 1921, 1933
School	1902, 1912, 1921, 1933
Bessie Post Office	1902
Town Hall - South Kepple Lake	1933

Traveling was a great hardship in the early days when roads and bridges were virtually unknown and even blazed trails were marked only between the larger settlements. The trails through the woods and around the swamps and lakes followed the routes of least resistance. Wagons would often get stuck in mud, upset in rivers, and in dense stands of timber hit stumps with such force that the passengers fell to the ground. Many supplies had to be obtained from as far away as Alexandria in Douglas County. South of the park, mail was brought to Fergus Falls by stage three times a week, in the 1870s. East of the park mail was brought to Perham every day by train. A stage line delivered mail and goods between the two major towns.

The post offices in the park and surrounding area were discontinued in 1905 when the rural service out of Pelican Rapids was extended to cover Lida township.

Park History

The idea of establishing a park in the area goes back to 1923 when it was originally proposed at the legislature. The next significant interest came in the 1950s when Dr. Norman Baker of Fergus Falls approached then Director of Parks and Recreation, U.W. Hella. Extensive aerial and ground reconnaissance was performed and the study concluded that this hilly, lake-dotted terrain was better suited to recreation than to farming. In December of 1960, Dr. Baker and six other men formed the Maplewood State Park Association which began soliciting contributions to fund the purchase of lands. Through the efforts of the Maplewood State Park Association, the park became a reality in 1963 when Maplewood State Park was established by the Minnesota Legislature. There were at least 138 individual property parcels within the statutory boundary.

The association made the first few purchases of land and the park road system started. During the 1960s and 1970s there was an intensive effort by the Division of Parks and Recreation to purchase property from willing sellers. Most of the existing park land was purchased during this period, especially from 1967-1969. Purchase of property slowed a great deal in the late 1970s as money for land acquisition dwindled. Of the 9,500 acres within the statutory boundary, about 1,000 acres remains in private ownership.

Park roads were laid out and constructed in the late 1960s. Some roads utilized vacated township roads. Blacktop was added in the early 1980s. The first buildings were in the service area and the park office was located there. The current park office was built in 1989. The campground sanitation building and 33 campsites were constructed in 1974. The campground was enlarged to its present size in the late 1970s. Electric hook-ups were added in 1997.

The picnic area and swimming beach were developed in the 1970s however, the modern sanitation building was not added until the 1980s. The winter trails were the first facilities to be used and parking was provided near Hallaway Hill which was an operating ski area from the late 1960s to the early 1980s. Many trails were aligned along old roads and farm driveways. The horse trails were also very popular in the early years, but there has not been a significant increase in horseback riding use in the last 20 years. In the late 1980s there was a trial period for mountain bike use on the park trails. Bike use grew very fast and it became apparent that the existing trail system would not accommodate horses and mountain bikes. By the early 1990s, bikes were no longer allowed on park trails.

Climate

Maplewood State Park is subject to the same continental weather patterns that influences all of Minnesota. The climate is influenced by cold Arctic air during winter months and is frequently dominated by hot air masses from the Gulf of Mexico during the summer months. In the summer, the average temperature is 68°F and the average daily maximum is 80°F. In the winter, the average temperature is 11°F and the average daily minimum temperature is 1°F.

The mean temperature in June, July and August is 68°F. Daily highs for these months are in the upper 70s to low 80s while the lows are in the 50s. The mean temperature in December, January and February is 10°F. Daily highs for these months are in the upper teens to low 20s while the lows are between -3°F to 4°F.

The average seasonal snowfall is 40.3 inches. The total annual precipitation is about 23.25 inches. Of this, about 75%, or 17.46 inches, usually falls in April through September. The frequency of severe drought on the Minnesota-North Dakota border is about once every 10 years and in eastern Minnesota about once every 20 years. The prevailing winds are from the northwest during the months of October through March and from the southwest for April through September. The average frost-free period in Fergus Falls, based on 37 years of data, is 139.6 days.

Geology

Glacial History

Glaciers played an important role in forming Maplewood's present landscape. Continental glaciers began forming about two million years ago and covered the park for extended periods of time up until approximately 10,000 years ago. Minnesota's "recent" geologic history has been marked by periodic advances of glacial ice from the north. Most of the surficial features that we observe in the park today resulted from the last stage of glaciation, which is believed to have lasted from 35,000 to 10,000 years ago. This period is called the Late Wisconsin Stage of the Pleistocene (Ice Age) Epoch. During this stage, individual ice lobes advanced over the mid-continent from the northeast and northwest. The Maplewood area was heavily influenced by two ice lobes, the Wadena lobe and the Des Moines lobe. The Wadena lobe moved down through Minnesota from the north toward the southwest, later being overridden by the margins of the Des Moines lobe which traveled down into central Iowa. The surface drift found in Maplewood is generally from the Des Moines(?) lobe. The interaction of these two lobes is known as the Alexandria Moraine Complex.

As the ice lobes advanced, they picked up rock and debris along their paths and deposited these materials as they melted. Their flow paths crossed different soil and rock types, allowing the glaciers to pick up distinctive sediment loads. The glacial drift deposited by each lobe is distinct in color, texture and stone content. The sediments and landforms left behind by the glaciers offer clues for understanding the past glacial history.

In the Hardwood Hills ecological subsection, there is 100 to 500 feet of glacial drift covering most of the bedrock. The thickest drift is in the northwestern half (Olsen and Mossler 1982). Middle Precambrian granitic bedrock is locally exposed in the southeast, along the Crow River near the town of Richmond (Morey 1976, 1981). Bedrock underlying the subsection is diverse. Cretaceous shale, sandstone, and clay and Lower Precambrian granite, metasedimentary and metaigneous gneiss, schist, and migmatite underlie the southern half (Morey 1976). To the north are metasedimentary rocks, iron formation, enschist, and metavolcanic rocks (Albert 1993). Ice stagnation moraines, end moraines, ground moraines, and outwash plains are major landforms found in this subsection. Kettle lakes are numerous, both on moraine and outwash deposits (Albert 1993). Parent material is primarily calcareous glacial till and outwash sediments. The glacial till is calcareous loamy sediment deposited by the last major glaciation (Wisconsin age).

Glaciers and the Landscape

Maplewood State Park lies entirely within an area known as an end moraine and is a direct result of the deposition of glacial drift. An end moraine is an area where a glacier stagnated for an extended period of time. As the glacier remained in place, the glacier brought new debris to the edge of the glacier. When the ice melted at the edge of the glacier, it released the debris and the end moraine grew. Glacial drift in the park sometimes reaches a depth of 700 feet of glacial sediment before hitting bedrock. Hallaway Hill is an example of such deep drift.

These hills, part of the Alexandria Glacial Moraine, were deposited during the last ice age. The Alexandria Moraine was formed by the Wadena lobe of the Wisconsin glacier. This large terminal moraine extended in an arc 10 to 20 miles wide and nearly 200 miles long though west central Minnesota. Relief is rugged, with changes of up to 300 feet in less than a mile. The highest hills in the park approach 1,600 feet. The Lake Lida basin was probably formed when the last glacier retreated 10,000 years ago and left ice stranded in the valley. The ice melted, exposing the basin and allowed the present lake to form.

A complex glossary of glacial features can be found in Maplewood State Park including: ice wall lake plains, kames, collapsed sediment deposits, ground moraines, long shore drift, lag concentrates, braided rivers, large erratics, slump features, and ice ramparts. Two of the predominant features of the park are the many kames and eskers. Kames were formed where meltwaters plunged into holes in the ice, resulting in conical-shaped hills of sand and gravel. Eskers were formed as the ice melted and large volumes of melt water cut tunnels and channels through the stagnated ice, resulting in sand and gravel-filled branching ridges. Another geological feature of the park are the many kettle lakes. Many other geological features in the park are clearly described in the Maplewood State Park Down Under Geological Guidebook.

Soils

In the Hardwood Hills subsection, soil textures range from loamy sands and sandy loams on outwash plains to loams and clay loams on moraines. Loamy soils are prevalent. Most are classified as Borolls (cold well drained soils developed under grassland) and Aquolls (wet soils developed under grassland), with some Udolls (dry soils developed under grassland, with soil temperatures warmer than Borolls). There are some Alfisols (soils developed under forested or savanna conditions).

Soil development is influenced by a variety of factors. Water from melting snow and rainfall dissolve minerals and support biological activity. Water transports minerals and organic residues into and across the soil. Temperature influences the kinds and growth rates of plants and soil animals. The temperature also controls the rates of physical and chemical weathering. The soil forming process is slowed in the winter when the soils are frozen and the alternate freezing and thawing helps develop soil by disintegrating the parent material. Rainfall can influence downward and upward movement of calcium carbonates in the soil. Prairie vegetation enhanced the accumulation of organic matter. The accumulation of organic matter under forest vegetation is less.

The parent materials for most of the soils in Otter Tail County were directly or indirectly derived from a series of glaciers that spread across the county and later melted. The soils found in the Maplewood area were mainly developed from a parent material of silty till of the Des Moines lobe. Rocks, clay, silt and sand were transported and deposited by the glacial ice, melting ice or meltwaters flowing from the ice from the different glaciers that moved across the land.

The two main types of glacial till parent material in the county are characterized by the percent clay, sand, silt and soil reaction, and stone types making up the till. Those till with less than 18 percent clay are generally called the Wadena Lobe or Winnipeg Lobe Till. Till with more than 18 percent clay is recognized as the Des Moines Lobe Till.

Two major soil associations that occur within the boundaries of Maplewood State Park are:

Waukon-Cathro-Gonvick Association - soils formed dominantly in loamy glacial till and organic materials under mixed prairie and forested vegetation. The composition consists of 55% Waukon soils - well drained, till parent material and loam surface texture; 15% Cathro soils - very poorly drained, organic material over glacial lacustrine deposits or till parent material and muck surface texture ; 10% Gonvick soils - moderately well drained, till parent material and loam surface texture; and 20% minor soils. These soils are found in the northern part of the park, near Lake Lida and are described as nearly level to hilly, well drained, moderately well drained, and very poorly drained soils on moraines.

Snellman-Naytahwaush-Lida Association - soils formed dominantly in loamy glacial till and sandy glacial outwash under dominantly forested vegetation. The composition consists of 53% Snellman soils - well drained, till parent material and sandy loam surface texture; 13% Naytahwaush soils - well drained, till parent material and clay loam surface texture; 8% Lida soils - well drained, glacial outwash parent material and sandy loam surface texture; and 26% minor soils. These soils are found in the majority of the park area and are described as gently sloping to steep, well drained soils on moraines, slope range is 1-45%.

The chart on the next page summarizes the soil limitations in Maplewood State Park. It should be noted that most of the soil types shown in the chart have severe limitations for all types of recreational use. These soils are either ponded/wetlands or steep slopes.

Map Unit	Description	Slope	Permeability*	Water Table Depth	Septic Tank Absorbtion Fields	Sewage Lagoon Areas	Buildings**	Local Roads & Streets	Camp Areas	Picnic Areas	Playgrounds	Paths & Trails	Lawns & Landscaping	Overall Suitability
34	Parnell silty clay loam, depressional		0-18" / 0.2-0.6	-1.0-0.5	S	S	S	S	S	S	S	S	S	S
38B	Waukon loam	2-6%	0-60" / 0.6-2.0	>6.0	M	M	L	M	L	L	M	L	L	L
38C2	Waukon loam	6-12%	0-60" / 0.6-2.0	>6.0	M	S	M	M	M	M	S	L	M	M
38D2	Waukon loam	12-20%	0-60" / 0.6-2.0	>6.0	S	S	S	S	S	S	S	M	S	S
38E	Waukon loam	20-30%	0-60" / 0.6-2.0	>6.0	S	S	S	S	S	S	S	S	S	S
180	Gonvick loam		0-15" / 0.6-2.0	2.5-3.5	S	S	M	M	L	L	M	L	L	M
267B	Snellman sandy loam	2-8%	0-9" / 0.6-6.0	>6.0	M	M	L	M	L	L	M	L	M	M
267C	Snellman sandy loam	8-15%	0-7" / 0.6-6.0	>6.0	M	S	M	M	M	M	S	L	M	M
267E	Snellman sandy loam	15-30%	0-3" / 0.6-6.0	>6.0	S	S	S	S	S	S	S	M	S	S
267F	Snellman sandy loam	30-45%	0-3" / 0.6-6.0	>6.0	S	S	S	S	S	S	S	S	S	S
422B	Bygland silty clay loam	1-6%	0-10" / 0.2-0.6	2.5-4.0	S	S	M	S	L	L	M	L	L	
422C	Bygland silty clay loam	6-15%	0-8" / 0.2-6.0	2.5-4.0	S	S	M	S	M	M	S	L	M	M
441B	Almora loam	0-2%	0-27" / 0.6-2.0	>6.0	S	S	M	M	L	L	M	L	L	
540	Seelyville muck		0-60" / 0.2-6.0	-1.0-0.5	S	S	S	S	S	S	S	S	S	S
544	Cathro muck		0-38" / 0.2-6.0	-1.0-1.0	S	S	S	S	S	S	S	S	S	S
680	Parnell silt loam		0-27" / 0.6-2.0	0.5-1.5	S	M	S	S	S	S	S	S	S	S
707B	Lizzie silt loam	2-6%	0-32" / 0.6-2.0	>6.0	M	S	M	S	L	L	M	L	L	
707C2	Lizzie silt loam	6-12%	0-40" / 0.6-2.0	>6.0	M	S	M	S	M	M	S	L	M	M
707D2	Lizzie silt loam	12-20%	0-35" / 0.6-2.0	>6.0	S	S	S	S	S	S	S	M	S	S
715	Bluffcreek-Clearriver complex		0-8" / 2.0-6.0	2.5-4.0	S	S	M	M	L	L	M	L	S	M
718E	Naytahwaush loam	15-30%	0-5" / 0.6-2.0	>6.0	S	S	S	S	S	S	S	M	S	S
1015	Udipsamments (cut and fill land)		0-14" / 0.2-20.0	>6.0	S	S	L	L	S	S	S	S	M	S
1103	Clitherall sandy loam		0-16" / 2.0-6.0	2.5-4.0	S	S	M	M	L	L	M	L	M	M
1104B	Waukon-Dorset complex	1-6%	0-9" / 0.6-2.0/6.0-20.0	>6.0	S	S	L	M	L	L	M	L	M	
1104C	Waukon-Dorset complex	6-12%	0-9" / 06.-2.0/6.0-20.0	>6.0	S	S	M	M	M	M	S	L	M	M
1104D	Waukon-Dorset complex	12-20%	0-9" / 06.-2.0/6.0-20.0	>6.0	S	S	S	S	S	S	S	M	S	S
1105B	Dent silt loam	1-6%	0-80" / 0.6-2.0	2.5-4.0	S	S	M	S	L	L	M	L	L	
1110	Isan sandy loam		0-16" / 2.0-6.0	0.5-1.5	S	S	S	S	S	S	S	S	S	S
1113	Haslie, seelyville and Cathro soils	ponded	0-30" / 0.6-6.0/0.2-2.0	-3.0-0.0	S	S	S	S	S	S	S	S	S	S
1114	Hangaard loamy sand, lake beaches		0-8" / 6.0-20.0	0.5-1.5	S	S	S	S	S	S	S	S	S	S
1120	Rushlake-Hangaard complex		0-8" / 6.0-20.0	2.5-3.5	S	S	S	S	S	S	S	S	S	S
1129	Lindaas silt clay loam	morainic	0-15" / 0.6-2.0	0.5-1.5	S	S	S	S	S	M	S	M	M	S
1195B	Sybil-Eagleview complex	2-8%	0-4" / 6.0-20	>6.0	S	S	L	L	M	M	M	M	M	M
1195C	Sybil-Eagleview complex	8-15%	0-3" / 6.0-20.0	>6.0	S	S	M	M	M	M	S	M	M	M
1195E	Sybil-Eagleview complex	15-30%	0-4" / 2.0-6.0	>6.0	S	S	S	S	S	S	S	M	S	S
1196B	Lida-Two Inlets complex	1-8%	0-7" / 2.0-6.0	>6.0	S	S	L	L	M	M	S	L	M	
1196C	Lida-Two Inlets complex	8-15%	0-8" / 2.0-6.0	>6.0	S	S	M	M	M	M	S	L	M	M
1196E	Lida-Two Inlets complex	15-30%	0-3" / 2.0-6.0	>6.0	S	S	S	S	S	S	S	M	S	S
1196F	Lida-Two Inlets complex	30-50%	0-14" / 2.0-6.0	>6.0	S	S	S	S	S	S	S	S	S	S
1208B	Naytahwaush clay loam	1-8%	0-7" / 0.2-0.6	>6.0	S	S	M	S	L	L	S	L	L	
1209C	Naytahwaush clay loam, eroded	8-15%	0-7" / 0.2-.06	>6.0	S	S	M	S	M	M	S	L	M	M
1212B	Mahkonce clay loam	1-4%	0-7" / 0.2-6.0	2.5-3.5	S	S	M	S	L	L	M	L	L	L
1215	Pinelake sandy loam		0-30" / 2.0-6.0	0.5-1.5	S	S	S	S	S	S	S	S	S	S
1217E	Waukon-Lida complex	20-35%	0-8" / 0.6-2.0	>6.0	S	S	S	S	S	S	S	S	S	S
1218B	Snellman-Lida complex	1-8%	0-3" / 0.6-6.0	>6.0	S	S	L	M	L	L	M	L	M	
1218C	Snellman-Lida complex	8-15%	0-3" / 0.6-6.0	>6.0	S	S	M	M	M	M	S	L	M	M
1218E	Snellman-Lida complex	15-30%	0-3" / 0.6-6.0	>6.0	S	S	S	S	S	S	S	M	S	S
1218F	Snellman-Lida complex	30-45%	0-3" / 0.6-6.0	>6.0	S	S	S	S	S	S	S	S	S	S
1230	Haslie and nidaros soils	ponded	0-44" / 0.6-6.0	-3.0-0.0	S	S	S	S	S	S	S	S	S	S
1276	Knute-Brandsvold complex, thick solum		0-10" / 0.6-2.0	2.5-3.5	S	S	S	S	L	L	M	L	S	
1289	Knute fine sandy loam, thick solum		0-53" / 0.6-2.0	2.5-3.5	S	S	M	M	L	L	M	L	L	
1343C	Lida-Almora-Dent complex	8-15%	0-8" / 2.0-6.0	>6.0	S	S	M	S	M	M	S	L	M	M
1344B	Lida-Almora-Dent complex	1-8%	0-7" / 2.0-6.0	>6 / 2.5-4.0	S	S	M	M	L	L	M	L	L	

Chart Legend - Soils Suitability/Characteristics

L = (Low) Limitations for a stated use are minor and can be overcome easily.

