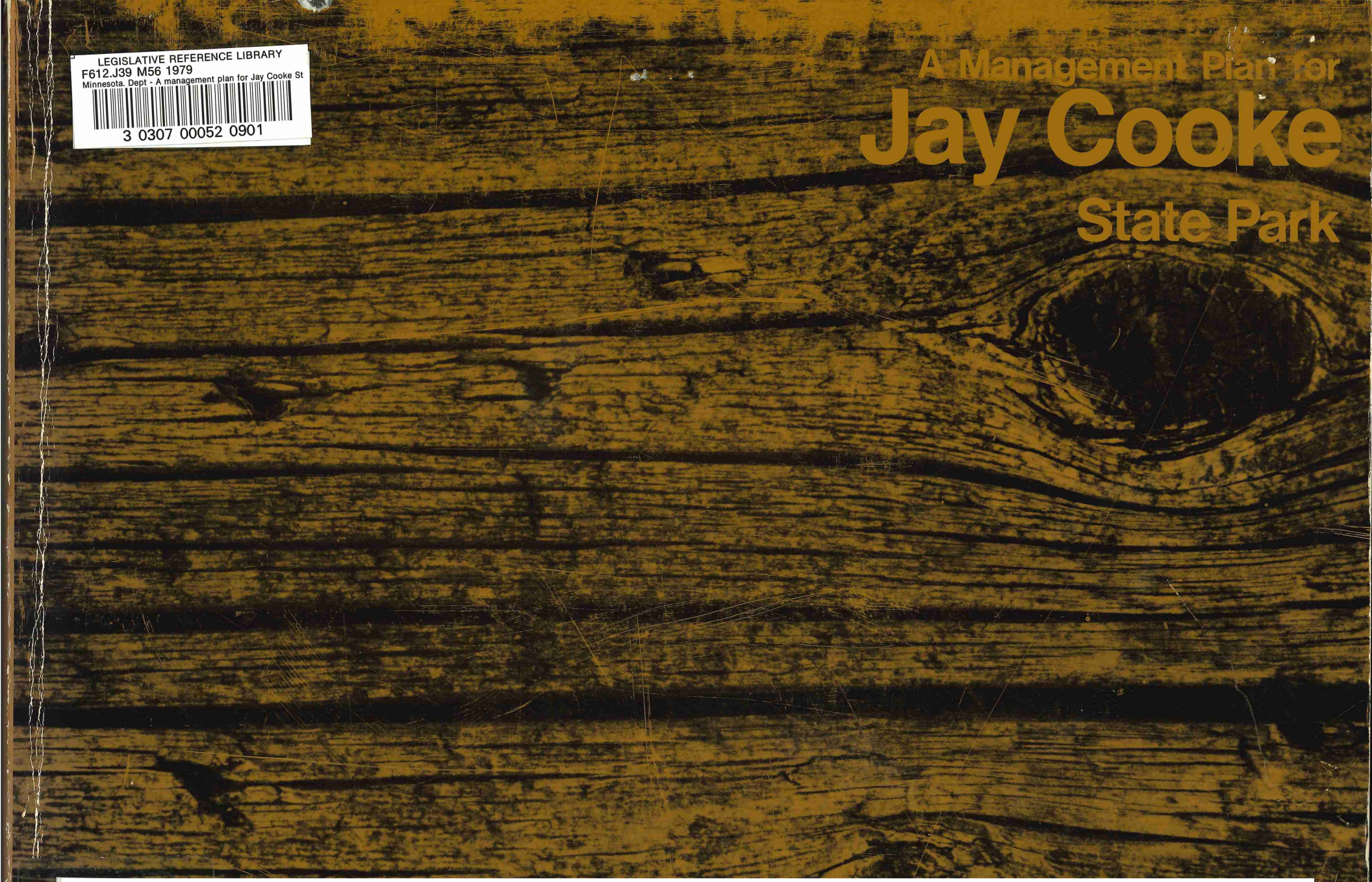
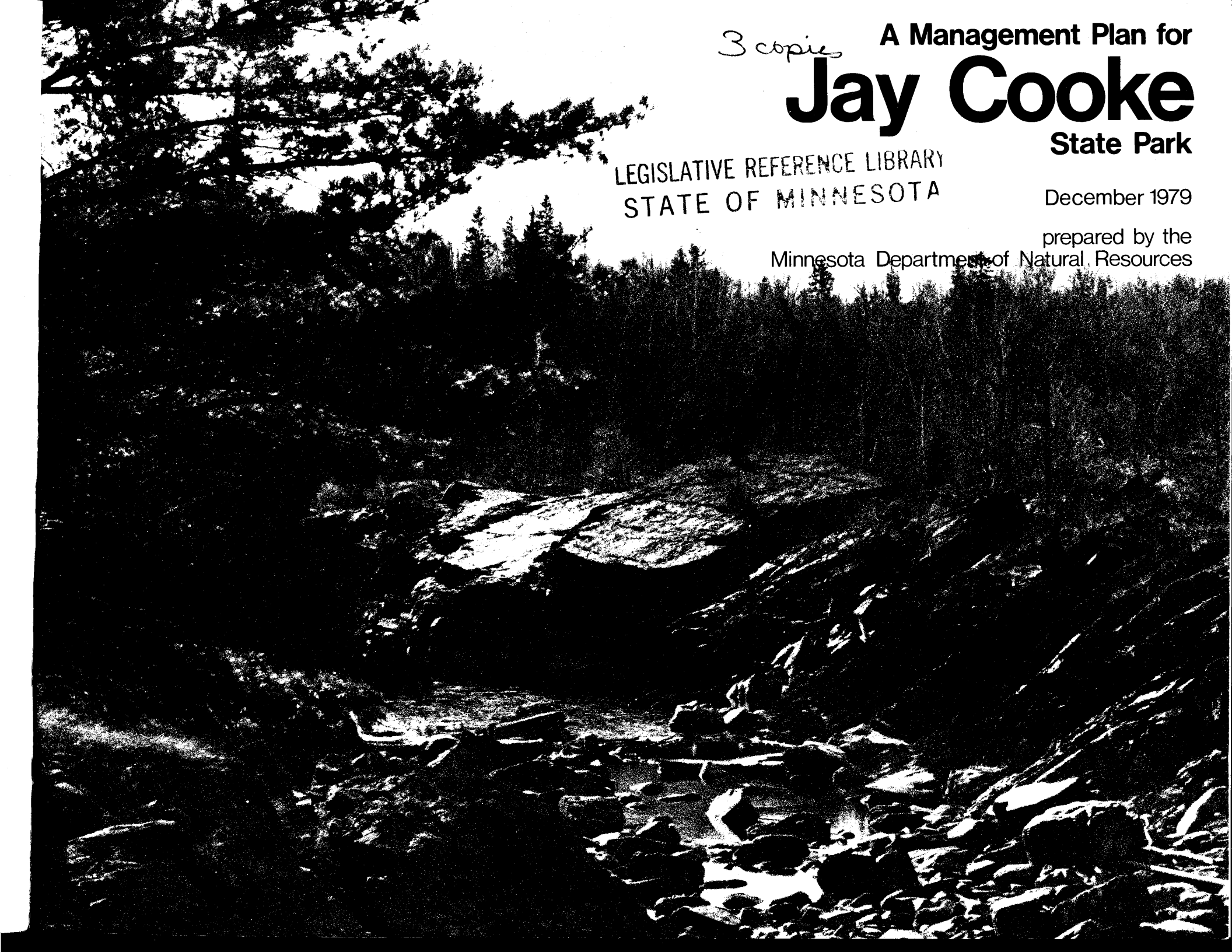
A Management Plan for Jay Cooke State Park





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December 1979

prepared by the
Minnesota Department of Natural Resources

Credits

This plan was prepared for the citizens of the state of Minnesota under the aegis of the Outdoor Recreation Act of 1975 by a multi-disciplinary team of Department of Natural Resources employees.

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Jay Cooke State Park Advisory Committee
Minnesota Historical Society
United States Department of Agriculture Soil Conservation Service
State Planning Agency

Table of Contents

All the cost estimates in this plan are based on 1976 dollars.

Purpose of Plan

MANAGEMENT AND DEVELOPMENT PHILOSOPHY

Minnesota is blessed with an abundance of high quality resources and, even more importantly, with leaders who have the wisdom and foresight to protect these resources. As a result, Minnesota today has one of the finest state recreation systems in the country. The Department of Natural Resources, with the assistance of concerned lawmakers, conservation and recreation groups, and private citizens, intends to do its utmost to provide planning that will be responsive to the needs of this generation while protecting the birthright of the next.

The management and development philosophy for the Minnesota state park system consists of two major objectives. The first is the protection of the natural resources within the recreation system. Without this protection, a resource can be destroyed in an alarmingly short period of time. Thus, protection benefits not only future generations, but present-day users as well. The second objective is maximizing the recreation opportunities available to the user, both in terms of quality and variety. It is the DNR's position that every citizen should share in the beauty and recreational opportunities of Minnesota's natural resources as well as the responsibility for maintaining and preserving them.

Obviously, there are going to be situations where use and preservation conflict. Every attempt will be made to reconcile these conflicts by the use of responsible management and development techniques. When this is not possible, however, the primary concern must be preservation of the resource. Allowing our resources to deteriorate would not only jeopardize high quality recreation for this generation but for future generations as well. To maintain a high quality recreational experience, it may be necessary to limit the number of people using a unit at a given time or to restrict certain activities within that unit. When this occurs, an attempt will be made to provide these activities at a nearby unit that has a higher tolerance to use.

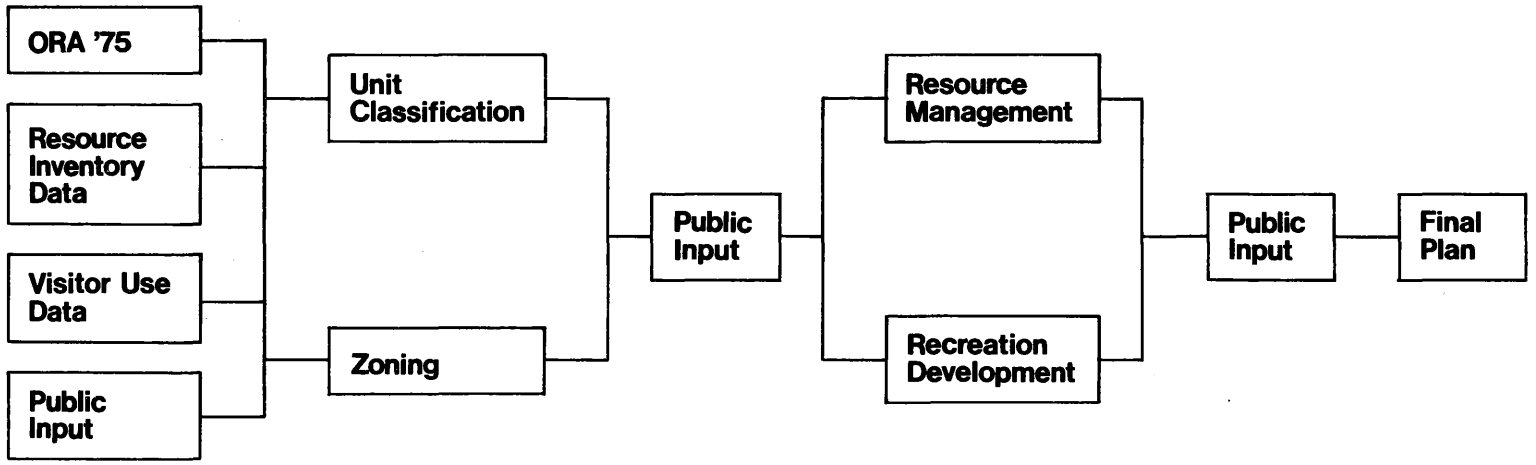
In planning management and development of the various units, the DNR will consider probable future impacts which would affect each unit. In spite of this, unforeseen circumstances are bound to occur. Therefore, each plan should be reviewed periodically to see that it is still relevant in light of current conditions. While a plan can and should be modified if conditions change, nothing should be done that would be detrimental to the objectives set forth in this philosophy.

OUTDOOR RECREATION ACT REVIEW

The Outdoor Recreation Act of 1975 (ORA '75) was enacted by the Minnesota Legislature to "preserve an accurate representation of Minnesota's natural and historical heritage" and to "provide an adequate supply of scenic, accessible, and usable lands and waters to accommodate the outdoor recreation needs of Minnesota's citizens." In an effort to improve long-range planning for the state recreation system, the legislature has directed that management and development plans be prepared for each unit in the system.

ORA '75 also redefined certain recreation unit classifications. For example, the state park classification was divided into recreational state parks and natural state parks. As a part of the overall planning process, the classification of each unit will be reviewed to insure that it is consistent with the resources in that unit. These plans will be used as a guide for developing management policies and planning recreation facilities in each unit. The ORA '75 also states that after August 1, 1977, no development funding will be permitted for any unit until a management and development plan has been completed and reviewed for that unit. By authorizing this planning program, the legislature has taken a significant step toward building a state recreation system in which every Minnesotan can take great pride.

Planning Process Diagram



Summary of Plan

INTRODUCTION TO JAY COOKE STATE PARK

Jay Cooke State Park is comprised of 11,323 acres- -the fourth largest park of the state. It is located just outside of Duluth in the northeast corner of Carlton County. The St. Louis River flows through the northern portion of the park. The river's spectacular rocky gorge is the park's primary attraction. Original vegetation in the area was largely pine. Numerous stumps now found throughout the park are reminiscent of the logging era.

The park is now revegetated with a mixture of communities, predominantly aspen, birch, and northern hardwoods.

CLASSIFICATION

Jay Cooke State Park is recommended for classification as a natural state park in accordance with the Outdoor Recreation Act of 1975 (ORA '75).

GOAL

The goal for Jay Cooke State Park is to display the natural resources of the North Shore Landscape Region for human interpretation, understanding, and enjoyment.

NATURAL RESOURCES INVENTORY AND MANAGEMENT

Groundwater

A thorough groundwater survey of the park has not been made. All of the available data have come from park well logs.

Objective:

To provide an adequate water supply for park use

- Management

A groundwater supply study should be conducted to determine the location and amount of water available in the park. If demand eventually exceeds the park's water supply, the wells can be deepened, new ones can be drilled, or the proposed Carlton-Thomson water main can be tapped.

Surface Water

Three natural water bodies and two artificial water bodies exist in or flow through Jay Cooke State Park: the St. Louis River, Silver Creek, Lost Lake, and 2 impoundments on the St. Louis River.

Objective:

To manage the surface water in the park to ensure high water quality

- Management

Current efforts to clean up the St. Louis River should be supported, and private parcels along Silver Creek should be acquired.

Fisheries

Silver Creek, a designated trout stream, is the only water body in Jay Cooke State Park that is monitored and managed by fisheries.

Objectives:

To improve stream fishing opportunities

To provide a reservoir fishing opportunity

- Management

Silver Creek will continue to be managed for brook trout, and will be stocked annually. If the pollution of the St. Louis River continues to abate, and if Minnesota Power and Light approves the project, a rough fish removal/game fish stocking program may be instituted in the reservoir below the Fond du Lac Dam.

Soils

A wide variety of soils are found in Jay Cooke State Park, with slopes ranging from 0 to 60%. The dominant soil is the clayey Eutrochrepts, followed by Campia, Ontonagon, and Omega. These four series make up at least 75% of the soils in the park. Much of the park has soils that are poorly suited for development because of slow percolation.

Objectives:

To prevent future erosion and correct existing erosion problems

To prevent ground and surface water contamination

• Management

Maintenance of good ground cover, the graveling of roads and spurs, and a hook-up with the Western Lake Superior Sanitation District will help to decrease the effects of the poor permeability of the soils in the park. Care will be taken to locate development on soils which can withstand the use.

Vegetation

The ecological community system was devised to describe the vegetation/wildlife associations in Jay Cooke. The original vegetation of the park was a mixture of pine and northern hardwoods. The primary ecological communities in the park are northern hardwoods, mature pioneer hardwoods/conifer, pine groves, big woods, bottomland hardwoods, spruce-fir, and conifer bogs and swamps.

Objectives:

To provide improved wildlife habitat

To improve existing communities, increase conifer communities, and provide vistas or scenic viewing areas along through highways

• Management

Very little active vegetation management will be done in Jay Cooke, for various reasons. Because of the severe topography in the park, any timber removal could result in serious erosion. Except for a few select areas, fire suppression will be the only active management.

Wildlife

There are 173 species of birds that nest within Jay Cooke State Park. In addition, 46 species of mammals and 16 species of reptiles and amphibians are known to inhabit the park.

Objectives:

To improve wildlife habitat

To increase the numbers and diversity of wildlife species

• Management

The primary management practice will be to enhance wildlife habitat by maintaining existing openings and creating others. Beaver and deer activity in the park will also be monitored so that the populations do not expand to the point where habitat is destroyed. In addition, care will be taken to ensure that trails and remote campsites do not intrude on sensitive nesting areas.

Prehistoric and Historic Sites

Jay Cooke has not been systematically surveyed, but significant historical activity did occur in the area. There is also considerable potential for prehistoric sites.

Objective:

To preserve all potential and known prehistoric and historic sites

• Management

A phase #1 survey should be undertaken as soon as possible to determine future management direction.

RECREATION MANAGEMENT

Existing Development

Many of the typical state park facilities have already been constructed in Jay Cooke State Park. The park contains:

- A large stone building which serves as the contact station, park office, snack bar, souvenir shop, enclosed picnic shelter, sanitation building, and dispensary.
- A 94-site campground.
- Two picnic areas with approximately 186 tables.

- Fifteen miles of hiking trails, 4 miles of cross country ski trails, and 16 miles of snowmobile trails.

- A scenic overlook off TH 23.

Proposed Development

The following are highlights of the developments proposed for the next 10 years:

- Develop a group campground in the area of Oldenburg Point with a 300 person capacity.

- Locate 6 remote campsites south of the St. Louis River.

- Locate a portion of the Minnesota/Wisconsin Boundary Trail along the northern edge of the park.

- Develop an additional 25 miles of trails for hiking and skiing.

- Convert the refectory into an interpretive/trail center.

- Consider eliminating through-traffic from the main use area.

- Build a contact station west of the River Inn area.

- Build a new manager's residence in the vicinity of the new service center.

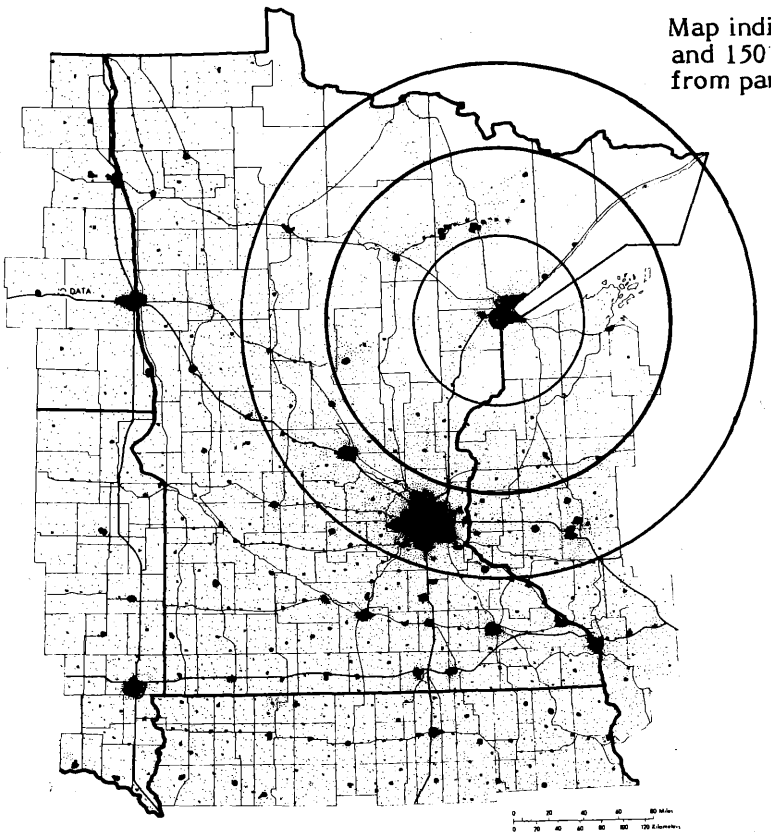
- Build an unheated storage building and an oil and gas storage building.

GEOGRAPHICAL PERSPECTIVE

Most of Jay Cooke State Park is located in northeastern Carlton County, with a small portion extending into St. Louis County. The park is located on the southern edge of the Duluth-Superior metro area. It is also bordered by several smaller communities: Thomson and Carlton on the northwest border, Wrenshall on the southeast border, and the Fond du Lac area of Duluth on the northeast border.

Jay Cooke State Park is accessible from two primary state highways that cross the park. Trunk Highway (TH) 23, a major highway that serves eastern Minnesota and western Wisconsin, crosses the southeastern section of Jay Cooke State Park, providing access from the south and east. TH 210 parallels the north bank of the St. Louis River from Thomson to Fond du Lac, providing access to the north side of the park and to the major use areas. It also serves as the major link to Duluth and to Interstate (I) 35. The western and southern portions of the park are accessible from County State Aid Highway (CSAH) 1 and CSAH 18.

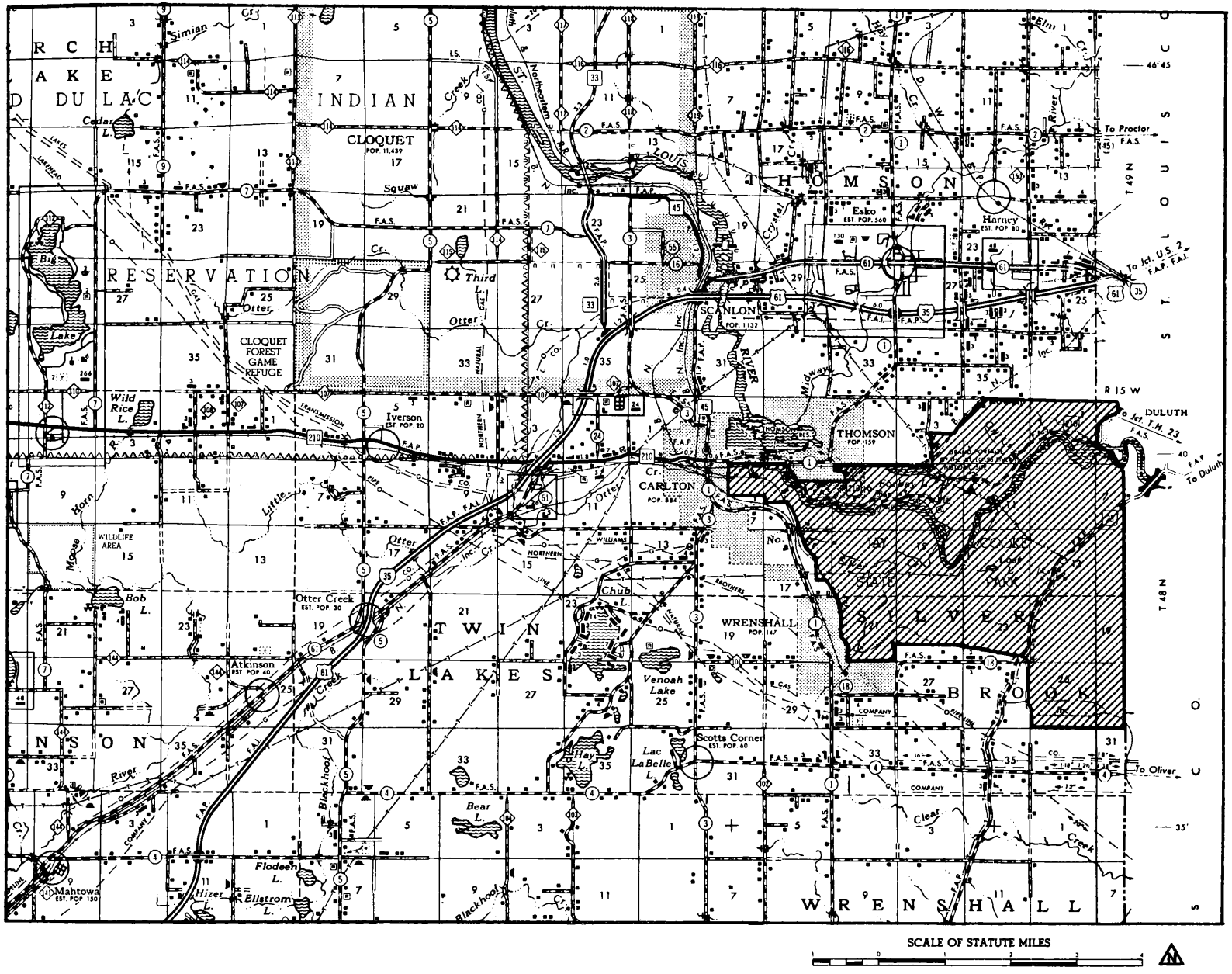
The park is located approximately 60 miles from the range cities and about 130 miles north of the Twin Cities metro area. The combination of good access roads and proximity to I-35 makes the park one of the most popular in the state system.



PROXIMITY TO POPULATION CENTERS

CENTER	*DISTANCE	TRAVEL TIME	POPULATION APPROXIMATE
Duluth	12	15 min.	100,578
Twin Cities	130	3 hrs.	2,000,000
Counties within 25 miles:			
Carlton			28,072
Pine			16,821
St. Louis			216,800

*APPROX. ROAD MILEAGE


CLOQUET
POP. 11,439
INDIAN
RESERVATION
CLOQUET FOREST GAME REFUGE
SCANLON
POP. 1132
THOMSON
POP. 139
CARLTON
POP. 884
WRENSHALL
POP. 147
Esko
EST. POP. 560
Harney
EST. POP. 80
Iverson
EST. POP. 20
Otter Creek
EST. POP. 30
Atkinson
EST. POP. 40
Mahtowa
EST. POP. 150
Scotts Corner
EST. POP. 60
WILDLIFE AREA
Wild Rice L.
Third L.
Bob L.
Venoah Lake
Lac LaBelle L.
Bear L.
Flodeen L.
Ellstrom L.
Hizer L.
Chub L.
Cedar L.
Simian Cr.
Squaw Cr.
Otter Cr.
Crystal Cr.
Midway River
Little Otter Cr.
Blackhoof River
Blackhoof Cr.
Clear Creek
Elm Creek
Horn Cr.
Moose Cr.
No. 1 Cr.
Northern Pacific
Soo Line
To Proctor F.A.S.
To Jct. U.S. 2 F.A.P. F.A.I.
To Jct. T.H. 23 F.A.S.
To Duluth F.A.P.
To Oliver
DULUTH
R 15 W
T 49 N
T 48 N
SCALE OF STATUTE MILES

REGIONAL PERSPECTIVE

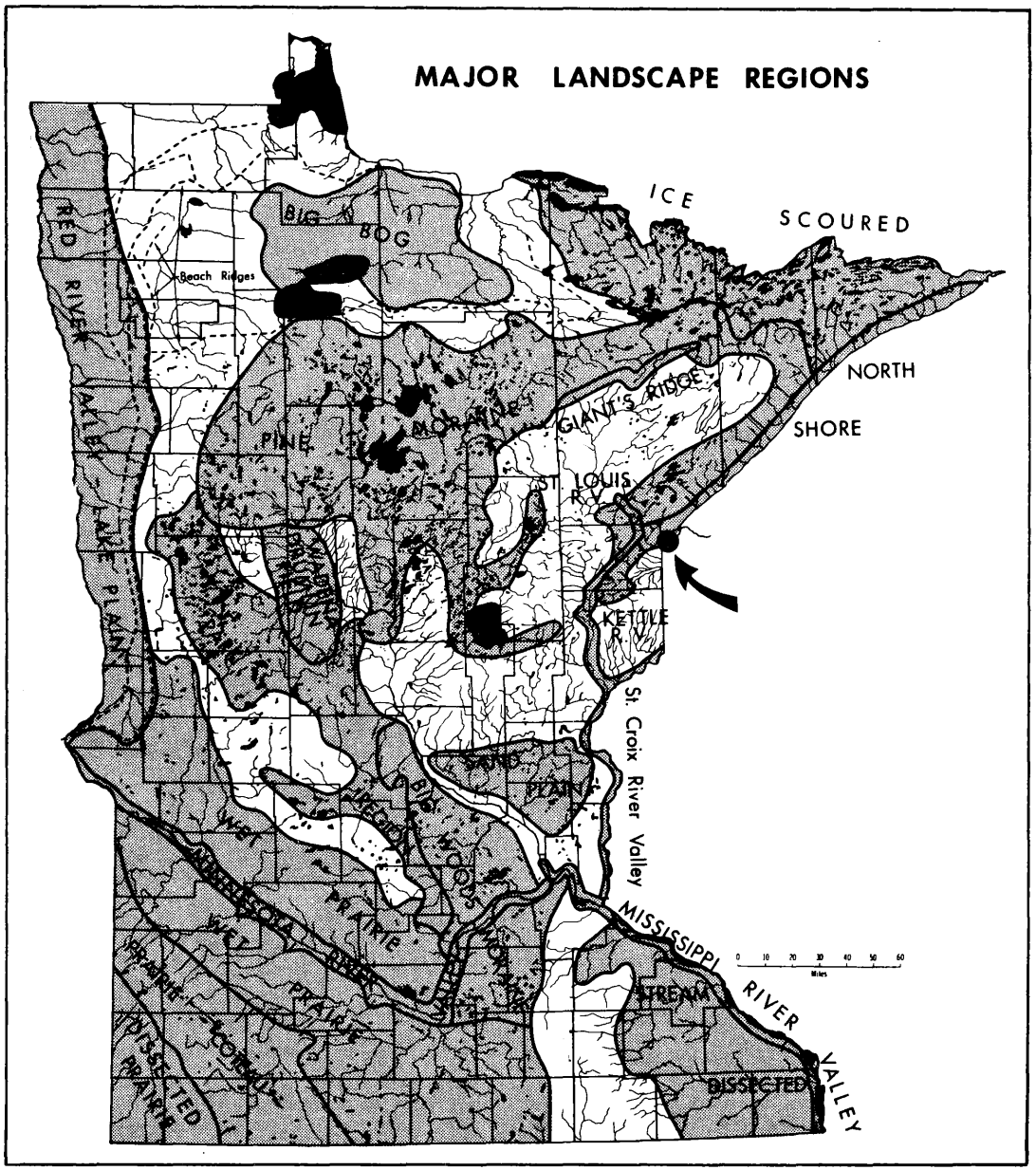
Jay Cooke State Park is located on the southern edge of the North Shore Landscape Region. The region is characterized by 500 to 1,000 foot escarpments broken by numerous steep stream valleys. The St. Louis River Valley is the largest and one of the best examples of this. The hills are composed of volcanic layers which dip gently toward the Lake Superior basin. During the Ice Age, the basin was scoured, the cliffs were sheared off, and parts of the upland areas were covered by glacial deposits.

