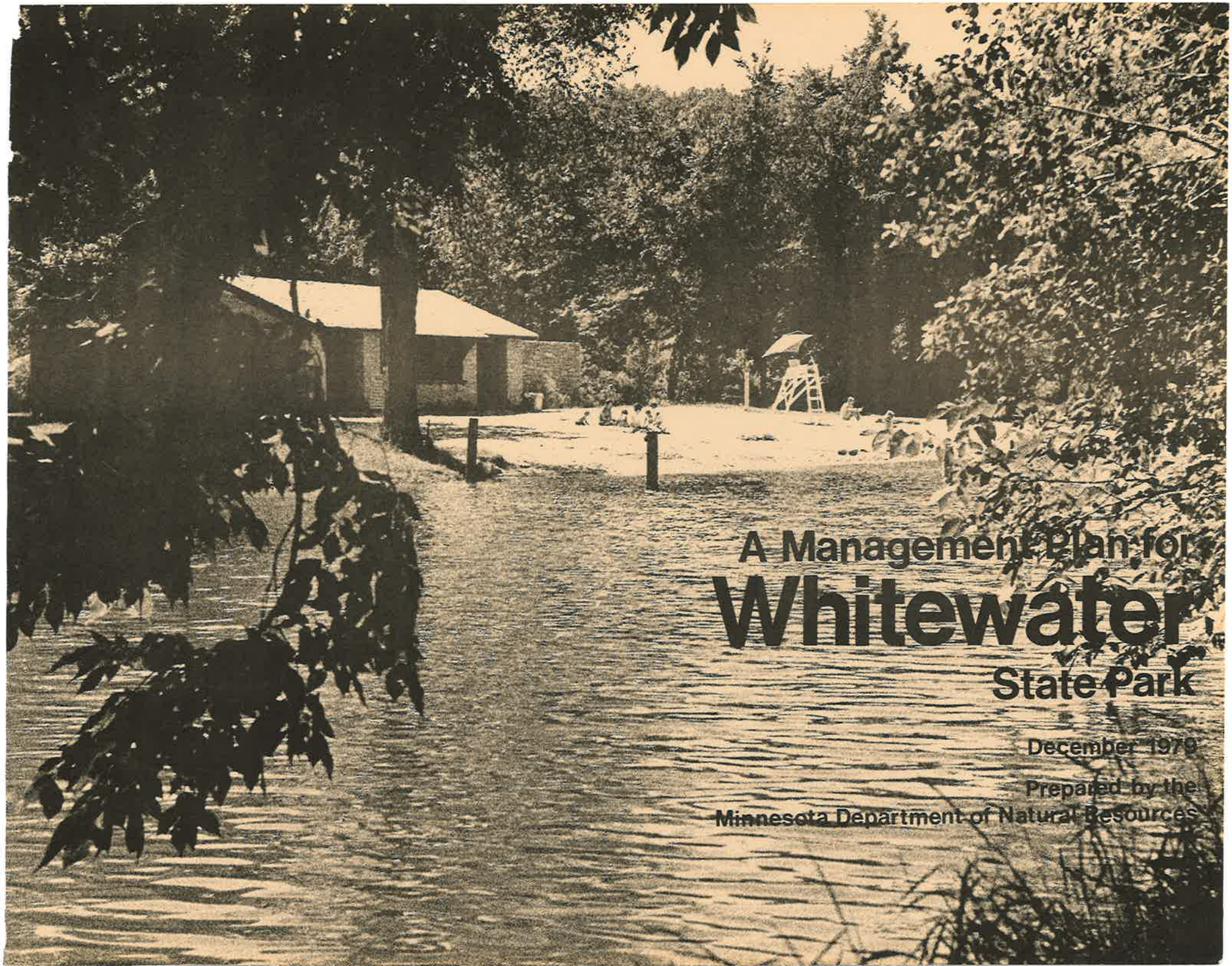

A Management Plan for Whitewater State Park

December 1979

Prepared by the
Minnesota Department of Natural Resources

Credits

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

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The planning team also wishes to thank the many elected officials and private citizens who attended meetings and provided their thoughts and ideas.

Table of Contents

All 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.