M = (Moderate) Limitations for a stated use can be overcome by special planning, design, or intensive maintenance.

S = (Severe) Limitations for a stated use generally require a major soil reclemation, special design, or intensive maintenance.

*Depth and permeability (inches per hour) ie. soil 34 = top 0-18" of soil depth have a permeability of 0.2-0.6 inches per hour.

**Based on buildings with a basement or foundation.

Natural Communities

Maplewood State Park is located in the Hardwood Hills landscape region subsection as defined by the DNR Ecological Classification System Committee. (See the Regional Landscape section for more details).

Native Vegetation

During the final stages of the glacial period, central Minnesota was vegetated in part by tundra and open boreal coniferous forest, which spread northward. Pollen records indicate that these forests were not necessarily like spruce forest of today, but tended to have more openings. Following the retreat of the glaciers these forests were replaced primarily with pines about 10,000 years ago. As the climate became more moderately moist, deciduous forests of dense birch-aspen mixed with the pine forests. About 8,000 years ago the climate became warmer and drier. Prairie vegetation, which had succeeded the spruce forests in the Dakotas, had spread into central Minnesota. The prairie encroached into the forest areas of the state, resulting in the prairie-forest border reaching about 75 miles northeast of it present position (the present prairie-forest border is found just to the west of Maplewood at the base of the Alexandria Moraine). It is likely that the many lakes and rugged terrain of the park would have provided fire breaks allowing oaks to persist. As the climate again reversed, about 4,000 years ago, deciduous forests succeeded the oak savanna. The establishment and expansion of the maple-basswood forest which continued down to southeastern Minnesota is known as the "Big Woods".

The General Land Office (GLO) survey took place from 1858 to 1871 in Otter Tail County. The map of bearing trees of the county shows a distinct line running north to south that depicts where the prairie ended and the oak savannas and maple basswood forests began. The original vegetation of Otter Tail County was a mixture of small prairie openings among primarily maple, oak, elm, and basswood. Approximately two-thirds of the county was covered with forests and one-third with native prairie when it was first settled.

Maple-basswood Forest

Maplewood State Park was in the transition zone. In general, the northern half of the park where Lake Lida provided a firebreak, a dense maple, oak, basswood, and elm forest developed. In this area of the park sugar maple and red oaks were predominant, with black oak and white oak, also noted as bearing trees. The dominant trees in a maple-basswood forest are highly sensitive to fire and were restricted to areas where natural fire-breaks prevented the spread of fire from the adjacent prairie lands. In Maplewood, there was also a pocket of tamarack trees just north of Beaver Lake. Other bearing trees species in the northern half of the park included elm, birch, linden (basswood), ash, and ironwood. Birch trees were more common in the northeast part of the park and less common in the northwest section.

Oak Woodland and Brushland

In the southern half of the park, red oaks were the dominant tree. The oak woodland and brushland was a common ecotonal type between the prairie and deciduous forest. Fire, more than landform or climate, was the significant factor influencing the extent of this community. Careful study of the original public land survey records has shown that the oak woodland and brushland ranged from small groves of trees intermixed with open prairie to a chaparral-like community of scrub forest and dense shrub thicket. In Maplewood, the "thicket" vegetation type was indicated mainly in the southwestern corner of the park. Red oaks (probably northern pin oak) were the predominant bearing tree species. Bur oak and white oak were the next common species. In the southeastern part of the park, oaks were still the predominant species, however, birch and aspen were also quite common. These birch and aspen trees, in the eastern half of the park are a hint of the changing vegetation type further to the east in Otter Tail County where boreal hardwood-conifer forests are found. Other tree species in the southern half of the park included: Balm of Gilead, maple, and elm.

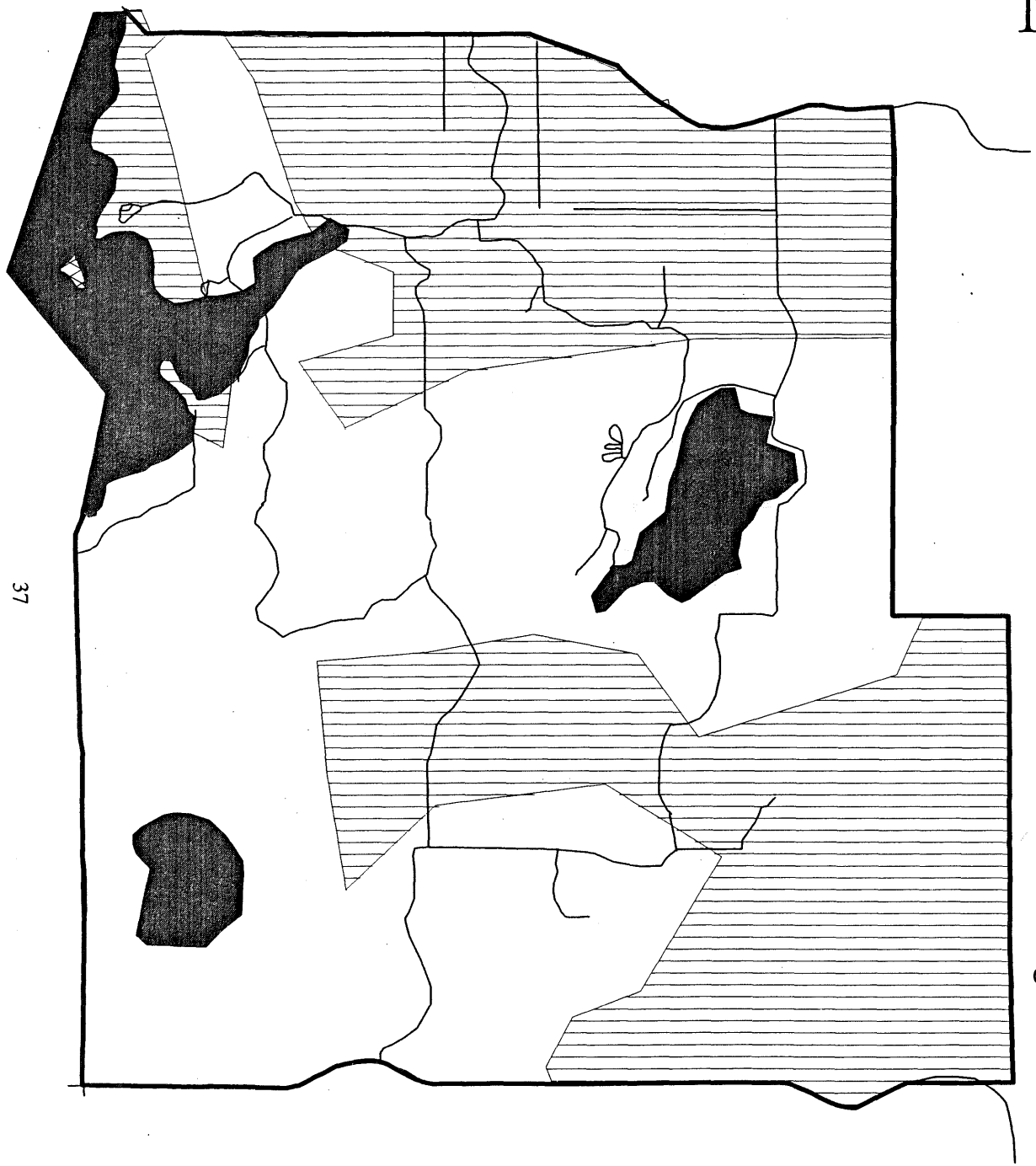
Marshes, Wet Prairies and Sloughs
Marsh vegetation type was indicated in three areas of the park: north of Beaver Lake, south of Field Lake and northeast of Grass Lake. These were most likely made up of marsh grasses, flags, reeds, and rushes with willow in places.

These bearing tree species indicate that the park was a diverse mix of natural communities prior to European settlement. Most of the original natural communities have been logged or pastured and replaced with second growth consisting of northern and bottomland hardwoods and old fields. The Northern hardwood communities are now dominated by oak, trembling aspen, and white birch.

Otter Tail County was settled approximately a century ago, but in the park area, the extent of development was limited by the steep topography, wet or rocky soils. Timber was undoubtedly removed, as a result, most forest stands represent regrowth. A detailed land use history has not been developed for Maplewood State Park.

Maplewood State Park

Vegetation at time of General Land Office (GLO) Survey



N

Vegetation Types
- Maple-Basswood Hardwoods
- Oak Openings and Barrens
- Open Land
- Water
- Roads
- Maplewood State Park Boundary

0 0.5 1 1.5 2 Miles

Source: DNR, Division of Parks and Recreation, 11/1997

Existing Vegetation

Maplewood is located in the transition zone between the state's eastern deciduous forests and western prairies. The Maple-Basswood Forests of Minnesota reaches the limit of its range near Maplewood State Park and is replaced by tall grass prairie to the west. Evidence indicates that this boundary has shifted over time and is probably influenced by climate, soil, topography, and fire (Kiehne 1980, Buell and Cantlon 1951, Buell and Facey 1960).

The existing vegetation has been influenced by many human activities including logging, fire suppression, and agriculture. Alan Kiehne in his 1980 vegetation survey recorded a total of 111 vascular plant species in the park wood stands including 12 tree species, 23 shrubs, 66 forbs, and 10 grasses. It is Kiehne observation and conclusion that the park woodlands that were sampled "are developing towards the mature maple-basswood forest typical of the "Big Woods" type of deciduous forest."

The most abundant tree species in the park are sugar maple, basswood and ironwood. Other common hardwood trees in the park include red oak, American elm, bigtooth aspen, and bur oak. Some softwood trees, such as red cedar and tamarack, also occur in the park. Common shrub species are chokecherry and prickly ash. Woodland and prairie wildflowers are found in the park. Common flowers and herbs include hog peanut, sarsaparilla, bellwort, zigzag goldenrod, early meadow rue, false Solomon's seal, bracken fern, tick-trefoil, and less commonly trillium and bloodroot. Common grass and grass-like species include Penn sedge, rough-leaved rice grass, and blackseed rice grass. There are also several large orchid populations in the park including large yellow ladyslippers. Sharp lobed hepatica is also found in the park. Because the area has fairly old trees, and there was very little grazing in the park, there are some unusual lichens in Maplewood.

There are two goat prairies in Maplewood State Park near Lake Lida. There are sites of prairie plants rarely recorded east of the Missouri River. There are also several relic prairies, one near Cowl Lake and one in the southern part of the park (See Vegetation Map). There are many old farm fields remaining in the park in various stages of secondary succession. Some are revegetating on their own and others will need restoration work done on them, especially in areas with thick brome grass.

Ecological Processes

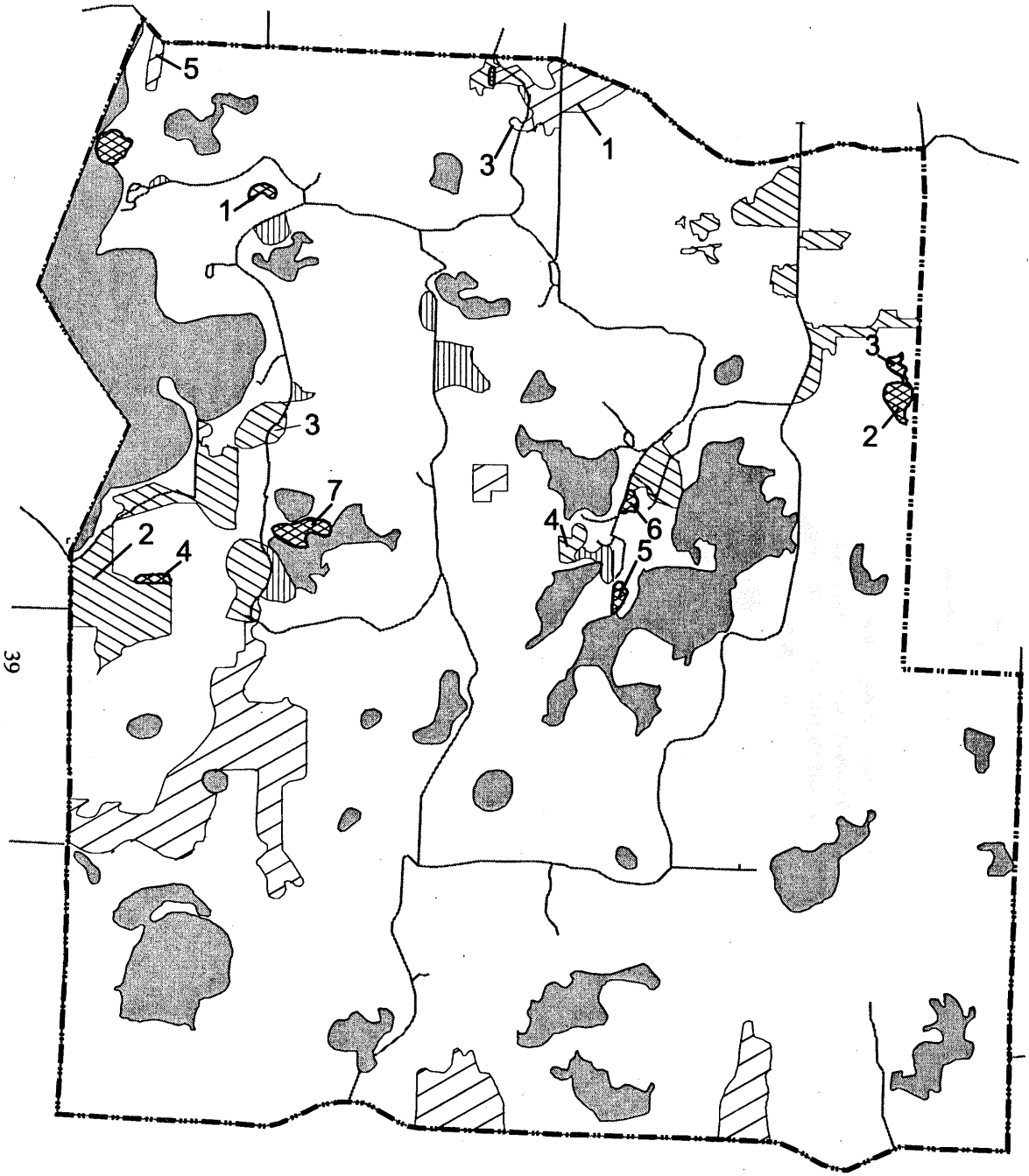
Fire has been one of the most important influences in the molding of the present park vegetation patterns. The pre-European period has little documentation. American Indians inhabited and used the area for thousands of years. They used fire extensively as part of their culture. European settlers also used fire in the area. Fire was an agricultural tool, and spring meadow burning was a tradition. Sugar maple and red oak are more susceptible to fire than thick barked species such as bur oak. In a deciduous forest, fire damage is greatest in the fall when leaf litter has accumulated and dry weather is common.

Following the logging period, the state entered a time when fire suppression was the predominant management practice. This was a response to catastrophic fires of the early 1900s. Fire suppression was very successful in Maplewood State Park, with fire only occurring in times of extreme drought.

Fire was important in oak savanna development. Windthrow was common in the sugar maple-basswood forests. Tornadoes and other high wind events also created natural disturbances (Albert 1993).

Maplewood State Park

Proposed Resource Management Priorities



N

Legend

- Maple - Basswood Restoration with Ironwood, Black Cherry & Viburnum
- Prairie Remnants (Should be Burned)
- Priority Vista Management
- Red Oak Restoration Priority Sites (Ironwood, Chokecherry & Pin cherry)
- Water
- Roads
- Maplewood State Park Statutory Boundary

**** 1 - 7 High Priority to Low Priority**

0 0.5 1 1.5 2 Miles

Source: DNR, Division of Parks and Recreation, 12/1997

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 name only a few factors. To effectively manage this unique area with its complex resources 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 Resource Management Recommendations section has some of the future research needs as recommended by a variety of Department of Natural Resources personnel. Listed below are the permitted research projects that have been conducted in the park since 1977 and other inventory work.

Cooperative Stand Assessment (CSA) of plants was completed in 1982 by the Division of Forestry. This survey was conducted to assess the amount and extent of tree species on DNR administered lands, and mostly depicts forest crown cover from aerial photos and field checks. While useful, this inventory does not always meet the needs to make ecologically-based management decisions. Today, CSA shows the park being predominantly upland hardwoods.

Old Growth Forest Candidate stands will need to be identified for Maplewood State Park. Old-growth quality ranking is based on a combination of the following criteria: 1) stand age, 2) stand size and context, 3) degree of human disturbance, and 4) ecological feature. A score of 50 is the highest possible ranking . The management of old growth forests will be in accordance with the landscape plans for the Hardwood Hills as established by the DNR Old Growth Guidelines.