These deposits include both moraines and clay deposited on the bottom of Lake Superior when the lake level was higher. Many of the outstanding features of this region occur in the gorges of the major streams which flow into Lake Superior. Spectacular cascades and waterfalls such as those on the St. Louis River were formed when the streams cut through volcanic flows of varying resistance.

The area was originally covered by a mixture of pines and northern hardwoods. Due to lumbering activities and the suppression of wildfires, the dominant forest cover today is aspen and birch regrowth.

Similar to the Ice Scoured Region, the North Shore Landscape Region was not covered by glacial till, resulting in exposed bedrock in many areas. The North Shore Region is mostly underlaid by the southwesterly dipping, basic to intermediate volcanic flows which are interrupted by "fingers" of Duluth Complex and include several distinct but separate outcrops of igneous rock.

Jay Cooke State Park is at the head of St. Louis Bay and is the beginning of the North Shore recreational corridor. The very rugged terrain that gives Jay Cooke its scenic beauty makes it an excellent area for recreation. Since the rough, rocky terrain is not suitable for urban development, most of the hillsides from Jay Cooke to Fairmount City Park have been set aside as park or recreation areas. The city of Duluth is developing these areas into an extensive recreation system linked by trails. Fond du Lac City Park borders the northeast boundary of Jay Cooke and has both winter and summer recreational facilities. The Fond du Lac Winter Sports Area located on the eastern boundary, offers excellent skiing facilities serving mostly local skiers from the Duluth-Superior area. Spirit Mountain Recreation Area is also an excellent compliment to Jay Cooke. It is a newly developed, well-designed, year-round recreational facility that provides a wide range of recreational activities which are not normally found in state parks. Other state owned facilities in this area include Nemadji and Fond du Lac state forests, Moose Lake State Recreation Area, and Pattison State Park in Wisconsin.


MAJOR LANDSCAPE REGIONS
ICE SCOURED
BIG BOG
Beach Ridges
RED RIVER VALLEY
NORTH SHORE
GIANT'S RIDGE
PINE MORAINE
ST. LOUIS R.
KETTLE R.
St. Croix River Valley
SAND PLAIN
MISSISSIPPI RIVER VALLEY
DISSECTED
STREAM
0 10 20 30 40 50 60
Miles

CLIMATE

Jay Cooke State Park is dominated by continental weather patterns that influence all of Minnesota, with a strong micro-climate influence from Lake Superior. Because of Lake Superior's massive size, water temperature remains fairly constant throughout the year. Jay Cooke receives warming breezes off the lake in the winter and cooling breezes in the summer.

Temperature Variations

Mean January Maximum	18°F
Mean January Minimum	0°F
Mean July Maximum	79°F
Mean July Minimum	54°F

Mean Average Extremes/Frequency

-0°F 45 days/year
+90°F 5 days/year

Precipitation

Annual Total 28-29"
Annual Snowfall 70-75"

Prevailing Winds

Northwest

Source:

Kuehnast, Earl L. 1972. Climates of the states. U. S. Department of Commerce, Climatography of the United States No. 60-21.

GEOLOGY

The St. Louis River has eroded a large gorge through glacial lake sediments and glacial drift, into the underlying layer of slate. The slate belongs to the Thomson formation, named for its abundant exposures at and near the village. They are very old and belong to the great assemblage of rocks referred to as Precambrian.

In the lower portion of the St. Louis River Valley, near the village of Fond du Lac, beds of sandstone lie on the eroded edges of the slate beds. This sandstone is younger than the Thomson formation, but it is still a part of the Precambrian formation.

During the late stage of the last glaciation of the Superior area, a large lake was ponded in front of the retreating ice of the Superior basin. This water filled the valley of the St. Louis and overflowed past Carlton and southwest to join the Kettle River, and then to the St. Croix and Mississippi. A great deal of clay was deposited by the glacial lake and now forms steep banks along the St. Louis River. These banks often become unstable when wet, resulting in landslides into the river or across the park roads.

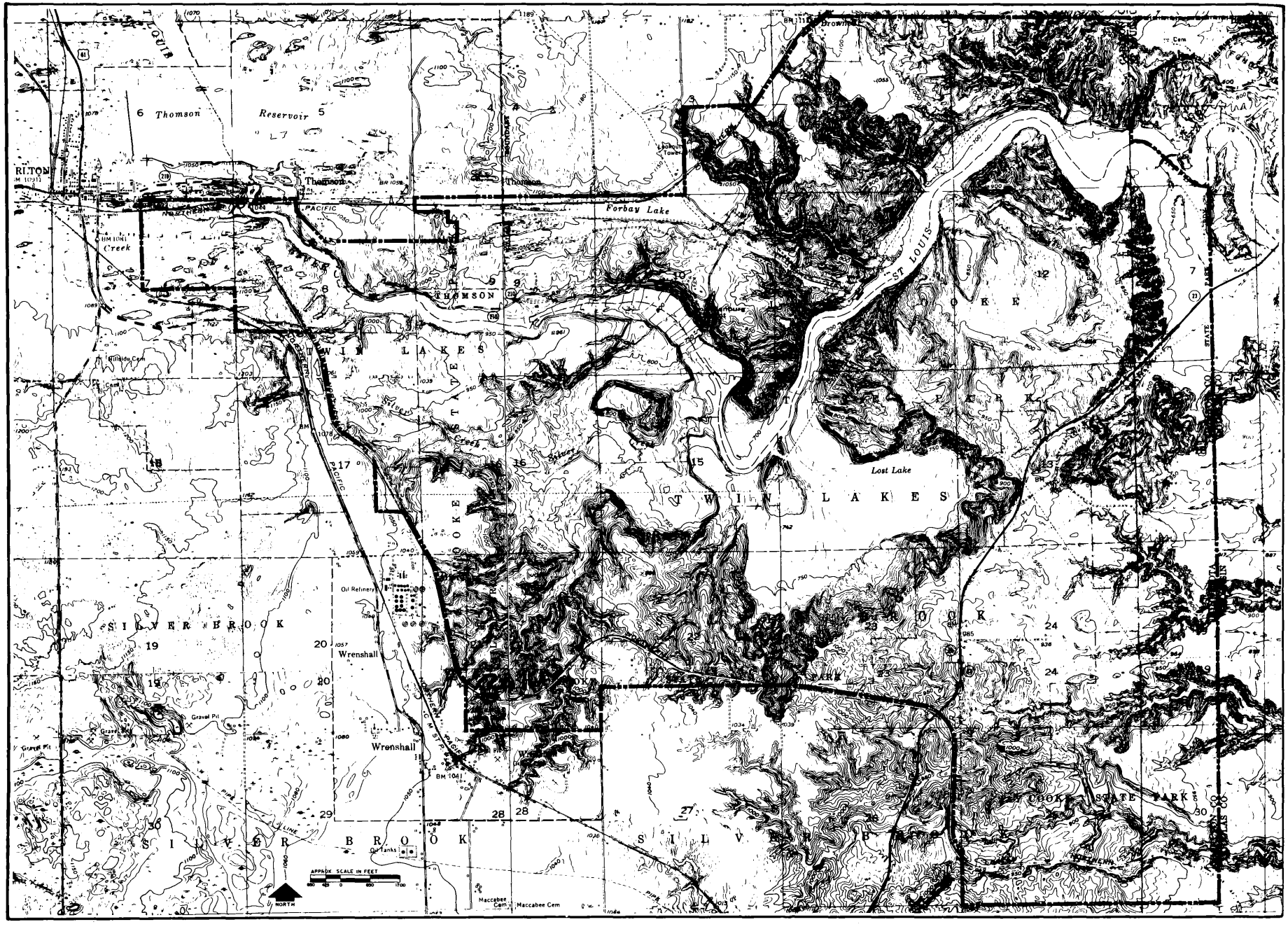
Following the river from the west entrance downstream, it may be noted that at most places the river tends to flow parallel to the strike of the slate and graywacke beds which form a series of reefs in the abandoned river channel. This tendency is clearly a result of the ease of erosion of some of the beds forming reefs and channels that guided the water parallel to their direction. Cross joints guided erosion of narrow channels from one depression to another.

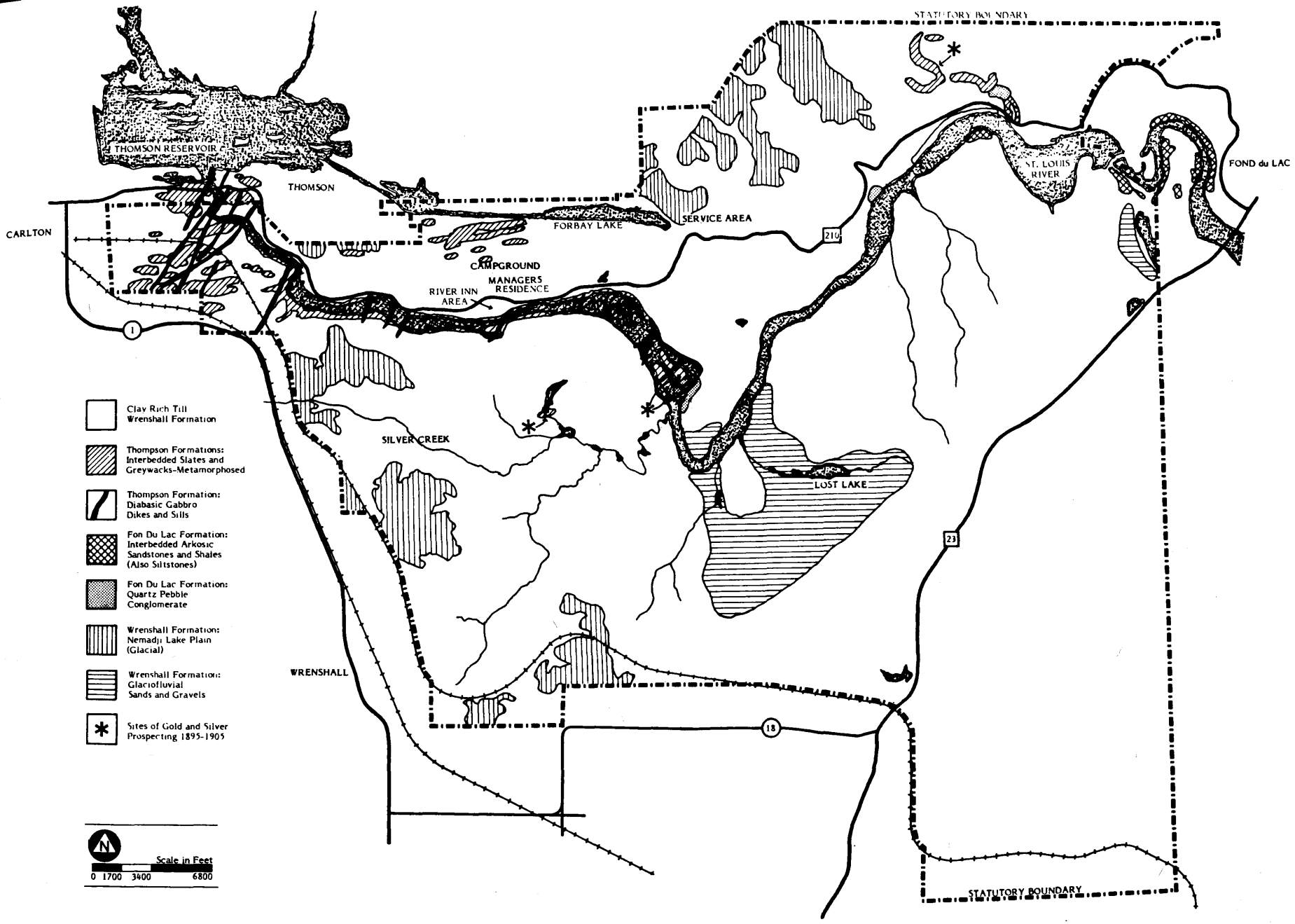
On the upland area near the park it may be noted that the rock outcrops occur as ridges elongated in an east-west direction because of the prevailing strike of both bedding and cleavage in that direction. These ridges usually slope off gradually at each end and such outcrops are called "roches moutonnees," a term used by the French to describe the fact that the ridges look like the backs of a flock of sheep lying in a pasture.

Source:

Schwartz, G. M. 1947. Geology of Jay Cooke State Park. Minnesota Conservation Volunteer. September-October.

PARK AREA TOPOGRAPHY




STATUTORY BOUNDARY
THOMSON RESERVOIR
THOMSON
CARLTON
FORBAY LAKE
SERVICE AREA
CAMPGROUND
MANAGERS RESIDENCE
RIVER INN AREA
ST. LOUIS RIVER
FOND du LAC
210
1
SILVER CREEK
LOST LAKE
23
WRENSHALL
18
STATUTORY BOUNDARY
Clay Rich Till Wrenshall Formation
Thompson Formations: Interbedded Slates and Greywacks-Metamorphosed
Thompson Formation: Diabasic Gabbro Dikes and Sills
Fon Du Lac Formation: Interbedded Arkosic Sandstones and Shales (Also Siltstones)
Fon Du Lac Formation: Quartz Pebble Conglomerate
Wrenshall Formation: Nemadji Lake Plain (Glacial)
Wrenshall Formation: Glaciofluvial Sands and Gravels
Sites of Gold and Silver Prospecting 1895-1905
N
Scale in Feet
0 1700 3400 6800

AREA HISTORY

The Dakota Indians occupied northern Minnesota hundreds of years before the arrival of Europeans. They were divided into many bands but spoke a common language and had similar customs. Their territory extended from the head of Lake Superior, throughout western Wisconsin, Minnesota, and into the eastern Dakotas.

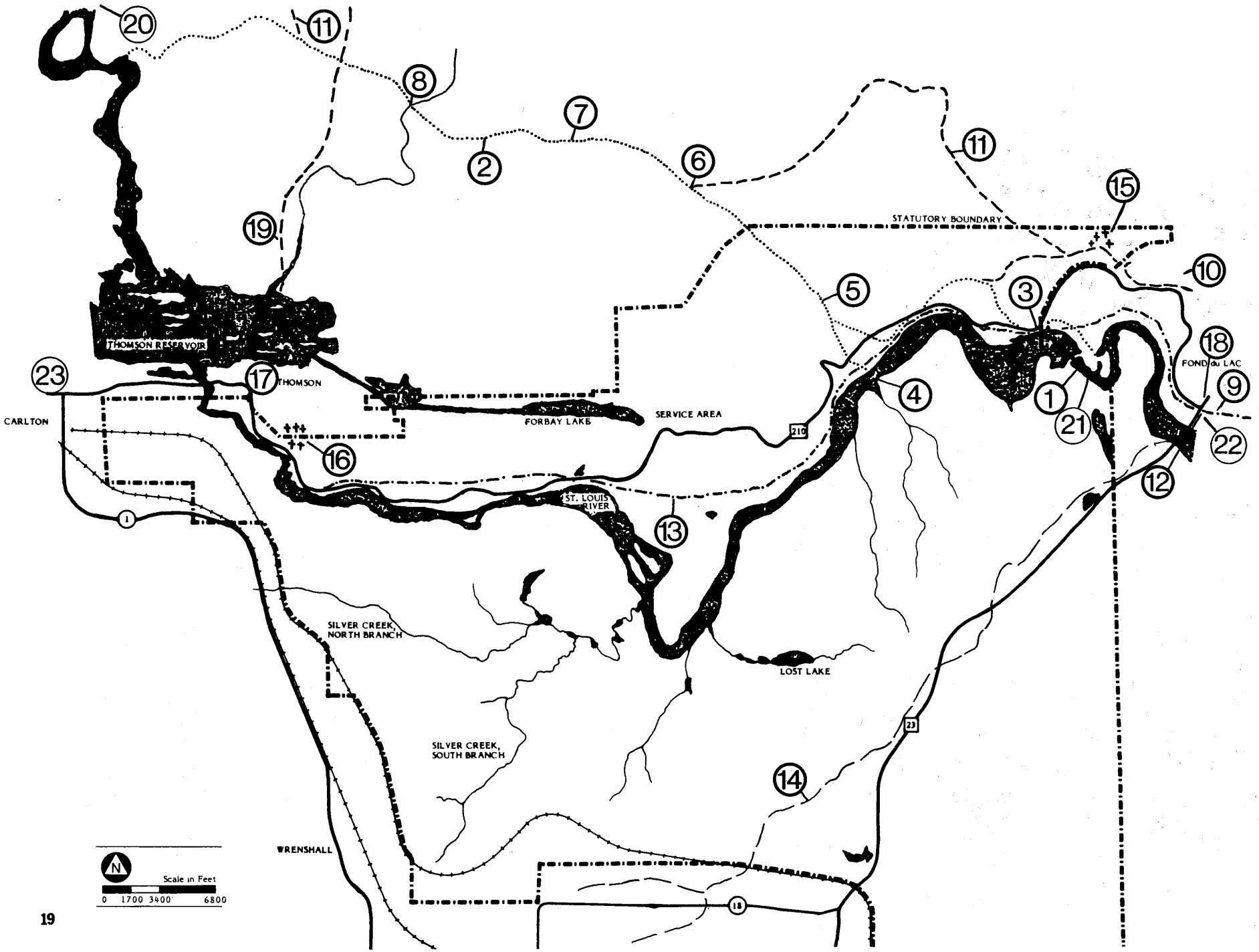
Radisson and Groseillers, early French traders and explorers, recorded visits to the Fond du Lac area between 1656 and 1660. When the explorer Dulhut reached Fond du Lac in the summer of 1679 there were no Ojibway in the area. The ensuing French fur trade was the mainspring which led the Ojibway westward. By the 1730's the warfare began between the Ojibway and Dakota. It continued until the 1860's.

The French fur trade of the region was focused between Fond du Lac and Chequamegon Bay, Wisconsin. British fur traders established the Fond du Lac Department of the North West Company in 1784, and operated from a fur trading post at the mouth of the St. Louis River (Duluth-Superior Harbor). They continued to operate in this country until about 1820, when the newly arrived American traders from the east and the United States government forced them out of the region. The fur trade ended in the region around 1860.

Although Minnesota was a territory in 1849, the area encompassing Jay Cooke State Park still belonged to the Indians, so settlers could not take up land there until after the LaPointe Treaty of 1854.

There is little record of settlers in the western half of Carlton County or in the southern half of St. Louis County before 1870. Some townships had no settlers and others had from two to ten families per township. Immigrants did not arrive in substantial numbers until the railroads were built in 1870. There is evidence to show that settlers were kept off the best pine lands until the timber was commercially cut. Fortunately the area which is now Jay Cooke State Park was too rugged to be completely cleared by loggers or farmers.

The early settlers often used poor judgement in choosing farmlands. After a few years of unproductive effort, many lands were abandoned. Old cellars and dirt ridges from original buildings can now be found in wild, inaccessible areas. A few ruins of early logging camps also remain in the area.


20
11
8
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6
11
15
19
STATUTORY BOUNDARY
10
5
3
18
THOMSON RESERVOIR
23
17
THOMSON
FOND du LAC
9
4
1
21
CARLTON
FORBAY LAKE
SERVICE AREA
210
22
16
12
ST. LOUIS RIVER
13
SILVER CREEK, NORTH BRANCH
LOST LAKE
23
SILVER CREEK, SOUTH BRANCH
14
WRENSHALL
N
Scale in Feet
0 1700 3400 6800

Map Key

(1) "Woman's Portage" (?) - 1840's
(2) Grand Portage of the St. Louis River (?) - 1840's
(3) "Pause One" of the Grand Portage (?) - 1840's
(4) "Roche Galet," Pause Three of the Grand Portage (?) - 1840's
(5) "Pause Four" of the Grand Portage (?) - 1840's
(6) Maple Pause, Pause Seven of the Grand Portage (?) - 1840's
(7) "Pause Twelve" of the Grand Portage Prior to 1820
(8) "Pause Fifteen" of the Grand Portage (?) - 1840
(9) Fond du Lac Mission 1834-1839, 1840-1850
(10) Two Brownstone Quarries (?)
(11) Fond du Lac-Cloquet Trail (?) - 1860's - (?)
(12) Fond du Lac Trading Post 1817-1850
(13) Lake Superior and Mississippi Railroad 1870 - (?)
(14) Old Military Road 1869 - (?)
(15) Roussain Graveyard 1860's - Pre WWI
(16) Old Thomson Cemetery (?)
(17) The Village of Thomson(?)
(18) Fond du Lac Post Grave Yards (?) - 1860's
(19) Indian Trail to Thomson Lake
(20) Three Foot Rapids
(21) Foot of the Rapids
(22) The Village of Fond du Lac
(23) Carlton

(?) Date unknown

PARK HISTORY

The Great Northern Power Company and the St. Louis River Power Company, a subsidiary controlled by the heirs of Jay Cooke, gave 2,350 acres of land along the St. Louis River from Thomson to Fond du Lac to the state on the condition that they could retain their power plants, lines, and pipelines on the land. However, over $18,000 in back taxes were owed on the land which precluded transfer to the state. A group of businessmen from Cloquet and Carlton paid off the taxes, allowing the transfer to take place and in 1975 the park was established by the state legislature. The governor appointed a commission to purchase adjoining land that brought the total to 3,375 acres.

In 1945, a large block of tax forfeited land, along with donations by the Hornby and Scovell families and Minnesota Power and Light Company, increased the total acreage to 9,034 acres. Since then, another 2,000 acres have been added to the statutory boundary bringing the present total to 11,323 acres.

ADJACENT LAND

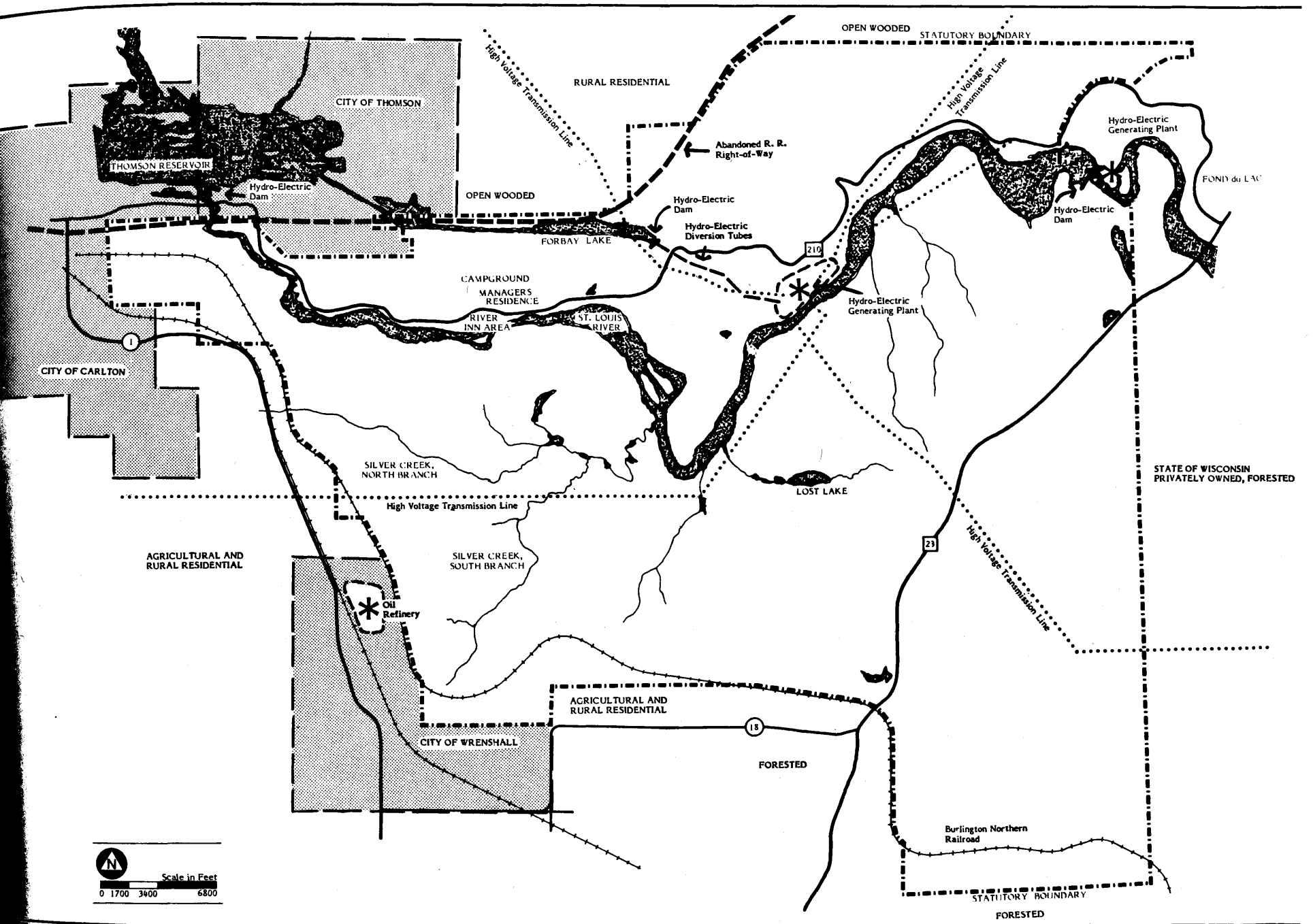
Jay Cooke is surrounded by a variety of land uses. The park is bordered on the northeast by the city of Duluth, including Fond du Lac Park. The northern border consists of some rural residential areas and the city of Thomson. The city of Carlton borders the park on the northwest corner extending along the west boundary. Between Carlton and the city of Wrenshall, which is on the southwest corner of the park, the area is mostly agricultural with some rural residential. Immediately east of Wrenshall there is agriculture, rural residential development, or forest. With the exception of Fond du Lac Park, the eastern boundary of Jay Cooke is the Minnesota/Wisconsin state line. The terrain is rugged and forested.

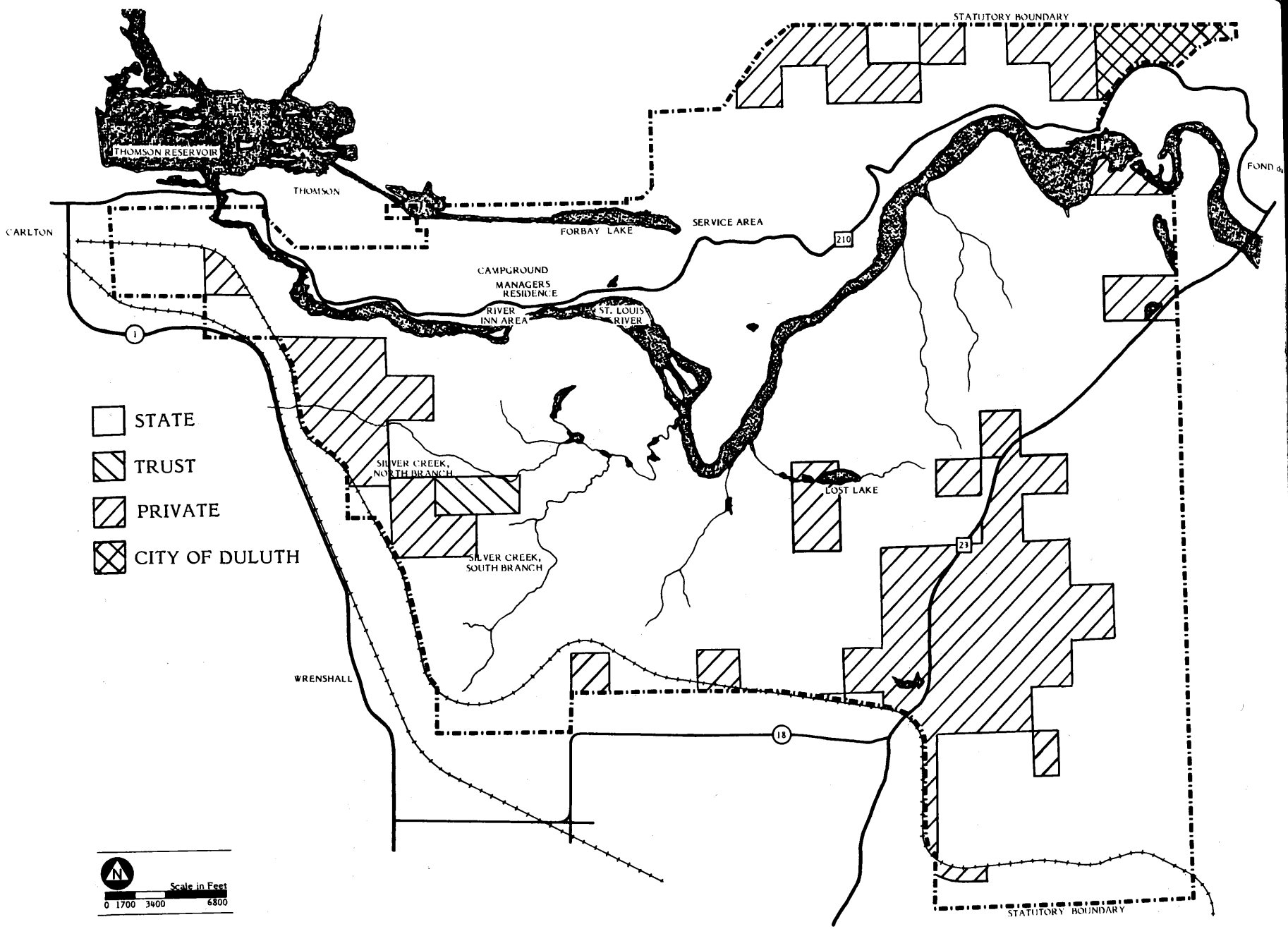
Outside the corporate limits of the cities, all the land along the north, west, and south boundaries, except for three county-owned parcels, is in private ownership. The land immediately adjoining the park in Wisconsin is all privately owned.