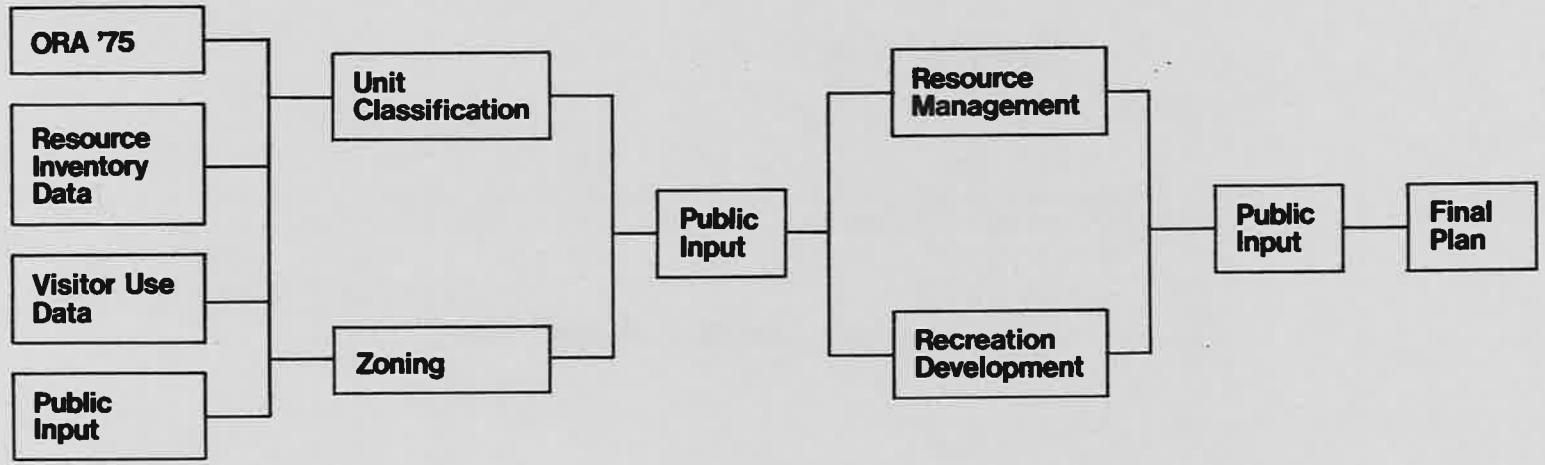
In planning management and development of the various units, the DNR will consider probable future impacts which would affect each unit. In spite of this, unforeseen circumstances are bound to occur. Therefore, each plan should be reviewed periodically to see that it is still relevant in light of current 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

Whitewater State Park is located in the southeastern Stream-dissected Landscape Region of the state. This is the only part of Minnesota which was not covered by glaciers. The many valleys of the area were formed by the erosion of sedimentary rocks by large volumes of glacial meltwater.

Whitewater State Park can be reached by following Trunk Highway (TH) 74 nine miles north from St. Charles.

The statutory boundary includes 2,863 acres. Negotiation and purchase of park lands was begun in 1920. By 1923, 483 acres of land had been acquired. In 1934, a Civilian Conservation Corps (CCC) camp was established in the park. Improvements carried out under this program and a subsequent Works Progress Administration (WPA) camp program are still in use today.

CLASSIFICATION

Whitewater has been recommended for classification as a natural state park. This classification is recommended because the park's unusual and scenic natural resources are characteristic of the Stream-dissected Landscape Region, and because of its existing and potential statewide use.