The Minnesota County Biological Survey has not been conducted in Otter Tail County.

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

Plants of Otter Tail County are located on a master database on the Bemidji regional server.

A number of research projects have been conducted at Maplewood State Park.
1977 - Ecological Research by Dr. Henry Hansen and Dr. Vilis Kurmis, University of Minnesota.

1978 - Insects by Dr. Edward Balsbaugh, Jr., North Dakota State University.

1978 - Plant Collection by Mr. Alan Kiehne, Moorhead State University.

1986 - Beetle Collection (subfamily Donaciinae) by Dr. Ingolf S. Askevold, University of Manitoba.

1986 - Sediment Cores from Bogs by Ms. Judith Griffin, North Dakota State University.

1989 - Study of Tree Hole Breeding Flies (Culicoides) by Dr. Carol D. Pappas, Peru State College, NE.

1996 - A Floristic and Chemotaxonomic Study of Lichens in Maplewood State Park by Ms. Katy Hanson, North Dakota State University.

Cindy Johnson Grow from St. Scholastica did research in the park on goblin ferns.

Exotic Species

There are currently three biological control sites in Maplewood State Park. Beetles have been released in leafy spurge sites as a attempt at biological control of this aggressive exotic species. Plumless thistle and musk thistle have been a problem in the past in the park, but are now under control. Both thistles are very serious problems outside the park, especially to the northwest. Canadian thistle continues to be a problem in the park. Caragana has started to spread rapidly in recent years. Buckthorn removal has also begun in the park. Of the above listed aggressive exotic species, buckthorn and leafy spurge are the worst problems, followed by the three thistles, and then caragana.

There are a number of less aggressive exotic species in the park that were planted by early homesteaders. These include lilac bushes, spruce trees, apple, and pear trees.
Tartarian honeysuckle is also in the park, however, this has not been a major problem since honeysuckle aphids have been attacking the plants.

In the future, it will be necessary to watch for purple loosestrife and Eurasian water milfoil in the park. Both species exist in area lakes but have not been found in the park yet.

Wildlife

As a result of the varied landscape in the park 150 bird species breed here along with 40 species of mammals, and 25 kinds of reptiles and amphibians. Over 230 bird species have been recorded in the park area seasonally.

Mammals

Forty-eight of Minnesota's 81 species of mammals have been sighted in or near the park. Bear and moose live in the area at various times.
Mammal species include:

Opossum
Masked Shrew
Arctic Shrew
Short-tailed shrew
Star-nosed mole
Little brown bat
Big brown bat
Hoary bat
Red bat
Eastern cottontail rabbit
White-tailed jackrabbit
Eastern chipmunk
Woodchuck
Thirteen-lined groundsquirrel
Franklin's groundsquirrel
Eastern gray squirrel
Fox squirrel
American Red squirrel
Southern flying squirrel
Plains pocket gopher
Beaver
White-footed mouse
Prairie deer mouse
Northern grasshopper mouse
Southern red-backed vole
Meadow vole
Prairie vole
Muskrat
House mouse
Meadow jumping mouse
Porcupine
Coyote
Timber wolf
Red fox
Gray fox
Black bear
Raccoons
Short-tailed weasel
Least weasel
Long-tailed weasel
Mink
Badger
Striped skunk
River otter
Canada lynx
Bobcat
White-tailed deer
Moose

Beaver dams are a problem in several areas of the park. In several instances their activities have flooded county and park roads. Raccoon periodically reach problem population levels. Timber wolves have been confirmed in the area, and there have been unconfirmed reports of them in the park. They have not been a problem.

Birds

A comprehensive bird inventory has not been completed recently for Maplewood State Park. Over 230 species have been recorded seasonally. Tamarac National Wildlife Refuge, approximately 30 miles north of the park, has a list of 258 bird species that can be observed at the refuge, with 14 additional species listed as casual occurrences. Tamarac is in the transition zone where the prairie pothole region meets the edges of the northern hardwood and boreal forest ecosystems. Maplewood State Park also lies on the transition zone between the prairie pothole region and northern hardwood ecosystem (not the boreal forest). The park is also in the transition zone for eastern and western birds, for example, eastern and western kingbirds can be found there.

The park has a multi-species colonial nesting bird site on a restored wetland in the park (T135N R42W Sect. 9). In 1992, cormorants, great blue herons, great egret and black-crowned night heron nested at the site. In 1994, the colony was inhabited by cormorants. Subsequent surveys indicate abandonment. The park is also a staging area for Neotropical birds. Maplewood State Park, and other northern parks, lie in a narrow forest belt that supports the highest diversity of songbirds in North America (over 120 species). In Minnesota, 43% of the forest bird species are Neotropical migrants (birds such as flycatchers, vireos and warblers that migrate south to central Mexico, Cuba, and into northern South America).

The park provides important habitat for many owl species, including barred owls and migrant snowy owls. A new osprey nest was reported on Field Lake in the park during the spring of 1997. Trumpeter swans were introduced several times in the park, but they did not stay. Nests are now found west of the park. Pelicans were on the park lakes at one time, and may return some day. Black terns and forester terns are seen on the big wetland restoration site and are likely to nest there. Sandhill cranes migrate through the park. A study conducted on red shouldered hawks in the park indicates a nesting population. In the past there was a bald eagle nest recorded on Beers Lake but is no longer active. Ruffed grouse are found in the park. In 1998, the DNR Section of Wildlife released wild turkeys in the area, weather permitting.

Reptiles and Amphibians

Minnesota County Biological Survey has not surveyed Otter Tail County for reptiles or amphibians. However, surveys were conducted in Wilkin and Clay Counties, just to the west of Otter Tail County, in 1988. One of the objectives of the survey was to search for and locate species of high interest, including bullsnake and western hognose, 5-lined skinks and spiny softshell turtles. During the season, 13 sites were visited in Wilkin County and 13 sites in Clay County. Western hognose and snapping turtles were found in both counties. No fox snakes, bullsnake, milksnake, or 5-lined skinks were seen during the 1988 survey in either county. The following amphibian and reptile species are likely to occur in Maplewood State Park.

- Salamanders: blue-spotted salamander, spotted salamander, tiger salamander, mudpuppy, eastern newt.
- Frogs/Toads: American toad, great plains toad, Canadian toad, Cope's treefrog, gray treefrog, spring peeper, western chorus frog, green frog, northern leopard frog, mink frog, wood frog.
- Turtles: spiny softshell, snapping turtle, painted turtle.
- Skinks/Lizards: prairie skink.
- Snakes: Eastern hognose snake, green snake, brown snake, redbelly snake, plains garter snake, common garter snake.

Insects

Professor Gary Clambe and his class from North Dakota State University conducted studies in the park on spiders and beetles. Another beetle project was completed by Pam Deerwood from the U.S. Department of Agriculture, St. Paul office. Ongoing monitoring programs take place annually in the park for gypsy moths and tussock moths.

Endangered, Threatened, & Special Concern Species

The Minnesota Natural Heritage and Nongame Research Program (MNHNRP), in collaboration with the Minnesota County Biological Survey (MCBS) collects and maintains information about species listed as endangered, threatened, or of special concern under the state endangered species act (MN Statutes 84.0985) as well as significant native habitats and sensitive areas such as animal aggregation sites. These rare features are called "elements" and location information is maintained by MNHNRP in both map and computerized formats. Each location record is termed an "occurrence". In the lists that follow, the "status" is the state status. For the small number of species that are also federally listed, the federal designation is also shown. Species designated as endangered or threatened under state law are protected from taking, importing, transporting, or sale, except as provided for in statute and rule.

The goal of MCBS is to systematically identify significant natural areas and to collect and interpret data on the distribution and ecology of rare plants, rare animals, and natural communities. Otter Tail County has not yet been surveyed by MCBS, and is not scheduled for survey within the next few years. In Maplewood State Park two elements have been documented by the MNHP. They are a maple-basswood forest (west central) and a Cooper's milk-vetch.

Plants:

Cooper's Milk-vetch (*Astragalus neglectus*) - Current status: none, formerly special concern. A small population is found in the park in a small meadow on the west side of a gravel road, just across from Andrew Lake. Recent searches in northwest Minnesota in the past five years have documented over 100 new locations of this species, therefore it was removed from the special concern list in 1996. It also tends to grow naturally in disturbed areas, which is a common habitat in Minnesota. However, this species may be rare in other states.

Animals:

Colonial Waterbird Nesting Site - Great Blue Heron, Cormorant, Common Egrets (possibly Little Blue Herons . This colony is located on the restored wetland on the south end of South Lida. It has been reported by Nongame Wildlife and there is an occurrence noted in the MNHNRP database.

Bald Eagle (*Haliaeetus leucocephalus*) - Current status: Special Concern. Federal Status: Threatened in MN. This species has not been recorded in the MNHNRP Rare Features Database for Maplewood State Park, however, park staff have been seeing them frequently in the park for many years and they have nested in the park on the south side of Beers Lake in the past. The bald eagle is an endangered species success story. In 1993 this species reached 568 well-distributed breeding pairs in Minnesota.

Other Significant Features:

Significant features are typically geologic features or natural communities. At this time only one natural community feature has been identified in Maplewood State Park. Natural communities are groups of native plants and animals that interact with each other and their abiotic environment in ways not greatly altered by modern human activity or by introduced (non-native) organisms. The Natural Heritage Program developed a classification system for native vegetation in Minnesota,

which is currently being revised through a collaborative effort of the MNHNRP, MCBS, and the DNR's Ecological Classification Systems project. The name listed below is based on this classification. Additional information about natural communities, including descriptions and lists of characteristic species can be found in Minnesota's native vegetation: a key to natural communities, version 1.5, 1993, MNDNR Biol. Report No. 20.

Maple-Basswood Forest (West Central) - 1 Site (no legal status). Approximately 50 acres of mature maple-basswood forest is located in the park at T135N R42W SENE09. The forest is dominated by sugar maple and basswood, with lesser amounts of bur oak. The sapling layer is dominated by sugar maple and American hop-hornbeam. Dominant shrubs include wolfberry, Northern prickly ash, and chokecherry. The sparse herb layer is dominated by hog peanut and zigzag goldenrod. There is no evidence of disturbance, but the tree DBH is small (9-15 cm). There may be other mature/old growth maple-basswood or oak stands located within the park. Assessment using standard evaluation procedure is underway.

Waters/Fisheries

Water Resources

Groundwater

The ground water development in the Otter Tail River watershed is in glacial drift. Wells range from less than 50 feet to about 400 feet below the land surface. The largest amounts of recharge generally occur in the spring before the growing season. Minor amounts of ground water may enter the watershed at some points from adjacent areas. Ground water flow is locally directed toward the major drainage lines and toward the lakes, although some lakes may serve as recharge reservoirs during part of the year. The general ground water flow is toward the Red River of the North. Well data suggests that much of the high land within the park is approximately 40 feet above the water table.

Well Data

Location	Depth	Water Table Level	Pumping time/rate	Drawdown
Campground	119'	40'	17-41 gpm	47'
Headquarters		40'	27 gpm	47'
Beach	143'	Flowing	25 gpm	50'
Picnic Area	214'	10'	18 gpm	123'

A study done at Maplewood in 1992 by the Soil Conservation Service showed a dramatic rise in the water table depth between March and June at all of their study sites. This was most likely due to the moisture from spring thaw and rainfall. The study sites consisted of pipes placed at varying depths on a landform. Depths ranged from 13 to 19 feet. The sites were chosen for study because of their lacustrine clayey sediments. Glacial till was underlying the lacustrine sediments at varying depths at each site. The glacial till was sandy loam to loam in texture. When the water table dropped into the glacial till, it seemed to fluctuate more quickly, apparently due to the increased permeability of the glacial till. Sloping areas also showed the greatest fluctuations in water table.

Well Sealing Records

Between the turn of the century and the formation of Maplewood State Park in 1962, the area comprising this park was extensively settled and farmsteaded. These farms left behind some unexpected legacies, as was confirmed during the summers of 1996 and 1997. Using old plat maps, aerial photos, and local lore (primarily the memories of the park managers) a DNR

hydrologist mapped out all of the old farmsteads across the park. Then an overhauser magnetometer, a magnetic locator, and/or field search was used at each of these sites to detect old wells. This equipment is designed to detect metallic well casings, even if they are now buried. It will not detect buried well casings of other materials, such as brick, rock, plastic or concrete. Deeper wells have the greatest potential for causing contamination problems, and it is fortunate that all deep wells in this area are steel cased and can be sealed.

Field surveys yielded three general results: no well, visible well, or a possible buried well. Working with Thein Drilling, a backhoe was used to excavate all the potential sites. Many sites yielded junk, but at others wells were excavated as much as seven feet below the ground. All of the identified inactive wells in the park will be sealed. To date, 32 wells have been sealed. Three were previously identified by park staff and sealed in 1992, and three more are still in the process of being sealed. The sealed wells span quite a range, from a flowing well, to a three-foot diameter brick cased well, to a 267-foot deep 2" diameter well. It is likely that one driller, who happened to favor 2" wells and wooden pump rods, installed many of the wells identified in the park. Many of the wells were obstructed, and removing those obstructions (often the pump rods) was difficult. The wells in the park were deeper than comparable wells nearby, with most averaging 100 to 150 feet deep. In addition to the 38 inactive and sealed wells in this park, 43 sites yielded no signs of a well. Apparently many homeowners had water trucked into their homes and stored in a cistern. Often these cisterns were destroyed when the building sites were removed. Some sites are quite old and possibly the water was hand carried from lakes or streams. In some cases, shallow sandpoint wells and dug wells might also have been removed during site demolition. There does remain the small possibility that a well still exists on one of these sites, but was not located by field searches. Records of this well work are kept in the Field Services facilities database, where each well or site has a number. Most well sites were recorded with a latitude/longitude location taken by GPS. Additional maps, field notes, bills, and other paper records are kept with the other well sealing files. No further work should be necessary for the sealed wells in this park. However, this database also contains information on the eight active wells in the park. Any changes to these wells will also be recorded in the database.

Surface Water

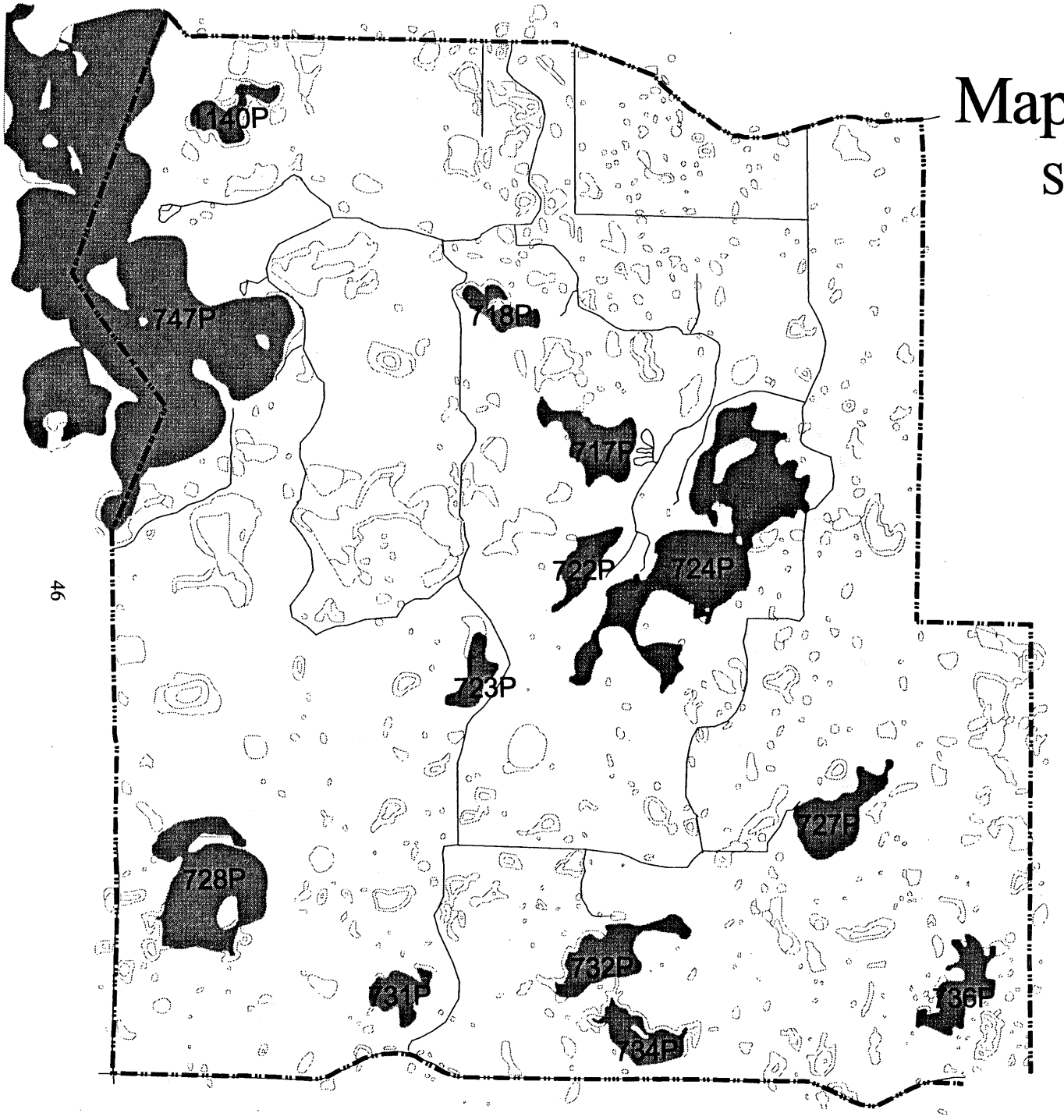
Maplewood State Park contains over 20 lakes of varying sizes and types ranging from 850 acre South Lida and 15 acre Cow Lake, both of which are deep, to Bon and Wilson lakes, which are shallow and in more advanced stages of eutrophication. Lakes with the greatest percentage of sandy shoreline are Twenty-one (50%), Fladmark (40%), South Lida (29%), and Bass (20%). Lakes with the clearest water are Fladmark, Bass, Beers, and Twenty-one.