There are many access roads into Jay Cooke State Park. TH 210 is the major east/west access corridor. It cuts across the northern part of the park and leads into the main use area of the park.

The Burlington Norhtern Railroad maintains a line which generally follows the park's west and south boundaries, from Carlton to Wisconsin. A second abandoned line roughly follows the northern boundary from Carlton into Duluth. This right-of-way has excellent potential for trails in the future.

Other impacts include the Wrenshall Refinery which, though outside the park, can be seen from nearly any high spot in the park. The refinery also produces a noxious odor. Finally, Minnesota Power and Light has two dams and two hydroelectric power plants on the St. Louis River and three high voltage transmission lines that cross the park. The dams and plants are fairly inconspicuous, but the transmission corridors are very obvious from any high point in the park.


OPEN WOODED
STATUTORY BOUNDARY
High Voltage Transmission Line
RURAL RESIDENTIAL
CITY OF THOMSON
THOMSON RESERVOIR
Hydro-Electric Dam
Abandoned R. R. Right-of-Way
High Voltage Transmission Line
Hydro-Electric Generating Plant
FOND du LAC
OPEN WOODED
Hydro-Electric Dam
Hydro-Electric Diversion Tubes
FORBAY LAKE
Hydro-Electric Dam
210
CAMPGROUND
MANAGERS RESIDENCE
RIVER INN AREA
ST. LOUIS RIVER
Hydro-Electric Generating Plant
1
CITY OF CARLTON
SILVER CREEK, NORTH BRANCH
LOST LAKE
STATE OF WISCONSIN PRIVATELY OWNED, FORESTED
High Voltage Transmission Line
AGRICULTURAL AND RURAL RESIDENTIAL
SILVER CREEK, SOUTH BRANCH
23
High Voltage Transmission Line
Oil Refinery
AGRICULTURAL AND RURAL RESIDENTIAL
18
CITY OF WRENSHALL
FORESTED
Burlington Northern Railroad
STATUTORY BOUNDARY
FORESTED
N
Scale in Feet
0 1700 3400 6800


STATUTORY BOUNDARY
THOMSON RESERVOIR
THOMSON
CARLTON
FORBAY LAKE
SERVICE AREA
210
CAMPGROUND
MANAGERS
RESIDENCE
RIVER
INN AREA
ST. LOUIS
RIVER
FOND du
STATE
TRUST
PRIVATE
CITY OF DULUTH
SILVER CREEK,
NORTH BRANCH
LOST LAKE
SILVER CREEK,
SOUTH BRANCH
23
WRENSHALL
18
Scale in Feet
0 1700 3400 6800
STATUTORY BOUNDARY

Classification

INTRODUCTION

In accordance with the Outdoor Recreation Act of 1975, the park planning staff has reviewed the classification of each park under study this biennium. After the park resource inventory was completed for each unit, the planning staff determined:

A. Which of the eleven classifications from ORA '75 was most appropriate for the unit
B. Whether sub-units should be considered to deal with special areas within the unit (scientific and natural areas or other sub-units authorized in ORA '75)
C. Whether administration of the unit should be reassigned to other governmental bodies (other state agencies, county or local governments)

Each park has been recommended for classification according to its resources and as such will be managed and developed according to the nature of those resources and their ability to tolerate visitor use.

Objective:

To establish a statewide recreation system that will meet the recreational needs of our society

To determine the most suitable management for a given park based on its natural resources and recreational potential

RECOMMENDED CLASSIFICATION

Jay Cooke State Park was recommended for classification as a natural state park.

CRITERIA

The Outdoor Recreation Act of 1975 requires that a unit substantially satisfy all of the following criteria to qualify as a natural state park:

> "Exemplifies the natural characteristics of the major landscape regions of the state, as shown by accepted classifications, in an essentially unspoiled or restored condition or in a condition that will permit restoration in the foreseeable future; or contains essentially unspoiled natural resources of sufficient extent and importance to meaningfully contribute to the broad illustrations of the state's natural phenomena."
>
> "Contains natural resources, sufficiently diverse and interesting to attract people from throughout the state."

"Is sufficiently large to permit protection of the plant and animal life and other natural resources which give the park its qualities and provide for a broad range of opportunities for human enjoyment of these qualities."

DISCUSSION

Although Jay Cooke State Park lies in the North Shore Landscape Region, it more accurately represents the geology of the St. Louis River Valley Landscape Region. It has significant stands of original vegetation, as well as, large areas modified by logging and good stands of regrowth.

Jay Cooke State Park has many diverse vegetation communities, rough topography, rock outcrops, cascading water, and panoramic views that are unmatched in the rest of Minnesota. Annually, well over 300,000 people come to Jay Cooke, not only from Minnesota, but from throughout the United States and Canada.

The park is large enough to ensure the protection of its natural resources while providing a wide range of recreational opportunities for significant numbers of people.

PARK GOAL

The goal for Jay Cooke State Park is to display, for human interpretation, understanding, and enjoyment, the natural resources of the North Shore Landscape Region.

Resource Management

INTRODUCTION

Optimal management of Minnesota's state park system requires a multi-disciplinary approach to each park's unique resource content. All determinations in this plan are based upon:

an initial inventory of the park's soils, waters, vegetation, wildlife, fisheries, and historical/cultural sites

a careful examination of the interdependence of these systems and their relationships to larger systems, within and outside of the park boundaries

a critical, site-specific zoning of all park areas according to natural and cultural resource values

an assessment of the park's recreational potential consistent with its classification and zoning.

While this planning process has shed new light on both resources and potentials, it has often outlined and underscored the need for specific research in areas where pertinent data is now deficient.

ZONING

Introduction

Before the specific management of Jay Cooke State Park can be considered, a zoning concept must be established to evaluate the various management alternatives. General management strategies can then be determined and expressed by zoning the park for its prime management objectives.

Objectives:

To establish a zoning system which formally recognizes the various features of a park

To identify those areas suitable for specific uses and establish management requirements necessary to provide for recreational needs while protecting the park's resources

Management Zoning

A land classification system utilizing six major management zones was adopted which will permit effective, economical management of the park's resources, centralize legitimate park development and use and protect delicate resources within the park.

Land Classification Zones

To aid in understanding the final zoning concept map, the six potential zones have been defined with a description of their prime management objectives.

Ecological Protection Zone - The ecological protection zone includes areas having ecological communities which are either sensitive to certain uses, require special management or protection and/or have significant value for research. Areas having unique or endangered wildlife habitat or vegetative communities are included in this zone. Management will be directed toward perpetuating these ecological values. Development will be restricted to interpretive facilities or trails which do not disturb these values. All forms of access may be prohibited when necessary. In certain instances, small structures may be necessary to orient use and protect habitat.

Outstanding Natural Feature Zone - The outstanding natural feature zone includes areas which are geologically or biologically of statewide significance. These features often are the park's principal resource attractions and will be managed to provide for visitor enjoyment without impairing quality. Development of restricted forms of recreation facilities may be necessary to allow for enjoyment and interpretation. All development must be compatible to the features of the site to protect its natural character. Resource management will be restricted to restoring the resources and perpetuating their natural characteristics.

Primitive Zone - The primitive zone includes extensive areas of land and water remote from high-density use areas and major development within the park. Development will be restricted to hiking/skiing trails, primitive walk-in campsites and appropriate interpretive facilities. Resource management will be directed toward restoring and perpetuating the natural environment and the aesthetic character of that environment.

General Environment Zone - This zone includes areas which, while they may be very scenic, contain no identified outstanding natural, historical, or cultural features. In addition, the resources in this zone must be able to tolerate moderate use. Properly managed, this zone will serve to unite the other zones into a cohesive unit.

Historical and Cultural Zone - The historical and cultural zone includes those sites which help to illustrate the historical and archaeological heritage of the area that would be preserved or restored. Activities should emphasize the interpretive values of the site. Recreational development will be restricted to activities such as hiking/skiing trails, small picnic areas, interpretive facilities, and parking. Activities and improvements should be limited to those which will not detrimentally affect the preservation and restoration of these sites and should be reviewed with the Minnesota Historical Society. All historical or cultural sites should be surrounded by sufficient natural buffers to minimize encroachment from other activities. Natural resource management activities should maintain and perpetuate historical and cultural values while insuring regeneration of native or historically compatible plant and animal species.

Development Zone - The development zone includes lands and waters where major park development and intensive use, both existing and proposed, has or will substantially alter the environment. This zone will be managed to provide and maintain the level of development necessary to serve the needs of relatively large numbers of visitors and park administration. Park roads extending beyond this zone may be included in appropriate natural or historic zones through which they pass. Resource management will be directed toward improving the recreation capabilities and characteristics of the environment. However, native vegetation should not be extensively replaced solely for aesthetic reasons.

Potential Zones

Potential Ecological Protection Zone (map, p. **31**) - Almost all of Jay Cooke could potentially be zoned for ecological protection. Areas of major concern are the St. Louis River gorge, the marsh and aquatic communities, and the trout streams.

Potential Outstanding Natural Feature Zone (map, p. **32**) - The St. Louis River gorge has potential to be zoned as an outstanding natural feature. It is one of the best examples of the North Shore landscape and is extremely beautiful. The combination of steep topography, rock outcrops, cascading waters, and diverse types of vegetation makes the gorge one of the most outstanding tourist attractions in northeastern Minnesota.

Potential Primitive Zone (map, p. **33**) - A large area of the park has potential to be zoned as primitive. This area is the southeastern portion of the park west of TH 23.

Potential Historical and Cultural Zone (map, p. **34**) - Most of the park north of the St. Louis River has potential to be designated as a historical and cultural zone. Land and water routes through the park have been used for centuries and many identified historic sites are located either on or adjacent to these routes.

Potential Development Zone (map, p. **35**) - There are no areas of the park that are suitable for intense recreational development without major modifications. With specialized facility modifications, the soils in some areas will be able to tolerate use.

Established Management Zones

Ecological Protection Zones - Both branches of Silver Creek have been established as ecological protection zones. They both contain good populations of trout and should be protected.

Outstanding Natural Feature Zone - The St. Louis River Valley can be easily classified as an outstanding natural feature. The outstanding natural feature zone classification is sufficiently protective to preserve the zone and to protect it from environmental damage.

Primitive Zone - A large area encompassing Lost Lake has been established as a primitive zone. This area has some suitability to be zoned for development, but because it is predominantly undeveloped, it will continue to be protected.

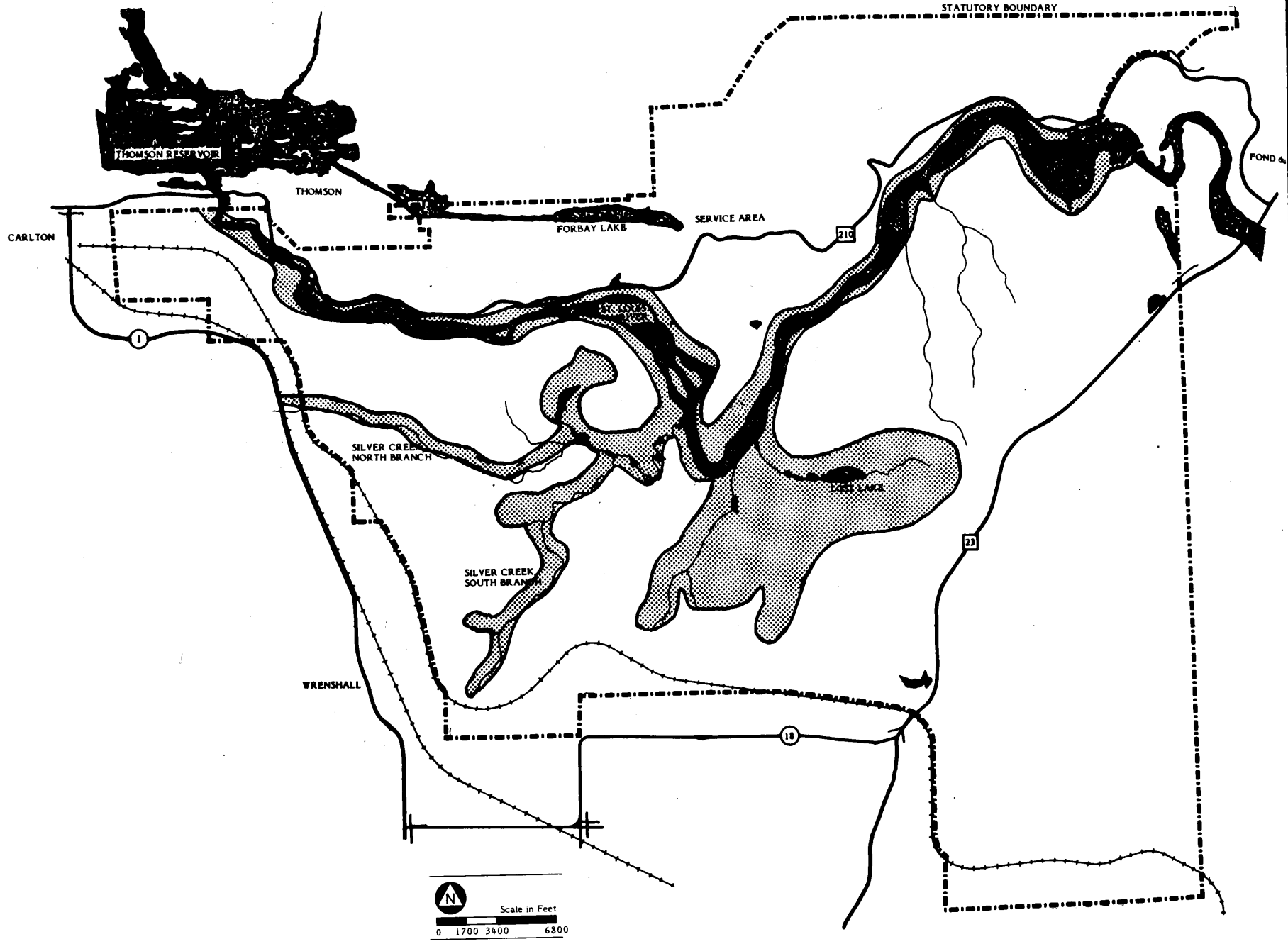
General Environment Zone - The majority of the land in Jay Cooke fits into this zone. In some cases, land that had potential to be classified into a more restrictive zoning category was included in this zone. This was done for two reasons; (1) in some cases the remaining land was not large enough to be a manageable zone, and (2) in the majority of cases, the land was considered to be sufficiently protected under the general environment zone classification.

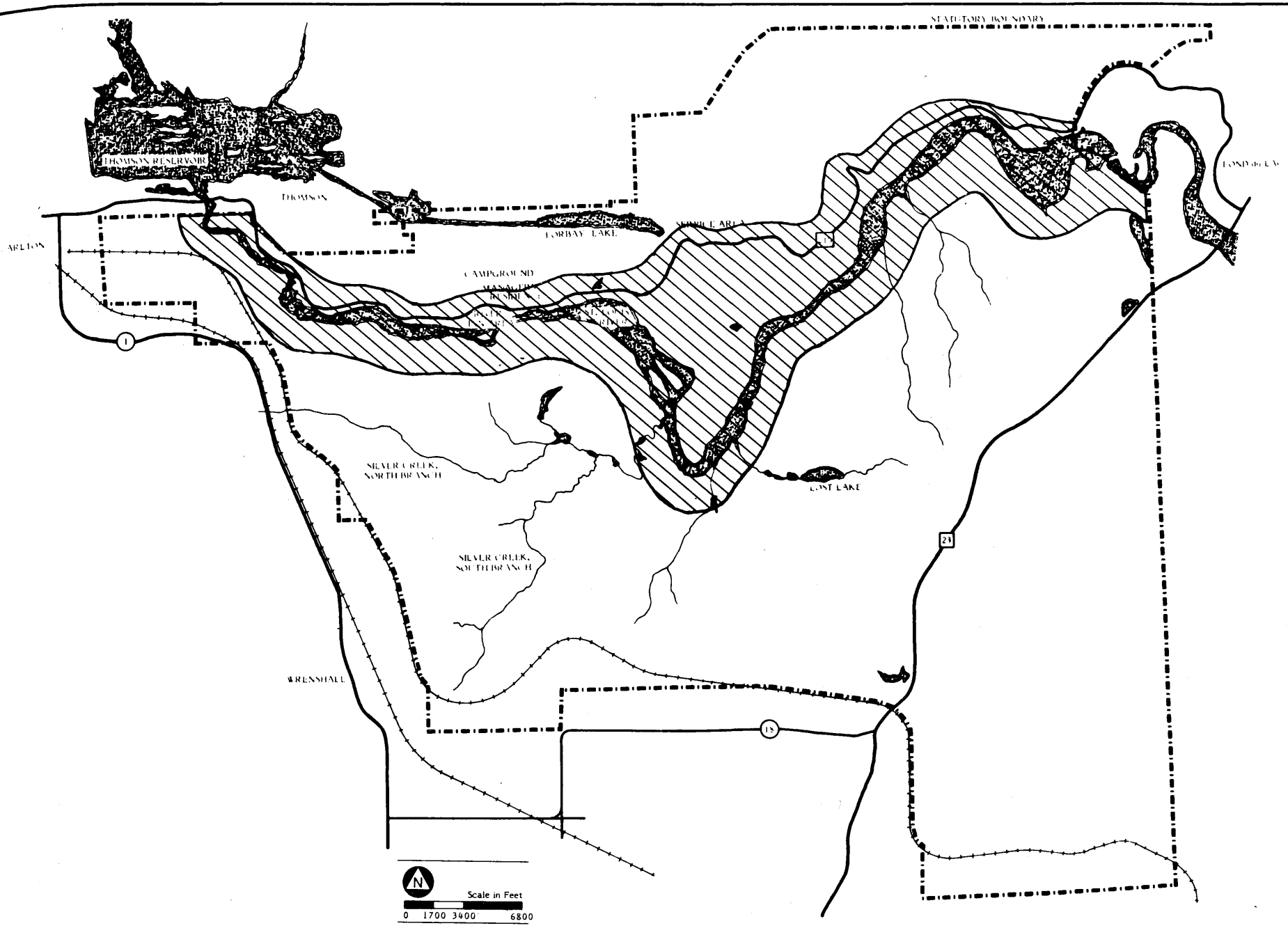
Historical and Cultural Zone - A large zone in the northeast portion of the park has many known historical and cultural sites. Since this area has a much higher value for its historical and cultural potential than it does for its recreational potential, it should be protected.

Development Zone - The only area that has been designated as a development zone is the existing development area. This area is large enough to provide space for all proposed recreational facilities. The area has the needed utilities to handle all expected impacts, and consequently, is the best suited place in the park for intensive development.

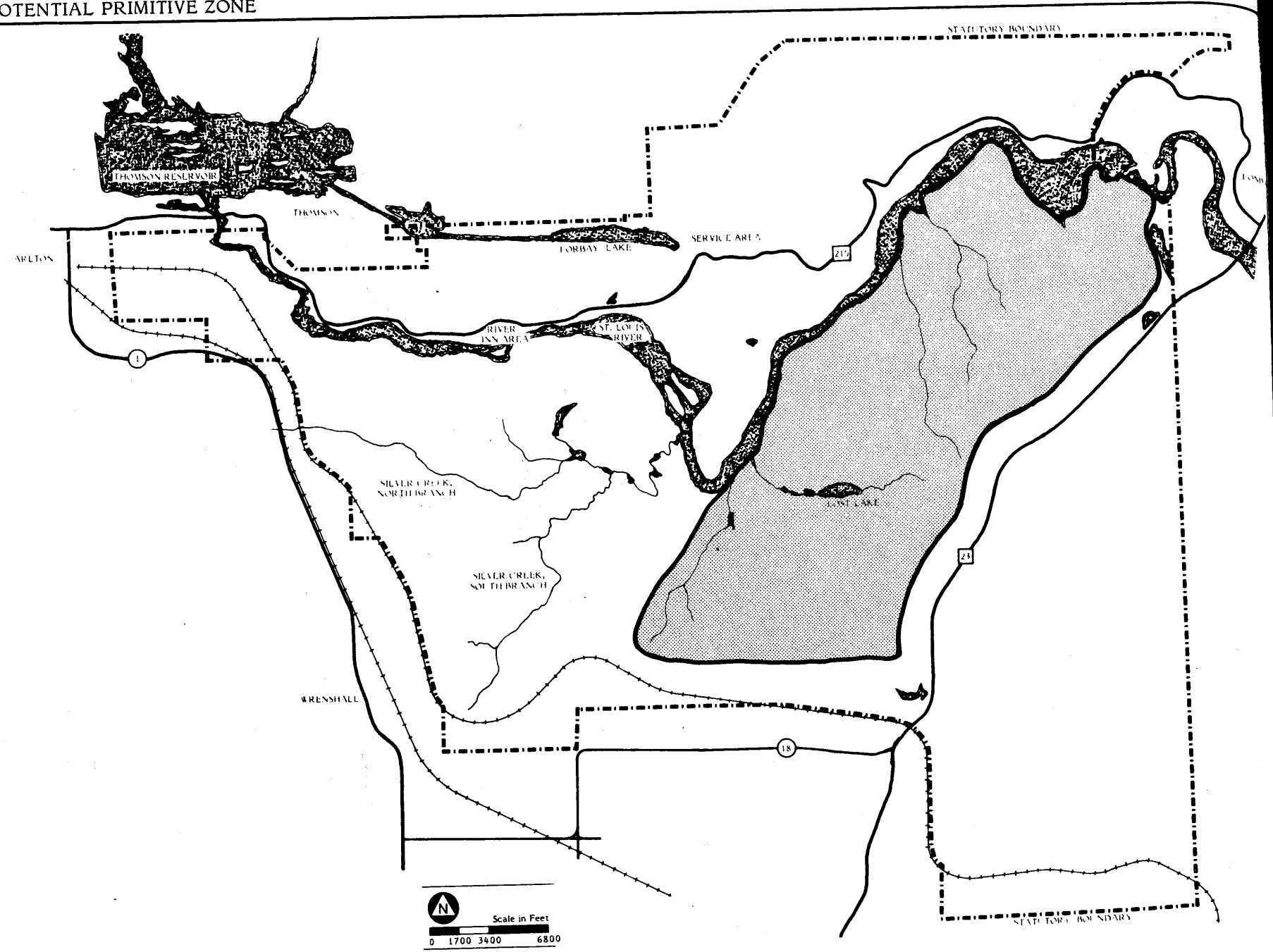
Final Zoning Map, (map, p. **36**).

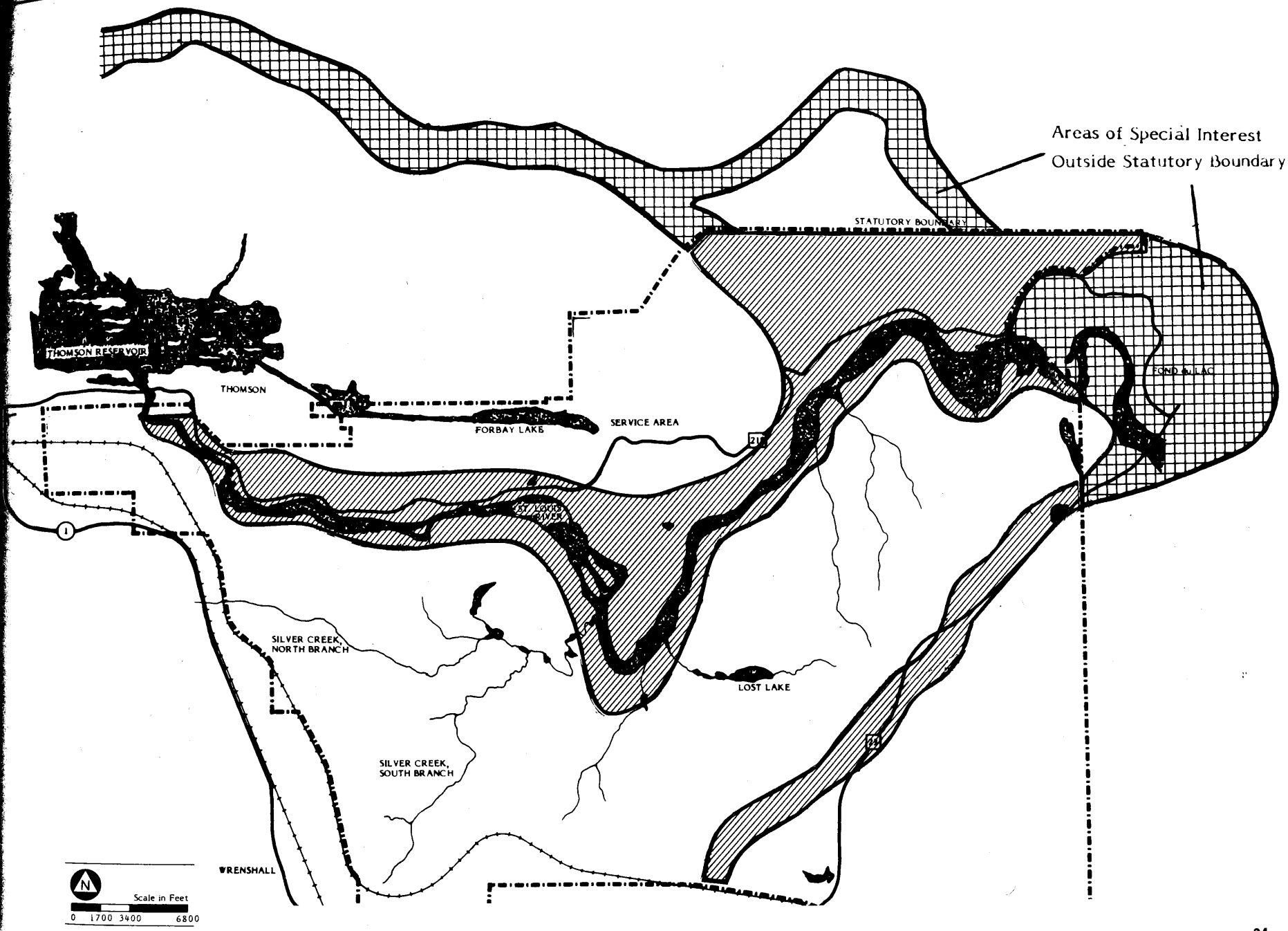
POTENTIAL ECOLOGICAL PROTECTION ZONE

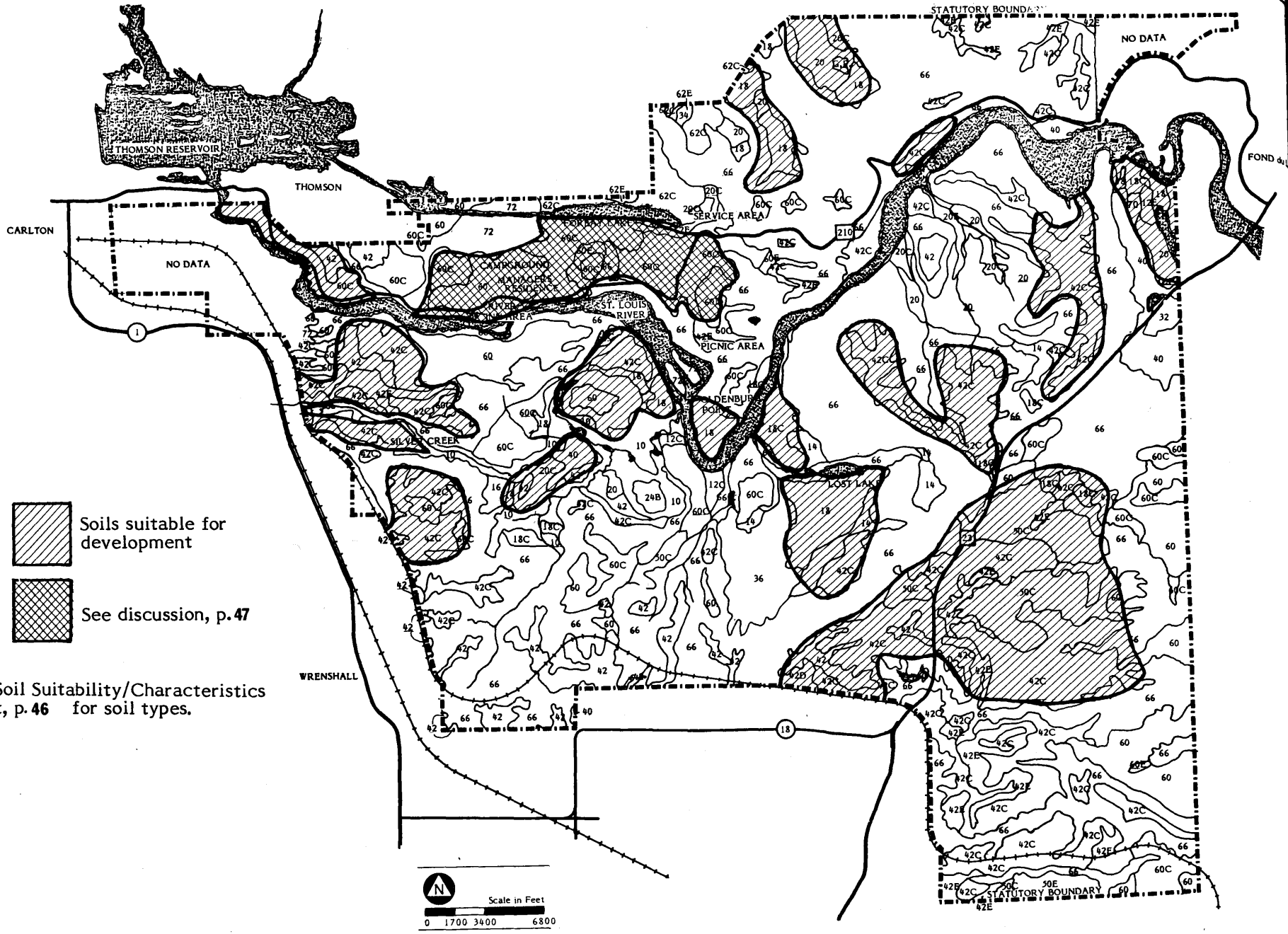



STATUTORY BOUNDARY
THOMSON RESERVOIR
THOMSON
FORBAY LAKE
SERVICE AREA
CAMPGROUND
ARLTON
SILVER CREEK, NORTH BRANCH
SILVER CREEK, SOUTH BRANCH
LOST LAKE
WRENSHALL
23
1
15
N
Scale in Feet
0 1700 3400 6800