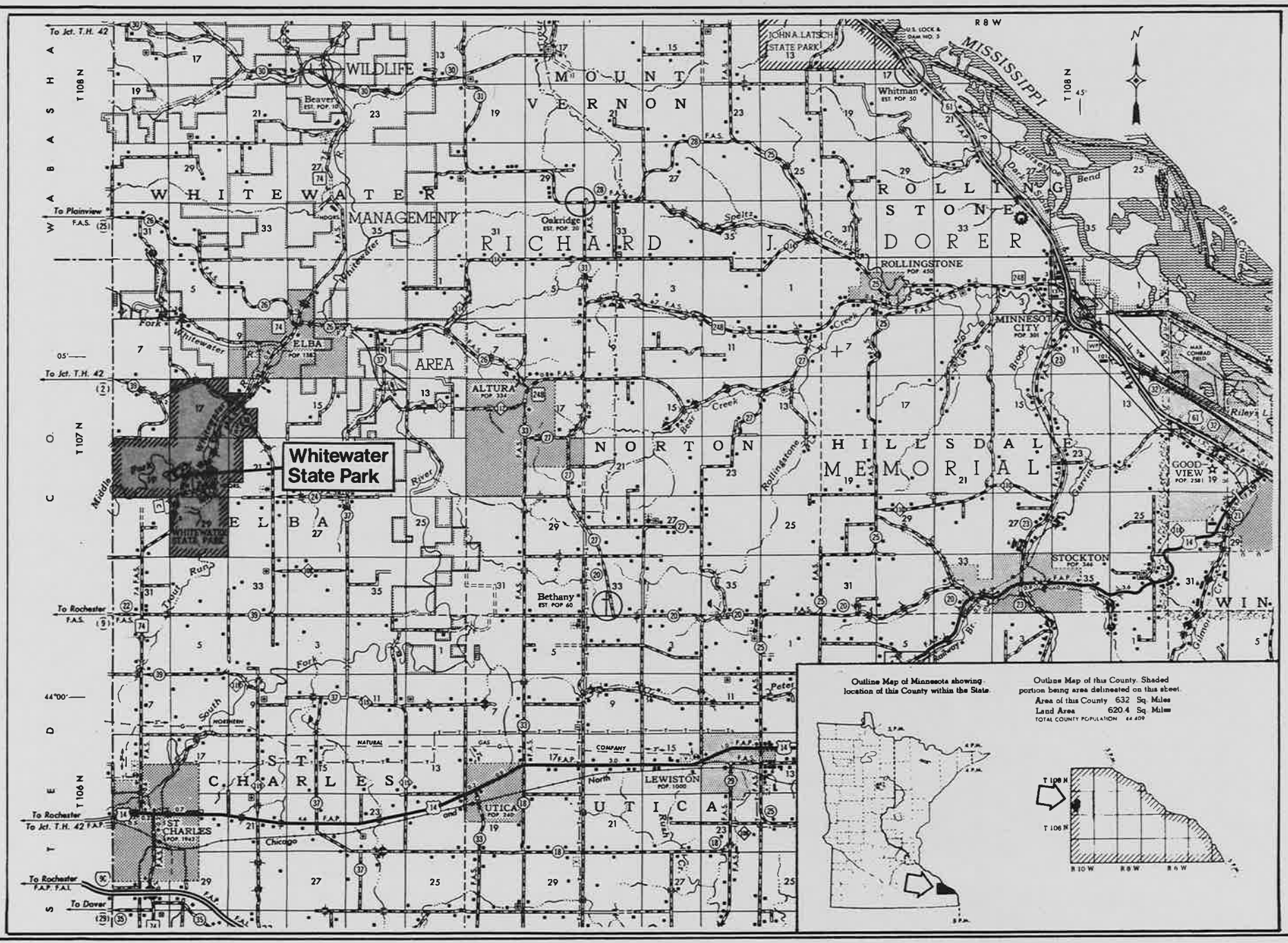
GOAL

The goal of Whitewater State Park is to provide the people of Minnesota with a variety of recreational facilities while protecting and perpetuating the abundant natural and historic resources of the park.

NATURAL RESOURCES INVENTORY AND MANAGEMENT

Soils

Soil characteristics were a primary consideration in the current facility placement as well as in planning future development. The inventory found loess soils occuping gently rounded ridgetops. This soil poses few restrictions to development. Loess and limestone residual soils occupy the upper valley slope along tributary streams. These soils pose few limitations to campground and picnic area development, but are generally not suited for drain fields and sewage lagoons. While alluvial soils found in the valleys pose few restrictions, the possibility of flooding limits much of this area to day-use. Finally, the steep, rocky land on the slopes is generally unsuitable for development.


Whitewater State Park
WHITEWATER WILDLIFE MANAGEMENT AREA
MOUNT VERNON
RICHARD J. DORER MEMORIAL
ROLLINGSTONE
NORTON
ELBA
CHARLES
UTICA
HILLSDALE
STOCKTON
WINONA
MINNESOTA CITY
GOODVIEW
ALTURA
Oakridge
Bethany
LEWISTON
Whitman
Beaver
JOHN A. LATSCH STATE PARK
MISSISSIPPI
Outline Map of Minnesota showing location of this County within the State.
Outline Map of this County. Shaded portion being area delineated on this sheet.
Area of this County 632 Sq. Miles
Land Area 620.4 Sq. Miles
TOTAL COUNTY POPULATION 44 409

Objectives:

To locate development on soils that can withstand the intended use

To control erosion

• Management

Parts of existing trails will be realigned or rehabilitated to control erosion. New trail alignments will be developed on suitable soils or with erosion control structure. Native groundcover will be planted on steep slopes to minimize erosion.

Water Resources - Groundwater

A sufficient quantity of good quality groundwater is available from both limestone and alluvial deposition aquifers.