Otter Tail County has 11 water monitoring wells in the park and the DNR Division of Waters has been monitoring lake elevation changes on seven of the lakes in the park.

The acreage and maximum depth for the lakes are listed below:

Bass Lake	25.8 acres	37 feet
Beers Lake	195 acres	60 feet
Big Grass Lake	79 acres	21 feet
Cow Lake	15.5 acres	33 feet
Fladmark Lake	54.7 acres	45 feet
Little Grass Lake	19 acres	22 feet
South Lida Lake	850 acres*	48 feet
Twenty-One Lake	114 acres	47 feet

*partially within the park



Maplewood State Park

State Protected Lakes

N

Legend

Roads
Maplewood State Park Statutory Boundary

State Protected Lakes
Wetlands

0 0.5 1 1.5 2 Miles

Source: DNR, Division of Parks and Recreation, 12/1997

Wetlands

Most of Maplewood's wetlands were formed during the glacial periods. Many of the parks original wetlands were drained for farming purposes using drainage ditches. Park personnel have dammed up most of these drainage ditches, restoring the wetlands to nearly their original condition.

Over 50 wetlands have been restored in the park, mainly by closing old ditches. See Restored Wetlands Map. This was done in the 1970s and 1980s, long before the state wetland mitigation program. Many of these restoration projects were funded by Henry Sompson, a private individual interested in wetland restoration. He also funded the bird observation blind in the park.

Fisheries

Maplewood State Park has six lakes which support game fish populations. Lake management plans have been completed by Fisheries staff for: Bass, Beers, Fladmark, Grass, South Lida, and Lake Twenty-one.

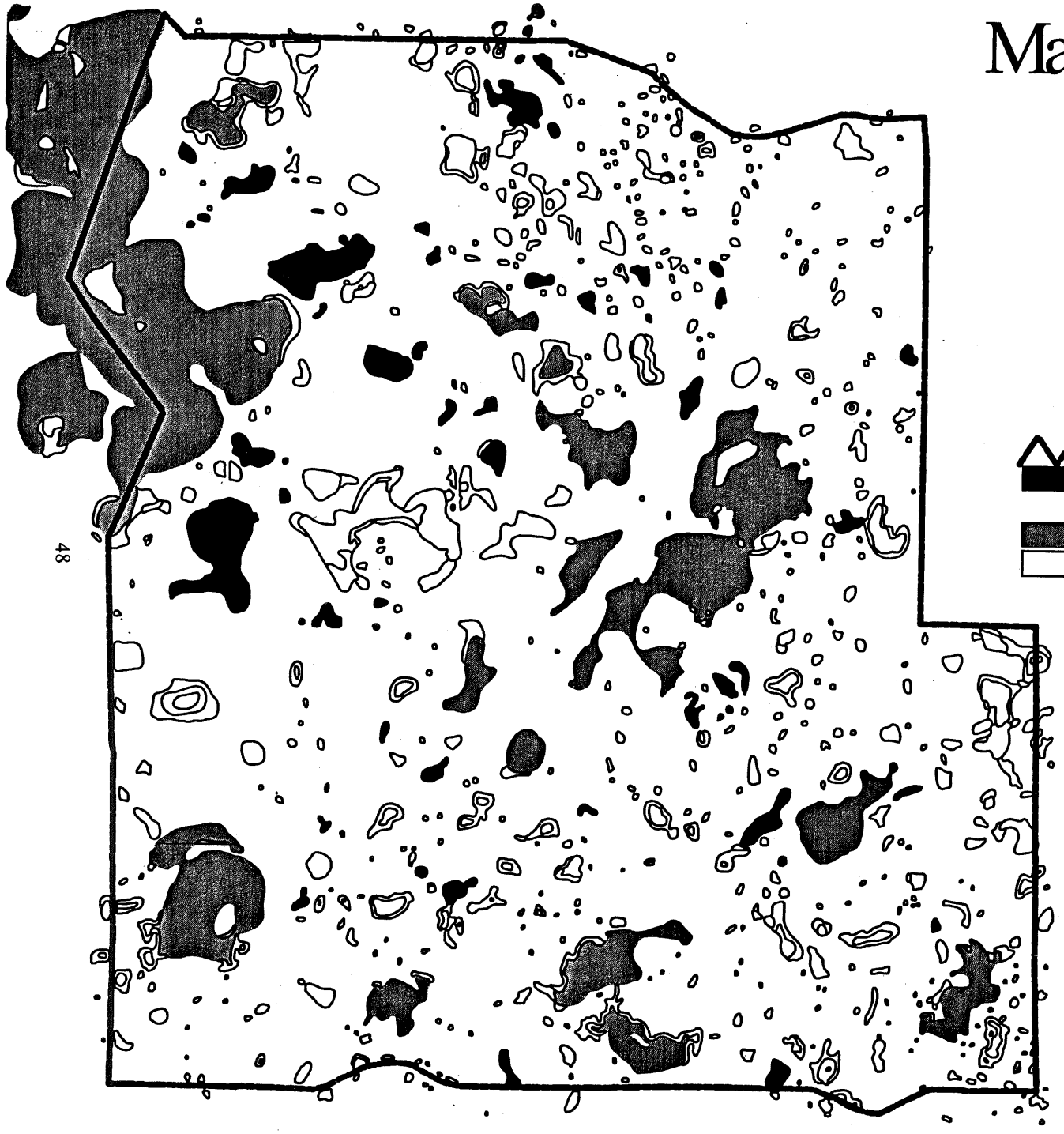
- Bass Lake provides the only rainbow trout fishery in Otter Tail County. It is stocked with yearlings on an annual basis.
- Muskellunge stocking began on Beers Lake in 1977 and has continued about every other year since then. Stocking of some kind has occurred in Beers Lake dating back to 1916. Over the years it has been stocked with pike, crappies, bass, largemouth bass, sunfish, suckers, rock bass, and walleye.
- Fladmark Lake currently has a new experimental/special regulations for bluegill, northern pike, and largemouth bass.
- As part of a fisheries research study, Lake Twenty-one also has experimental/special regulations for bluegill , largemouth bass, and northern pike. Like Beers Lake, various fish have been stocked in this lake since 1916. The majority of the shoreline is located within Maplewood's State Park. Two carry-in accesses are located on the lake.
- South Lake Lida has most of the eastern shoreline bordering Maplewood State Park. Natural reproduction appears to be maintaining the walleye population at this time. Experimental/special regulations for black crappie will be considered in 1997.
- Grass Lake has the main campground located along its southeast shore. The lake is prone to occasional fish kills and has an abundant population of small bullheads. Since 1970, northern pike, sunfish, black crappie, and walleye have been stocked periodically in the lake.

The Section of Fisheries has decided to implement experimental fishing regulations on Fladmark and Twenty-one lakes in Maplewood State Park. The regulations for both lakes will be a daily and possession limit of 10 sunfish or bluegill (either or combined) and no harvest (catch and release only) for northern pike and largemouth bass. The regulations are effective from May 11, 1996 through February 28, 2002. Part of the reason for these experimental regulation is to address the problem of a decline in size structures of the fish.

Private consultant, Konrad Schmidt, conducted a fish study in the park from 1989 to 1990, and developed a list of all fish species using the park including nongame fish.

Maplewood State Park

Restored Wetlands



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Maplewood State Park Statutory Boundary
Restored Wetlands

Lake
Wetlands

0 0.5 1 1.5 2 Miles

Source: DNR, Division of Parks and Recreation, 11/1997

Resource Objectives

These objectives will guide the park management decisions toward sustainable natural and economic resources and the protection of cultural resources.

Environmental

- Protect existing wetlands and identify former wetlands under our jurisdiction for restoration where feasible.
- Protect known cultural resource sites.
- Protect and enhance habitats for plant and animal species that are listed as endangered, threatened or special concern.
- Identify, monitor, and control invasive exotic species including plants, insects, diseases, and animals.
- Manage and maintain examples of each natural plant community. One mission of parks is to provide for essential habitat for the native species of Minnesota.
- Sustain functioning ecosystems and maintain the integrity of biological diversity at all levels: ecosystem, community, species, and genetic.
- Identify degraded natural communities and ecosystems and work toward their restoration through management.
- Manage the forested portions of the park for mature/old growth where opportunities exist.

Community

- Raise the level of understanding of cultural and environmental issues. Communities come together and learn to work together through cultural and environmental activities.
- Maintain natural communities that offer opportunities for solitude. Stress is a serious issue in modern society. All of the popular solutions highlight the role of leisure and relaxation.
- Manage natural resources on a landscape and ecosystem basis. The provision of parks, open spaces, and protected natural environments contribute to the environmental health of our communities.
- Identify, monitor and manage historical and cultural resources in cooperation with the Minnesota Historical Society.

Economic

- Park development should be completed in a manner compatible to resource management and protection. Many studies have shown that financial investment in recreation projects pay dividends throughout the community--the return is always greater than the original outlay. (Benefits of Parks Catalogue).
- Use natural resources and public funds efficiently. Direct growth towards areas in the park with existing capacity in infrastructure and services. Use land efficiently and appropriately. Habitat protection and recreation are often the highest and best use of lands that are too fragile for development (slope, floodways, etc.).

Resource Management Actions

This plan provides the basic management direction for the park and is not intended to provide specific management or development details. The Minnesota Department of Natural Resources (DNR) has a goal of managing resources in a way that is sustainable for future generations. Ecosystem-based management (EBM) is the approach DNR is using to achieve this goal. The way this goal is approached is by taking a broader perspective and addressing ecosystem management rather than focusing only on individual plant or animal species. The goal of this planning process is to decide how to manage Maplewood State Park to sustain healthy ecosystems into the future. This EBM perspective forces us to look at Maplewood State Park not as an island, but as an integral part of a larger ecosystem.

Management actions for Maplewood State Park revolve around the concepts of working towards restoring native vegetation systems focusing on restoring natural processes (not just communities), Ecosystem Based Management, and using current and future technology (GIS, ECS and others). This plan outlines a few basic prairie and forest restoration areas, however, future inventory work and research will enhance these projects. Soil surveys and subsequent interpretations of soils through ECS will be important in determining management strategies for sites. Interpretation is an important component of effective resource management. See the Interpretive Services section for details.

The major concerns at this time are: 1) Maintaining biodiversity; 2) Avoiding fragmentation of habitat; 3) Reestablishing ecological processes; 4) Protection of listed species, while maintaining old growth and various age class representatives; 5) Avoiding introduction of exotic species, monitoring for new introductions, and eliminating exotic species when feasible; and 6) Developing the Ecological Classification System.

Note: although the actions are numbered, they are NOT in priority order.

Vegetation and Maintaining Biological Integrity

Maplewood State Park contains a mix of forest, prairie, and wetland habitat. All efforts should be made to avoid habitat fragmentation and protect biodiversity. Biodiversity considerations include composition, structure, and function relating to species. Composition includes the species and genetic diversity that constitute the communities and ecosystems. Structural diversity pertains to how the ingredients of diversity are arranged relative to each other in time and space. Functional diversity applies to ecological processes and many interactions that occur in an ecosystem (Crow, Haney, Waller, '94). Effort should be made to maintain minimum levels of each successional stage. Reserves should be large enough to offset catastrophic events (Vora '94). Maplewood State Park has extensive stands of northern hardwood forests that will be self-maintaining (maple-basswood). It is a park where old-growth forests can be permanently allocated and managed to become relatively self-perpetuating (barring major natural disturbance or change in climate). However, old growth management needs to be addressed in the larger framework of landscape ecology.

- **Action 1: Implement management towards native vegetation patterns.** Development of an Ecological Classification System (ECS) will help obtain accurate and useful information with which to determine the most appropriate ecological communities. Restoration is the goal in degraded natural communities, such as old fields.

- **Action 2: Create a long term vegetation management plan for Maplewood looking 50-100 years from now**. Conduct a record search for original forest/prairie information. The current vegetation of Maplewood reflects the land ownership history of the park. It is a mosaic of hardwoods, old fields and homesteads, wetlands, shoreline, and small patches of prairie.

- **Action 3: Determine areas for old growth, future old growth, prairie restoration, vista management, and young hardwoods growth**. A mix of wetlands, prairie, and hardwoods can be restored and maintained in the park. Old fields should be prioritized and restored to prairie or young hardwoods. (See Restoration Map). Old growth sites are already protected in state parks. Any identified old growth stands in Maplewood will be protected and managed as such. Enhancement or managed future old growth is currently not a major resource management practice in state parks. However, there are some forest management techniques that might be used to speed or enhance species composition of old growth, especially in plantation areas in the park.

- **Action 4: Minimize forest fragmentation to protect interior forest species habitat.** There is a critical need for interior forest bird species habitat, and the east part of Maplewood could be managed primarily for hardwood forest intermixed with wetlands.

- **Action 5: Participate in local and regional planning efforts to sustain healthy ecosystems.**

- **Action 6: Protect Federal and State listed species and manage their habitats for optimum sustainability conditions.** The MN County Biological Survey has not began evaluation of natural communities and the survey of rare plants in Otter Tail County. Provide input through local community and department to request that Otter Tail County receive priority in planning County Biological Survey.

- **Action 7: Plant native trees and shrubs in campgrounds and picnic areas (including the horse camp) to replace hazard trees and maintain shade.**

- **Action 8: Actively and aggressively control invasive exotic species such as European buckthorn, caragana, leafy spurge, Eurasian water milfoil, and spotted knapweed**. In managing exotic species, exotics should be eliminated and replaced with native species whenever possible. Herbicides will be managed to use the appropriate type and minimum amount needed to accomplish exotic species control and prairie restoration. Other methods of weed control will be used whenever possible. All recommended safety precautions will be used when and if herbicides are used.

- **Action 9: Resource management practices will be interpreted for public interest and education**. Incorporate concepts of biodiversity, ecosystem management and watershed/landscape management into park interpretive programs and displays, as well as explain current management projects.

- **Action 10: Monitor species and natural communities** for indications that reflect changes in populations and biological health. Indicator species should be identified. Initiate an ongoing assessment and monitoring program in the park.

- **Action 11: Reintroduce fire as an active part of the system.** As prairie areas are established, prescribed burning will be used as a tool to maintain and enhance these areas as well as hardwoods. Reintroducing disturbances is often vital to restoring ecosystems in state parks. Historically, fire was a major force in the shaping of the park's vegetation. Since it has been effectively removed from the system, those communities dependent on it have decreased. Fire disturbance should mimic natural events as closely as possible.

- **Action 12: Request a resource specialist position to be shared with Glendalough or other Hardwood Hills Landscape Region parks.** Resource management and restoration is seen as a major goal for the park.

Wildlife

A holistic approach is the foundation of ecosystem-based management. The goal is a viable population of all native species, varying within sustainable limits.

- **Action 13: Maintain wildlife populations at levels that allow vegetation communities to develop, and minimize problems related to park facilities and visitors (roads, campgrounds, etc.)** Manage wildlife populations to meet balanced ecosystem goals.

- **Action 14: Manage populations of certain species (beaver, raccoon) that have an impact on facilities.** Control beaver where flooding is a problem. Beaver may be a problem in some areas in the park, where they should be managed through appropriate procedures.

- **Action 15: Maintain the southeast part of the park as relatively undisturbed/undeveloped for wildlife habitat.** Determine habitat needs for interior forest neotropical song birds and manage the hardwood forest to favor them. This is a large block of mixed forest and wetland that could be managed for old growth forest, and as a representative of the full ecological diversity of the region.

- **Action 16: Deer populations will be monitored and managed to allow for vegetation succession.** Population control of deer will be one strategy. Options include special deer hunts which could include archery, firearms, and/or muzzleloader seasons, either sex hunts or antlerlesss only. The objective of vegetation succession should be measured by browse surveys or other monitoring methods. Fences or seedling protection tubes may be needed to promote the regeneration of some species of plants where deer browsing or grazing is high.

Land and Water Resources

The major goal is to protect surface and ground water against further degradation of water quality and to prevent soil erosion problems.

- **Action 17: A surface geology and soil map should be developed for the park.**

- **Action 18: Clean up the old dump sites in the park.**

- **Action 19: Reduce erosion in the park by enforcement of trail use rules, volunteer rangers, and education of users**. Consider trail relocation where needed for erosion control.

- **Action 20: Find and seal any abandoned wells that remain**. There is currently a project underway locating abandoned wells from 1946 aerial photos.

- **Action 21: Conduct periodic water quality testing for drinking water and in conjunction with fish surveys**. In cooperation with area lake associations and others, consider having Fladmark Lake be a baseline for water quality standards in the area (possibly using the trophic state index test). This information could then be used for comparison of water quality in lakes that have greater development impacts. Monitor runoff as a source of water quality degradation.

- **Action 22: Design park development and structures (boat ramps and docks) with high and low water levels in mind.**

- **Action 23: Continue wetland restoration in the park and avoid water control structures**. Determine what kind and where wetlands existed before they were first drained or diverted. Research past restoration projects to determine the kind and effect of the restoration that was accomplished.