POTENTIAL PRIMITIVE ZONE



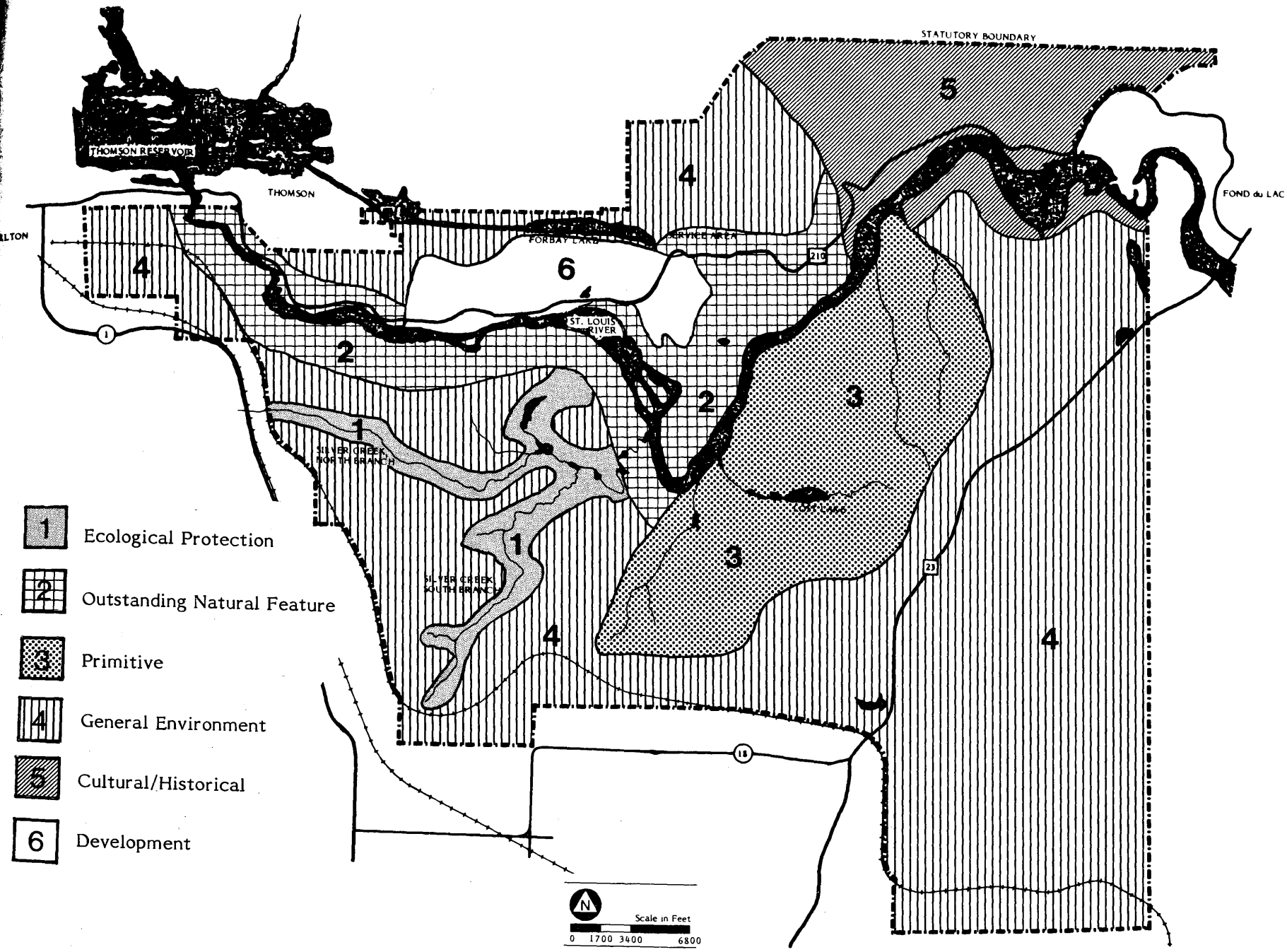

Areas of Special Interest
Outside Statutory Boundary
STATUTORY BOUNDARY
THOMSON RESERVOIR
THOMSON
FORBAY LAKE
SERVICE AREA
FOND DU LAC
ST. LOUIS RIVER
SILVER CREEK, NORTH BRANCH
LOST LAKE
SILVER CREEK, SOUTH BRANCH
WRENSHALL
Scale in Feet
0 1700 3400 6800



Soils suitable for development

See discussion, p. **47**

See Soil Suitability/Characteristics Chart, p. **46** for soil types.


STATUTORY BOUNDARY
THOMSON RESERVOIR
THOMSON
FORBAY LAND
SERVICE AREA
FOND du LAC
ST. LOUIS RIVER
SILVER CREEK NORTH BRANCH
SILVER CREEK SOUTH BRANCH
1 Ecological Protection
2 Outstanding Natural Feature
3 Primitive
4 General Environment
5 Cultural/Historical
6 Development
N
Scale in Feet
0 1700 3400 6800

WATER RESOURCES

Introduction

No single element plays a more important role in the total environment and its component life support systems than water. Besides nourishing vegetation and wildlife, water provides aesthetic and recreational experiences for park users.

By statute, the Division of Parks and Recreation can control surface and shoreline use of any lake or stream which is totally within a park's statutory boundary and in state ownership. However, if one or more parcels along a shoreline are in private ownership, a common agreement must be reached before surface water controls can be employed on the water body.

Groundwater Inventory

The groundwater in Jay Cooke State Park has not been adequately studied. The data used in this plan come directly from the well logs for 3 of the wells in the park. The table below contains the available data.

Well Logs

Well	Depth	Static Water Level	Aquifer	Pumping Time	Pumping Tests Pump Volume	Drawdown
Manager's Res.	32'	26'	N.A.	N.A.	10 gpm	2'
Service Area #1	77'	16'	Bedrock	5 hrs.	9-10 gpm	7'
Service Area #2	76'	16'5"	Bedrock	2.5 hrs.	9 gpm	53'7"

The 2 wells in the service area are drilled into the bedrock. Wells into bedrock generally draw water from fractures in the rock. These fractures usually contain a flowing stream or hold water like a reservoir. If they are the latter, the water supply may be finite. These aquifers are generally recharged by percolation from above, but mostly from where the fractured bedrock comes near the surface or has a highly permeable soil above it. Wells into bedrock do not usually produce as high a volume as wells in till. This factor is verified by the well logs, especially service area well #2.

The well at the manager's residence, on the other hand, probably has glacial till for an aquifer. This type of well is recharged by percolation from the immediate area.

No data on water quality were available for these wells, but the Department of Health checks them annually and if they are not up to standards, they are closed. Locations of all the wells in the park are identified on the Existing Development Map, p. **73.**

Surface Water Inventory

There are three natural water bodies and two artificial water bodies in or flowing through Jay Cooke State Park : Silver Creek, the St. Louis River, Lost Lake, and two reservoirs which are impounded on the St. Louis River. A 4 mile section of Silver Creek, which has been designated as a trout stream, has been studied. This portion ranges from 4 to 5 feet wide with an average width of 4.5 feet. It has an average depth of 0.9 feet, but it ranges from 0.32 to 2.0 feet. The gradient is 105 feet per mile. The bottom is 40% gravel, 25% rubble, 25% sand, 5% clay, and 5% marl. Sixty-five percent of the stream has riffles, 25% pools, and 10% flats. The pools are 80% type B-2 and 20% type B-1.

Silver Creek flows generally in a north-northeasterly direction. The recorded volume ranged from 0.21 cfs (cubic feet per second) to 2.4 cfs, and the water level fluctuates about one foot in the summer.

There are two inactive beaver dams in this section which are barriers during low water. The stream is not navigable by any craft.

There are some water quality data on this stream. The color was clear, the total alkalinity was 53 ppm with pH of 7.7, the total iron was .08 ppm, and the total nitrogen was .23 ppm. There were 5.2 ppm of the sulfate ion, and 0.35 ppm total phosphorus in the water. The temperature was taken at five places along the section. The chart below shows the results:

Station	Mile*	Date	% Shade (Midday)	Air Temp.	Water Temp.
1	0.1	8-19-68	80	80	56
2	0.5	8-19-68	80	71	55
3	1.2	8-06-68	10	78	55
4	2.4	7-10-68	20	64	54
5	3.5	7-10-68	20	66	58

*Mile readings start at the mouth of the stream.

The fisheries study found no sources of pollution. The Wrenshall refinery was dumping waste water into the stream, but it has now diverted this water.

The Pollution Control Agency has a monitoring station on the St. Louis River at Fond du Lac. Consequently, there are some water quality data available on the river just below the park. The average annual temperature is 49.2° with a range from 32° to 79°. The average summer temperature (April-September) is 60°.

The St. Louis River is classified as a commercial river. The fecal coliform count was above allowable limits in over 2/3 of the test samplings. The dissolved oxygen was below standards only 5 of the 32 times. The water was never above allowable standards for hardness. Hard metals - cadmium, zinc, lead, arsenic, selenium, copper, and mercury - were all below the allowable limits. Manganese levels were over allowable limits in all but 6 samples. The iron levels were all over allowable limits. The standards for all but the fecal coliform and hardness were for Class 1 (Human Consumption) which are generally more restrictive than the commercial class. In spite of having fairly good water quality in regards to metals, the river often has a strong stench from commercial wastes being dumped above the park.

The river flows through a rocky gorge in the park with numerous rapids, small waterfalls, and cascades. There is a considerable gradient through this section. The water volume is generally small because most of the water is diverted into Forbay Reservoir. Only during the heavy spring runoff is the volume high. The rapids, waterfalls, and 2 dams prevent navigation on the river.

The St. Louis River has been seriously polluted by industrial wastes in the past. Though the river has improved somewhat lately, it still is not safe for contact recreational uses. Since park management has virtually no control over the river, the only feasible action is to make sure that park facilities are not polluting the river and to support efforts to clean up the entire watershed.

The majority of soil types in Jay Cooke lend themselves to heavy runoff and slow percolation. Therefore, development near the river will require special construction provisions to ensure against runoff. On-site testing must be completed before any development is implemented.

Management

Objectives:

To provide an adequate water supply to the park

To maintain the present water quality of Silver Creek

To support efforts to clean up the St. Louis River

• Specific Management

The quantity of groundwater available from the active wells in Jay Cooke State Park may be limited. Four of the wells are drilled into bedrock, which generally is a smaller volume aquifer than glacial till. Nearly all the wells ran dry during the summer of 1976. However, a broken water line was not discovered until late in the summer, so it is not known if the wells would have run dry if the line had not broken. A groundwater supply study is recommended to determine where and how much water is available in the park. If park use increases beyond the present water supply capacity of the park, there is a possibility that the proposed Carlton-Thomson watermain (which is not yet constructed) can be tapped. If the main can not be tapped, the existing wells can be deepened, or new ones can be drilled.

A Western Lake Superior Sanitary Sewer District line runs along TH 210 in the park. The park will tap into this sewer line which should eliminate the pollution problem caused by the waste disposal systems in the park (see Soils Section, p. **44**).

The only management recommendation for Silver Creek is to acquire the private parcels along the creek to protect it.

FISHERIES

Introduction

The primary goal for any fisheries management program is to maintain the optimum natural fish population that a water body can support. This optimum is determined by such factors as water fertility, oxygen supply, food supply, and water temperature. Periodic fishery surveys are conducted to determine species diversity and the size and condition of fish populations. The results of these surveys then determine the classification and site-specific management goals for a water body.

The Division of Fisheries uses 8 ecological classifications for lakes - trout, soft-water walleye, hard-water walleye, centrarchid-walleye, centrarchid, rough fish - gamefish, bullhead, and unclassified. There are, however, only 6 management classifications - trout, walleye, walleye-centrarchid, warm-water gamefish (includes occasional winterkill), and regular winterkill.

A lake or stream may be classified into more than one category. Dual classification allows the use of more than one management alternative. Also, unless otherwise specified, a species classification does not imply that only those species are found in the lake or stream. Thus, specific management may differ slightly for lakes with similar classifications. Management alternatives include, but are not limited to, passive management, population monitoring, stocking programs, water level modification, habitat improvement, and rough fish control.

Inventory

Silver Creek, a designated trout stream, is the only water body in Jay Cooke that is managed by the Section of Fisheries. The former naturalist at Jay Cooke has periodically studied the waters of the park for fish species. The list of species below lists numbers that correspond to the map in the Wildlife Section of this plan (p. **63**). The numbers show the locations where the species were sighted.

Fisheries Inventory Chart

Silver lamprey	80, 81
Lake sturgeon	80, 81
Brook trout	36, 31, 32, 33, 34, 50, 54, 51
Rainbow trout	80, 81
Brown trout	25, 3, 35, 80
Rainbow smelt	80, 81
Central mudminnow	73, 54

Northern pike	80, 48, 69, 81
Carp	80, 81, 69
Blacknose dace	33, 50, 65
Longnose dace	33, 50
Horneyhead chub	54
Creek chub	65, 32
Pearl dace	33
Northern redbelly dace	33
Finescale dace	50
Fathead minnow	3, 26, 27, 31, 32, 39, 51, 50, 62, 54, 69, 80
Common shiner	54
Northern redhorse	79, 80
White sucker	79, 80
Longnose sucker	79, 80
Channel catfish	2, 3, 39, 48, 69, 80
Black bullhead	73
Tadpole madtom	80
Smallmouth bass	69, 39, 25, 2, 3
Yellow perch	80, 69
Walleye	79. 80
Johnny darter	26, 27, 31, 32, 33, 50, 54
Slimy sculpin	27, 31, 36

The lengths of brook trout found in Silver Creek range up to 9.4 inches with the majority under 2.9 inches. The suckers range up to 9.9 inches, but most are only a few inches in length. The minnows were all under 4.5 inches.

Silver Creek has very little vegetation because of the hard and shifting gravel and sand bottom. This same bottom, however, with the riffle areas and cold water, makes the stream excellent for trout spawning. The stream is well shaded and has only a few pools.

Silver Creek has been stocked regularly with brook trout. It was heavily fished in the past but receives only light to moderate pressure.

Management

Objectives:

To improve stream fishing opportunities

To provide a reservoir fishing opportunity

• Specific Management

Silver Creek is almost totally within the park boundary, but it flows through a few private parcels. If these parcels are purchased, the state would control virtually the entire stream. The creek will continue to be managed for brook trout with annual stocking of this species.

Except for the lack of pools, the stream is excellent for trout. If, in the near future, a process for constructing in-stream habitat structures without environmental damage to the surrounding area is developed and the fishing pressure increases substantially, then such structures may be considered. For the present, the annual stocking satisfies demand.

The section of the St. Louis River in the park is tremendously modified and has been so commercially polluted in the past that few game fish survive which are suitable for eating. The Fond du Lac dam in the lower part of the park creates a reservoir which has fisheries potential. There are two factors which are key to any fisheries potential on this reservoir. The first is that Minnesota Power and Light Company (MP&L), who owns the water rights on this reservoir, must agree to this use. Second, the pollution in the river must be cleaned up considerably. The pollution is being reduced, but the river still needs further improvement.

If the pollution reduction continues and MP&L approves the project, a management program may begin. The first step would be to study the reservoir to determine which fish species should be stocked (walleye, northern pike, muskellunge, or trout). Once this is determined, a rough fish removal program should be instituted, followed by a stocking program. A preliminary recommendation is for walleye to be the primary stocked species.

Cost: Study and stocking - Fisheries Section
Rough fish removal - $72,000
Lake access and parking lot - $7,000

The St. Louis River below the Fond du Lac Dam also has some fisheries potential as a spawn collection station since walleye run up the St. Louis to the dam to spawn. Since the river is interstate water at this point, it was necessary to reach an agreement with the state of Wisconsin. This area was discovered to also be an excellent source of sucker eggs which are used to provide forage for muskies in hatcheries.

Cost: Fisheries Section

SOILS

Introduction

Soil structure, type, and fertility play an important role in dictating what types of vegetation will be found in the park or which plant communities might logically be reintroduced to approximate those communities which exerted a dominant influence in the formation of that soil type. Soils data must also be considered when locating park roads, recreational buildings, intensive use areas (e.g., campgrounds and picnic areas), and sewage lagoons and septic tank filter fields. Consequently, the development of a park management plan depends heavily upon detailed soil surveys of a park. Through the use of such surveys, environmentally sound, intelligent resource management decisions can be made.

Inventory

Soils and their underlying geological foundations are the major components of a park's topography, and greatly influence vegetative cover.

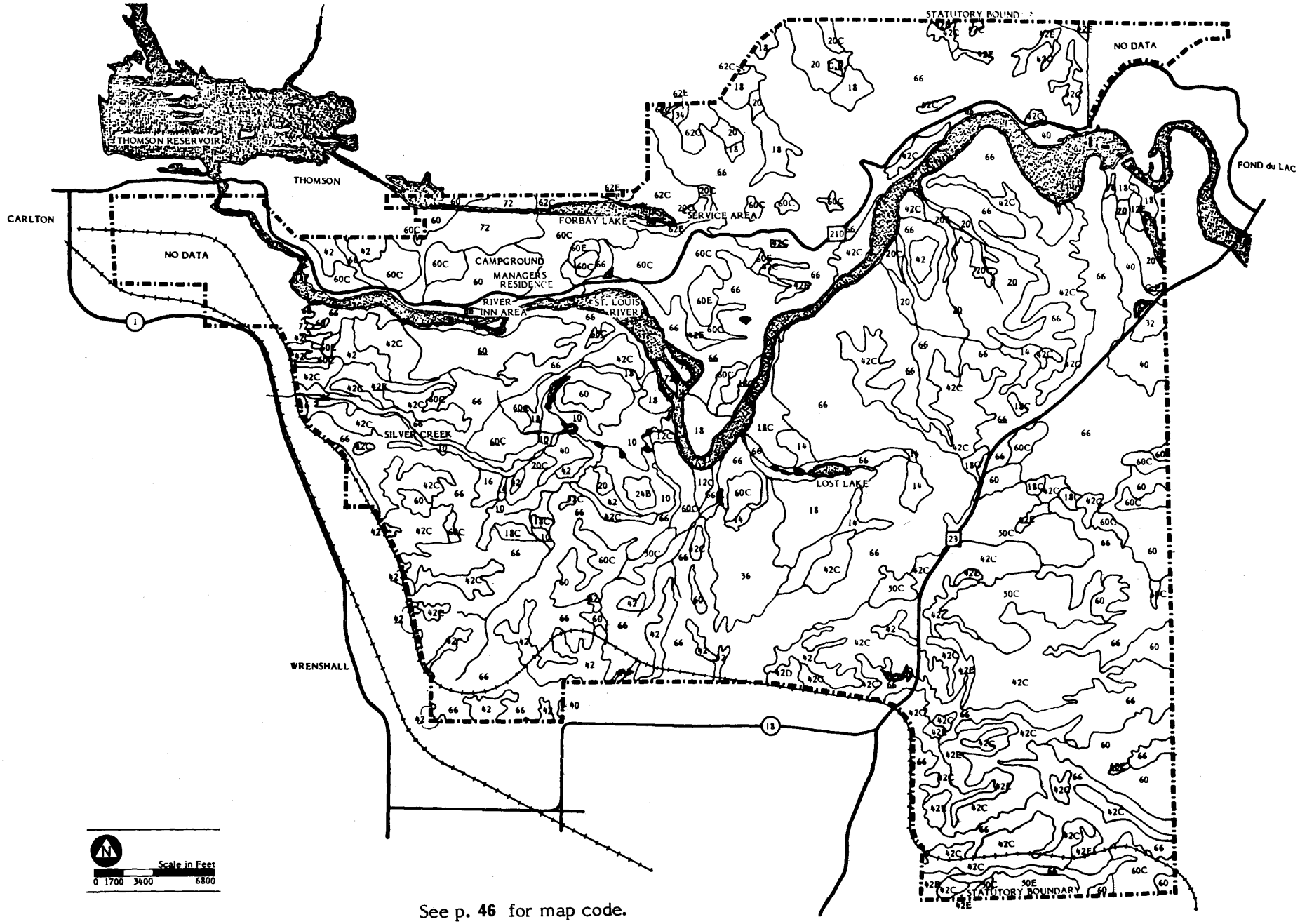
Jay Cooke has a variety of soils ranging from the excessively drained Cloquet, Cromwell, Emmert, and Omega soils to the very poorly drained, organic Dusler, Spooner, Newson, Dawson, and Moose Lake soils. These are also red clays of Campia, Ontonagon, clayey Eutrochrepts, Nemadji sands, Duluth loam, alluvial soils, and rock outcrops. Slopes range from 0 to 60%.

The dominant soil is the clayey Eutrochrepts followed by Campia, Ontonagon, and Omega. These four series make up at least 75% of the soils in the park.

The clayey Eutrochrepts, Ontonagon, and alluvial soils are not suitable for development. The Cloquet, Cromwell, Emmert, Nemadji, Omega (on slight slopes), Duluth, and Rockland soils are suitable for low density development.

The table (p. **46**) lists each series and some of its major characteristics. The map (p. **45**) shows the locations of each series in the park. The soils survey is not site specific in detail and thus small areas of different soils may be located within the areas shown on the map. Though the survey scale is quite accurate, site tests must always be taken before a development project is implemented.

One problem with many of the soils in Jay Cooke is poor percolation. Most of the park's development is on these poorer soils. As a result, the present waste disposal systems are inadequate or, at best, expensive to operate.



See p. **46** for map code.

A Permeability measured in inches per hour

B Based on buildings without basements

C Based on buildings with basement or foundation

D Estimated from available data

1 Slope

2 Surface Texture

3 Depth to Bedrock

4 Flooding (Duration & Frequency)

5 Pollution potential

6 Permeability

7 Water Table

8 Frost Action

9 Drainage

10 Shrink-swell

Soil Type	Map Code	Slope	Permeability[A]	Erosion Hazard	Potential Frost Action	Intensive		Paths and Trails	Recreation Buildings	Sewage Lagoons	Septic Tank Filter Fields
						Picnic Areas	Camp Areas				
Alluvial Land	10	0- 3%	No Data	No Data	Moderate	Severe[4]	Severe[4]	Severe[4]	Severe[B,4]	Severe[4,7]	Severe[7,4]
Emmert	12C	6-12%	2.0-20+	Slight	Low	Moderate[1]	Moderate[1]	Slight	Severe[C,1]	Severe[6]	Severe[1]
	12E	18-24%	2.0-20+	Mod-Severe	Low	Severe[1]	Severe[1]	Moderate[1]	Severe[C,1]	Severe[6,2]	Severe[1,5]
Newson	14	0- 2%	6.0-20	Slight	No Data	Severe[7,2]	Severe[7,2]	Severe[7,2]	Severe[B,7]	Severe[7]	Severe[7]
Nemadji	16	0-12%	6.3-20	Slight	Moderate	Moderate[7]	Moderate[7]	Moderate[7]	Severe[C,7]	Severe[7,6]	Severe[7]
Omega	18	0- 2%	6.0-20	Slight	No Data	Slight	Slight	Slight	Slight[B]	Severe[6]	Slight
	18C	6-12%	6.0-20	Slight	No Data	Slt-Mod[1]	Slt-Mod[1]	Slight	Slt-Mod[B,1]	Severe[6,1]	Slt-Mod[1]
Cloquet	20	0- 2%	0.6-20	Slight	Low	Slight	Slight	Slight	Slight[C]	Severe[6]	Slight
	20C	6-12%	0.6-20	Slight	Low	Slight	Moderate[1]	Moderate[1]	Moderate[C,1]	Severe[6]	Moderate[1]
	20E	18-25%	0.6-20	Slight	Low	Slight	Moderate[1]	Moderate[1]	Severe[C,1]	Severe[6,2]	Severe[1]
Cromwell	24B	2- 6%	0.6-20	Slight	Low	Slight	Slight	Slight	Slight[C]	Severe[6]	Slight
Dawson	32	0- 2%	.06-20	Slight	High	Severe[7]	Severe[7]	Severe[7]	No Data	Severe[6,7]	Severe[7]
Dusler	34	0- 2%	.06-2.0	Slight	High	Severe[7]	Severe[7]	Moderate[7]	Severe[C,7,10]	Slight	Severe[6,7]
Moose Lake	36	0- 2%	10-20	Slight	High	Severe[7]	Severe[7]	Severe[7]	Severe[C,7,9]	Severe[7]	Severe[7,9]
Spooner	40	0- 2%	2.0-6.0	Slight	High	Severe[7,4]	Severe[4,7]	Severe[7,4]	Severe[B,4]	Severe[7]	Severe[7]
Campia	42	0- 2%	0.2-2.0	Slight	Moderate	Slight	Slight	Slight	Moderate[B,8]	Moderate[6]	Severe[6,7]
	42C	2-12%	0.2-2.0	Slight	Moderate	Slt-Mod[1]	Slt-Mod[1]	Mod-Sev[1]	Moderate[C,8]	Mod-Sev[1,6]	Severe[6,7]
	42D	12-18%	0.2-2.0	Slight	Moderate	Severe[1]	Severe[1]	Moderate[1]	Mod-Sev[B, 8, 1]	Severe[1]	Severe[1]
Ontonagon	60	0- 2%	.06-.6	Slt-Mod	Moderate	Severe[2]	Severe[2,6]	Severe[2]	Severe[C]	Slight	Severe[6]
	60C	6-12%	.-6-6	Slt-Mod	Moderate	Severe[2]	Severe[2,6]	Severe[2]	Severe[C,10]	Severe[1]	Severe[6]
	60E	18-24%	.06-.6	Severe	Moderate	Severe[2]	Severe[2,6]	Severe[2]	Severe[C,10]	Severe[1]	Severe[6]
Duluth	62	0- 2%	.06-2.0	Slight	High	Slight	Moderate[6]	Slight	Slight[C]	Slight	Severe[6]
	62C	6-12%	.06-2.0	Slight	High	Moderate[1]	Moderate[6]	Slight	Moderate[C,1]	Severe[1]	Severe[6]
	62E	18-25%	.06-2.0	Slight	High	Severe[1]	Severe[6,1]	Moderate[1]	Severe[C,1]	Severe[1]	Severe[6]
Clayey Eutrochrepts	66	25-60%	.06-0.2	Severe	Moderate	Very Severe[1]	Very Severe[1]	Severe[1]	Severe[C,1]	Severe[1]	Severe[1]
Rock Land	70	Var.	Unclassified	Severe	No Data	Slt-Mod[1]	Severe[3]	Slt-Mod[1]	Slight[C,9,4]	Severe[3]	Severe[3]
Rockland, Wet	72	0- 2%	Unclassified	Slight	No Data	Severe[3,9]	Severe[3,9]	Severe[3,9]	Severe[C,9,5]	Severe[3,9]	Severe[3,9]

Management

Objective:

To prevent future erosion and correct existing problems

To prevent ground and surface water contamination

- Specific Management

Existing park development is located in an area where the soil is very poorly suited for development. It is a heavy red clay which has very poor surface texture and permeability.