Objectives:

To maintain high quality groundwater

To provide an adequate supply of high quality drinking water for park users

• Management

Sewage disposal facilities will be located and designed to minimize potential groundwater contamination. Because of the varying levels of stratification of the sedimentary rock (aquifers), each proposed well site will be considered separately.

Water Resources - Surface

Within the park are two clear, fast-moving streams: Middle Fork Whitewater River and Trout Run Creek. Both are subject to flash flooding.

Objectives:

To maintain high water quality in park streams for recreational purposes

To control flooding in the park

To protect park users from the hazards of flash floods

To control river bank erosion

To maintain and increase the wild (non-stocked) trout population

- Management

Flash floods are a hazard in the park. Studies have shown, however, that flood control structures are not economically feasible. A flood warning system has been installed near the group camp which reduces the danger in the event of high water.

Riverbank erosion will be controlled by placing large boulders along eroding banks to deflect the current.

Fisheries

Middle Fork Whitewater River is an excellent trout fishing stream. Trout Run Creek is a spawning area for trout and supplies a viable fishing population downstream from its confluence with Middle Fork Whitewater River. Upstream, trout are stocked.

Objective:

To maintain and increase the wild (non-stocked) trout population

- Management

Management will include: continued stocking, river bank erosion control, habitat improvement, beaver control, and trout population monitoring.

Vegetation

The vegetation in Whitewater is composed of prairie and agriculture fields on the bluff tops; northern hardwoods, big woods, and scattered areas of white pine on the valley walls; and bottomland hardwoods, agricultural, and recreational development on the valley floors.

Objectives:

To retain or reestablish pre-European settlement vegetative cover in the majority of the park

To provide scenic diversity

To manage vegetation for wildlife diversity

To manage vegetation in development areas to allow intensive use without major resource deterioration

To preserve rare or unusual plant communities

• Management

Management of the bluff tops will consist of reestablishing native prairie on the land currently owned by the state. The valley walls will be managed to maintain the existing vegetation. The valley floor will be managed for recreational development and to increase the amount of natural vegetation.

Wildlife

The park supports a diverse population of birds, mammals, reptiles, and amphibians.

Objectives:

To maintain a diverse native wildlife population

To reintroduce species once present in the general area of the park before European settlement

To maintain a beaver population in the park

To provide opportunities for park visitors to observe wildlife and learn more about their habits and habitat

• Management

Vegetation will be managed to increase wildlife habitat, especially by increasing edge environments between open meadows and woods.

Beaver will be controlled on Middle Fork Whitewater River and Trout Run Creek to avoid impacts on trout habitat. They will be left undisturbed on the small tributary where they have built a dam.

RECREATION MANAGEMENT

Introduction

The Minnesota Statewide Comprehensive Outdoor Recreation Plan (SCORP) has identified the southeastern corner of the state as having considerable potential as a tourist area and has predicted its development as such. Trout fishing, hunting, hiking, and camping are all available within a relatively small area crossed by several principal highways. In order to minimize duplication and maximize the range of opportunities available to area visitors, the proposed recreation development and management plan for Whitewater has taken into consideration other recreational facilities in the region.

Development Plan

Proposed new development and changes in existing development are based on the following general objectives:

To coordinate park development with other private and public facilities and resources in the vicinity

To limit park development to that which is necessary for efficient management and for the public to experience, study, and enjoy the natural resources