- **Action 24: Control invasive exotic species such as purple loosestrife and Eurasian Milfoil**. Lakes should be monitored for presence and boaters given information on preventing the spread of these exotic species. Wetlands, which are extensive in the park, should be periodically monitored for the presence of purple loosestrife.

Fisheries

In general, fisheries management at Maplewood State Park will balance recreational needs of the area with the natural ecosystems that occur or have existed in the park. Natural drainage patterns should be maintained and preserved whenever possible. Natural spawning habitat should be protected in lakes and streams. DNR staff, including Parks, Fisheries, and Waters, should consider the advisability of any water control structures or road culverts, which often prevent access to spawning and rearing habitat. Future fisheries management activities in the park will include: 1) coordination between Parks and Fisheries and 2) periodic review of fisheries assessments and park issues to determine the future management of these lakes.

- **Action 25: Continue managing Beers Lake for muskellunge, black crappie, largemouth bass, and sunfish populations.** Recreational fishing is very popular at this lake, particularly because this lake offers one of the few opportunities in the area to fish for muskies.

- **Action 26: Increase size and numbers of crappies in South Lida** (note: experimental crappie regulations began spring 1997).

- **Action 27: No recommendations will be made for Fladmark and 21 Lake until the fisheries research studies are completed**. There is a possibility of limiting these two lakes to electric motor or nonmotorized lakes in the future.

- **Action 28: Investigate the designation of Cow Lake as a Heritage Fishery Lake or have other fishing restrictions**. The nearest Heritage Fishery Lake is in Glendalough State Park at Annie Battle Lake. The goal of the Heritage Fishery is to provide quality fishing, but also to provide a demonstration and education area for fisheries management. Special experimental regulations are tailored to the fish population. The use of electric or gas motors or electronic fishing aids is not permitted and boat access is limited to carry-in canoes or rowboats.

- **Action 29: Grass Lake - continue bluegill stocking as needed**. Little Grass Lake - no fish management recommended at this time.

- **Action 30: Bass Lake - continue managing for rainbow trout fishery.** Changing the name of the lake was also discussed, however, it was not agreed to as a worthwhile change.

Cultural Resource

Cultural and regional history are topics which are of special interest to park visitors.

- **Action 31: Cultural interpretation should be located at appropriate field sites, on kiosks, in the office, or at the new visitor center building including displays and brochures**. (See the Interpretive Services Recommendations for more details).

- **Action 32: Insure that archaeological exams are done before any earth work is done in the park**. As is the Division of Parks policy, if significant cultural resources are discovered during surveys, facility siting, design, use, and possible archaeological mitigation may need to be reviewed to avoid or minimize impacts. A systematic investigation and mapping program of the park is preferable to development-driven, individual surveys.

Recreation Resources

Recreation Management Objectives

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

Community

- Provide reasonable access and accommodations for persons with disabilities.

- Offer and market a package of opportunities which include:
  Largest State Park in the Hardwood Hills Landscape
  Camping, swimming, and picnicking
  Diverse cultural resources and history
  Candidate old Growth Forest complex
  Trout fishing lake and other fishing opportunities
  A variety of trail opportunities including hiking, biking, skiing, and snowmobiling
  Scenic Hallaway Hill and other unique geological features
  A diversity of wildlife and birds, including waterfowl and eagles.

- Promote the safety and security of park users.

- Complement the character and economic vitality of the neighboring communities.

- Promote increased understanding, appreciation, and enjoyment of natural and cultural resources in the park by providing interpretive services.

Economy

- Consider the long-term social, economic, and environmental costs of growth and development. Base decisions on whether or not they are sustainable over the long term.

- Use natural resources and public funds efficiently. Direct growth toward areas with existing capacity in infrastructure and services. Use land efficiently and appropriately.

Environmental

- Respect the limitation of the natural environment to support growth and development.

- Preserve and interpret the park's natural scenic beauty, old growth hardwood communities, noncommercial atmosphere, and historic character.

- Minimize and concentrate park development in order to preserve the remaining portions of the park.

Existing Development

Camping

- Semi-modern campground: 60 drive-in sites, 32 with electricity (33 sites built in 1974 and the remainder added in late 1970s, electricity added in 1997)
- 1 sanitation building with showers (built in 1974)
- 15 rustic sites in the picnic area
- 1 primitive group camp: 50 person capacity
- 30 rustic horse camp sites
- 3 backpack/canoe camp sites

Trails

- Hiking: 10 miles
- Self-guided: 2 miles
- Cross-country Skiing: 4 miles groomed, 13 miles total
- Snowmobiling: 15 miles groomed trails
- Total trail alignment: 32 miles

Day-Use

- Picnic Shelter and beach house (built in the mid-1980s)
- 1 Swimming beach
- 3 Drive-in water accesses
- 2 Carry-in water access
- 4 Roll-in docks
- 7 Fishable lakes

Park Administration

- Contact Station (built in 1989)
- Park service garage and shop area
- Trailer dump station
- Septic tanks: 5
- Active wells: 7, Unsealed abandoned wells: 3, Sealed abandoned wells: 30
- Roads: 5 miles blacktop (early 1980s); 7 miles gravel

Proposed Development Actions

This plan provides the basic management direction for the park and is not intended to provide specific management or development details. The proposed development in this plan is generally conceptual. Site-specific, detailed development plans will be completed based on the concepts outlined in this plan. The proposed development map shows the location of major proposed developments. Also, refer to the proposed summer and winter trail maps and the Interpretive Service chapter.

Proposed developments outlined in this plan were generated after reviewing available information on park resources. Development recommendations are made after careful consideration of the natural and cultural resources, resource management zoning map, and the recreation management objectives outlined in this plan. Plans often need to be altered as more data become available.

Each recommended development proposal (e.g. buildings, trails) is contingent on a detailed site analysis prior to implementation. Development will only take place after a detailed physical analysis (e.g. soils) and resource assessment (e.g. impact on soils, wetlands, geological features, rare plants, and/or animals or archaeological sites) have been conducted, considered, and mitigated.

Trails

Trail locations and conditions were seen as major issues in the planning process. With 32 miles of trails in a wetland area with diverse topography, maintenance concerns are inevitable. Existing park trails often utilized old township roads. With shrinking maintenance budgets and greater emphasis on efficiency, every existing trail was evaluated for its ability to provide multiple use and ease of maintenance. Signing needs ongoing evaluation.

Winter Trails (Snowmobile and Cross Country Skiing)

Winter trails were probably the first facilities to be used when the park opened. Several factors were considered in redesigning the winter park trails. 1) One objective was to minimize the interaction between snowmobile trails and ski trails. 2) Snowmobile use has changed over the past 20 years and fewer people utilize short snowmobile loops. They tend to prefer longer corridor trails that take them from town to town. 3) Minimize maintenance. 4) The park snomowmobile trails do not currently connect to the grant-in-aid trails to the east of the park, and this was seen as a missed opportunity. Overall, the ski trails will be about the same, with a short beginners ski trail being added, while snowmobile trails will increase slightly.

- **Action 1: Increase snowmobile trail mileage, primarily by using existing roads and trails**. Park snowmobile trails should connect to Grant-In-Aid trails outside the park boundaries on the northeast, west, and south sides of the park. Allow the existing minimum maintenance township road through the eastern part of the park to be used fore snowmobile trail. Provide a northern loop within the park by using the horse trail behind the contact station going to the east connecting with an abandoned township road and east to the existing township road.

- **Action 2: More reassurance markers and arrows are needed for snowmobile trails and cross-country ski signage needs to be better marked with maps and mileage.**

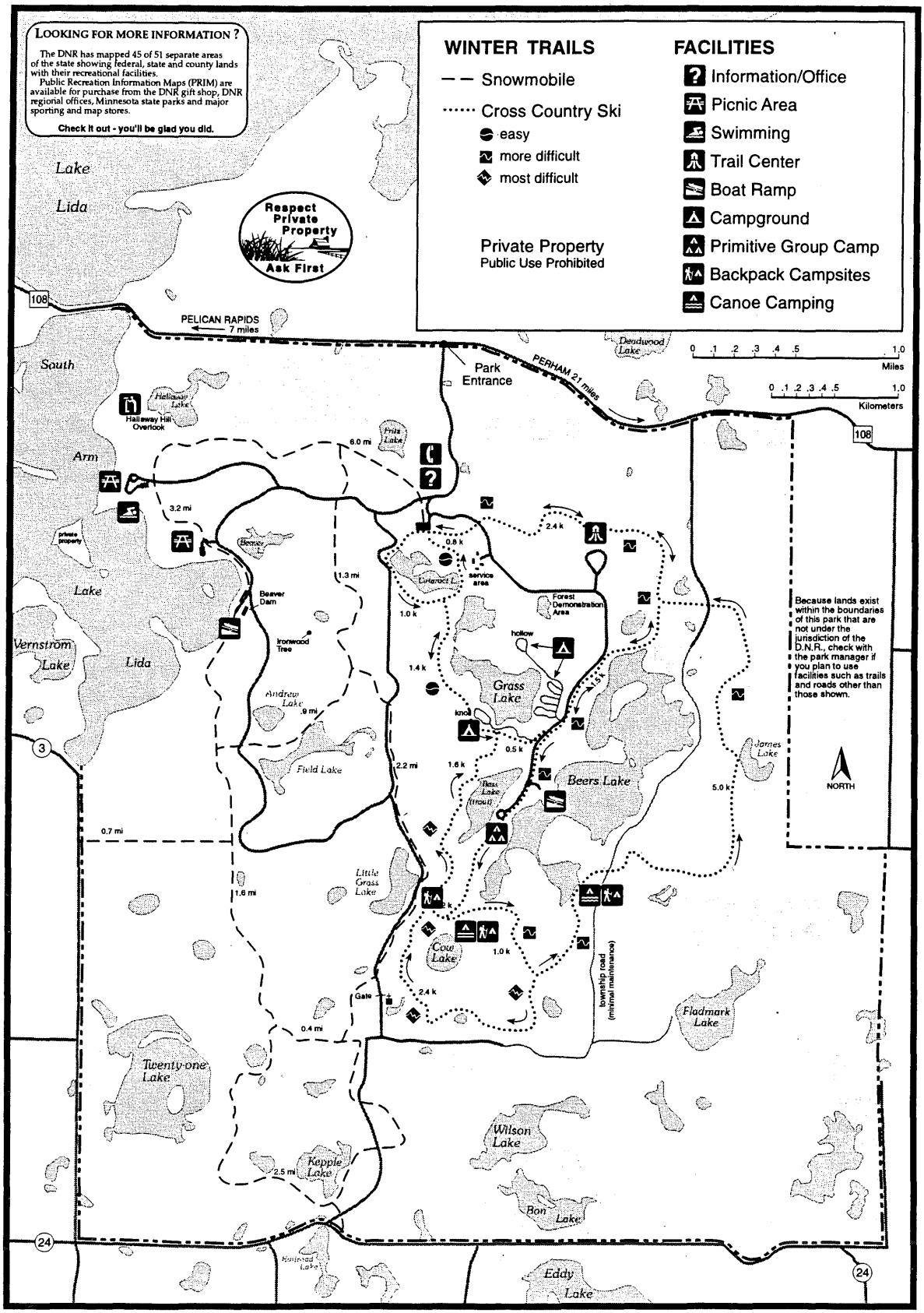
- **Action 3: Several improvements should be completed in the Hallaway Hill area.** Signage on the south side of Hallaway needs improvement. On south side of Hallaway Hill add a snow fence if needed. Benches should be added on Hallaway Hill.

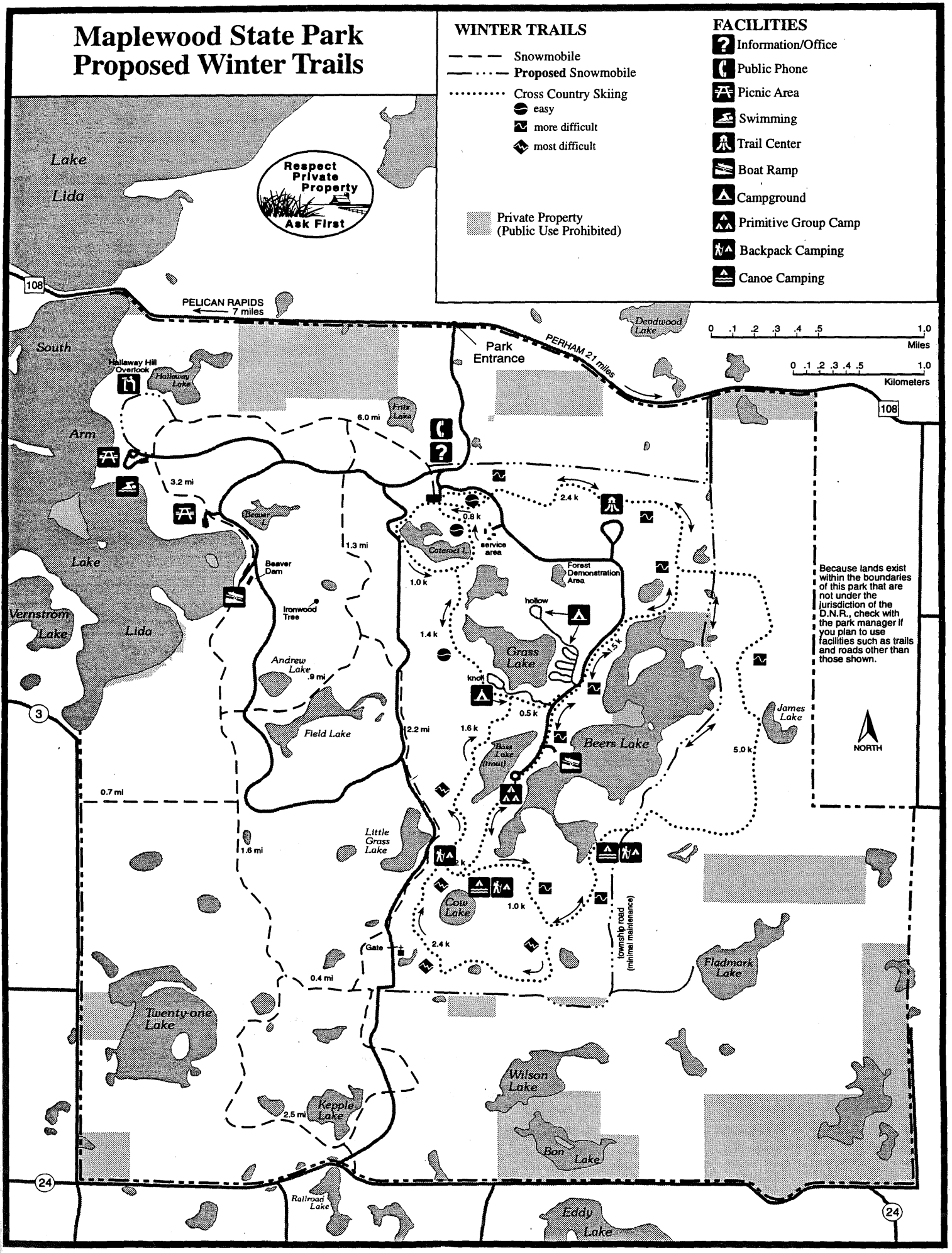
- **Action 4: Focus snowmobile trail maintenance efforts on the main corridor trails**. To improve trail maintenance, park trails should be put into grant-in-aid.

- **Action 5: It is recommended to add a new beginner ski trail loop near the proposed visitor center**. This will probably correspond with the proposed new handicap accessible summer trail, either to the east or west of the proposed visitor center.

- **Action 6: Seek funding for cross-country ski trail grooming and for promoting the excellent ski opportunities at Maplewood**. Currently Maplewood does not receive funding from the State Park Ski Pass account. When the proposed visitor center is completed, new use patterns will attract more skiers to the park and there will be increased maintenance needs.

Existing Winter Trails Map




Maplewood State Park
Proposed Winter Trails
WINTER TRAILS
Snowmobile
Proposed Snowmobile
Cross Country Skiing
easy
more difficult
most difficult
Private Property
(Public Use Prohibited)
FACILITIES
Information/Office
Public Phone
Picnic Area
Swimming
Trail Center
Boat Ramp
Campground
Primitive Group Camp
Backpack Camping
Canoe Camping
Respect Private Property
Ask First
Lake Lida
South Arm
Lake Vernstrom
Lida
108
PELICAN RAPIDS
7 miles
PERHAM 21 miles
Park Entrance
Deadwood Lake
Halloway Hill Overlook
Halloway Lake
Fritz Lake
6.0 mi
3.2 mi
Beaver
Beaver Dam
1.3 mi
Ironwood Tree
Andrew Lake
.9 mi
Field Lake
2.2 mi
0.7 mi
1.6 mi
Little Grass Lake
Cataract L.
service area
0.8 k
2.4 k
1.0 k
1.4 k
Forest Demonstration Area
hollow
Grass Lake
knoll
0.5 k
1.6 k
Bass Lake (trout)
Beers Lake
1.5 k
5.0 k
James Lake
NORTH
Cow Lake
1.0 k
2.4 k
Gate
township road (minimal maintenance)
0.4 mi
Twenty-one Lake
Fladmark Lake
Wilson Lake
Kepple Lake
2.5 mi
Bon Lake
Railroad Lake
Eddy Lake
3
24
0 .1 .2 .3 .4 .5 1.0 Miles
0 .1 .2 .3 .4 .5 1.0 Kilometers
Because lands exist within the boundaries of this park that are not under the jurisdiction of the D.N.R., check with the park manager if you plan to use facilities such as trails and roads other than those shown.