There are 2 areas in the park which have soils well-suited for development. One area is around Lost Lake and the other is near TH 23 in the west-central part of the park. However, since the first area is very remote and the second is in private ownership, it was decided that the most feasible alternative would be to keep the high use area in its present location. With special management, the limitations of these soils can be overcome. For example, maintenance of a good ground cover helps control surface run-off. The graveling of roads and campsite spurs and increasing inter-site spacing will also help by curtailing run-off and dispersing use. Finally, hooking up the park's sewer system with the Western Lake Superior Sanitation District sewer system and the water with the Carlton-Thomson water system should eliminate all of the existing soil problems in this area.

Segments of some trails have severe erosion problems. These areas must be rehabilitated immediately before the damage becomes so extensive the trails must be closed.

Cost: $5,000

Jay Cooke State Park's poor soil problem is compounded by a very rugged topography. Care must be used in developing new facilities or trails to avoid severe impact on the delicately balanced resources. If this care is taken, Jay Cooke will offer the visitor an opportunity to enjoy one of the state's most scenic river valleys.

VEGETATION

Inventory

To rapidly inventory the vegetation of a park, a system was devised which would not only categorize vegetation, but would also recognize those species of wildlife normally associated with a specific plant community. The system used to describe vegetation/wildlife associations is called the ecological community system. In designing the system, several factors were considered. These factors included existing land use patterns, soil, moisture, plant species composition, physical appearance (e.g., grassy, brushy, forested, bare), and the habitat of the various species of wildlife commonly found in Minnesota.

Original Vegetation

The original vegetation of the park was a mixture of pine and northern hardwoods. Detailed maps of the original vegetation are not available, but many huge pine stumps still can be seen where the pine stands once existed.

Existing Ecological Communities

The predominant ecological communities in the park are: northern hardwoods, mature pioneer hardwood/conifer, pine groves, big woods, bottomland forest, spruce-fir, and conifer bogs and swamps.

The vegetation map, p. **52**, delineates the ecological communities found in the park. Each symbol on the map describes the ecological community type, its size and density, shrub and ground cover density, and the community's fire susceptibility.

The park's ecological communities and the percentage of the park they cover are:

Pioneer Hardwoods/aspen	26%
Pioneer Hardwoods/birch	23
Northern Hardwoods	21
Pine Groves	5
Bottomland Hardwoods	4
Mixed Hardwoods and Conifers	3
Conifer Bogs and Swamps	3
Mature Pioneer Hardwoods	3
Big Woods	2
Spruce-Fir	2
Alder-Willow	1
Hardwood Swamps	1

Pioneer Hardwoods/saplings	.40
Upland Brush	.40
Dry Prairie	.30
Orchards and Plantations/Conifers	.10
Marsh	.06
Banks and Rock Outcrops	.05
Old Fields	.03

Toxic Plants

Poison Ivy

Scenic Communities

Landscapes with the greatest variety or diversity generally have the highest scenic value. In Jay Cooke, the diverse vegetative communities with mixtures of conifers and deciduous trees combine with the scenic qualities of the water bodies to form a landscape that is extremely beautiful. The pine stands that remain in the park have survived logging and disease to provide an excellent example of the pine communities that once covered much of northern Minnesota.

Diseased, Mature, or Overmature Stands

Vegetation in the campground and picnic area is generally suffering because of heavy use. Some problems that are common in heavy use areas are: soil compaction, breaking and cutting of live vegetation for firewood, nails in trees, and girdling birch trees. Generally, vegetation throughout the park is mature or overmature, and in need of management. The pioneer hardwood and pine grove communities in Jay Cooke are no longer reproducing, but are being replaced by shade tolerant spruce-fir species. Unless measures are taken to stimulate reproduction of the desired pine species, the scenic quality will be lost.

Wildlife/Vegetation Relationship

Vegetation throughout the park provides excellent wildlife habitat. The varied types of vegetation and the many age classes serve as excellent songbird habitat. Shrubs and trees, especially red rosier dogwood and white cedar, are heavily browsed by deer. The conifer bog and swamp communities serve as deer yarding areas because of the food and shelter they provide. Aspen communities near water serve beaver populations. Aspen also has a high value for grouse in areas where there is sufficient age class diversity to fulfill their needs.

Overstory Size and Density Code

	Size				
	1	2	3	4	5
Density	Seedlings (0-1"dbh) Trees/Acre	Saplings (1"-5" dbh) Trees/Acre	Poles (5"-9" dbh) Trees/Acre	Small Saw Timber (9"-15" dbh) Trees/Acre	Large Saw Timber (15"+ dbh) Trees/Acre
0	*	*	0-30	0-19	0-5
1	0-500	0-250	31-90	11-40	6-20
2	501-1,000	251-500	91-150	41-60	21-30
3	1,001-2,000	501-1,000	151-210	61-80	31-45
4	2,001-5,000	1,001-2,500	211-270	81-100	46-60
5	5,001-10,000	2,501-5,000	271-330	101-130	61-75
6	10,001-20,000	5,001-10,000	331-390	131-150	76-90
7	20,001-30,000	10,001-15,000	391-450	151-180	91-105
8	**	**	451-510	181-200	**
9	**	**	511+	201+	**

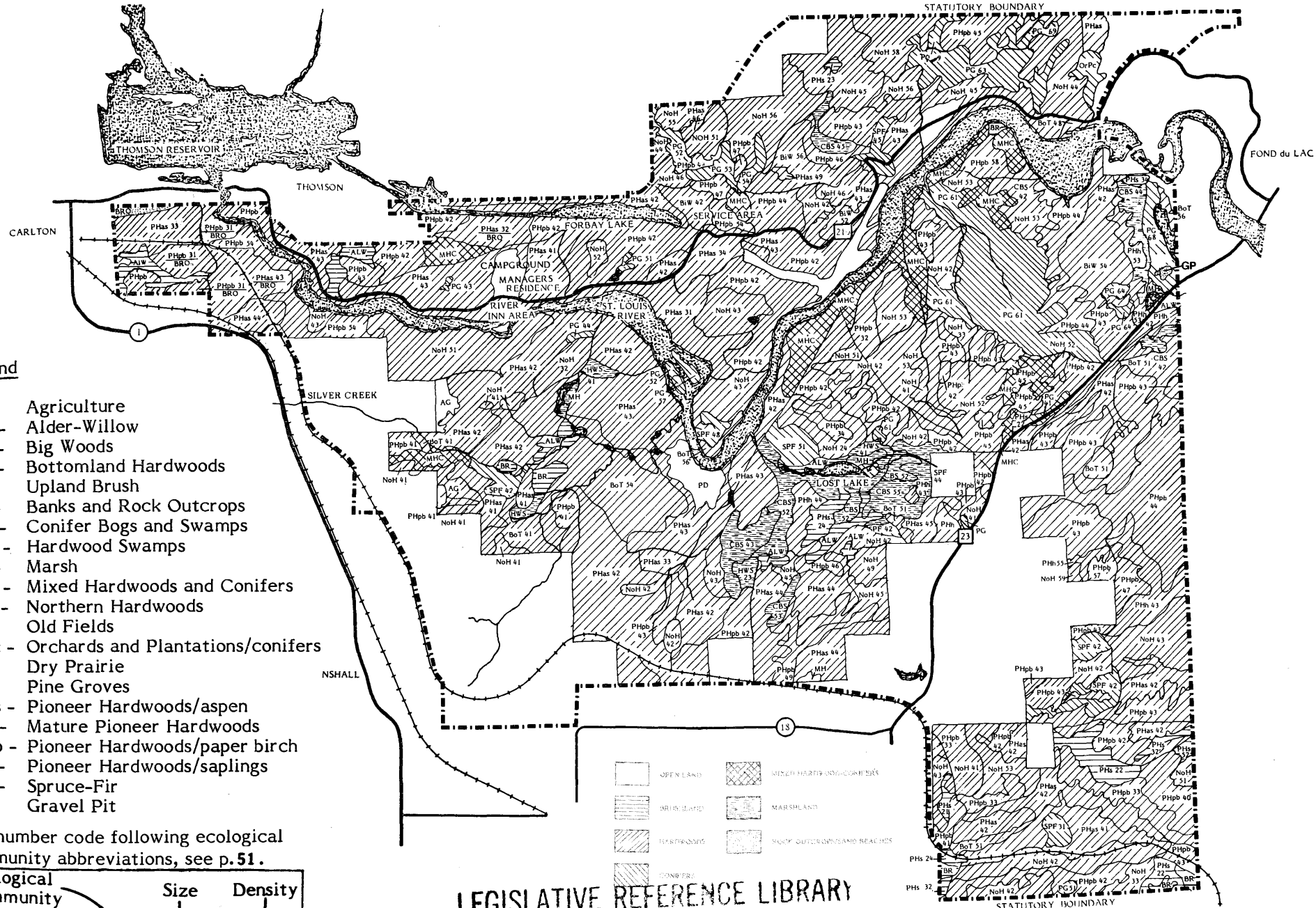
* dbh - diameter/breast height
** Not a valid density code for these size classes

Management

Objectives:

To provide improved wildlife habitat

To improve existing vegetative communities, increase conifer communities and provide vistas or scenic viewing areas along through highways



Legend

AG -	Agriculture
AIW -	Alder-Willow
BiW -	Big Woods
BoT -	Bottomland Hardwoods
Br -	Upland Brush
Bro -	Banks and Rock Outcrops
CBS -	Conifer Bogs and Swamps
HWS -	Hardwood Swamps
MH -	Marsh
MHc -	Mixed Hardwoods and Conifers
NoH -	Northern Hardwoods
OF -	Old Fields
OrPc -	Orchards and Plantations/conifers
PD -	Dry Prairie
PG -	Pine Groves
PHas -	Pioneer Hardwoods/aspen
PHh -	Mature Pioneer Hardwoods
PHpb -	Pioneer Hardwoods/paper birch
PHs -	Pioneer Hardwoods/saplings
SPF -	Spruce-Fir
GP -	Gravel Pit

For number code following ecological community abbreviations, see p. **51**.

Ecological Community → Size ↓ Density

BiW 54

• Specific Management

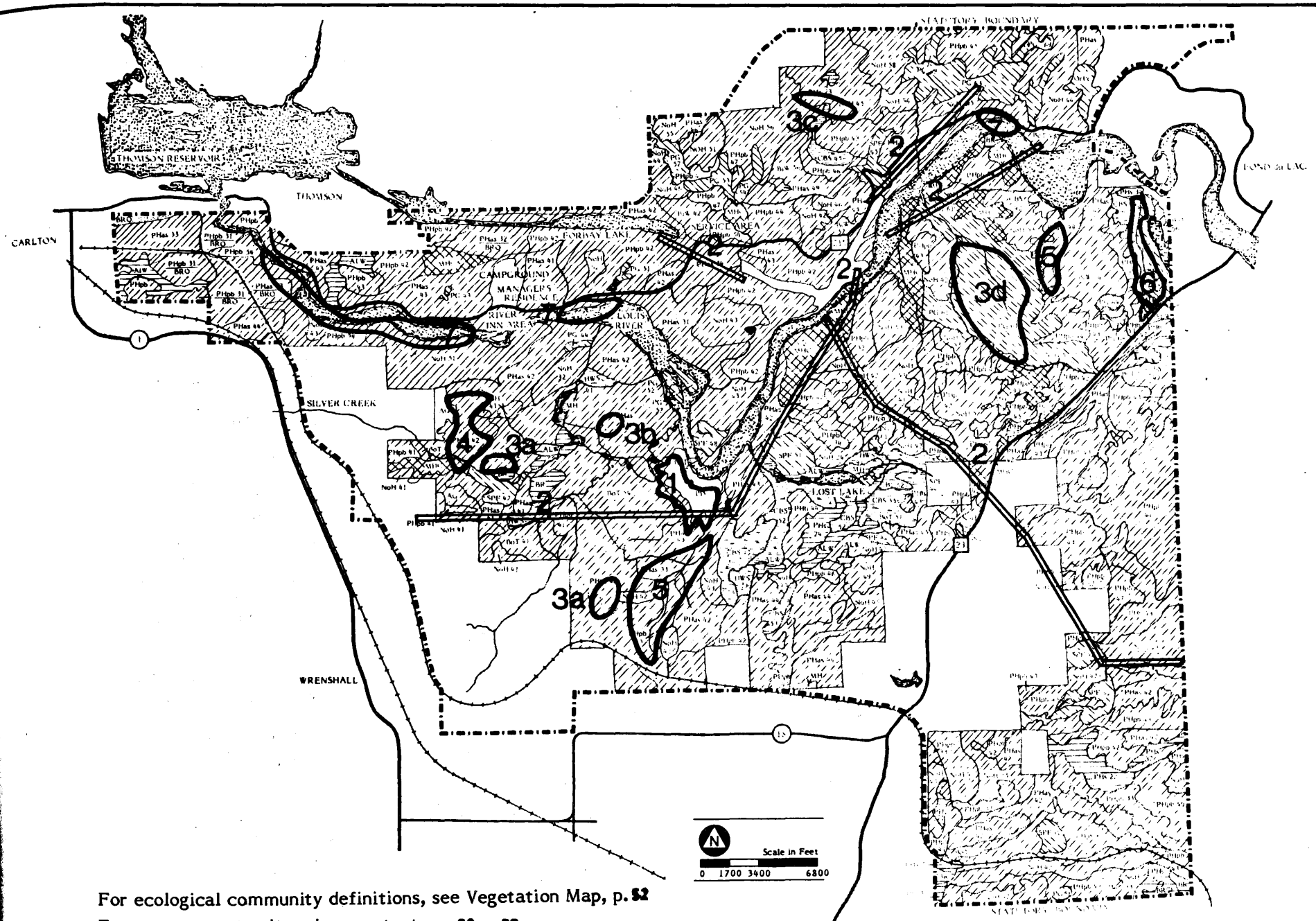
There are currently no known vegetational problems in Jay Cooke. The park has some elm, but since there are no large pure elm stands the effects of a Dutch Elm infestation should be minor. In fact, some large dead elm will provide excellent nesting sites for raptors. However, dead trees near use areas should be removed because they are a hazard to park users.

Except for fire suppression, very little will be done with the vegetation in the park. The topography is the largest single limiting factor in the park. Any timber removal on slopes could have disastrous erosive results.

The following table outlines the recommendations for the management of each vegetational community.

Jay Cooke State Park Vegetation Management Plan

Map Code (p. 54)	Ecological Community	Management Practice	Management	Cost
1	Dry Prairie (PD) 36 acres (approx.)	Prairie management	A four-year burning rotation program should be implemented starting in 1978.	Burning $100/acre $3,600/year $10,800/10 years
2	Power line right-of-way (TRS)	Opening maintenance	Minnesota Power and Light (MP&L) has retained the rights to these corridors. Any management must be approved by them before implementation. MP&L presently maintains grass and forbe-covered corridors primarily by spraying. The spraying can be continued. However, occasional areas should be left growing freely to provide protective runways across the corridor for wildlife. These woody areas will visually break the corridors and help to integrate them into the surrounding area. As portions of these corridors need replacement they should be rerouted to avoid the hills wherever possible.	None



For ecological community definitions, see Vegetation Map, p. **52**

For management unit codes, see text pp. **53** - **57** .

3a	Pioneer Hardwoods/ aspen (PHas 42) 4 acres	Timber removal, Permanent opening creation	These areas have been selected for permanent wildlife openings because they are located where one-acre clearings can be made without erosion problems. When all are completed, they will offer a scattering of openings throughout the park. The forester, wildlife manager, and park manager should select the sites for the openings. Criteria for selection should include any natural openings, areas of deteriorating timber and level to slightly rolling topography. One opening in each of the 3a areas, one opening in each of the 3c areas, and three openings in the 3d areas should be completed during the first biennium and the remainder during the second. The cutting will be done by park workers, and if possible, the wood should be used for park firewood. If not, it should be burned along with the slash. Some of the brush should be left piled to create small mammal homes. Logs can serve as drumming logs for grouse. The burn should be hot enough to kill off root suckers, if possible. After the burn, the area should be seeded to grass, particularly clover. Finally, to maintain the opening, an approved chemical should be applied as needed. The cutting should be done in the late fall or winter. The burning should be done in the very early spring and the seeding later in the spring.	Cutting $300/acre $900/year $3,600/4 years Burning $50/acre $150/year $600/4 years Planting $15/acre $45/year $180/4 years Chemical $5/year $20/4 years	
3b	Pioneer Hardwoods/ aspen (PHas 43) 1 acre				
3c	Northern Hardwoods (NoH 45) 2 acres				
3d	Pine Groves (PG 61) 5 acres				
4	Pioneer Hardwoods/Aspen (PHas 41) 40 acres	Timber removal	This extensive stand is predominantly aspen, in the pole timber size class, with a light density. Since it should be harvested to improve regeneration and is accessible, approximately 4 acres per year should be harvested. The forester and park manager will mark the tract to be cut and a contract should be let. Otherwise, park laborers can cut the timber to make firewood for sale to park users.	Cutting $500/acre $2,000/year $20,000/10 years	

5	Various	Timber removal, Reforestation	There are numerous areas throughout the park that contain pine stumps which attest to the wide spread stands of pine that once covered in the park. These areas now have various hardwood species growing on them. Since reestablishment of original vegetation is one of the general goals for natural state parks, it is recommended that a small one to two-acre tract be planted with pine seedlings. The forester and park manager should select the site. Steep slopes should be avoided. Only a couple of tracts per year will be selected. Removal of the timber can be done by issuing firewood permits, if the tract is near a trail. If not, park laborers should cut the vegetation and let it lay. Once cleared, the tracts should be burned, but only if they are on a trail which can be used for a fire break. Otherwise, the downed timber will be left. Once the site is prepared it should be planted with a mixture of white and Norway pine seedlings. For a few years after planting, the tracts may need treatment with a broadleaf chemical to hold the hardwoods back from natural regeneration. As soon as the pine becomes established the chemical treatment should be discontinued.	Cutting $250/acre $1,000/year $10,000/10 years Burning $60/acre $60/year $600/10 years Planting $63/acre $252/year $2,520/10 years Chemical $40/10 years
6	Pine Groves (PG 68) 38.5 acres (approx.)	Timber removal	This stand consists of white and Norway pine and white spruce in the 15" dbh class and is very dense (over 100 trees per acre). To maintain the quality of the stand, it should be thinned. The district forester and park manager will mark the trees to be cut and a logging contract will be let for their removal. The district forester and the park manager should oversee the operation and ensure minimal damage is done to the remaining stand. The contract should specify removal of most of the slash.	None

7	Pioneer Hardwoods/aspen (PHas 43, 41) Alder-Willow (AlW) Pioneer Hardwoods/ paper birch (PHpb 42) Northern Hardwoods (NoH 45)	Timber removal	These stands are along Th 23 and TH 210. The recommendation is to selectively clear areas along these highways to create vistas. TH 210 has traditionally been used as a scenic drive through the park. The vegetation has grown so much that few places remain to view the river and valley. Clearing select areas will allow views of the river valley. There are two scenic overlooks along TH 23 (one belongs to Mn/DOT). Both of these overlooks require clearing. Park laborers should do the clearing, leaving the conifers and some of the large hardwoods. The brush and smaller hardwoods should be cut. The wood can be used for firewood. If the regrowth is rapid, a chemical should be used to retard broadleaf growth while allowing grasses to grow which will protect the slopes from erosion. If grasses do not grow and erosion begins, ground cover should be planted to protect the slopes.	Cutting $500/acre $2,000/10 years Chemical $20/10 years

WILDLIFE

Introduction

Many species are commonplace but unnoticeable because of their elusive or secretive behavior. For many visitors the mere awareness of the presence of wildlife is all that is needed to change a dull, uneventful walk through the brush into a challenging, refreshing stroll. In order to provide such an experience for park users, detailed inventories of park wildlife are needed so that managers are better able to manage habitat to attract certain species or protect habitat to ensure the continued presence of existing species. The following wildlife inventory was based on checklists and reports submitted by local residents, birders, naturalists, area game managers, and park managers. The list is not all inclusive and will continue to be revised and upgraded as new data are reported.

Certain wildlife species occurring within a park are especially noteworthy because special precautions are required in their management or protection. These species may be sensitive to human activity or have the potential of damaging vegetation and property or they may pose a threat to park visitors. These wildlife species and the potential problems are discussed in the following paragraphs.

Inventory

Jay Cooke State Park contains a fair diversity of wildlife. There are 173 species of birds that nest in or visit the park. Forty-six species of mammals are recorded to be in the park, and there is a good chance that another 6 species could be found there. Finally, 16 species of reptiles and amphibians are known to inhabit the park. The checklist on p. **64** enumerates the species found in Jay Cooke based on the available data.

Endangered, Threatened, or Rare Species

Species within this group are those which are presently in danger of extinction in Minnesota within the immediate future, species which could become endangered in the foreseeable future in Minnesota but not necessarily throughout their entire range, or species that once resided in Minnesota but have been extirpated or nearly so because of changes in land and water use patterns.

Species of Special Interest

Species within this group include those which are uncommon or locally distributed in Minnesota and are not presently threatened or endangered but which might become so. Also included are those species which presently are not in any particular difficulty but should be closely watched because they have unusual or special values, are of special public interest or because their habitat is especially vulnerable. Special management may be required.

Birds

Seasonal Residents	Permanent Residents
Common tern	Pileated woodpecker
Marsh hawk	
Northern bald eagle	
Osprey	
Common loon	
Great blue heron	

Mammals

Canada lynx
Eastern timber wolf
Bobcat

Reptiles and Amphibians

Snapping turtle
Redbacked salamander

Troublesome Species

Troublesome species include those species of wildlife which as individuals or populations might become nuisances to either the natural resources of a park, park property, or park visitors.

Mammals

Species	Potential Problems
Black bear	Nuisance and cause property damage
Raccoon	Nuisance and cause property damage
Porcupine	Vegetation and property damage
Beaver	Plug culverts and cause flooding
Snowshoe rabbit	Vegetation damage
White-tailed deer	Vegetation damage

Sensitivity to Humans

Species listed within this group are those which are unusually sensitive to disturbance by human activity. Disturbance during one season or another may result in nest or den abandonment, decrease in territorial size, or shift in territorial movement. Such disturbance might be detrimental to the survival of the species in a given area or may have effects over a much larger area.

Birds

Bald eagle

Mammals

Timber wolf
Red fox
Canada lynx
Bobcat
Coyote

Management

Objectives:

To improve wildlife habitat

To increase the numbers and diversity of wildlife species

To prevent overpopulation of certain cyclic species

• Specific Management

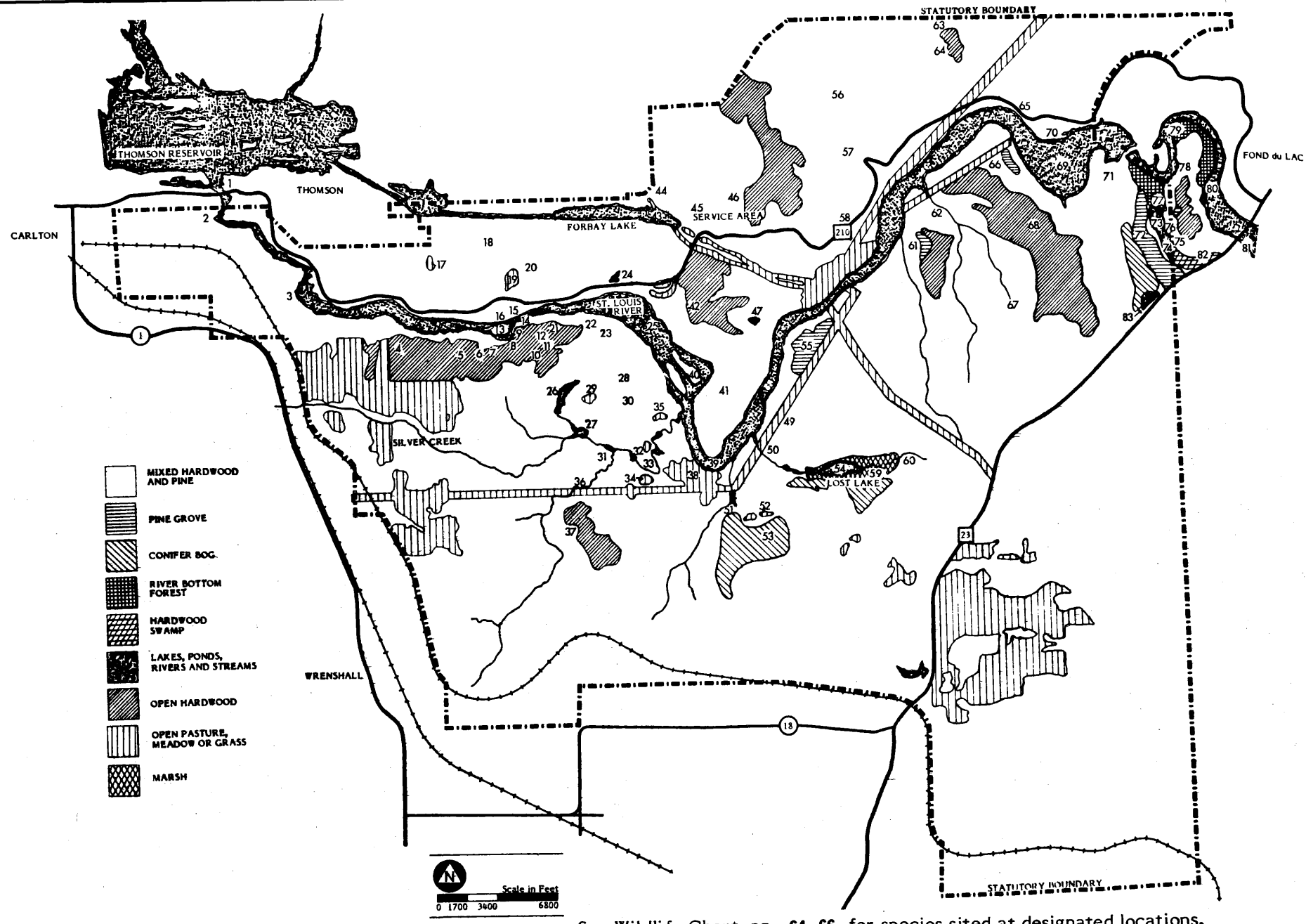
Jay Cooke State Park offers many different habitats for its wildlife species. The park is not inhabited or visited by a large number of birds, compared to other parks, but it does have a substantial number of mammals.

The major management practice will be to enhance wildlife habitat. This will be done primarily by maintaining present openings and creating others. These openings not only provide an additional food source for some species, but they create an edge area between the grassy openings and the deep forests. This edge is one of the best habitats for many wildlife species. Also recommended in the vegetation section are some aspen cutting and pine regeneration tracts which will also enhance habitats for some species. Large scale habitat modification cannot be conducted in Jay Cooke, however, because of the rough terrain. On the other hand, a majority of the park's habitat is in good condition, and its size allows for large remote areas which will help keep the animal/human conflict to a minimum.

Another management recommendation is to monitor beaver activity in the park. Presently, there is considerable activity, particularly around Lost Lake. Beaver activity will be encouraged as long as they do not overpopulate. If this happens, they will be trapped down to a population that does not exceed the carrying capacity of the area.

All trails and remote campsites will be located to avoid any sensitive nesting areas, such as that of the bald eagle. If there is an area near a nesting or den site which will allow viewing without disturbance, a viewing blind will be constructed.

The deer population should be periodically monitored. In the past, the deer herd grew too large and serious damage to the park's vegetation resulted,particularly to the ground herbs and forbes. Periodic counts will determine the population, and if it is too large, management controls must be implemented. Controlled hunting may be used as a method of control.



See Wildlife Chart, pp. **64-66** for species sited at designated locations.