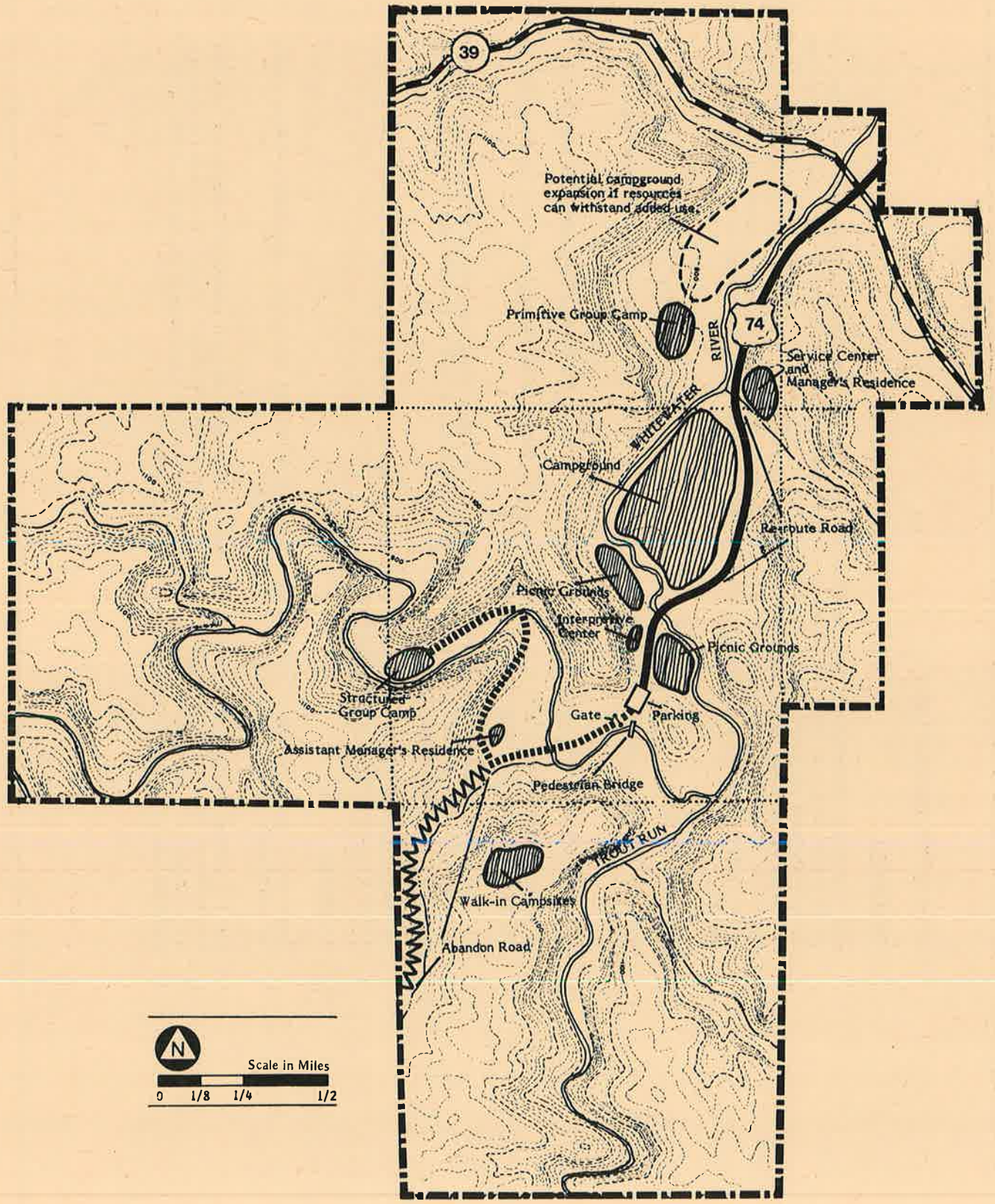
To locate park development where it: will have the least impact on sensitive natural or historic resources; will not detract from the enjoyment of other users; and will allow easy access to areas of high scenic or study value

To make major facilities in the park accessible to special populations, such as people with physical disabilities, the elderly, and the very young

- Camping

There are 5 campgrounds in Whitewater. Three of them are vehicular - Gooseberry Glen, Cedar Hill, and South. They have a total of 127 campsites.

The 132 person capacity structured group camp is in a beautiful, but potentially dangerous location. A detailed survey and flood hazard assessment determined that flood control structures on the river are economically unfeasible. The National Weather Service has installed an early warning system, which increases camper safety in the event of flash floods.



PROPOSED DEVELOPMENT

The 75 person capacity primitive group camp must be relocated when the vehicular campground nears completion. A new primitive group camp is proposed for the west side of Middle Fork Whitewater River.

• Picnicking

The present picnic ground has 105 tables. Unlike camping, picnicking and other day use facilities can be developed on floodplains and pose little or no threat to the safety of park visitors in the event of flooding. Therefore, the existing picnic area will be retained. After Gooseberry Glen Campground is phased out, it will be utilized as a picnic ground expansion area, providing an excellent site for an additional 50 to 60 tables.

• Contact Station

The existing contact station will be retained. The park roads will be realigned so that all campers and picnickers will pass the contact station.

• Interpretive Center

A portion of the campground sanitation building is being used as a temporary interpretive center. The interpretive center will be moved to the former manager's residence when the new residence has been constructed. This location is easily accessible from the major use areas and has good access to the interpretation area and the trail system.

• Service Center and Manager's Residence

The existing manager's residence and service center is located across TH 74 from the picnic ground.