Summer Trails (Hike, Horseback, and Bike)

The summer trails allow access to major park attractions and facilities and connect many of the areas together in a network of trails. Although erosion is a concern in several areas, the major maintenance problem arises with the mucky soil, often the result of high lake levels or beaver activity. In some cases it was concluded that it will be easier to move the trail rather than combat the ongoing problem of lake levels and beavers. As much as possible, summer trails utilize existing ski and snowmobile trails. The number of miles of hiking and horseback riding trails will remain the same, while new areas will be designated for bikes. The horse trails are very popular, but there has been no significant increase in the amount of use by horses in the last 20 years.

- **Action 6: Improve signage, especially where trails cross roads.** More clarification is needed concerning rules of the trail.

- **Action 7: Construct several "trail rest areas".** A "rest area" to stop and tie horses is needed at the base of Hallaway Hill (on the southeast side, away from the hiking trail). Riders could then hike to the top of the hill. Construct another rest area with benches and tie-ups on the long southern horse trail. This would probably be located east of Lake 21.

- **Action 8: Develop an interpretive trail around Cataract Lake, leaving from the proposed visitor center on the north side of Cataract Lake.**

- **Action 9: Develop a short accessible trail from the location of the proposed visitor center on the north side of Cataract Lake to the wetland to the east and back.**

- **Action 10: Consider the addition of a multi-use trail in south/southeast corner of the park.**

- **Action 11: Horse trails will be maintained at basically the existing system; new major horse trails will not be added.** There may need to be several short trail sections where horse and bikes will share the same treadway in order to make trail connections.

Bike Trails

Demand for bike trails is very high and growing. Providing family biking opportunities in Maplewood was seen as an appropriate activity in the park. In general, as family bike use increases in the park with the development of the paved trail from Pelican Rapids, there should be efforts to find connections to create more loops, paved bike trails or bike lanes on existing roads, both inside and outside the park.

There was a trial period for mountain bikes during the late 1980s. Bike use grew very fast and it became apparent that the existing trail system would not accommodate both horses and mountain bikes. Bikes were no longer allowed on the park trail system beginning in the early 1990s. The possibility of mountain bike trails in Maplewood State Park was discussed at several group meetings. Mountain bikes will continue to be directed to use the minimum maintenance township road loop. It was decided that the problems of erosion, safety and user conflict would outweigh the advantages of providing this new day use activity on the park trails. State forests, near the park, such as Smoky Hills and Huntersville State Forest, have roads and trails that are open to mountain bike use, unless posted otherwise. Some state forest snowmobile trails may be impassable in the summer due to wet conditions.

- **Action 12: As soon as the Pelican Rapids bike route is selected, begin working on interior park trails**. Delay determining park entry point until the route is selected from Pelican Rapids. There are several areas on the west side of the park that could work fine, coming in off of County Road 3. Try to use existing trail routes or abandoned township roads as much as possible to avoid additional forest fragmentation.

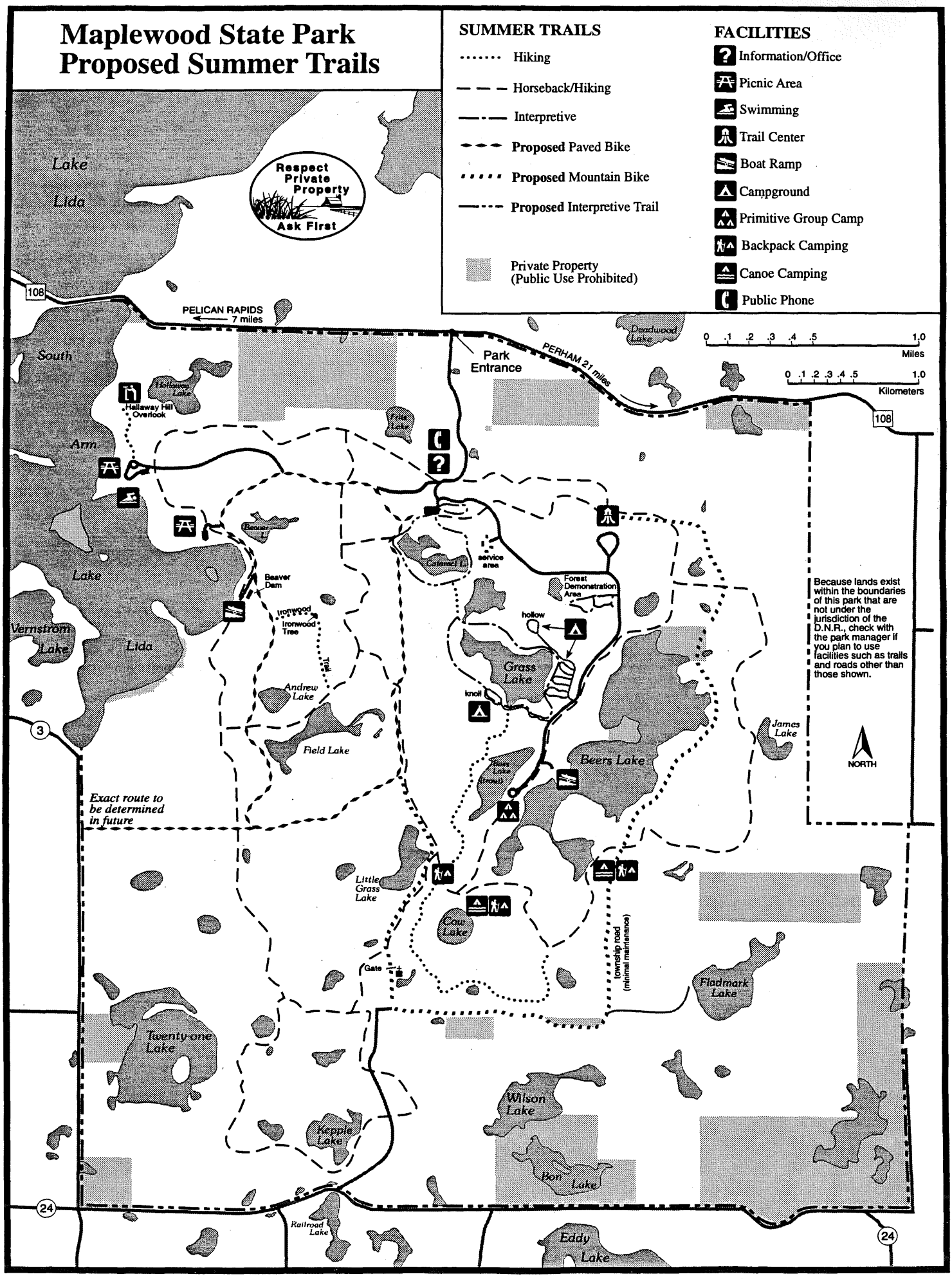
- **Action 13: Recommended criteria for the new bike trail include**: Keep the trail as scenic as possible. Degree of difficulty should be easy to moderate (not too steep, but some hills are OK. In the park, there may need to be a wider trail (double track) or have separate bike/snowmobile trails.

- **Action 14: Pave the park drive, make it a one-way road and have designated two-way bike lanes**. The city of Pelican Rapids has worked hard to get the bike trail to the park. Once the bicyclist are in the park, there will need to be biking opportunities inside the park, at least to the major facilities. Investigate possible partnerships to help fund the bike trails inside the park, work with the Park Advisory Group.

- **Action 15: Add a mountain bike connection on the Grant-In-Aid snowmobile trail** (sharing with the existing horse trail) to allow mountain bikers to connect from the minimum maintenance township road back to the park bike trail system. This will provide a loop for mountain bikers inside the park without having to go on busy State Highway 108.

- **Action 16: Long-term, connect the bike trail in the park to Glendalough State Park**. There is an existing snowmobile trail that currently connects with Battle Lake. It may be a possible route for the bike trail. This would require additional cooperative efforts.

Maplewood State Park
Proposed Summer Trails



Camping

The main campground at Maplewood State Park offers scenic, lakeshore camping and new electric hook-ups with one shower building. Hollow Campground and Knoll Campground offer sites with greater privacy and a more rustic camping experience. The drive-in campsites are nearly full on summer and fall weekends with some midweek use. The group camp is located on a scenic ridge between two lakes and the horse camp offers a very large, pleasant field surrounded by woods. Part of the picnic grounds at Lake Lida also serves as overflow camping on a rustic basis. The east side of the park is the least developed, and should remain so in the future. Currently the number of campsites is sufficient. The group camp is fairly small (about 50 person capacity). There was discussion at several meetings about relocating the group camp, however, a better location could not be found to meet the criteria. It was then recommended that the group camp should not be moved. Swimming at the campground was also discussed. However, as the name "Grass Lake" implies, it is not well suited to swimming.

- **Action 16: The existing shower building needs to be remodeled or replaced and should be enlarged considerably.** This project is on the state park capital needs list and is awaiting funding.

- **Action 17: Camper cabins should be added.** Start with 3 cabins in the campground and then evaluate.

- **Action 18: The overflow campgrounds in the picnic area at Lake Lida should be converted to a rustic campground** (not more than 25 sites). No electric sites will be provided due the archaeological significance of the area.

- **Action 19: Water should be provided at the group camp and at Knoll campsites.**

- **Action 20: Add a restroom/shower building in the horse campground. The horse camp needs a site plan.** The sites should have the following criteria: large spaces, limit the number of campers at any one time. In the site plan, calculate the number of sites based on the number of existing outhouses and/or if the new shower building is installed. If large groups request to use the horse camp they will need special use permits and will need to bring in the appropriate number of satellite toilets.

- **Action 21: A short walk-in or cart-in campsite should be added with a hard surfaced trail.** Cart-in or walk-in sites are relatively inexpensive to develop. It should be located near existing facilities in an area that has good privacy, but will not damage native vegetation.

- **Action 22: Develop 3-5 additional backpack, boat/canoe-in campsites.** No specific locations were recommended at this time.

Other Day Use Recreation

The picnic/swimming area was used in the 1970s with the modern sanitation building being constructed in the mid 1980s. The other small picnic area, is often used now for rustic camping. At one time the horse camping area was located here.

- **Action 23: A new visitor center/trail center should be built**. The recommended location is near the office, overlooking Cataract Lake. (This was also the site chosen in the first management plan). This area provides a beautiful overlook of Cataract Lake and is easy to plow to in the winter, with plenty of previously disturbed area for parking. It would only be a short distance to connect with the newly proposed bike trail. It should be heated for year-round usage and include: a stove or fireplace, indoor toilets, outdoor deck for barbecues with eating areas, adequate indoor space for a busload of people, good storage space, a small office area for seasonal or area naturalist, AV area, and possibly a small conference room.

- **Action 24: Construct a picnic shelter at the Lake Lida picnic grounds**. If this receives heavy use and the demand is high for a second shelter. The second location could be at the original Beers Lake landing.

- **Action 25: Relocate the Beers Lake access. Install picnic tables and benches by the old Beers Lake access**. The existing Beers Lake access is on a small, narrow peninsula. The launch area has frequently been underwater, during the recent years and it is a low, muddy area. There is also an inadequate amount of parking space, little room for turning with trailers, and nowhere to expand. Therefore, a new location is proposed a short distance up the shore, across from the campgrounds, at an old farm site. The current or "old" area should be made into a quiet spot for shore fishing and small picnics.

- **Action 26: Provide opportunities for shore fishing by utilizing appropriate accessible shore fishing facilities** at: Bass Lake, Trout Lake, and Beers Lake.

- **Action 27: Install an extended dock or pier on Grass Lake near the campground**. Docking facilities should only be to aid in launching (not for parking). No fishing pier is recommended.

- **Action 28: Boat accesses at each lake need to be looked at individually**. Return/maintain the carry-in lakes as carry-in access only. The use of personal watercraft (jet skies) was discussed at one meeting. They are mainly used on South Lake Lida. The 1998 Minnesota legislature has increased restrictions on these vehicles. Individual counties may also increase restrictions on the watercrafts, however the park can only make restrictions on lakes that are completely within their boundary. One lake in the park has motor restrictions and one lake has speed limit restrictions. Bass Lake is electric motor only. In the future, it is possible there will be more lakes with electric only or with motor restrictions.

Roads, Parking Lots, Accessibility, Administration

- **Action 28: The upgrade of the existing blacktop is a highest priority**. The second priority for blacktopping is the campground into Knoll camp loop and on to the Beers Lake access. These are high use roads with high erosion problems. Third priority for blacktopping is the park drive. This may become higher if it is needed for a bike trail connection should the trail come from Pelican Rapids to the park.

- **Action 29: After the upgrade, it is recommended that the park drive be made a one-way scenic drive** from the boat access on, going counter clockwise, with designated two-way bike lanes.

- **Action 30: The east township road should be maintained as a minimum maintenance road;** or for park patrol and does not need to be improved or paved. If it is abandoned as a township road, then have it become primarily a trail route, with possible access to Fladmark Lake. One park entrance road is preferred.

- **Action 31: If park drive is made one-way, signs will need to be changed accordingly**. Roadway signage is adequate except the east side of park drive needs sign indicating "to contact station" or "to beach".

- **Action 32: More pull-offs and benches should be added along all park roads** (especially along the park drive and to the beach).

- **Action 33: There is need for additional parking at the Beers Lake access and visitor parking in the campgrounds**. There is adequate winter parking.

- **Action 34: Priority buildings for bringing up to accessibility codes are: the campgrounds and the picnic area restrooms**. Parking lots are accessible and there are walkways to buildings.

- **Action 35: When the new visitor center is developed, that building should be handicapped accessible**. An accessible trail should be located near the visitor center.

- **Action 36: Construct a new cold storage building and expand the existing heated building in the shop area**. These facilities are needed for equipment storage, bundled firewood and lumber storage.

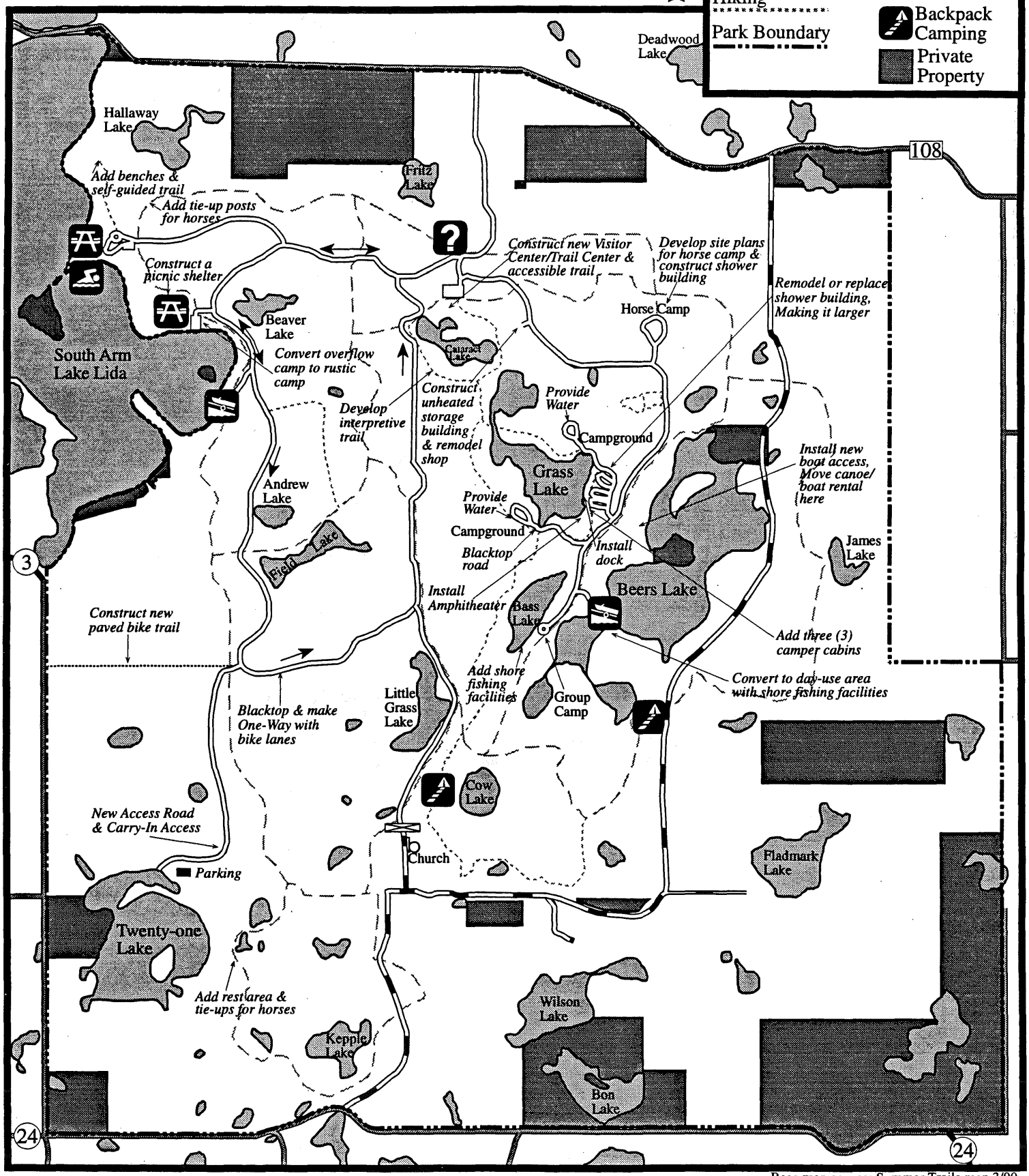
- **Action 37: Expand the existing contact station** to provide additional storage area, office space with adequate computer equipment, and a larger nature store area.

- **Action 38: Provide a road from the park drive to Lake 21 and develop a new boat access and day use area at the same time**. Ideally, Lake 21 should be accessible from inside the park, rather than having to drive all the way around the park. Route selection will have to be carefully considered due to wetlands in the area.