SPECIES *Nesting (spotted)		RELATIVE ABUNDANCE						SEASONAL OCCURRENCE					
		ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
Common Loon	69,81		●						●				
Horned Grebe	73,81			●					●				
Pied-billed Grebe	73,81	●							●				
Whistling Swan	73,81				●					●			
Mute Swan	73,81				●					●			
Mallard	73*,81*,26*,27,43,69*,59*	●							●				
Black Duck	73,81		●						●				
Pintail	73,81		●						●				
Gadwall	73,81		●						●				
American Widgeon	73,81		●						●				
Shoveler	81		●						●				
Blue-winged Teal	73*,81*,26*,43,54*	●							●				
Canada Goose	81			●					●				
Green-winged Teal	73*,81		●						●				
Wood Duck	73*,81	●							●				
Redhead	73,81		●						●				
Canvasback	81		●						●				
Ring-necked Duck	73,64,81,43	●							●				
Greater Scaup	73,43,69,81,79	●								●	●		
Lesser Scaup	73,43,69,81,79	●								●	●		
Common Goldeneye	73,43,69,79,80,81	●								●	●		
Bufflehead	73,69,79,80,81		●							●	●		
Ruddy Duck	81			●					●				
Common Merganser	73,80,81	●									●		
Red-Breasted Merganser	73,80,81		●								●		
Hooded Merganser	73,79,80,81		●								●		
Turkey Vulture	77			●					●				
Goshawk	25,26		●						●				
Sharp-shinned Hawk	77		●						●				
Marsh Hawk	6		●						●				
Rough-legged Hawk	65*		●								●		
Red-tailed Hawk	80,65,35		●						●				
Broad-winged Hawk	10*,35		●						●				
Golden Eagle	81,80				●				●				
Bald Eagle	77,55*,47,80,81,54,50			●					●				
Osprey	69,80,81			●					●				
Sparrow Hawk	6		●						●				
Ruffed Grouse	10*,42,33,58,75,76,77	●						●					
Great Blue Heron	73,54,48,78		●						●				
Green Heron	26,54,73*,74*,77		●						●				
American Bittern	74,81		●						●				
Sora Rail	74,81		●						●				
American Coot	73,79	●							●				
Kildeer	75,79,81	●							●				
Spotted Sandpiper	65*,78,33		●						●				
Solitary Sandpiper	65,32			●						●			
Lesser Yellowlegs	73			●						●			
Greater Yellowlegs	73			●						●			
American Woodcock	75*,77,71		●						●				
Common Snipe	81		●						●				
Herring Gull	69,78,80,81	●							●				

SPECIES		RELATIVE ABUNDANCE						SEASONAL OCCURRENCE					
		ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
Ring Billed Gull	80,81		●						●				
Common Tern	69,78,80,81	●							●				
Black Tern	73,80	●							●				
Rock Dove	16,81	●							●				
Mourning Dove	16,19,76	●							●				
Black-billed Cuckoo	10			●					●				
Screech Owl	76			●				●					
Snowy Owl	19			●							●		
Barred Owl	37*			●				●					
Saw-whet Owl	53(?)						●		●				
Great Horned Owl	72*,76		●					●					
Whip-poor-will	18		●						●				
Common Nighthawk	73,15		●						●				
Chimney Swift	73			●					●				
Ruby-throated Humming Bird	19,77		●						●				
Belted Kingfisher	73,78,80		●						●				
Yellow Shafted Common Flicker	10,11,12,42,76,38		●						●				
Pileated Woodpecker	47*			●				●					
Red headed Woodpecker	6			●					●				
Yellow-bellied Sapsucker	10*,41*		●						●				
Hairy Woodpecker	77,10		●					●					
Downy Woodpecker	10*,19,77		●					●					
Eastern Kingbird	26*,73*			●					●				
Great crested Flycatcher	10,11,76			●					●				
Eastern Phoebe	77*,73		●						●				
Yellow-bellied Flycatcher	10,7		●						●				
Traill's Flycatcher	50			●					●				
Least Flycatcher	76			●					●				
Eastern Wood Pewee	77,17,18		●						●				
Olive-sided Flycatcher	72		●						●				
Horned Lark	75			●					●				
Barn Swallow	73		●						●				
Cliff Swallow	78			●					●				
Tree Swallow	26*,64,73*		●						●				
Bank Swallow	78,73		●						●				
Purple Martin	73		●						●				
Blue Jay	5,10*,19,32,63,72,76,77	●						●					
Gray Jay-Swamp Lake	76,77		●					●					
Common Raven	69		●					●					
Common Crow	73,76,72*		●					●					
Black-capped Chickadee	4,10,17,18,19,41,42,77,76		●					●					
White-breasted Nuthatch	77		●					●					
Red-breasted Nuthatch	72,77			●					●				
Brown Creeper	77			●					●				
House Wren	91,77		●						●				
Winter Wren	76			●					●				
Catbird	76*,10			●					●				
Brown Thrasher	10			●					●				
Robin	13,14,15,16,19,77*,76	●							●				
Wood Thrush	10*,11,42,77*		●						●				
Hermit Thrush	10*			●					●				

SPECIES		RELATIVE ABUNDANCE						SEASONAL OCCURRENCE					
		ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
Veery	10*,17,18,76,77*		●						●				
Eastern Bluebird	6			●					●				
Golden Crowned Kinglet	72,62,76		●						●				
Ruby Crowned Kinglet	72,62			●					●				
Cedar Wawing	76		●					●					
Northern Shrike	72			●					●				
Solitary Vireo	4			●					●				
Yellow-throated Vireo	12			●					●				
Red-eyed Vireo	41,57,64,76,77*,4,5,7,8,17,18,10*,	●											
	11,42*,68	●							●				
Philadelphia Vireo	75			●					●				
Warbling Vireo	12			●					●				
Black & White Warbler	77			●					●				
Golden-winged Warbler	75			●					●				
Tennessee Warbler	75,76		●						●				
Orange Crowned Warbler	75,76		●						●				
Nashville Warbler	72,75*,76		●						●				
Parula Warbler	72,76		●						●				
Yellow Warbler	75,76		●						●				
Magnolia Warbler	77			●					●				
Cape May Warbler	72			●					●				
Yellow Rumped Warbler	72,73,74,75,76		●						●				
Black Throated Green Warbler	68			●					●				
Black Throated Blue Warbler	42			●					●				
Blackburnian Warbler	26,72			●					●				
Chestnut Sided Warbler	72,76,75,77		●						●				
Bay Breasted Warbler	76,72			●					●				
Blackpoll Warbler	77			●					●				
Pine Warbler	72			●					●				
Palm Warbler	72,76			●					●				
Ovenbird	10*,77,76*		●						●				
Yellowthroat	74*		●						●				
Mourning Warbler	76			●					●				
Connecticut Warbler	59			●					●				
Wilsons Warbler	76			●					●				
Canada Warbler	77			●					●				
American Redstart	10*,15,42,77*,76		●						●				
House Sparrow	19,77		●					●					
Eastern Meadowlark	6			●					●				
Red-winged Blackbird	26*,54*,73*,74*	●							●				
Rusty Blackbird	76			●					●				
Brewers Blackbird	76			●					●				
Common Grackle	77,76	●							●				
Brown-headed Cowbird	77,76		●						●				
Eastern Cowbird													
Baltimore Oriole	26*,10,77		●						●				
Scarlet Tanager	10,8,68		●						●				
Rose-breasted Grosbeak	26*		●						●				
Evening Grosbeak	77		●					●					
Indigo Bunting	74			●					●				
Purple Finch	77,19		●					●					

SPECIES		RELATIVE ABUNDANCE						SEASONAL OCCURRENCE					
		ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
Pine Grosbeak	77,72		●								●		
Hoary Redpoll	77			●							●		
Common Redpoll	77			●							●		
Pine Siskin	77		●					●					
American Goldfinch	76		●						●				
Red Crossbill	77		●								●		
White-winged Crossbill	77,72		●								●		
Rufous-sided Towhee	71			●					●				
Savannah-Sparrow	6			●					●				
Grasshopper Sparrow	6			●					●				
Vesper Sparrow	77			●					●				
Slate colored Junco	76,77		●					●					
Tree Sparrow	77			●							●		
Chipping Sparrow	76,77*		●						●				
Clay-colored Sparrow	75			●					●				
White crowned Sparrow	77			●					●				
White Throated Sparrow	72*,77		●						●				
Fox Sparrow	77			●					●				
Swamp Sparrow	74			●					●				
Song Sparrow	75*,76*,77*,26*		●						●				
Snow Bunting	75		●								●		

MAMMAL CHECKLIST

SPECIES *Probable Residency #Dropping or Tracks		RELATIVE ABUNDANCE						SEASONAL OCCURRENCE						
		ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
Starnose Mole	10						●					●	
Masked Shrew	*						●						
Arctic Shrew	72						●						
Northern Water Shrew	*						●						
Pigmy Shrew	17						●						
Shorttail Shrew	10,19		●									●	
Little Brown Bat	19,16,77		●									●	
Keen Bat	*						●					●	
Silver Haired Bat	*						●					●	
Big Brown Bat	*						●					●	
Red Bat	14,76						●					●	
Hoary Bat	*						●					●	
Black Bear	44,45,42,30,71#		●									●	
Raccoon	19,72		●									●	
Short-tailed Weasel	26						●	●					
Long-tailed Weasel	72						●	●					
Mink	80						●	●					
River Otter	71#						●	●					
Badger	63#												
Striped Skunk	19,5,76												
Red Fox	58,76												
Coyote	69,71#												
Timber Wolf	20 (1963)				●			●					
Lynx	3												
Bobcat	68#												
Woodchuck	71												
Thirteen lined Ground Squirrel	19												
Franklin Ground Squirrel	72												
Least Chipmunk	76,77,19,16,13,68	●										●	
Red Squirrel	18,20,19,13,22,32,76,77,72	●										●	
Eastern Gray Squirrel													
Eastern Fox Squirrel	4												
Northern Flying Squirrel	77												
Beaver	26,27,31,33,39,54,69,73,24,83,82	●						●					
Woodland Deer Mouse	75												
White Footed Mouse	16,77												
Southern Bog Lemming	59#												
Boreal Redback Vole	72												
Meadow Vole	6,18												
Muskrat	73	●						●					
Norway Rat	16,19	●						●					
Meadow Jumping Mouse	5,4												
Woodland Jumping Mouse	76												
Porcupine	77,68,66,58,4		●					●					
Snowshoe Hare	83,68,84,72#,18#	●						●					
Easterr Cottontail	45		●					●					
Whitetail Deer	17,18,26,29,22,19,24,42,53,49,												
	65,44,82,83,84,77,76,74,71,62												
	66,72	●						●					
Moose	71#						●	●					

REPTILE AND AMPHIBIAN CHECKLIST

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE						SEASONAL OCCURRENCE					
		ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
●	Common Snapping Turtle		●				●				●		
	Wood Turtle						●				●		
	Map Turtle						●	●					
●	Western Painted Turtle	●						●			●		
	Blanding's Turtle						●	●					
	False Map Turtle						●						
	Western Spiny Softshell						●						
	Eastern Spiny Softshell						●						
	Northern Prairie Skink						●						
	Five-lined Skink						●						
	Six-lined Racerunner						●						
●	Northern Red-bellied Snake		●					●			●		
	Texas Brown Snake						●						
	Northern Water Snake						●						
	Eastern Plains Garter Snake						●						
●	Eastern Garter Snake		●					●			●		
	Red Sided Garter Snake						●						
	Plains Hognose Snake						●						
	Eastern Hognose Snake						●						
	Blue Racer						●						
	Eastern Smooth Green Snake						●						
	Western Smooth Green Snake						●						
	Bullsnake						●						
	Western Fox Snake						●						
	Black Rat Snake						●						
	Eastern Milk Snake						●						
	Eastern Massasauga						●						
	Timber Rattlesnake						●						
●	Mudpuppy		●					●			●		
	Central Newt		●					●			●		
●	Jefferson Salamander						●	●			●		
	Eastern Tiger Salamander						●						
	Gray Tiger Salamander						●						
●	Red-backed Salamander		●					●			●		
●	Dakota Toad	●						●			●		
●	American Toad	●						●			●		
	Great Plains Toad						●						
●	Northern Spring Peeper	●						●			●		
●	Eastern Gray Treefrog						●	●			●		
	Blanchard's Cricket Frog						●						
●	Boreal Chorus Frog						●	●			●		
	Western Chorus Frog						●						
	Pickerel Frog						●						
●	Mink Frog						●	●			●		
●	Northern Leopard Frog						●	●			●		
●	Green Frog						●	●			●		
●	Wood Frog						●	●			●		

PREHISTORIC AND HISTORIC SITES

Introduction

It is of primary importance to protect known and suspected locations from activities which could adversely affect these irreplaceable and non-renewable cultural resources.

Inventory

Jay Cooke State Park has not been systematically surveyed, but is an area where there was significant historical activity. There is also considerable potential for prehistoric sites in the area. An intensive survey is recommended.

Management

Objective:

To preserve all potential and known prehistoric sites

- Specific Recommendation

A phase #1 survey should be conducted as soon as possible, to determine management direction.

Cost: Phase #1 survey - $10,000

Resource Management Budget

Management Practice	Biennium 78-79	80-81	82-83	84-85	86-87	Total
Waters						
Groundwater Survey (if necessary)	$ 5,000					$ 5,000
Fisheries						
Roughfish Removal		$ 4,800	$ 2,400			$ 7,200
Access			7,000			7,000
Soils						
Trail Erosion Repair	1,000	4,000				5,000
Vegetation						
Cutting	9,800	7,800	6,000	$6,000	$ 6,000	35,600
Burning	4,020	420	3,720	120	3,720	12,000
Planting	594	594	504	504	504	2,700
Chemical		20	20	20	20	80
Prehistoric and Historic Sites						
Phase #1 Survey	10,000					10,000
TOTAL	$30,414	$17,634	$19,644	$6,644	$10,244	$84,580

USER ANALYSIS

Introduction

Careful consideration must be given to future needs of the park user. Although a great deal of data exist concerning disparate elements of the subject, no comprehensive authoritative study on recreational tourism demand in Minnesota is currently available. Trends in travel patterns are discernible, but estimates of the time period over which this demand will develop and of its magnitude are only speculative at this time. Furthermore, published data largely document what people have done in the past. Only if it is assumed that these trends will continue can valid conclusions be drawn. Obviously, these data are not sensitive to any unpredictable technological changes or political events. For example, the oil embargo created an "energy crisis" overnight. This development and its implications have had a direct impact upon travel patterns.

There are two basic aspects of recreational demand. The first involves measurement of the amount and kind of recreational opportunities/facilities currently demanded by the public (e.g., the size of the park or the number of campsites). The second aspect involves an estimate of latent demand for recreational opportunities/facilities which would exist if citizens were given ample opportunity and adequate conditions to participate in an activity (e.g., the number of handicapped campers that would have utilized campsites if the architectural barriers to their use had been removed).

In the planning for the use and development of state parks, an attempt has been made to anticipate the recreational needs of the public by providing increased recreational opportunities while protecting the park's natural resources.

Jay Cooke State Park's use and demand has fluctuated considerably in recent years for several reasons. This section looks at the past, present, and future use of Jay Cooke as well as the future plans for development.

FUTURE USE

Jay Cooke is one of the most popular state parks in northeastern Minnesota. Since 1954, when attendance records were started, the number of visitors has risen from 75,000 to 378,654 in 1975. The trend has been steadily upward, but year to year fluctuations in both directions have been common. The 1976 attendance was down by over 100,000, but at least part of this can be blamed on a failure in the water supply. All sanitation facilities were closed except for the pit toilets.

Concerning future use, some assumptions and generalizations can be made.

1. The improved and expanded internal trail system, the trail center, and the connection to the Minnesota-Wisconsin Boundary Corridor Trail should increase park use year-round.

2. The construction of an interpretive center and the upgraded and expanded trail system along with the planned use of the park as an outdoor environmental education center should increase the park use, particularly during the off-season.

3. The addition of backpack campsites should increase the number of visitors, but probably will not affect the total significantly, at least in the next few years.

4. The completion of I-35 will affect park use in two ways. It has and will make it easier and faster to reach the park from the Twin Cities and Duluth. On the other hand, people destined for the North Shore can now easily drive past Jay Cooke and get to the North Shore parks Friday evening, whereas in the past Jay Cooke was the Friday night stop-off point. Whichever of these possibilities becomes more dominant is difficult to predict, though part of the 1976 attendance drop could be attributed to this factor.

Analysis of these factors would indicate that the use of Jay Cooke should continue to increase in the long term, but it will probably hold steady for the next couple of years.

EXISTING DEVELOPMENT

In 1936 the Civilian Conservation Corps (CCC) built a large stone building (River Inn) near the west end of the park that is used today as a contact station, park office, snack bar, souvenir shop, enclosed picnic shelter, sanitation building, and dispensary for firewood and ice. There are two pit toilets behind this building which are open during the winter when the water is shut off.

Directly north of the River Inn, across TH 210, is the 94-site campground with a sanitation building with hot water showers and a separate vault toilet building. Adjacent to the campground is a dumping station with holding tanks.

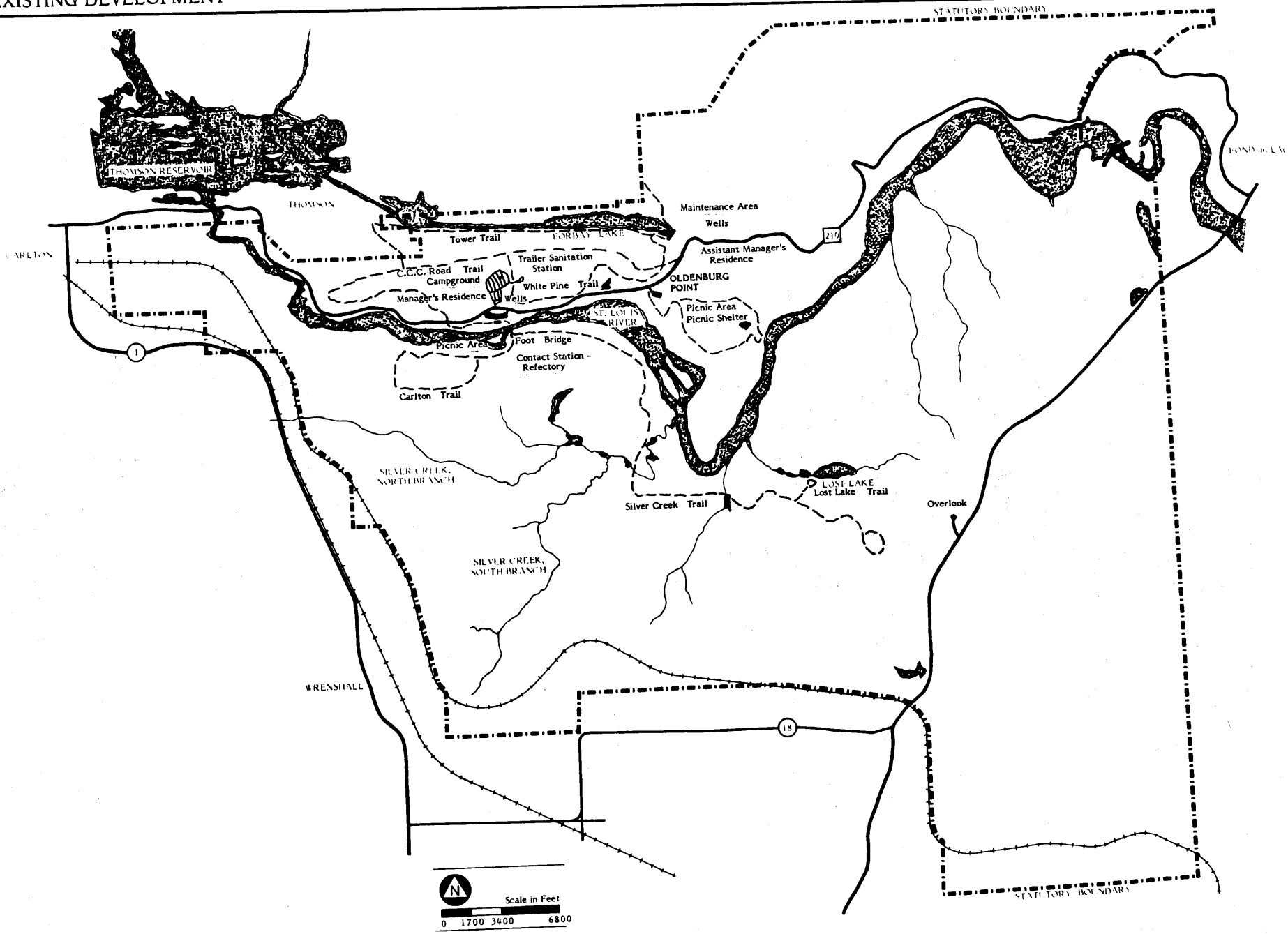
There are two picnic areas in Jay Cooke. One is behind the contact station along the St. Louis River, where River Inn provides the sanitation facilities and a shelter. The other is at Oldenburg Point, where there is an open picnic shelter, a set of pit toilets, and a sanitation building. There is a total of 186 picnic tables in the two areas.

Other facilities include 15 miles of hiking trails, 4 miles of cross-country ski trails, 16 miles of snowmobile trails, and a scenic overlook off TH 23 in the southeast part of the park.

There are 6 wells in the park, two of which are in the service area. Water lines run from these wells to a 7,000 gallon reservoir just north of the wells, and then back down to TH 210 and along it to just past the Forbay Reservoir tubes. There the line branches: one follows TH 210 to the Oldenburg Point sanitation building; the other runs west along the old CCC road to a 10,000-gallon underground reservoir just east of the campground. From there, the line runs into the campground where one branch goes throughout the campground and the other to the contact station. Two wells are located just southeast of the campground. Lines run from these wells to a 9,000-gallon above-ground reservoir north of the campground and then back into the campground. There is a well just east of the manager's residence and another at the former naturalist's residence near Fond du Lac.

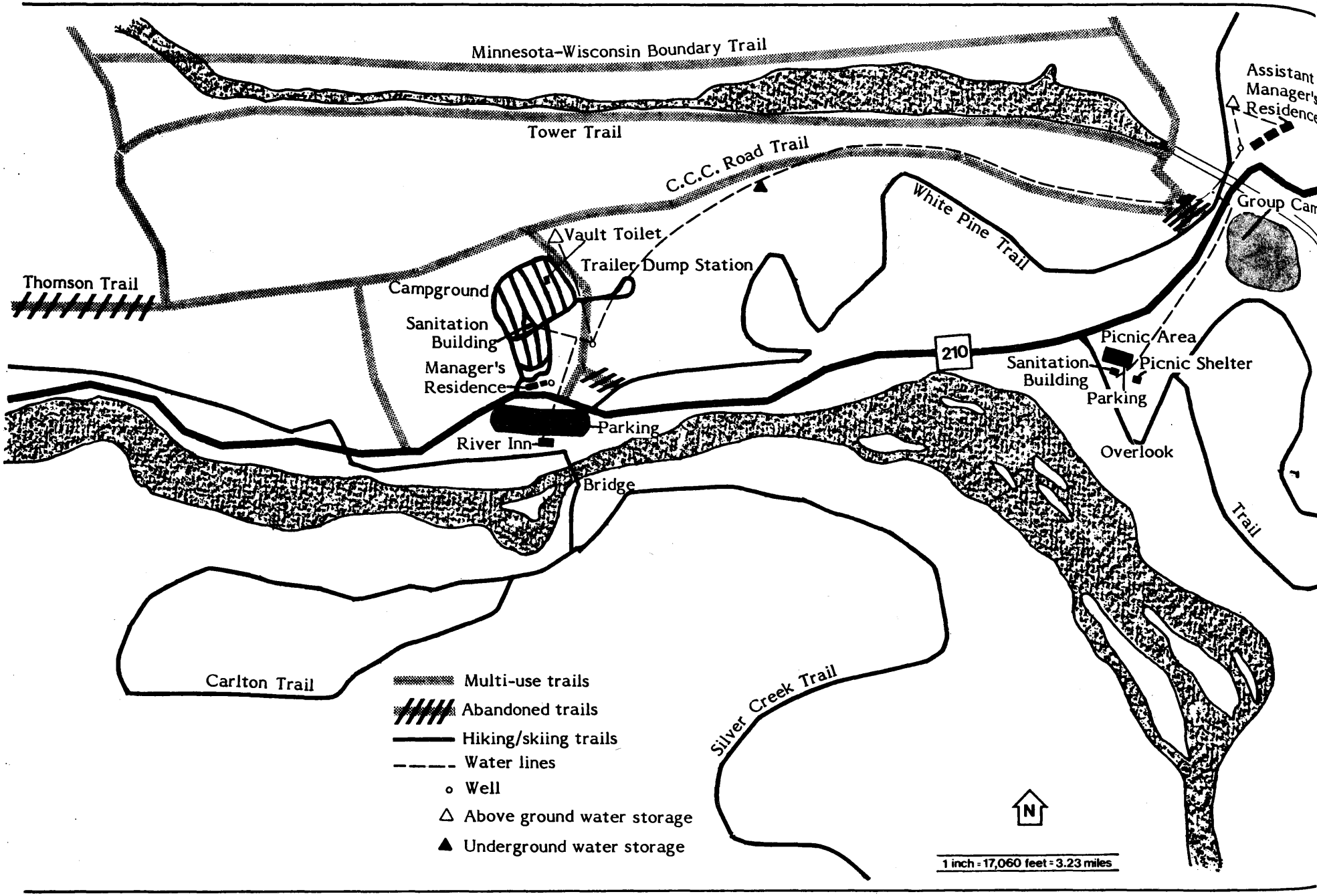
The park has 2 drain fields. The first one is located along the west side of the campground. The second is just east of the contact station. When the West Lake Superior Sanitary Sewer District is linked with the park they will no longer be used.

The park telephone line is underground and follows TH 210 from the west end of the park to the assistant park manager's residence.


STATUTORY BOUNDARY
THOMSON RESERVOIR
THOMSON
Maintenance Area
Wells
Tower Trail
FORBAY LAKE
219
Assistant Manager's Residence
Trailer Sanitation Station
C.C.C. Road Campground
Trail
White Pine Trail
OLDENBURG POINT
Manager's Residence
Wells
ST. LOUIS RIVER
Picnic Area
Picnic Shelter
Picnic Area
Foot Bridge
Contact Station - Refectory
Carlton Trail
SILVER CREEK, NORTH BRANCH
LOST LAKE
Lost Lake Trail
Silver Creek Trail
Overlook
SILVER CREEK, SOUTH BRANCH
WRENSHALL
18
N
Scale in Feet
0 1700 3400 6800
STATUTORY BOUNDARY

Building Inventory

Type	Size	Age	Condition
Woodshed	26 x 20	1974	Good
Sanitation (vault)	12 x 24	1964	Fair
Sanitation	20 x 48	1960	Good
Warehouse	20 x 21	1936	Poor
Park manager's residence	24 x 42 + 13 x 14	1954	Good
Garage, storage, bunkroom	21 x 31	1936	Poor
River Inn refectory	33 x 123	1936	Good
Sanitation (Oldenburg)	16 x 35	1936	Fair
Picnic shelter	26 x 50	1936	Fair
Pump house	12 x 14	1936	Fair
Shop	28 x 40	1940	Poor
Park ranger's garage	22x 26	1935	Poor
Park ranger's residence	24 x 32 + 8 x 14	1935	Fair
Chlorination building	4 x4	1970	Unknown


Minnesota-Wisconsin Boundary Trail
Tower Trail
C.C.C. Road Trail
White Pine Trail
Assistant Manager's Residence
Group Cam
Vault Toilet
Trailer Dump Station
Thomson Trail
Campground
Sanitation Building
Manager's Residence
210
Picnic Area
Sanitation Building
Picnic Shelter
Parking
Overlook
Parking
River Inn
Bridge
Trail
Carlton Trail
Silver Creek Trail
Multi-use trails
Abandoned trails
Hiking/skiing trails
Water lines
Well
Above ground water storage
Underground water storage
N
1 inch = 17,060 feet = 3.23 miles

PROPOSED DEVELOPMENT

Introduction

Physical development in Jay Cooke State Park is directed toward providing those facilities necessary for appropriate use and enjoyment of the resources. The recreational development plan is designed to accommodate those forms of recreation that allow users to enjoy and utilize the natural features of the park without impairment of their qualities.

It is DNR policy to provide recreational opportunities for all people of the state. However, extreme topographic relief in some parks precludes extensive use by persons with physical disabilities. If the DNR were to make lands of this type physically accessible to all, it would require an extensive system of switch-backs and hard surfacing, which would destroy the natural atmosphere for which the unit was established. Therefore, the DNR will concentrate its efforts on providing accessibility in parks which have the most potential for use by persons with physical and other disabilities.

All future park facilities will be physically accessible, in accordance with the Minnesota Uniform Building Code, Chapter 55 - Facilities for the Handicapped. An attempt will be made to upgrade existing park facilities where it is not detrimental to the natural resources, and to provide better access and usable programs to the individuals, including persons with physical disabilities.

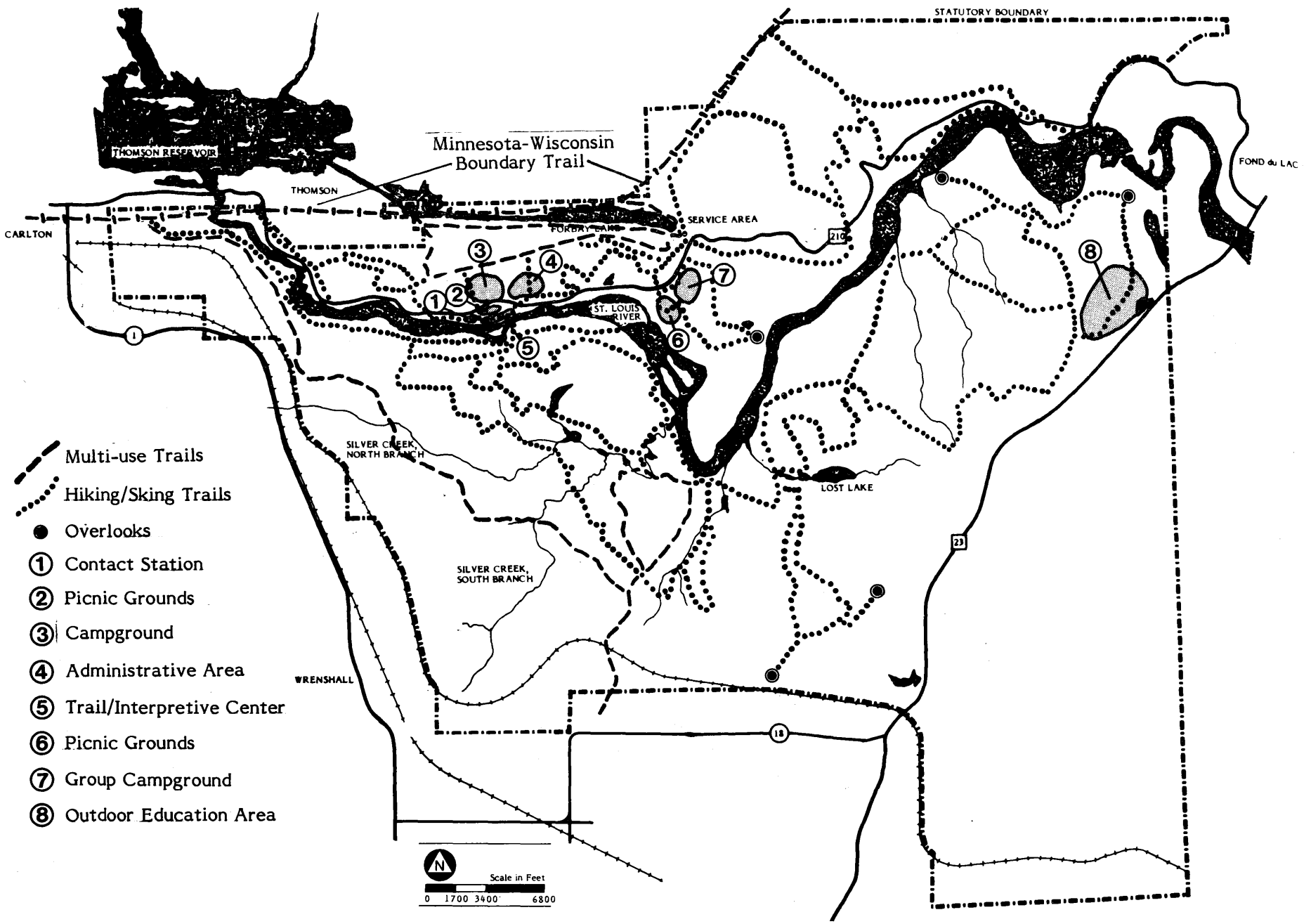
In the case of Jay Cooke State Park, many of the facilities and attractions are fully accessible. However, there are still some minor alterations needed to remove architectural barriers that restrict access to some of the park buildings. This is currently being done through force account funding, and when this plan is funded, the program will be accelerated. All of the proposed new facilities (with the exception of some trails), will be totally accessible.