A new service center and manager's residence will be constructed directly north of the proposed campground on the east side of TH 74. The existing facilities will be used as an interpretive center.

BOUNDARY MODIFICATION

Objectives:

To include sufficient acreage within the statutory boundary of the park to preserve the natural resources and still provide areas for recreational facilities and activities

To exclude from the statutory boundary any areas that are unnecessary for the preservation of the natural resources or, that are not needed for the development of recreational facilities or activities

To control by fee title or easement all land within the statutory boundary

Historically, this park's development and use has been focused on the valley environment, with spectacular views from the bluff tops.

Areas of upland plateau are essential to maintain prairie and prairie edge environments. Much of this level upland plateau will be retained in private ownership. If Winona County zones these areas as agricultural land, the DNR will request the legislature to delete them from the park statutory boundary. In this way, good agricultural land will be preserved and incompatible land use will not intrude on the park environment.

It is desirable to extend state ownership to include the valley walls outside of the existing statutory boundary in order to help protect the watershed and provide areas for trail expansion. These parcels have the highest priority for acquisition. It is proposed that the Division of Forestry purchase these areas of steep terrain from willing sellers.

In order to comply with the ORA '75, which does not allow wildlife management areas within state parks, it is recommended that the northern boundary of the park be relocated to County State Aid Highway (CSAH) 39.

The land to the east of TH 74, in the vicinity of CSAH 39, will be considered for deletion on a parcel by parcel basis.

TRAFFIC MANAGEMENT

Objectives:

To provide a safe atmosphere in which the park visitors may relax and enjoy the natural surroundings

To control the entrances and exits from the park, facilitating the collection fees and ensuring protection of the park's resources

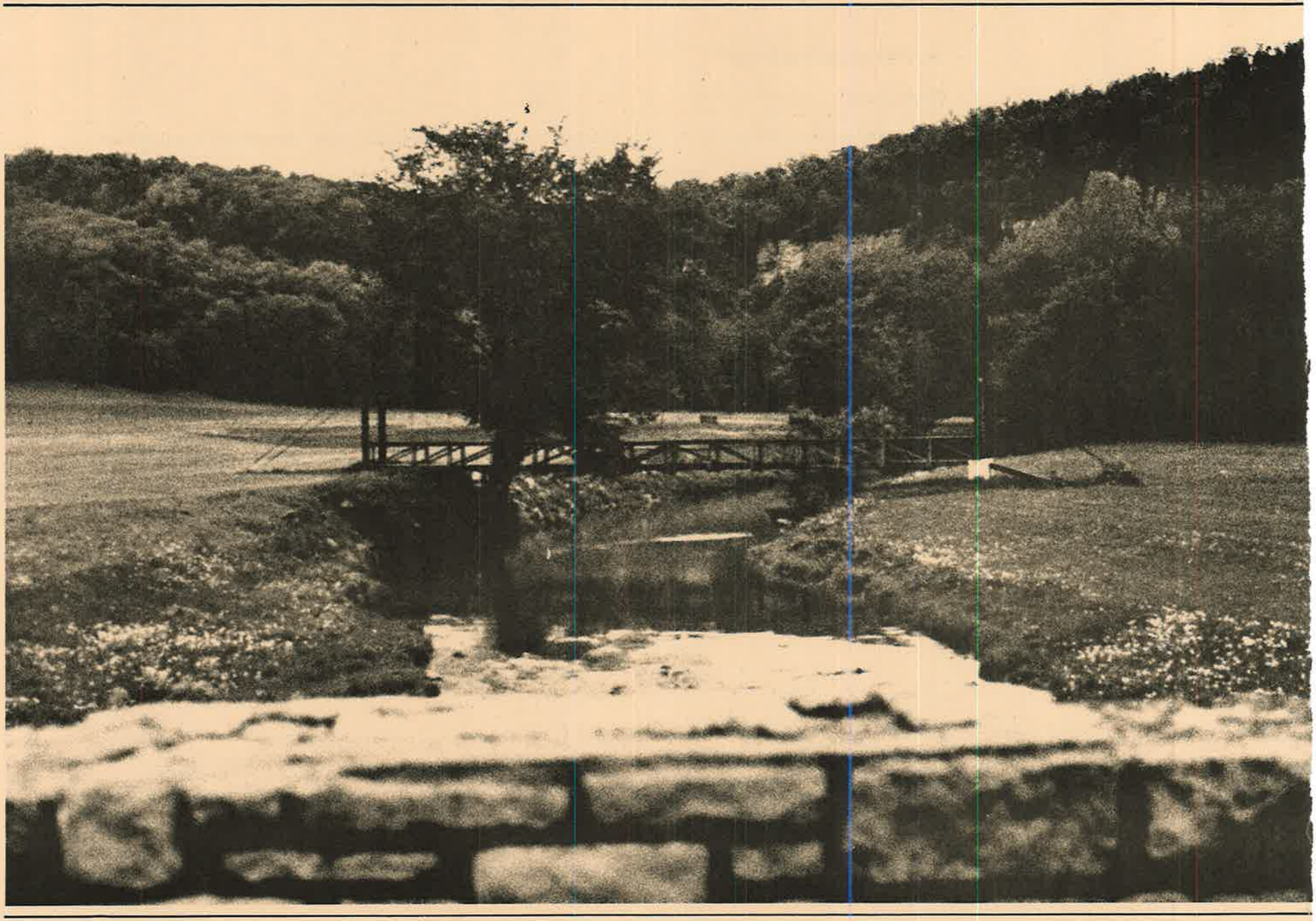
To facilitate smooth local traffic flows