Maplewood State Park

Proposed Development

0 0.5 1.0 Miles



Base map source: Summer Trails map 3/90

PARK BOUNDARY

The existing statutory boundary of Maplewood State Parks includes approximately 9,262 acres. Included within the boundary are approximately 1,158 acres of privately owned land in 45 parcels, approximately 8,103 acres of state park administered land, one acre of school district land and .22 acre of Veterans Administration Land. (See Land Ownership Map).

Boundary modifications were discussed at several planning meetings. The 1978 Management Plan of Maplewood State Park recommended an expansion to the east of the park. This statutory boundary change was never completed. The Minnesota Legislature sets a statutory boundary for each state park. The Minnesota DNR, Division of Parks and Recreation, can only negotiate for purchase of land from willing sellers within statutory boundaries. State Parks cannot purchase land outside of the boundary. Being included in a state park boundary gives landowners the option of an additional potential buyer (state parks). Landowners can sell to whomever they choose and use of their land is unaffected by the boundary.

Land Management and Boundary Recommendations

Lake Lida Island

- **Action 1: Install a park sign at the beach point that says the island on Lake Lida is private property**, also improve park maps and other information about private property.

Boundary Change

- **Action 2: Seek local landowner support and legislation to expand the park boundaries to the east in Star Lake Township (T 135 R 41W Sect. 17, 18, 19, and 20),** approximately 2,540 acres. This was proposed in the 1978 management plan, but was never accomplished. This land has high quality woodland, small lakes, and wetlands and at this time is not highly developed. It would provide additional wildlife habitat, especially for forest songbirds, and would help to meet future recreation needs. It is recommended that the area be inventoried and a report be compiled, documenting the effect such an addition would have on the local property tax base, the anticipated revenues generated by additional park area, and potential conflicts with private enterprise resulting from such an expansion. All affected landowners should be contacted and their interest in being included in the park boundary indicated in the report. The Division of Parks and Recreation will not request the Minnesota Legislature to include any lands in the statutory boundary without local landowner support.

Land Protection

- **Action 3: Work with wildlife associations, conservation groups, lake associations, and others to promote ecosystem management on private property for wildlife habitat and watershed protection**. Provide educational materials and encourage partnerships. Work with landowners within the park boundary and in adjacent areas so that land is managed to protect water quality, woodlands, wetland, and prairie habitat. Some of the options and easements that are currently available for private landowners include:

1. Conservation easements (MN Land Trust);
2. Land retirement programs (RIM Reserve and Conservation Reserve Program, Conservation Reserve Enhancement Program, Wetland Reserve Program, MN River Basin Pilot);
3. Property tax relief programs (for native prairie, wetlands, agriculture preserves, Green Acres, Metropolitan Agricultural Preserve program);

4. Restoration cost-share programs (Partners for Wildlife, Pheasant Habitat Improvement, Stewardship Incentives Program);
5. Registry programs;
6. Deed restrictions (MN Land Trust);
7. Mutual covenants;
8. Leases;
9. Management agreements;
10. Sustainable Farming Options (EQUIP, Pilot Projects);
11. Conservation District Option;
12. Voluntary implementation of conservation practices (private decisions to not harvest a timber stand, or drain a wetland, or sell to a developer). Although often unrecognized, this is perhaps one of the most important stewardship efforts taking place.

Additional information is available on the above programs through the Land Protection Options - A Handbook for Minnesota Landowners, published by The Nature Conservancy, the Minnesota Department of Natural Resources, The Trust for Public Land, and the Minnesota Land Trust (1996).

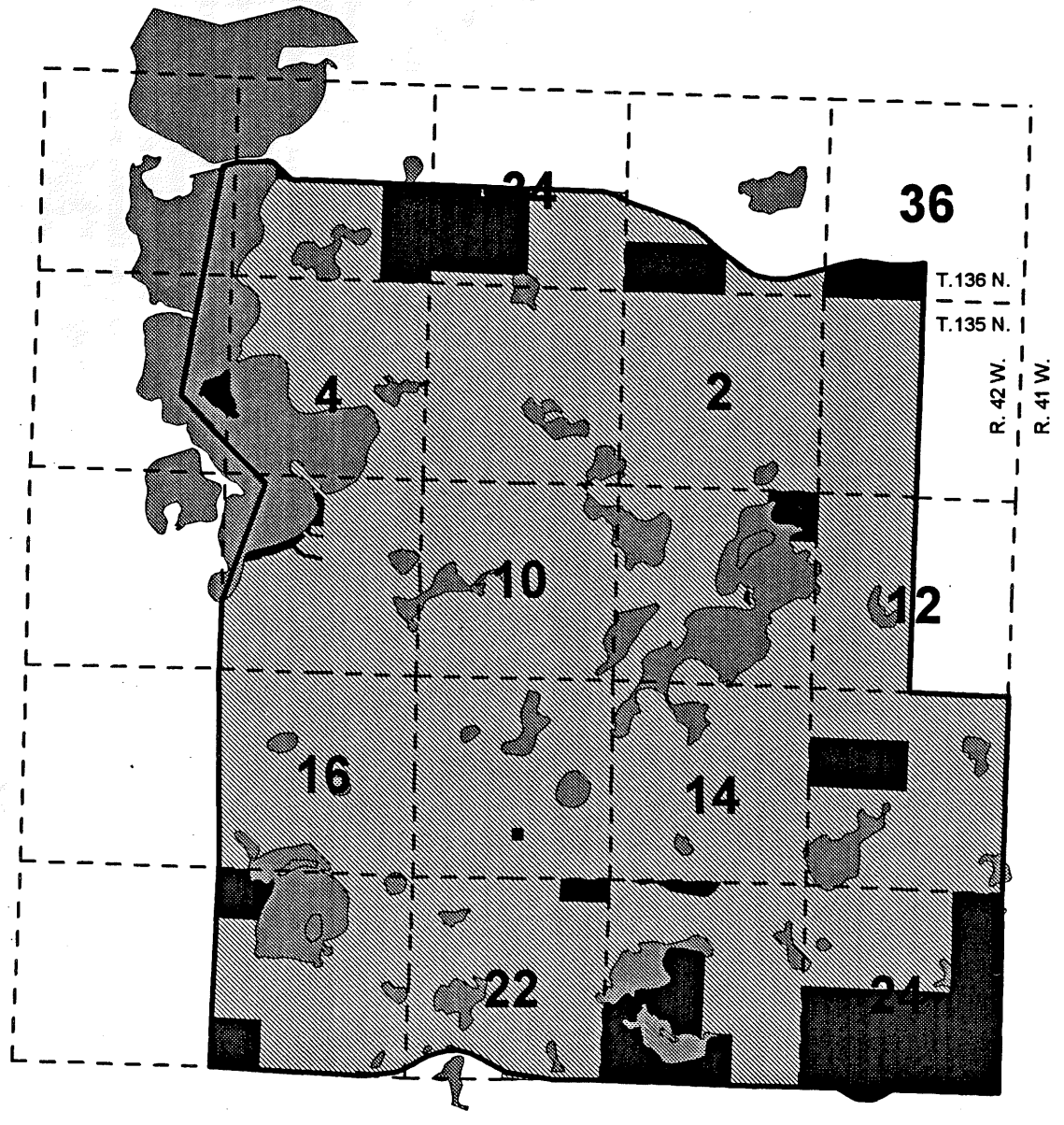
Buffer Zone

- **Action 4: Encourage the county and townships to establish a one mile economic development buffer zone around Maplewood** (which would prohibit certain development such as junk yards, quarries, large feedlots, etc.).

Subdivision

- **Action 5: Keep the subdivision area in the northwest corner of the park as part of the statutory boundary**. There is park property on all three sides of this small subdivision.

Maplewood State Park Ownership



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N
W E
S

Park Boundary
Section Lines
Private Lands
Lakes
Public Lands

Mapping Notes:
This map was prepared using information from a variety of sources. Not all of these sources meet Federal Map Accuracy Standards.

Questions regarding the accuracy of this map should be addressed to the DNR Bureau of Engineering. 612-296-2119.

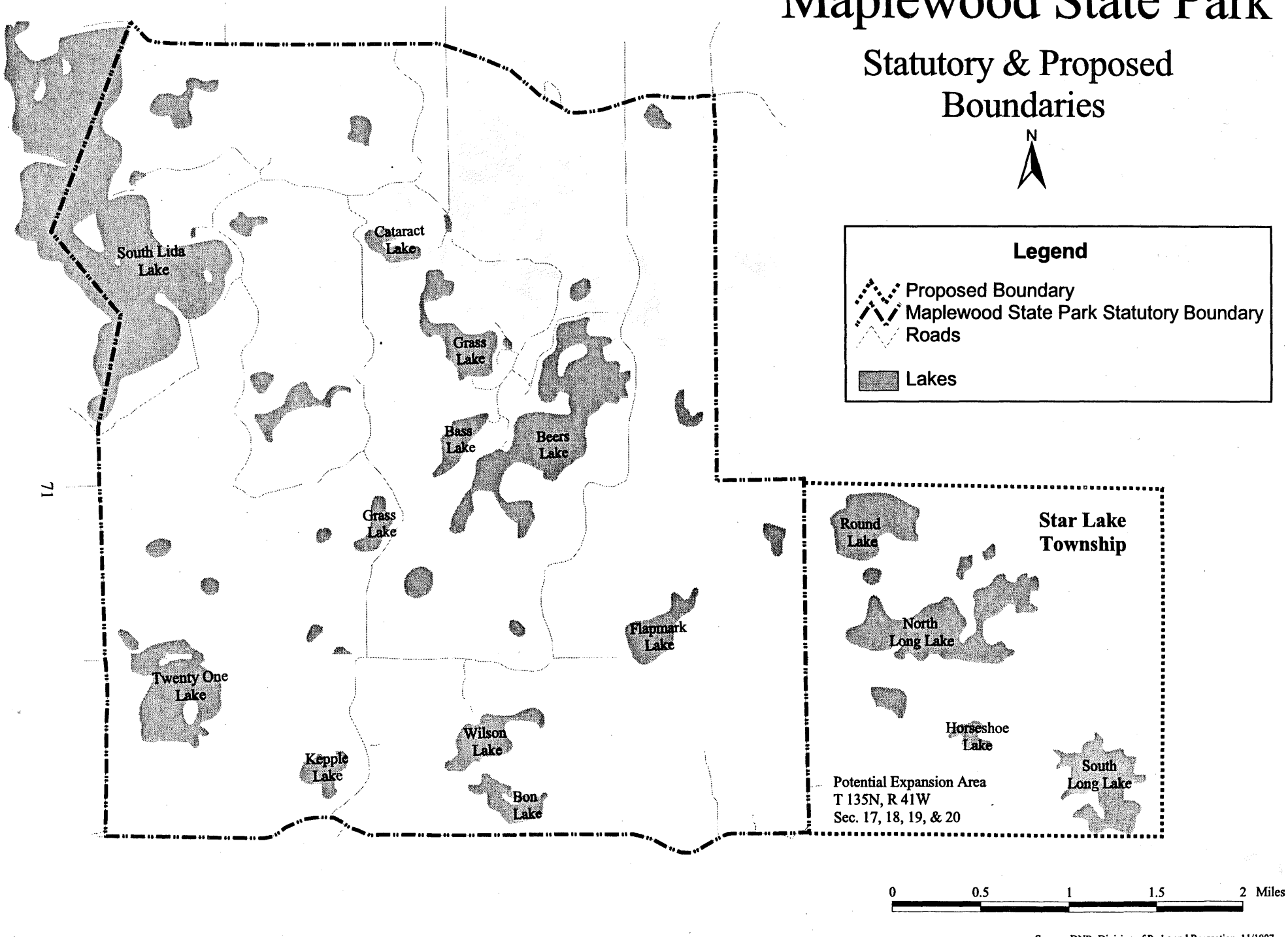
2 0 2 4 *Miles*

Maplewood State Park
SPK00229

Prepared by:
DNR Bureau of Engineering
SVF; Nov. 1997

Maplewood State Park

Statutory & Proposed Boundaries



Source: DNR, Division of Parks and Recreation, 11/1997

Interpretive Services

The interpretive services program in Minnesota State Parks began in 1941 through the WPA program when guide services were offered at Itasca. The program lasted for one summer and was shut down for World War II. In 1947, Walter Breckenridge, from the Bell Museum, met with the state parks director and worked out an agreement for the Bell Museum to run interpretive programs in several state parks until about 1960. At that time Minnesota State Parks began their own interpretive services program.

The Minnesota State Park and Recreation's interpretive mission 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."

As a division of the Minnesota Department of Natural Resources, the Minnesota State Park system seeks to promote increased understanding, appreciation, and enjoyment of natural and cultural resources in Minnesota; assist in protecting each state park's resources; promote public understanding of, involvement in, and support for the Minnesota Department of Natural Resources and its Division of Parks and Recreation; and to increase public awareness of critical environmental problems on a local, state, national and worldwide scope, as a major provider of environmental educational experiences.

The park Interpretive Services chapter of this plan identifies and describes interpretive themes (or stories) that should be told about Maplewood State Park based on its natural, cultural and recreational resources. The chapter recommends ways for the park manager and staff, regional naturalist, park interest groups and volunteers to interpret and tell those stories to the park's stakeholders. The resources and themes listed in this chapter reflect the importance of those stories as they fit with the Minnesota State Park System's Interpretive Services Plan (1995).

The State Park Interpretive Plan was completed in 1995 and is scheduled to be updated soon. In this plan all state parks are evaluated by resources, audiences, and park use. The results are then tabulated into a rating for each park. Maplewood is rated a 3 out of a possible 5 in the overall analysis. Maplewood State Park received the highest ranking possible in representing the resource characteristics of the Hardwood Hills Landscape Region. This means that the park comes close to depicting what the original native vegetation of this area looked like. Culturally, this area is important for its prehistoric and historic habitation sites.

Landscape Regions provide one reference point in time to interpret what resources were here when Europeans arrived, how interactions between people and the land affect each other, and why the landscapes look the way they do today. The natural and cultural resources of Maplewood State Park contribute significantly to telling the stories of the local area, landscape region and the state.

The statewide plan recommendation is for a seasonal naturalist at Maplewood or a year round naturalist to be shared with Glendalough. Of the 68 state parks, 13 have year round naturalists. Itasca, Bemidji and Sibley are the closest parks to Maplewood with year round naturalists. Ten other parks have summer only naturalist programs, including Lake Carlos and Buffalo River. The focus in the park has been on non-personal interpretation and various volunteer efforts.

Interpretive Clientele

An analysis of park use has been used to measure the present and potential audiences for interpretation in all Minnesota State Parks in the Interpretive Services Plan. This was based on the number of day use visitors, the number of campers, and the population within a 25-mile radius. The criterion to document additional potential users of the park's interpretive services includes environmental education opportunities for local schools. When compared to other state parks , Maplewood State Park ranked mid-range for number of campers, low for number of day users, and mid-range for population base within 25 miles.

Summary of Existing Interpretive Services

Over the last 15-20 years, there have been volunteers who have conducted occasional programs and the park manager and a naturalist working as a parks worker have also contributed occasional programs for summer visitors and school groups. In the 1970s there were some naturalist intern programs in the park. Now programs are mainly done on a special request basis.

Interpretive Facilities

There are no developed facilities at Maplewood State Park devoted entirely to interpretation and education. The contact station maintains some park orientation displays, but no other indoor exhibits or program areas exist.

Non-personnel Interpretation

Two self-guiding interpretive trails have been developed at the park: the Grass Lake Interpretive Trail and the Forestry Demonstration Trail. The Grass Lake Interpretive Trail Guide was completed about 15 years ago and is currently outdated and needs major revisions.

Several outdoor interpretive signs have been installed at Maplewood including an outdoor beaver pond exhibit. Other signs include interpretation of fish management of Bass and Beers Lakes and deer exclosure information. A new interpretive sign about the life of Hannah Kempfer, the first woman elected to the Minnesota Legislature, was installed in 1997 in the Lake Lida picnic grounds.

Through the efforts of a graduate student from North Dakota State University, a geology guide to the park called "Maplewood Down Under" was developed. It is a self-guiding booklet that is sold at park headquarters and provides an outstanding overview of how the glaciers formed the Maplewood landscape.

Like all Minnesota State Parks, Maplewood offers the Junior Naturalist Program and has for sale the series of Explorer Activity Books for children.

Overview of Area Interpretive Services

There are a number of interpretive facilities within a 50 mile radius of Maplewood State Park. The Prairie Wetlands Learning Center (under development), Fergus Falls; the Otter Tail County Historical Society - Museum and Educational Programs service in Fergus Falls; Moorhead State University Regional Science Center and Buffalo River State Park; Tamarac National Wildlife Refuge; and the new Otter Trail Scenic Byway.

The Otter Tail County Historical Society

Otter Tail County has one of the finest Historical Society museums in the state. This facility is located in Fergus Falls and offers special programs that relay the area's history, including dioramas, period rooms, and other static displays, as well as live shows and speakers. The museum focuses on geology, wildlife, and the people of Otter Tail County. The trades and lifestyles are depicted, with a large section of the museum devoted to agriculture. The historical

society also has hand-on activities for children, an outreach education program for schools and organizations and a library geared toward genealogical and historical research. The historical society also offers an auto tour with a pre-recorded cassette that acts as a guide to tour the historic areas of the entire county. There is also a gift shop with souvenirs, books, and hand crafted items. The historical society museum is located in Fergus Falls, approximately 20 miles south of Maplewood.