Development Plan

- Camping

  Family Campground (Existing)

  1) Proposed Action: Reduce camping density by 50%.
     Rationale: The existing campground is much too crowded to provide a good, natural camping experience. Present density allows only 4,500 sq. ft. per campsite. By reducing density, the area per campsite will be increased to almost 10,000 sq. ft. Natural vegetation will replace much of the blue grass that presently dominates the campground.
     Cost: None


STATUTORY BOUNDARY
THOMSON RESERVOIR
Minnesota-Wisconsin
Boundary Trail
THOMSON
CARLTON
SERVICE AREA
FOREST LAKE
FOND du LAC
ST. LOUIS
RIVER
SILVER CREEK,
NORTH BRANCH
LOST LAKE
SILVER CREEK,
SOUTH BRANCH
WRENSHALL
Multi-use Trails
Hiking/Skiing Trails
Overlooks
① Contact Station
② Picnic Grounds
③ Campground
④ Administrative Area
⑤ Trail/Interpretive Center
⑥ Picnic Grounds
⑦ Group Campground
⑧ Outdoor Education Area
N
Scale in Feet
0 1700 3400 6800

2) Proposed Action: Redesign campground according to recommendations of the Bureau of Engineering.
Rationale: Since the original campground was developed, primary use has shifted from tent camping to vehicular camping. The spurs must be redesigned to more easily accommodate the large camping vehicles that are currently being used.
Cost: $10,000

3) Proposed Action: Add a new loop west of the present campground to replace campsites that are being removed.
Rationale: Based on demand, the number of campsites in the park should not be reduced. By spreading the sites out over a larger area, the impact of the campground will not be so concentrated. Spacing will allow natural vegetation to reestablish itself and to naturalize the campground.
Cost: $35,000

4) Proposed Action: Build an additional sanitation building on the new campground loop.
Rationale: The existing sanitation buildings cannot handle demand during peak use periods. An additional building will more adequately service a redesigned campground and will satisfy Health Department requirements.
Cost: $90,000

Group Camp (Proposed)

1) Proposed Action: Develop a group camp with a council ring in the area of Oldenburg Point, capable of accommodating up to 300 people in 4 individual sites. Each site should include a pit toilet, drinking water, 10 picnic tables, 10 fire rings, parking for 25 cars and a horse tie area. Each site will be phased in as needed.
Rationale: A space must be provided for large groups that frequently come to the park. At the present time, the only way they can be accommodated is to either give the group several sites in the family campground or allow them to camp in the picnic area. Both alternatives cause conflicts either between the group campers and family campers or between the group campers and picnickers.
Cost: $20,000

Remote Campsites

1) Proposed Action: Develop 6 remote campsites south of the St. Louis River. Each site should be clearing approximately 25' in diameter with a fire ring and a wilderness toilet.
Rationale: There is an excellent opportunity to provide a remote trail camp experience on the south side of the river. Many people have expressed an interest in this type of facility.
Cost: $9,000

- Picnicking

River Inn Picnic Area (Existing)

1) Proposed Action: Encourage more natural revegetation in some areas of the picnic ground to visually break up the area.
Rationale: The present picnic area functions well, but spatial diversity is needed.
Cost: None

Oldenburg Point Picnic Ground

1) Proposed Action: Develop a mowing plan in conjunction with the Bureau of Engineering.
Rationale: The site functions well, but too much mowing is done. A mowing plan would provide more visual diversity and define spaces to increase privacy and separate groups.
Cost: None

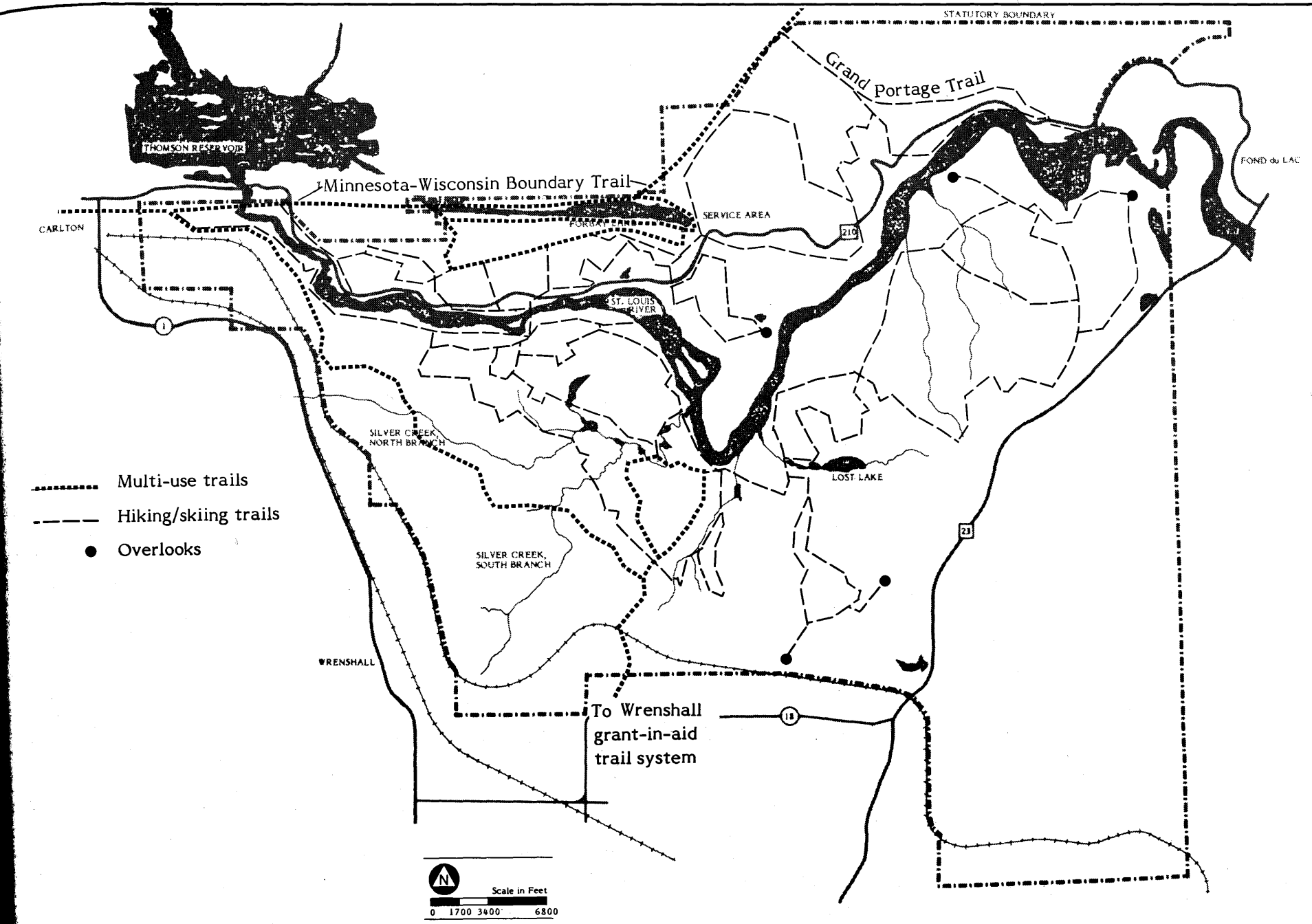
2) Proposed Action: Rehabilitate the sanitation building.
Rationale: The building was built in the thirties and has deteriorated considerably. Renovation is needed to comply with the Minnesota Building Code and Health Department regulations.
Cost: $40,000

- Trails

Multi-Use Snowmobile/Horse Trails - 8 miles

1) Proposed Action: Realign existing snowmobile trails to eliminate erosion and maintenance problems and promote safety. The realignment should also make the trails usable for horseback riding.
Rationale: The existing trails were originally laid out to follow old roads and trails. There are relatively few major problems, however sensitive or eroded areas must be repaired or realigned.
Cost: $10,000

2) Proposed Action: Surface snowmobile/horseback trails with a stable material.
Rationale: In order to make the trails usable year-round they must be surfaced because the clay soils are extremely erodable and must be protected.
Cost: $10,000


STATUTORY BOUNDARY
Grand Portage Trail
THOMSON RESERVOIR
Minnesota-Wisconsin Boundary Trail
FOND du LAC
CARLTON
SERVICE AREA
210
ST. LOUIS RIVER
SILVER CREEK, NORTH BRANCH
LOST LAKE
23
SILVER CREEK, SOUTH BRANCH
WRENSHALL
To Wrenshall grant-in-aid trail system
18
Multi-use trails
Hiking/skiing trails
Overlooks
N
Scale in Feet
0 1700 3400 6800

3) Proposed Action: Construct 2 bridges on the new snowmobile trail - one across each branch of Silver Creek (see map, p. **80**).
Rationale: There is presently only one bridge for all uses and it is not strong enough to support the groomer.
Cost: $40,000

Minnesota-Wisconsin Boundary Trail

1) Proposed Action: Locate a portion of the Minnesota-Wisconsin Boundary Trail along the northern edge of the park in cooperation with the Trails Section. The trail should be located north of Forbay Lake. (See map, p. **80**.)
Rationale: The trail will provide a link between other recreational facilities in the area, nearby communities, and the park.
Cost: Trails Section Budget

Hiking/Skiing Trails - 21 miles hiking, 4 miles hiking/skiing

1) Proposed Action: Upgrade all trails to be used year-round.
Rationale: Almost every hiking trail in the park needs major rehabilitation. By designing them to be used for both hiking and skiing they will be less likely to be damaged. Trails designed for skiing have gentle slopes, are wide, and follow the contours of the land.
Cost: $15,000

2) Proposed Action: Develop an additional 25 miles of trail designed for year-round use. The trails should be designed for hiking in the summer and for either skiing or snowshoeing in the winter.
Rationale: There are many areas of the park that have high recreational and scenic value, but do not have trails into them. An extensive system of trails would disperse park users, minimizing their impact.
Cost: $25,000

3) Proposed Action: Construct a bridge across each branch of Silver Creek.
Rationale: A bridge across the creek is necessary for the groomer to maintain the trail.
Cost: $20,000

- Interpretive Facilities

Trail/Interpretive Center

1) Proposed Action: Convert refectory from its present gift shop function to a multi-use trail/interpretive center. The center should contain an office for the park naturalist, winterized restrooms, a display area, a multi-purpose area that will serve as a media presentation area and a warm-up area during winter months, and an outdoor activity area.

Rationale: Since the activities are compatible and require similar types of interior space, a combination building can fulfill the needs of both activities. It is cost effective to combine activities in one facility.
Cost: $100,000

- Roads, Parking, and Traffic Control

Parking Lots (Existing)

1) Proposed Action: Pave parking lots at River Inn and at Oldenburg Point.
Rationale: Both lots are heavily used and are in poor condition.
Cost: $41,000

Roads

1) Proposed Action: Close all unauthorized roads in the park.
Rationale: There are many old roads that are being used by off-road vehicles in the park. This is an unauthorized activity in state parks and must be halted immediately.
Cost: None

TH 210

1) Proposed Action: Consider eliminating through-traffic from the main use area.

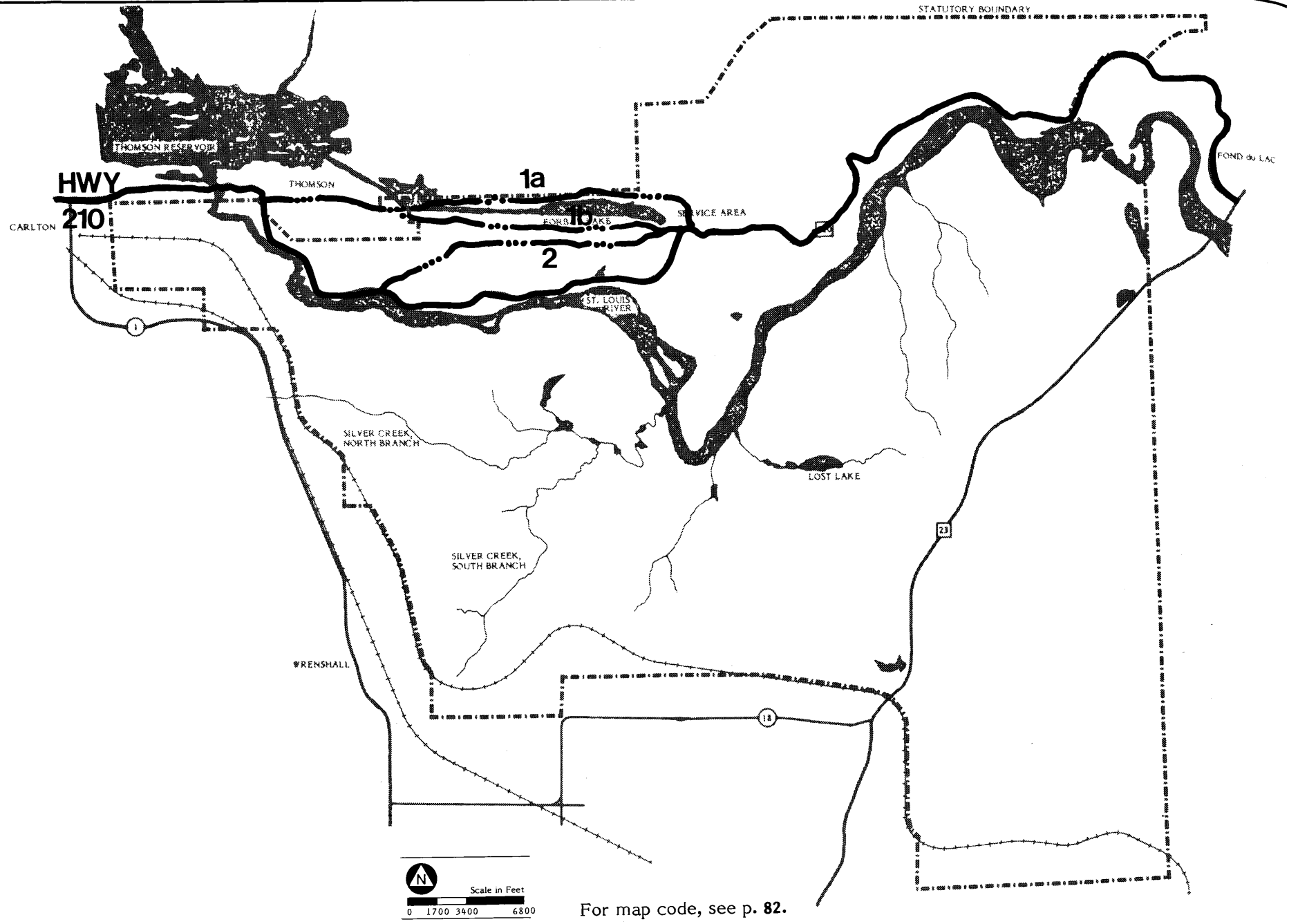
Two alternative solutions could solve the present conflict. The alternatives are listed below with their advantages and disadvantages.

Alternative 1 - By-pass main use area following an alignment either north (1a on map, p. **83**) or south (1b) of Forbay Lake.

Advantages
- Provides separate road to main park use areas
- Allows continued use of eastern portion of TH 210 as scenic drive

Disadvantages
- Must construct one and one-half miles of new highway including rock work
- New road would conflict with proposed corridor trail alignment
- A few homes in Thomson would be displaced or at least adversely affected

Alternative 2 By-pass main use area following an alignment just north of the existing campground (2)



For map code, see p. **82.**

Advantages
- Provides separate road to main park use areas
- Allows through traffic to use eastern and a small part of the western portion of TH 210 through the park as a scenic drive

Disadvantages
- Must construct one and one-half miles of new highway including costly rock work
- New road will crowd campground area preventing any major expansion and adds some noise pollution

The DNR will work with Mn/DOT, MP&L, Carlton County, and local citizens in determining which alternative will be selected.

Rationale: Because of its present alignment, safety and operational problems on TH 210 are acute. Control is a major problem since through-traffic and park visitors enter the park on the same road. In addition, the scenic drive would be more aesthetically pleasing if the traffic volume were reduced or through-traffic eliminated. Safety problems exist because through-traffic on TH 210 does not flow smoothly with the leisurely tourist traffic of the park. The main use area frequently becomes quite congested with slow moving traffic, turning vehicles, and cross traffic. Fender benders are difficult to avoid with the present highway design. Pedestrian conflicts are also frequent and will probably increase as more trail crossings are developed.

State law requires that all vehicles entering a state park must have a valid state park permit. With four entrances into use areas, much time and money is being wasted trying to enforce the law. There are also operational problems involved in attempting to close the park at 10:00 p.m. Presently the only way to control illegal use of the park and to maintain visitor security is to patrol 24 hours a day.
Cost: The cost could vary considerably depending on which alternative is selected.

- Administrative/Service Area

Contact Station/Office

1) Proposed Action: Build a contact station west of the River Inn area in a location when it will function well no matter what the disposition of TH 210 is.
Rationale: Every state park needs a check-in point where park visitors can obtain information about the park and where park user permits can be validated.
Cost: $50,000

Shop Complex

1) Proposed Action: Build an unheated storage building with a loading ramp.
Rationale: There are many types of materials and equipment that should be stored inside, but which do not require a heated building.
Cost: $45,000

2) Proposed Action: Build an oil and gas storage building with an underground gasoline storage tank.
Rationale: For safety reasons, flammables should never be stored inside a building that can burn. A fireproof building made of concrete blocks well away from other buildings would be a safe theft-proof place to keep flammables.
Cost: $5,000

3) Proposed Action: A new shop has been built. If there is no longer a need for the old building it should be removed.
Rationale: All surplus buildings should be eliminated, as they are too expensive to maintain.
Cost: $3,000

Residences

1) Proposed Action: Build a new manager's residence in the vicinity of the new service center.
Rationale: The assistant manager's residence must be replaced, so the manager will occupy the new residence and the assistant will move into the present manager's residence.
Cost: $55,000

2) Proposed Action: Convert this residence to the assistant manager's residence. Dismantle old garage and build a new one.
Rationale: The house is in good condition and should continue to be used. But the old garage is too small and is in poor condition.
Cost: $10,000

3) Proposed Action: Remove house and garage from site.
Rationale: They will not be needed once the assistant manager is moved.
Cost: $3,000

- Utilities

1) Proposed Action: Connect main development area to Western Lake Superior Sanitation District facilities as soon as the treatment plant is completed.
Rationale: The new system was designed so that the park facilities could be connected. The problems that presently exist with the park sewer system would then be eliminated.
Cost: $20,000

2) Proposed Action: Connect the water system to the Carlton-Thomson Municipal Watermain.
Rationale: The present water system has many problems and is not dependable. Connecting the park to the new system will provide good source of clean, fresh water.
Cost: $275,000

3) Proposed Action: Rehabilitate all water lines in the park.
Rationale They are old and in poor condition.
Cost: $25,000

4) Proposed Action: Bury all electric service lines.
Rationale: Overhead lines and the necessary right-of-way cuts are unsightly and do not fit into the natural character of the park.
Cost: $25,000

Recreation Management Budget

Management Practice	Biennium 78-79	80-81	82-83	84-85	86-87	Total
Camping						
Family Campground						
Redesign		$ 10,000				$ 10,000
Additional Loop					$ 35,000	35,000
Sanitation Building					90,000	90,000
Group Camp	$ 5,000	5,000		$ 5,000	5,000	20,000
Remote Campsites		9,000				9,000
Picnicking						
Oldenburg Point Sanitation Building				40,000		40,000
Trails						
Multi-Use Snowmobile/Horse Trails						
Realignment	10,000					10,000
Surfacing		10,000				10,000
Bridges		40,000				40,000
Hiking/Skiing Trails						
Existing	14,000	1,000				15,000
Proposed		5,000	5,000	10,000	5,000	25,000
Trail Bridges	20,000					20,000
Trail/Interpretive Center						
Convert River Inn			100,000			100,000
Roads, Parking, and Traffic Control						
Parking Lots/Oldenburg Point and Trail/Interpretive Center					40,000	40,000
Close Unauthorized Entrances	1,000					1,000

Administrative/Service Area						
Contact Station/Office		50,000				50,000
Unheated Storage Building				45,000		45,000
Oil and Gas Storage Building			5,000			5,000
Existing Building Removal					3,000	3,000
Residences						
Manager's Residence (New)			55,000			55,000
Existing Manager's Residence (Remodel)					10,000	10,000
Existing Assistant Manager's Residence (Remove)					3,000	3,000
Utilities						
Tie into Western Lake Superior Sanitation Sewer District	20,000					20,000
Tie into Carlton-Thomson Municipal Watermain			275,000			275,000
Replace Old Water Lines				25,000		25,000
Bury All Electric Lines				25,000		25,000
Total	$70,000	$80,000	$440,000	$150,000	$191,000	$931,000

Interpretive Program

INTRODUCTION

Interpretation is "an educational activity which aims to reveal meanings and relationships through the use of original objects, by first-hand experience, and by illustrative media, rather than simply to communicate factual information" (Freeman Tilden). In this light, the interpretive services program fosters in the public an understanding of park resources and management by:

1. Revealing the kinship of park visitors to the park environment and, by association, their even broader involvement within ecosystems.

2. Illuminating the historic and ongoing impacts of natural forces within the park and upon the people who use them.

3. Assisting park visitors in the discovery of meaningful and satisfying ways in which to enjoy their visits without intruding on the experiences of others or impairing the quality of the park environment.

4. Explaining the mission of the Department of Natural Resources' interdisciplinary park management practices and the importance of public participation and support in the operation of this agency.

Interpretive services will be developed in recognition of the following:

1. All parks are fragile communities of life which can be perpetuated only through careful management.

2. People are a natural and necessary element in the park, free to enjoy the environment in non-destructive ways.

3. All natural resource units and the publics they serve are tied to one another ecologically, economically, socially, and politically.

It is hoped that the people who recreate and learn in the parks will, by experiencing the parks and related interpretive services, derive a better quality of life with increased environmental awareness. As people are encouraged to think and to feel more about park environments, they can be expected to do more on behalf of these environments. They can also be expected to strengthen their ties with the land and with our state's cultural heritage.

INTERPRETIVE THEMES

The interpretive theme for Jay Cooke State Park will stress the way in which glaciers, bedrock, and water interacted to form the landscape of the park.

The melting snows of winter send the St. Louis River into a frenzy as it passes through Jay Cooke State Park. Spring is usually the only time of the year this river resembles its past might. The great glacial lakes of the north (Upham and Aitkin) drained a voluminous reservoir of water which thundered through the early St. Louis River Valley. This massive flow gouged out the present river dalles, eroding much of the soil and some of the bedrock to create this unique landscape.

Use Factors

General Public:

There are 2 types of use in Jay Cooke State Park: camping and day-use. The camper is usually in the park for more than one day, but less than two days. The day-user stays in the park, on the average less than 4 hours. In order for the program to provide activities for the day-user, they must be informed of the park activities for the day initially upon arrival in the park. At present, with the volume of day-users, it would be inefficient to program specifically for them. However, by locating the program schedule in a centralized location near the park entrance, both user groups will be served.

Existing Interpretive Facilities and Programs

River Inn - This facility is used only on a part-time basis – the main area for the presentation of the evening program and the concession area to house several displays dealing with natural history.

Silver Creek, Lost Lake, Oldenburg Point trails have had no major improvements for years and are in need of complete rehabilitation. This includes new trail surfaces, steps, ramps, realignment of segments, culverts, and bridges.

Present interpretative programming consists of auto caravans, hikes, and afternoon or evening presentations 5 days a week. They are directed toward both the short-term and day-use visitor.

Proposed Interpretive Facilities and Programs

Outdoor Education Area

This park is near the state's second largest urban center and is surrounded by seven school districts. The school districts have expressed some interest in an outdoor education area, possibility used in conjunction with a visitor center building.

The best location is in Section 7 T.48N R.15W. (see map, p. **77**). This location was chosen because of its access to over eight very distinctive ecological communities, and because it is possible to provide access to each of these environments for the handicapped. Also, at this location there is access to several geologically significant formations. This type of facility could increase the day-use of the park by 50%.

Trail System

It is proposed that a series of trails be developed around the outdoor education area for year-round recreational and interpretive use. These trails would access a variety of different habitats. The locations on the Trails Map, p. **80** are approximate. The exact alignment will be laid out after further on-site analysis. Each trail will pass through a single community or a series of related communities allowing the visitor to examine the different cover types individually or in contrast.

Trail/Interpretive Center

The River Inn will be converted from a refectory to a combination trail/interpretive center. Included in the center will be an office for the park naturalist, winterized restrooms, and a display area; a multi-purpose area which will be used for media presentations and a warm-up area during the winter months; and an outdoor activity area. The trail system around the River Inn will be improved for use by the interpretive program. These trails will be designed to function similarly to those in the outdoor education area. At least two additional trails will be developed which can be used for interpretive purposes.

Orienteering Course

An orienteering course has been proposed for Jay Cooke as part of the interpretive program. A working team of the park planners, the regional naturalist, the park manager, and the educational consultant will select and identify a number of control locations in the park. The selection of any specific location will be based on its orienteering value, its interpretive value, and management considerations. In all cases, the Bureau of Planning will have final approval on the selection of any location.

Markers should be designed to be durable with little or no maintenance required. A 4" x 4" redwood post no more than 18" high with a red and white marker on all four sides is proposed. Approximately 50 markers should be placed in the park at selected locations. Each marker will have a number and two-letter identification code.

The park naturalist or the park manager will conduct the program and lay out the course. Any number of markers, up to 10, can be selected from the 50 and the location of these 10 displayed on a master map. The course should be changed frequently to minimize impact on the environment.

Should excessive impact occur at or near a specific control point, or as a direct result of selecting a specific control point, its selection for a course could be suspended indefinitely. This decision will be the responsibility of the park manager.

The cost of the program will initially be born by the Bureau of Information and Education. Specific funding will be worked out pending the evaluation of the pilot program.

The programs should be expanded to seven days a week and should include a continuous type of program with displays and self-guided tours.

The park's interpretive program should be expanded to 7 days a week with various displays and self-guided tours.

The fall, winter, and spring programming should be directed toward environmental educational opportunities for the 7 school districts near the park during the week and toward the general public during the evening and weekends. These programs should provide opportunities for the public to learn how to use the park and its recreational resources during each season of the year. Activities which are consistent with the natural state park designation will be part of the programming. Examples of these activities are cross-country skiing, snowshoeing, outdoor photography, bird watching, orienteering, and other activities that are not limited by age and physical stamina.

Personnel

Presently, Jay Cooke State Park has one three-month seasonal park naturalist position. With the development of the interpretive center, a staff of two full-time park naturalists, plus funding for 40 hour-a-week work-study students should be provided.

This staff would run a program at River Inn 7 days a week, 9 hours per day. This would include one person to work in the center while one worked with the groups on the trails. As use increases a park worker/clerk typist position will be needed.

Equipment and Supplies

The existing program is utilizing old, borrowed equipment from a variety of sources. Better equipment would ensure more effective presentations to the public. A specific list of equipment and supply needs will be compiled before the visitor center begins operation.

Interpretive Prospectus

Detailed procedures for interpretive plan implementation with specifics on costs and phasing will be prepared by the regional naturalist in cooperation with DNR Park Planning staff during the next biennium. The prospectus will include recommendations for research on park ecology, visitor use, and local history. Any additional recommendations will be incorporated into this plan.

Boundary Modification

Introduction

Boundary adjustments and acquisition must be considered in the management of any state park. The amount of land necessary to manage a park correctly must be determined and acquired before management can be efficiently carried out. There are two objectives that should be strived for in every park.