To provide easy visitor access to the park

To provide a link with the nearest county state aid or trunk highway

TH 74 causes safety, noise, and control problems with the present park and highway design. Realigning TH 74 out of the park is a desirable long range consideration, but is not feasible for the near future. Therefore, some road realignment is proposed to minimize the adverse effects on TH 74.

A proposed park road will be constructed north from the contact station parking lot to the picnic ground parking lot. This park road will then pass under TH 74 and connect to the existing Gooseberry Glen road which provides access to the Cedar Hill Campground. TH 74 will then be realigned to curve west away from Cedar Hill Campground and then curve back to cross Middle Fork Whitewater River on the existing bridge.



REGIONAL PERSPECTIVE

Whitewater State Park is located in Winona County, 9 miles north of the city of St. Charles. TH 74 provides the major access to the park. The total authorized land area is 2,863 acres. Approximately one third of this area is currently under the administrative jurisdiction of the Division of Parks and Recreation, DNR.

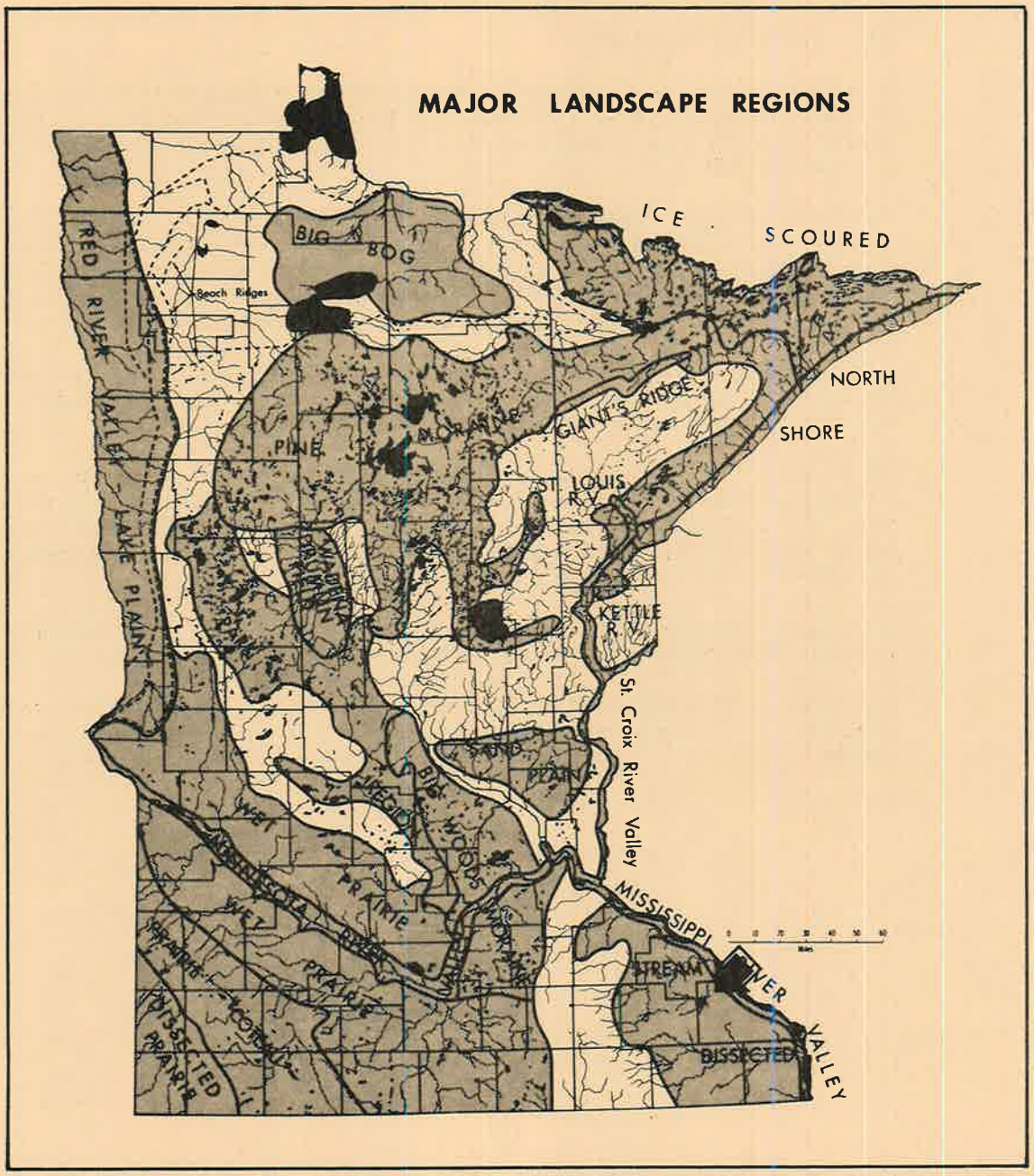
The park is located in the Stream-dissected Landscape Region. As the name implies, the area was primarily formed by stream erosion. Glaciers did not cover this area in the last phases of the Ice Age. The valleys of the Mississippi River tributaries were carved into the sedimentary rocks by large volumes of glacial meltwater. The region now consists of three parts: rolling upland; steep, wooded valley walls with exposed rock bluffs; and flat valley floodplains.