Tamarac National Wildlife Refuge
Tamarac National Wildlife Refuge, north of Detroit Lakes, has a year round visitor center which is open on weekends from Memorial Day to Labor Day. The facility has an exhibit room that illustrates the natural resources and also an auditorium with a 15 minute audio-visual presentation about the refuge and the history of the site. A park ranger/naturalist is on staff, however, most activities are self-guided. Numerous interpretive brochures and checklists are available specifically about the refuge. The refuge staff sponsors annual environmental education workshops for local teachers. Thousands of students tour the refuge, especially in the fall for self-guided tours (curriculum packets are provided for the teachers). Open houses are held in the spring and fall with speakers and displays that focus on bird migration and various educational opportunities. There is also an auto tour route that is available to the public except during the winter months. This route has many wildlife, photographic, and scenic opportunities along the way. Several hiking trails and a cross-country ski trails are located in the refuge. The refuge is northeast of Detroit Lakes and is approximately 30 miles from Maplewood.

Moorhead State University Regional Science Center
The MSU Science Center is located one mile east of Buffalo River State Park on 300 acres of prairie, woods, and river communities. There is a 13,000 square-foot interpretive center with a classroom, a field studies lab, an exhibit area, an auditorium, a local natural history library, and a multi-purpose room. There is also an observatory with a telescope that projects images to the auditorium. The facility specializes in K-12 teacher education, urban environmental education, and consulting for agencies developing new programs in science and environmental education. There are also a variety of public activities year round. The Science Center is approximately 50 miles northwest of Maplewood and is adjacent to Buffalo River State Park.

The Prairie Wetlands Learning Center
The facility will be a residential learning center. In 1994, $3 million in funding was received to build the facility. It is currently under construction, just south of Fergus Falls on the T.H. 210 by-pass, on the south side of the road. There are 300 acres and approximately 32 wetlands at the site. The residential building will house 80 people (including facilities for approximately 12 interns). The target audience will be 7-9th graders, approximately 70 students and teachers at a time.

The focus of the facility will be to interpret the prairie pothole ecosystem. Upland areas are being restored to tall grass prairie and wetlands have been restored. The curriculum is currently being developed by local teachers in Fergus Falls. The prairie potholes curriculum will also tie in heavily with technology. They are looking at developing "strands" i.e. photography, where students take photos and at the same time learn the value of wetlands. They are trying to show how this affects their lives socially, culturally, economically, etc.

Even without the new facility, the Prairie Wetlands area has been accommodating approximately 5,000 students every year, with no advertising. Tours last approximately one hour. Some students from the St. Olaf SNAP program have adopted 22 acres at the site trying to restore the original vegetation. There is currently one staff member. Programs have been run out of the old homestead barn at the site.

This project is a joint venture. The state of Minnesota, DNR was the project director for the Bonding. The City of Fergus Falls owns the land (through a land trade with the US Fish and

Wildlife Service). The city is responsible for the building and the US Fish and Wildlife Service will oversee and operate the facility once it is constructed.

It will be the first residential learning center in the nation that is operated by the US FWS. The project was started over eight years ago. There will be 3,000 feet of exhibit space in the interpretive center part of the building. There will be a 200 seat Great Hall for programs; 2 classrooms, and a store with appropriate items for sale. The Prairie Wetlands Learning Center is just south of Fergus Falls and is approximately 25 miles from Maplewood.

Phelps Mill County Park
Originally called the Maine Roller Mills, the mill is now a county park and museum. The Otter Tail County Historical Society has prepared an on-site video presentation that gives an overview of the history and operation of the mill. Interpretive signs throughout the building explain features of the facility. There is no interpretive staff on site, however, the park manager is available to answer questions. A festival is held each summer. The mill is approximately 25 miles southeast of Maplewood.

At this time there is minimal cooperation between Maplewood State Park and these area interpretive services. See the Interpretive Services Recommendations section for future actions.

INTERPRETIVE THEMES

Primary Themes

Primary themes are the main stories of the park. Some primary themes are listed below:
* Indicates items which are recommended as priority themes.

Cultural

* Who were the earliest people to live in the Maplewood area?
European settlers and agricultural development changed Maplewood.
Role of logging in park history.
How was maple syrup made in the pioneer days?

Geologic

* How did glaciers shape the Maplewood area?
How were the lakes in the park formed?
How does geology affect water quality?

Biologic

* What is a Hardwood Hills ecosystem?
What is a prairie?
What is a wetland?
What natural communities/plants/trees are found in Maplewood?
What is biodiversity and why is it important to protect rare species and significant natural communities in the area?
What is the significance of Old Growth Forests?
What do we know about songbird migration?
Aggressive exotic species degrade native ecosystems.

Recreation

* You can take great photos at Maplewood State Park.
Maplewood's best areas for wildlife and bird watching.
Tips for hiking at Maplewood State Park.

Management

Why was Maplewood State Park started?
What is the mission of Maplewood State Park?
How do recreation needs mix with the environment?
What do we know about the pre-European vegetation in the park and how does it affect management decisions?
How will forest regeneration be managed in the park?
How do activities outside of the park affect the park (and vice versa)?
How are white-tailed deer managed at Maplewood?

Interpretive Services Recommendations

Note: The following action recommendations are not in priority order.

Facilities

- **Action 1: Construct a new amphitheater**. Suggested locations are near the campground Centennial Tree Planting area or located along Hollow campground road. Electricity will need to be installed. It was noted that it is nice to have an amphitheater located within walking distance of the campgrounds.

- **Action 2: A new trail/interpretive center should be built overlooking Cataract Lake**.

- **Action 3: The wetland restoration efforts in the park should be interpreted** in the new interpretive center and/or as a sign somewhere in the park. This could old tie-in with the Prairie Wetland Learning Center, in Fergus Falls.

- **Action 4: Any future road work needs to have adequate pull-off** at scenic spots to allow for interpretive signs.

Self-guided Trails

- **Action 5: Grass Lake interpretive trail brochure should be updated**. The trail needs a new bridge and there are several areas that need erosion control work done.

- **Action 6: A self-guided trail should be developed for Hallaway Hill**. It should interpret the glacial geology and the Woodland Indian period.

- **Action 7: An accessible trail should be located near the new visitor center**.

Brochures, Guides and AV Materials

- **Action 9: Provide interpretive materials for wildlife and birdwatching**. The Friends of Maplewood group could purchase binoculars that could be checked out at the park office. Possibly some bird books or other field guides as well. Brochures could have bird lists and bird watching information since this recreation is increasing tremendously.

- **Action 10: Reduce erosion in the park by enforcement of trail use rules, volunteer rangers, and education of users**.

- **Action 11: Develop interpretive materials on unique vegetation and natural communities**. Identify areas of unique vegetation and natural communities such as old growth stands and orchid locations. Develop interpretive materials on areas of interest. Aspen Stand Improvements - maintain some small managed aspen fields mainly for interpretive points. Let the rest take the natural course.

- **Action 12: Develop interpretive materials on cultural features of the park**. Areas where archaeological work has been done needs to be marked generally and shared of the findings. The historic Westbe house is in Perham now, but it used to be in the park. It would be good to develop a joint brochure/flyer to interpret the building, early settlers, and the site in the park. In the park, a plaque should interpret the site.

Exhibits and Kiosks

- **Action 14: Put an observation book/log in the wildlife blind** for people to record their sitings. Enhance the observation blind area by putting up wood duck houses and other structures that will bring the wildlife closer to the blind. If this observation blind becomes popular, consider developing similar facilities in other areas of the park.

- **Action 15: Exhibits and kiosks should be developed to interpret the various cultural resources in the park**. Have a display showing old plat maps, since many visitors ask about their ancestors farms. And/or there could be a brochure telling about cultural interests in the park and the surrounding area. Farm sites - choose one of the three farmsteads for public viewing. Include this area in the hiking area with signs stating interesting points for viewing (i.e. building areas, garden areas, fields, plants, trees) all pointing out and sharing how people lived and survived in the area.

- **Action 16: Interpret lake water quality and quantity**, perhaps on Beers Lake where vegetation indicates historical water level changes. The "beaver halo" effect could also be interpreted along the north side of the lake as well.

- **Action 17: Have a display board to put up photos of kids with their fish.**

Naturalist Program Recommendations

Staff

Action 18: Request a full time naturalist position to be shared with Glendalough. This was seen as a better option than a seasonal position, because it would improve the efforts of "area" tourism and would probably be more efficient in terms of limited funding available.

- **Action 19: Keep trying to find ways to get local people out to the park**. If volunteers are used for school group programs, they must be well trained. The best volunteers tend to be former teachers who can control a group and maintain their interest. It was noted that we need to start with a naturalist position before developing a volunteer naturalist program.

Action 20: Partner with resorts or local schools to organize kids coming on week days to the park and have nature hikes (with a volunteer, or a resort naturalist, or an intern).

Programs

- **Action 21: Work with the new Prairie Wetlands Learning Center to interpret the two ecosystems in the area** (PWLC depicts the Prairie Pothole ecosystem and Maplewood exemplifies the Leaf Hills/Hardwood Hills ecosystem).

- **Action 22: Consider holding special events such as: a maple syrup special event** (may include a pancake feed etc.). There is a retired school teacher who is still tapping maple trees. There is also some syruping done near Lake Franklin.

- **Action 23: Cooperate with the Detroit Lakes bird watching club to have a Special Event to do bird watching and help develop a good species check list for the park**. Maybe it could be done like a March For Parks where people raise donations for the number of birds/species that are seen.

- **Action 24: Cooperate with the Fergus Fall Convention and Visitor Bureau to bring tours into the area**.

Interpretive Services Summary

The Interpretive Services recommendations describe long term needs for Maplewood State Park. Some could be accomplished fairly quickly with minimal expense and other recommendations will require detailed preparations and sizable funding. The recommendations also take into account interagency and area interpretive opportunities in a 50 mile radius. Although this area does not align with the Hardwood Hills Landscape region, it is a reasonable distance for people to drive from the park in approximately one hour.

Operations, Staffing and Costs

Operations and Staffing

Maplewood State Park operations are minimally implemented with present staff levels. Resource degradation from minimal maintenance is occurring in some areas. Examples include, building maintenance and trail maintenance. Several actions in the plan would require additional staffing.

The 1994, Division of Parks and Recreation Statewide Interpretive Plan recommended the placement of a Seasonal Naturalist or Area Naturalist (to be shared with Glendalough) at Maplewood State Park. The planning process fully justified that position. In addition, there are a number of recommendations which will result in the need for additional staff, mainly maintenance hours. Examples of this would be: the visitor/trail center; a larger/remodeled shower building in the main campground; a new shower building in the horse camp; camper cabins; and bike trail maintenance. A resource specialist position is recommended to be shared with Glendalough or other parks in the Hardwood Hills Landscape Region. Resource management staff time, both regional and park level, will need to be expanded if the resource management recommendations are to be implemented. Currently, enforcement problems are minimal in the park. Future enforcement efforts should be focused on heavy use weekends and interpretive efforts (personal and non-personal) and should emphasize ways to protect the park's natural and cultural resources and reduce impacts on the resources. This could become increasingly important if future bike trail use increases significantly.

Many of the development proposals would have initial start-up expenses with additional long term maintenance expenses. Some of the proposals could be developed with minimal expenses using alternative labor, for example:

Friends of Maplewood State Park group
Sentence to Service (STS)
Minnesota Conservation Corps (MCC)
Other Volunteers

For example, the STS crews could assist in completing construction on the proposed trail changes. This would result in minimal impact on the park operating budget for construction, however, there would still be ongoing maintenance costs.

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 Division of Forestry, the Division of Trails and Waterways, the Division of Fish and Wildlife, the Bureau of Engineering, and the Bureau of Real Estate Management, may experience increased work loads as a result of increased recreational opportunities and resolution of land issues. Local representatives of these disciplines participated in the planning process and are familiar with what their role may be in the future.

Costs

Operational Costs

If all the actions and recommendations in this park plan were implemented, the park's annual operational costs would need to be significantly increased. The level or amount of this increase is difficult to estimate because many of the recommendations are too general to base estimates on at this time. However, the increase in staffing outlined in the previous sections (year round naturalist, approximately $ 40,000 to be shared with Glendalough, resource specialist, approximately $40,000 to be shared with another park(s), and seasonal buildings and grounds

maintenance worker, approximately $13,000) combined with a review of the development projects outlined below, suggests the park's annual operating budget would be increased by 15 to 25%.

Development Costs

The following list represents those actions which have development cost implications. The total cost to implement these actions (as noted) is estimated at $2.8 million, (in 1997 dollars). 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, distance to electrical service).

1. Develop 3-5 park specific brochures on natural and cultural resource themes of the park.
2. Conduct biological surveys and monitoring programs.
3. Restore degraded communities and remove undesirable exotic species.
4. Develop park database and GIS of natural and cultural resources.
5. Complete wetland restoration.
6. Develop a long term vegetation management plan, looking 50-100 years ahead.
7. Plant native trees and shrubs in three of the campgrounds and in the picnic area.
8. Conduct cultural resource surveys, especially in proposed development areas.
9. Control beaver where flooding is a problem.
10. Work with archaeologists to determine if mitigation is needed for known cultural sites.
11. Clean up old dump sites.
12. Construct a new Trail Center/ Visitor Center.
13. Develop a surficial geology and soils map for the park.
14. Seal 3-4 remaining abandoned wells.
15. Implement recommended trail changes - approximately 2 miles of new trail.
16. Develop self-guided trail to Hallaway Hill and add trail benches and hitching posts.
17. Improve trail signage and assurance markers.
18. Construct a hard surfaced accessible interpretive Wetland Trail near visitor center.
19. Construct several trail rest areas along horse trails.
20. Develop an interpretive trail around Cataract Lake.
21. Convert the overflow camping area at Lake Lida to a rustic campgrounds.
22. Provide water at the group camp and at Knoll campground.
23. Remodel and enlarge campground shower building.
24. Add a shower building in the horse campground.
25. Add three camper cabins.
26. Construct a new picnic shelter at Lake Lida.
27. Relocate and improve accesses at Beers Lake.
28. Upgrade the existing blacktop on the main roads.
29. Develop and implement a horse camp site plan.
30. Add a short walk-in or cart-in campsite with hard surfaced trail.
31. Install picnic tables and benches at Beers Lake.
32. Install an extended dock or pier on Grass Lake.
33. Evaluate/construct accessible fishing facilities on Trout, Beers, and Bass Lake.
34. Install amphitheater/facilities for outdoor interpretive events.
35. Develop interpretive exhibits on the park's cultural resource themes.
36. Develop interpretive display on the Hardwood Hills
37. Blacktop the Park Drive, make one-way and add bike lanes, also connect bike trail to county road and visitor center - approximately 6.5 miles total mileage.
38. Install more benches and pull-offs along park roads.
39. Add visitor parking in the main campground.
40. Bring campground and picnic area restrooms up to accessibility code.
41. Restore vegetation in old fields and homesteads.
42. Construct a new cold storage building, expand existing shop, and remodel the contact station.

Acquisition

All acquisition projects will be placed in priority order with other state park acquisition projects. The total cost to complete this acquisition is estimated at $ 2.4 million (1997 dollars).

1. Purchase private, county and federal land (approximately 1,159 acres at approximately $750,000) in existing statutory boundary.
2. Purchase private, county and federal land (approximately 2,540 acres in Star Lake Township at approximately $1,650,000) in proposed statutory boundary.

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.

Planning is an ongoing process and the written plan must be regularly revised if it is going to have continuing value. Over time, however, conditions change that affect some of the plan recommendations (or, in extreme cases, an entire plan). Plans need to recognize changing conditions and be flexible enough to allow for modifications as needed.

For the purpose of this plan we will differentiate between less controversial plan revisions and major plan amendments. Minor plan revisions can generally be made within the Division of Parks and Recreation. If a proposed change to a management plan meets any of the criteria below, it must follow the Plan Amendment Process. To maintain consistency among the plans and processes, all revisions and amendments should be coordinated through the Division of Parks and Recreation planning section. Requests for modifications should be directed to the Division of Parks and Recreation Planning Manager at the central office.

Major Plan Amendments

Proposed Plan Change Amendment Process Criteria

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

The proposed change:

1. Alters the park mission, vision, goals, or specific management objectives outlined in the plan; or
2. Is controversial among elected officials and boards, park user groups, the public, other DNR divisions, or state agencies.

Management Plan Amendment Process

1. Division of Parks and Recreation Initial Step: Review plan amendment at 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. Review proposed approach with central office managers.

2. If the proposed change issue is between DNR Divisions, the issue should be resolved by staff and approved by the Division Directors. This may require one or two area/regional integrated resources management team meetings. The Division Directors will determine whether the proposed changes should go through the departmental (CTECH/Senior Manager) review process.

3. If the proposed change issue is between state agencies, the issue should be resolved by staff from both agencies and approved by the Division of Parks Director.

4. If the proposed change is potentially controversial among elected boards, park user groups, or the public, the park advisory committee should discuss the proposed change and attend an open

house forum which is advertised in the local and regional area. Following the open house, the Division of Parks Director will determine whether the proposed change should be reviewed by the department.

5. All plan amendments should be coordinated, documented, and distributed by the Division of Parks 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 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 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 not uncommon. Plans should outline a general direction and document general "area" for development rather than specific locations. For the most part, plans are conceptual, not detailed-oriented. Prior to development, proposed development sites are examined for the presence of protected Minnesota Natural Heritage Program elements and historical/archaeological sites. If any are found, the planned project may have to be revised to accommodate the protection of these resources.

Program Chapter Revisions

The resource management section (Natural and Cultural Resource Objectives and Integrated Management page 61) and Interpretive Services chapter should be updated periodically as needed. Division of Parks and Recreation Resource Management and Interpretive staff will determine when an update is needed and coordinate the revision with the park planning section. Program chapters 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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