Objectives:

To include sufficient acreage to protect and perpetuate the natural resources and still provide areas for the necessary recreational facilities and activities

To control all land within the statutory boundary by fee title (direct ownership)

Because it would be fiscally and physically impossible to achieve these objectives overnight, this plan will establish priorities that will work toward them. The following framework will be used in developing adjustment and acquisition priorities:

1. Land needed for protection and perpetuation of park resources or values.

2. Land need for development of facilities.

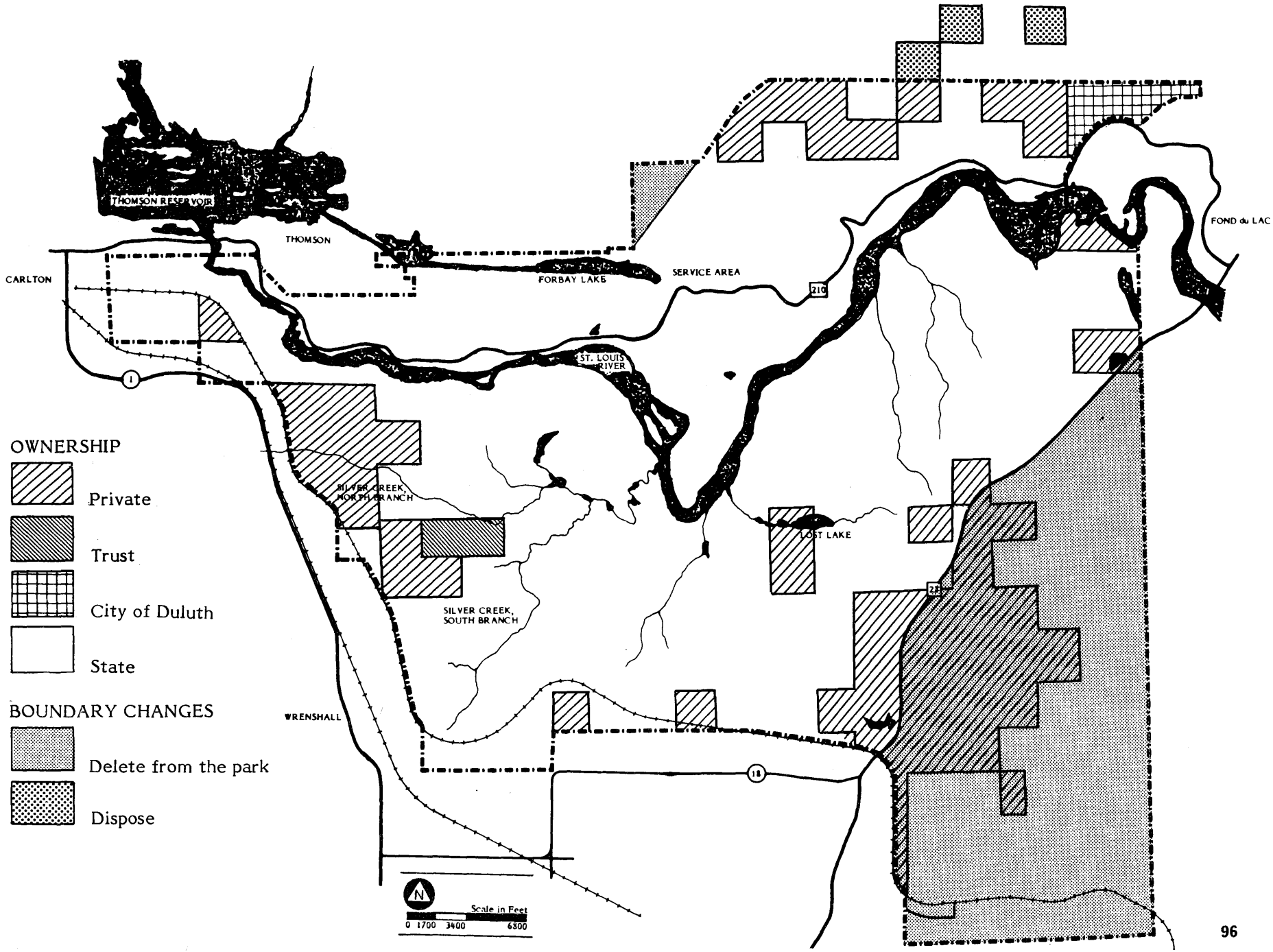
3. Unimproved buffer land needed to prevent threatened development or use which would be compatible with existing or potential park purposes.

Specific Recommendations

Presently, 81% of the acreage in Jay Cooke State Park is in state ownership. The remaining ownership is: trust fund - 1%, city of Duluth - 1%, and private or county - 17%. A portion of the county-held lands are partially owned by the state. The majority of the non-state owned land is in two areas, along TH 23 and on the west side of the park.

After evaluating the park's needs, resources, and manageability, 6 recommendations have been made. They are:

1. Delete the portion of the park east of TH 23, (approximately 2,400 acres). Since the highway separates this parcel from the main body of the park and the majority of the road frontage is still in private ownership, the state-owned land in this area is very difficult to manage. It should be traded for privately owned lands west of TH 23, or turned over to the Division of Forestry.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WRENSHALL
OWNERSHIP
Private
Trust
City of Duluth
State
BOUNDARY CHANGES
Delete from the park
Dispose
N
Scale in Feet
0 1700 3400 6800

2. Delete a small triangular piece of land northwest of the railroad in Sec. T.48N R.16W and trade it for some nearby private land that is in the boundary. If this parcel cannot be traded, it should be sold.

3. Dispose of the three forties (NE1/4, SE1/4; NE1/4, SW1/4; and SW1/4, SW1/4 Sec. 36 T.49N R.16W) that were removed from the boundary, but are still in state ownership. These should be traded for private or trust fund lands in the boundary, if possible. If they cannot be traded, they should be given to another unit of government or declared surplus and sold.

4. The parcel owned by the city of Duluth should be purchased if the city is willing to sell. Otherwise, it should be deleted from the boundary. Since it is park land, there is no danger of adverse development. However, since it is within the statutory boundary, it should be either purchased or deleted.

5. The remaining non-state owned parcels should be purchased as soon as possible. The goal in every state park is to own all the land in the statutory boundary. Purchase of these parcels will remove the possibility of future conflicts between park users and private land owners.

6. Though the Division of Parks and Recreation does not have the authority to purchase land outside of statutory boundaries, some form of protection should be accorded to the Grand Portage Trail from the point where it leaves Jay Cooke to its terminus. It is recommended that the Minnesota Historical Society purchase a corridor along the trail. The DNR should support the society in this project.

STAFFING AND EQUIPMENT

Introduction

Maintenance is an essential, little noticed, and difficult to finance responsibility of the Division of Parks and Recreation, DNR. The basic obligation of the state is to maintain the landscape resources and state park facilities in a safe, sanitary, environmentally sound, and aesthetically pleasing condition. These facilities must be operated in a manner that provides maximum use and enjoyment at the least possible cost, consistent with state law. There are four basic aspects to maintenance and operations:

1. Maintenance of the landscape resources for the use and enjoyment of future generations
2. Maintenance of the recreational facilities that provide access to those resources
3. Provision of services to the park visitors for maximum enjoyment of facilities and resources
4. Enforcement of rules and regulations to protect the resources from abuse and to ensure enjoyment of the facilities by park visitors

To maintain the park properly and minimize costs, a trained staff, sufficient supplies, and proper equipment are needed.

The task of providing services to the public and security for park facilities and resources 24 hours a day, 12 months of the year is monumental. During the busy season, full-time operations are necessary 98 hours per week (8:00 to 10:00 p.m., seven days a week). The remaining hours are covered by a night patrol and the resident manager. During other seasons, only part-time operations are provided 98 hours per week, however, maintenance, repair, and park security accounts for many extra work-hours. If these responsibilities are to be met, competent trained personnel are necessary.

A work load analysis of park operating functions has been initiated to ascertain the personnel needs of each park, based upon existing facilities and current operations. This study identifies the work-hours needed to perform each task required for adequate maintenance and operation. Initial results reveal:

1. an extreme shortage of adequate personnel,
2. that because of procedures necessary in hiring seasonal workers, high cost labor employees are used for jobs more appropriate for other job classifications, and
3. that a high percentage of work-hours are related to direct services to the public.

These factors limit the personnel available for proper maintenance. Because extensive development has occured since the Natural Resources Act of 1963 was passed, the gap between maintenance and development has widened. Standards based on the work load study can be established to determine work-hour operating requirements for future facilities as they are proposed for development so that sufficient personnel and supplies can be provided. Facilities must be properly designed to meet the needs of the public, while being operational with the minimum amount of personnel and cost.

Another contributing factor to the current park operations problem is the heavy reliance on federally funded work programs, such as the Comprehensive Employment and Training Act (CETA), the Neighborhood Youth Corps (NYC), and Green Thumb. The low cost personnel provided by these programs makes it possible for parks to offer programs and services which would otherwise be impossible. However, these employees are hired on a short-term basis, usually 8 to 10 weeks and often do not have the training and experience necessary to provide needed services without constant supervision in already understaffed parks. To avoid these problems, funding should be made available to hire trained personnel for major public service and maintenance programs. Temporary employees should only be hired for minor maintenance and special projects.

Enforcement of park rules and regulations is a vital element in the management of state parks. Currently, violations are referred to DNR enforcement officers for prosecution. Park personnel should have the technical training and tools needed to carry out this responsibility in a manner which will protect the resources from abuse, while educating the visitor about the importance of environmental protection.

One of the major maintenance problems of recreation areas is the extreme impact of large numbers of people concentrated in specific locations. These areas include: campsites, trails, lakeshores, river banks, areas around buildings, and scenic points of interest. This overuse affects the ground cover and frequently exposes tree roots to damage from foot traffic. The eventual result may be erosion, slides, disfigured sites, and even danger to the visitors. Regular maintenance programs with adequate personnel, supplies, and equipment would reduce the damage and consequently prevent major reconstruction expenditures. It will also preserve the aesthetic character of the park by preventing unsightly scars or exposed areas.

The purpose of a maintenance and operations plan is to identify specific problems of each park, develop a solution for these problems, and specify management techniques which decrease the costs of operation. The plan should make specific recommendations for facilities which will serve the needs of visitors with a minimum of regimentation and provide for ease of maintenance and enforcement. It should also identify basic management duties, establish adequate staffing requirements, and identify supply and equipment needs.

Objective:

To ensure that there is adequate staff and equipment to efficiently and effectively operate Jay Cooke State Park

Park Management Duties and Responsibilities

Park Manager:

The park manager and assistant at Jay Cooke will administer the total park maintenance and operations program and implement portions of the development program under the direct supervision of the park supervisor at DNR regional headquarters in Grand Rapids. This consists of supervising park staff, providing law enforcement, providing for and conducting interpretive activities, maintaining local public relations, recruiting employees, volunteers and other work programs, and implementing the provisions of this plan. These administrative responsibilities allow little time for active participation in maintenance and operations duties.

Park Activities and Operations

Jay Cooke is predominantly a sightseeing, camping, and trail use park, drawing large numbers of day users from the nearby Duluth area primarily for picnicking and interpretive activities.

The park is open and is extensively used all year, with modern seasonal facilities opened in mid-May and closed in late September.

Permit sales are necessary at River Inn, Oldenburg Point, and the campground to maintain proper enforcement of the vehicle permit law. This operation is conducted by park personnel at the entrance to these areas and by continual patrolling. These services are required intermittently year around with two shifts per day necessary for 98 hour per week operation from Memorial Day through Labor Day. Extensive savings in personnel and equipment costs could be achieved by eliminating the through-highway and establishing one entrance and contact point.

Law enforcement is a major responsibility at Jay Cooke. Its many accesses, miles of road and trails, and proximity to large populations greatly increase the potential for game violations, vandalism, and violation of park rules and regulations. Law enforcement requires fully trained officers on a 24 hour basis and full cooperation between local enforcement officials and DNR officers.

River Inn is the focal point for administration and public services. It houses the park office, concession and lunch area, picnic shelter, interpretive program facilities, and office for permit sales and camper registration. It is open from Memorial Day through Labor Day, 14 hours per day, and on weekends only during late May, September, and part of October. The park office is moved to the manager's residence during the winter for energy conservation.

Campground operation consists of providing services for the 94 site campground, two sanitation buildings, and trailer dump station. Camper registration is conducted from River Inn or by vehicle when River Inn is closed. The camping season begins in mid-April and runs through October. It is filled to capacity on weekends most of the summer. Intermittent use is received throughout the winter from skiers and snowmobilers. Groups are accommodated in this campground when possible, otherwise no group facilities are available.

Interpretive Services activities are currently conducted by one seasonal naturalist. Immediate goals are to provide one full time naturalist to establish a 12 month interpretive program for park visitors and students from local educational institutions. Long range goals include a second naturalist and several volunteers to expand this service and serve all DNR activities in the area. Programs and activities will originate from River Inn, which will be remodeled as an interpretive/trail center.

Clerical duties are currently accomplished by the park manager and assistant. There is a need for a clerk 6 months of the year to handle the increasing volume of reports and correspondence.

Maintenance personnel (laborers, park workers, and student workers) provide a broad range of services. This includes maintaining service buildings, public buildings and grounds, trails, roads, parking areas, tables, signs and equipment, conducting night patrol, and providing semi-skilled labor for rehabilitation and development projects. CETA and other programs can provide valuable assistance when available, but they require qualified park employees for supervision.

Night patrol is a service required from 10:00 p.m. to 5:30 a.m. daily throughout the summer and on weekends during spring and fall for adequate security of overnight visitors and park facilities.

Solid waste is collected by park personnel and transported 4 miles to a county landfill. This service should be contracted with a local vendor as soon as possible.

Firewood is purchased pre-bundled from private vendors for 55¢ to 65¢ per bundle and resold to visitors at 75¢.

Snowplowing is currently accomplished by park personnel with a 4 wheel drive vehicle. This provides winter parking for trail users. Mn/DOT maintains TH 210 through the park.

Trail maintenance and grooming is a major responsibility because of the extensiveness of the trail system and the easily erodable soils. Winter grooming equipment is currently shared with Moose Lake State Park. This equipment is in poor condition and needs replacement.

Water supply and sewage disposal has been a problem requiring close monitoring and occasional closing of facilities. All park sewers will be connected into the Western Superior Sanitation Sewer District by late 1977. The annual cost of this service will be calculated by metering the flow at the beginning of the 1978 operating season.

Water shortages in 1976 initiated discussions about the possibility of obtaining water from the proposed Carlton-Thomson Watermain. No conclusion has been reached.

Maintenance and Operational Problems

Staffing: The permanent staff currently consists of a full time manager and assistant plus seasonal and hourly personnel as listed on the staffing chart. The following additional staff is needed to meet current maintenance and operational responsibilities and implement the provisions of this plan.

a. Full time technician - to provide additional supervision and enforcement of park rules and regulations on a 12 month basis.

b. 6-month clerk - to handle the increasing volume of reports and office duties.

c. Two 3-month park workers - to handle minor maintenance and janitorial duties and to extend the permit sales hours at River Inn and Oldenburg Point.

d. Naturalist - add one new 3-month naturalist position to provide daily interpretive services and extend the program hours.

e. Laborers - convert existing labor funds into 2 full-time labor positions to provide year-round maintenance of equipment, buildings, trails, and other facilities.

Through road traffic is the worst problem in this park. Large amounts of time and money are expended patrolling park facilities and roads for permits, vandalism, and game violations. The new contact station/office and a controlled entrance will greatly reduce operating costs and provide visitors with greater security and enjoyment. There is also a problem with landslides on this road which is currently maintained by Mn/DOT.

Staffing

This chart shows existing staff and additional personnel needed to perform current duties. The needs are based upon a workload evaluation which identifies tasks and the work-hours required to perform them. The evaluation was carried out in 1976 and needs for 1977 were identified and projected through 1987 on that basis.

	Existing 1976		Needs for 1977	
Administrative Personnel				
Park Manager	12 mo.	$16,800	12 mo.	$16,800
Assistant	12 mo.	11,800	12 mo.	11,800
Technician	0		12 mo.	9,800
Clerk	0		6 mo.	3,500
Public Services Personnel				
Park Workers	3 @ 5½ mo.	10,600	3 @ 5½ mo.	10,600
Park Workers	5 @ 3½ mo.	10,200	5 @ 3½ mo.	10,200
Park Worker	0		2 @ 3 mo.	4,000
Naturalist	3½ mo.	3,000	12 mo.	12,000
Naturalist	0		3½ mo.	2,700
Maintenance Personnel				
Laborer	9 mo.	8,200	12 mo.	10,800
Laborer	7 mo.	6,300	12 mo.	10,800
Laborer	7 mo.	6,300		
Total		$73,200		$103,000

In addition to the regular staff, project laborers are employed as necessary to accomplish capital improvements under the development program. NYC, CETA, and other work programs are intermittently available to assist in minor maintenance duties.

Future Staff Requirements

1	Initial phase of developing a group camp area in the Oldenburg Point vicinity by 1979 will require additional labor for maintenance. Estimated annual cost:	$ 1,500
2	Construction of a new contact station by 1981 will require additional operating personnel unless the road is closed and one controlled entrance established. This estimated annual cost anticipates that the road will not be closed at that date. Estimated annual cost of:	6,000
3	Interpretive center remodeling by 1983 will require additional naturalist services for 12 months. Estimated annual cost of:	7,000
4	Development of additional campsites by 1987 will require additional maintenance. Estimated annual cost:	2,000
5	Completed phase of group camp development by 1987 will require additional labor for maintenance. Estimated annual cost:	1,000
	Total	$ 17,500

Equipment

The items of equipment listed below, when replaced on a regularly scheduled basis, are considered essential for the current overall operations of this park, although the needs may change periodically throughout the 10 year projection. Heavy equipment and specialized equipment not listed should be obtained through the regional office. Equipment of the proper size and type must be selected on a park by park basis to match the conditions and job being accomplished. Proper up to date equipment will reduce the personnel needs, the cost of repairs on old equipment, and the cost of maintenance and improvement projects.

1978 - 1987 Projected Equipment Replacement Schedule

Unit	Existing	1978-79	1980-81	1982-83	1984-85	1986-87	Total
Sedan	1972	$ 4,100			$ 5,500		$ 9,600
1/2 Ton		4,400			5,800		10,200
3/4 Ton	1975		$ 5,200			$ 6,900	12,100
3/4 Ton 4 Wheel Dr.	1960	4,750			6,300		11,050
4 Wheel Dr. 1 Ton	1960	5,500				8,000	13,500
Tractor		9,000					9,000
Groomer J5	1969	6,000			8,000		14,000
Snowmobile	1968	1,300		$ 1,500		1,800	4,600
Snowmobile Velmont	1970						
Small mowers, etc.		4,000	4,200	4,400	4,600	4,800	22,000
2-Way Radios		5,000					5,000
Total		$ 44,050	$ 9,400	$ 5,900	$ 30,200	$21,500	$111,050

Future replacement will be based upon the following general criteria:

Light maintenance and administrative vehicles: 5 years or 70,000 miles.

Heavy maintenance equipment: With the limited use received, this equipment should last a long time and be replaced on an individual item basis when necessary, or be exchanged through the region for other improved vehicles.

Small equipment: Mowers and chainsaws need regular replacement with the consistent use received. Other motorized equipment will be purchased and replaced as needed.

Other equipment: Interpretive furniture and fixtures will be purchased as needed.

Maintenance and Operations Summary

The figures for the period 1980 through 1987 are estimated projections intended to illustrate the scope of the potential maintenance and operations costs, including the operation of new facilities, plus an estimated 10% 2-year salary inflation cost.

	Biennium				
	78-79	80-81	82-83	84-85	86-87
PERSONNEL:					
Existing 76-77 $146,000					
Actual Needs (for current operations based on staffing chart)	$206,000				
Personnel Costs (from previous biennium)		$229,900	$266,100	$308,100	$343,300
Additional Personnel Needs (to operate new facilities, see p.104)	[1] 3,000	[2] 12,000	[3] 14,000	[4] 4,000	[5] 2,000
Sub Total	209,000	241,900	280,100	312,100	345,300
10% Salary Inflation	20,900	24,200	28,000	31,200	34,500
TOTAL BIENNIAL PERSONNEL COSTS	229,900	266,100	308,100	343,300	379,800
*SUPPLIES: Administrative Overhead and Expenses (20% of personnel costs)	46,000	53,200	61,600	68,600	76,000
*EQUIPMENT (from equipment schedule)	44,000	9,400	5,900	30,200	21,500
TOTAL PROJECTED BIENNIAL MAINTENANCE AND OPERATIONS COSTS:	$319,900	$328,700	$375,600	$442,100	$477,300
ANNUAL COST BREAKDOWN:	$159,950	$164,350	$187,800	$221,050	$238,650
TOTAL 10 YEAR COST PROJECTION:	$1,943,600				

*Rounded-off figures

Total Management Budget

	Biennium					
	78-79	80-81	82-83	84-85	86-87	Total
Resource Management	$ 30,414	$ 17,634	$ 19,644	$ 6,644	$ 10,244	$ 84,580
Recreation Management	70,000	80,000	440,000	150,000	191,000	931,000
Maintenance and Operations	319,900	328,700	375,600	442,100	477,300	1,943,600
TOTAL	$ 420,314	$ 426,334	$ 835,244	$ 598,744	$678,544	$2,959,180

Implementation

OVERALL AUTHORITIES

DIVISION OF PARKS AND RECREATION

General

Once the management plan has been completed and approved, it will become the responsibility of the director of Parks and Recreation (hereafter referred to as the director) to insure proper implementation of the concepts established in the plan. As such, the director will act as the coordinator and liaison between the planning staff, regional staff, local officials, and the general public to insure that the plan is kept current, remains on schedule, and becomes a reality.

In order to insure the accomplishment of this cooperative planning and implementation effort, the following responsibilities have been established and must be followed.

Specific Requirements

The director and staff will:

1. Coordinate and administer field operations as delegated by the assistant commissioner of operations
2. Develop and administer all programs necessary to accomplish plan goals and objectives. Programs include those necessary to implement management plans and to maintain and operate parks and other programs assigned to the division. Specific program responsibilities at this time are: acquisition, development, resource management, maintenance and service operations, interpretive services, and accessibility
3. Prepare policies, guidelines, procedures, and standards necessary to implement programs established in the plan (e.g., responsibilities relating to contracts and force account project,)
4. In coordination with DNR legislative liaison, prepare legislation necessary to provide program funding, boundary changes, and operational authorities
5. Review and approve all detailed plans, specifications, and project proposals prepared by the BOE or field staff. Coordinate on–site field staking and site layouts with BOE and regional staff
6. Coordinate divisional administrative functions with other DNR administrative offices
7. Work with DNR's federal grant specialists in order to obtain maximum federal funding (e.g., LAWCON) for all division programs

8. Recommend modifications and provide information necessary to update the management plan. All modifications to the concepts established in the approved plan will be processed through the Office of Planning and Research. The director will submit requests for modifications in writing, stating justification for change and what impact the change would have on the overall management plan. If comments and rationale for opposing a proposed change are not received within 25 working days, agreement is implied. In the event that significant change in the direction of the plan is proposed (e.g., altering goals and/or objectives of the plan) it will be necessary to follow the same procedures established in developing the original plan. If the director and the Office of Planning and Research cannot come to an agreement on the requested change, the director will then submit the request to the commissioner's Planning and Environmental Review Board (PERB) which will formulate the final recommendation to be submitted to the commissioner's Executive Council
9. Assign responsibilities and funding for implementation of the development program to BOE for contracts and to the regional staff for force account projects. In addition, the director shall coordinate the implementation of resource management programs
10. Make recommendations which will expedite the park planning process and evaluate progress toward the achievement of goals and objectives stated in the plan
11. Forward BOE requisitions and field project proposals to the Office of Planning and Research so that the progress of implementation can be monitored

REGIONAL OFFICE

General

The regional administrator and staff will supervise the physical implementation programs for the approved plans as established by the division.

Specific Requirements

1. The regional administrator will assign qualified staff to help implement this management plan. The district forester, wildlife managers, and other specialists should be consulted on specific aspects of the resource management of the plan.
2. The regional park supervisor will supervise and direct the park manager to insure that the management plan is implemented correctly.
3. The regional park supervisor will regularly field inspect all development in the park.
4. The regional park supervisor will submit written reports as necessary to keep the regional administrator and the director informed on the progress of development and any problems encountered.

5. The regional park supervisor will submit information to faciliate plan updates and changes. The regional park supervisor will submit his recommendations for change in writing to the regional administrator and the director. The recommendations should include rationale and an analysis of the impact the requested change will have on the management plan.
6. The regional park supervisor will submit project proposals to the regional administrator and the director for review and approval. The director and staff will review all project proposals verifying compliance with the intent of the plan and its schedule.

The region may implement approved project proposals once detailed specifications have been prepared and funding has been provided.

PARK MANAGER

General

It will be the responsibility of the park manager, under the direct supervision of the regional park supervisor, to coordinate the physical implementation of assigned sections of the management plan. The manager will inform the regional supervisor concerning the progress of the implementation through project proposals and written progress reports.

Specific Requirements

The park manager will:

1. Seek the assistance of the regional park supervisor in the resolution of any major implementation problems
2. Consult the regional park supervisor if there is uncertainity, concern, or opposition to recommended management of a specific item within the plan
3. Assist and give direction to field personnel assigned to the implementation of specific sections of this management plan
4. Maintain records on the development of specific items in this plan to insure continuity and reference for future updating and revision
5. Work with the regional park supervisor in initiating project proposals to be submitted to the director for review and approval
6. Submit to the regional park supervisor information to aid in the updating and revision of the plan

OFFICE OF PLANNING AND RESEARCH

General

The Office of Planning and Research will monitor and evaluate implementation of the management plan and make revisions to the plan as necessary.

Specific Requirements

The Office of Planning and Research will:

1. Review all BOE requisitions and project proposals to evaluate the proposed actions for consistency with the approved plan. Comments, suggestions, or corrections will be submitted to the director
2. Process all modifications to the approved management plan (see Parks and Recreation section)
3. Provide additional information and justification for specific recommendations within the plan when requested by the division
4. Maintain contact with the public, local officials, legislators, and DNR staff regarding the updating of the plan

PROCEDURES

DEVELOPMENT

The development procedure for the Division of Parks and Recreation can be broken down into two categories: (1) contract, and (2) force account.

Contract

Director initiates project by preparing a program, which complies with the management plan.

Director distributes copies of preliminary program and drawings to the planning section and regional staff for review.

Director requests BOE to prepare detail drawings and specifications in accordance with approved program.

BOE prepares detailed drawings and specifications and submits them to the director.

Force Account

Director initiates project by preparing the program, complying with the management plan.

Director distributes copies of preliminary program and drawings to the planning section and regional staff for review.

Director assigns funds to regional administrator.

Regional administrator directs regional park supervisor and necessary staff to implement program.

Director approves drawings and specifications, insuring compliance with management plan objectives and goals, and re–submits them to the BOE.

BOE processes contract documents through the Department of Administration, Division of Procurement for bidding and contract award procedures.

BOE provides direction to the contractor and establishes site location and field staking.

BOE supervises construction and approves completed work according to contract documents.

Director and staff monitor the progress, funding, and necessary coordination between other state agencies and funding sources.

Regional park supervisor may:

Request that the BOE prepare detailed drawings and specifications for review by the director

Assign the park manager to complete the project with field personnel

Assign park manager, in cooperation with the regional staff, to let bids to local contractors

Supervision over the project will be the responsibility of regional, divisional, or BOE staff, depending on the complexity of the specific project.

Regional park supervisor will certify to the division that the project has been completed as planned.

Director and staff will monitor the progress of the development program.

RESOURCE MANAGEMENT

The resource management program for the Division of Parks and Recreation is also broken down into contract and force account categories.

Contract

Director initiates a project by preparing the program, in compliance with management plan.

Director distributes copies of preliminary program and drawings to the planning section and regional staff for review.

Director approves project and initiates bidding process through the Department of Administration.

Director supervises and monitors the program.

Consultant or contractor, in coordination with divisional and regional staff, completes the project.

Director approves the completed project.

Force Account

Director initiates project by preparing the program, in compliance with the management plan.

Director distributes copies of preliminary program and drawings to the planning section and regional staff for review.

Director assigns funds to regional administrator.

Regional administrator directs regional park supervisor and necessary resource management staff to implement program.

Regional park supervisor and resource staff prepare detailed resource implementation program.

Detailed resource management program is submitted to the director for approval.

Once approved, the regional park supervisor and resource managers may:

- Assign the park manager and field personnel to implement program
- Prepare contracts to be let to local contractors or consultants to implement program

Regional staff supervises project.

Director and staff monitor the progress of the resource management program.

Regional park supervisor certifies to the division that the project has been completed as planned.

MAINTENANCE AND OPERATIONS

The Division of Parks and Recreation will provide the regional staff with necessary direction to maintain and operate state parks as a statewide system. The director will establish rules and regulations pursuant to the ORA '75 for administering state parks. In addition, training courses and manuals will be prepared by the division on park operations, maintenance, enforcement, signing, and construction standards. If necessary, special operational orders will be prepared by the commissioner for specific problem areas. The following illustrates the general operation and maintenance procedures:

Director in cooperation with the assistant commissioner of operations, will establish policies, guidelines, and statewide procedures for maintenance and operations of all state park facilities.

The regional park supervisors, directed by the regional administrator, will follow policies, guidelines, and statewide procedures, of the Division of Parks and Recreation as well as commissioner's orders.

The regional park supervisor will provide the necessary supervision and direction to the park managers to insure that park maintenance and operation policies, guidelines, and procedures are followed.

It will be the responsibility of the park manager, under the supervision of the regional park supervisor, to maintain and operate all park facilities.

The director and staff will inspect and review operations of state parks on a regular basis to insure that statewide procedures are being implemented and followed correctly.