Originally, the region was covered by a hardwood forest, bounded by prairie to the southwest and by big woods to the northeast. Most of the flat areas have been cleared for agriculture, but original vegetation on the hillsides remains.

As in other areas of southern Minnesota, the predominant land use in the three county area surrounding the park (Olmsted, Winona, and Wabasha) is agricultural (57.4%). Unlike lands to the west, there are considerable tracts of forested lands (20.9%). The State Planning Agency has estimated the 1974 population of these counties to be 153,000. This represents a slight increase over the 1970 census which was 145,737.

Southeast Minnesota, often referred to as Hiawathaland, offers a substantial array of recreational facilities. Fishing, hunting, boating, hiking, and camping are available within a relatively small area.

According to data generated by the Department of Economic Development, Winona County derived $8,822,000 from tourism-travel expenditures in 1974. This is 3.2% of the total gross sales in the county.


MAJOR LANDSCAPE REGIONS
ICE SCOURED
BIG BOG
Beach Ridges
RED RIVER
AXLE
LAKE PLAIN
PINE
PRAIRIE
MORAINE
GIANT'S RIDGE
NORTH SHORE
ST. LOUIS R.V.
KETTLE R.
St. Croix River Valley
SAND PLAIN
BIG WOODS
PRAIRIE
MISSISSIPPI
STREAM
RIVER
VALLEY
DISSECTED
MORAINE
TILLSTED PRAIRIE

CLIMATE

According to the state climatologist, Minnesota has a continental-type climate. The state is subject to frequent outbreaks of continental polar air throughout the year, with occasional Arctic outbreaks during the cold season. Occasional periods of prolonged heat occur during summer, particularly in the southern portion when warm air pushes northward from the Gulf of Mexico and the southwestern United States. Pacific Ocean air masses that move across the western United States produce comparatively mild and dry weather in all seasons.

Because of its southern location in the state, the Whitewater area experiences winter temperatures which average 10°F warmer than the northern third of Minnesota. Although Whitewater experiences periods of bitter cold during the winter, it is far less likely than much of the rest of the state to maintain a snowcover usable for recreational purposes (e.g., snowmobiling) throughout the season. Summer temperatures do not vary as much across the state. Except for the North Shore, only 3° or 4°F separate summer temperatures throughout the state.

Temperature Variations:

Mean January Maximum	24°F
Mean January Minimum	4°F
Mean July Maximum	83°F
Mean July Minimum	60°F

An average of 36 days per year are 0°F or below

An average of 12 days per year are 90°F or above

Precipitation:

Snowfall	42.5 in.
Total Precipitation	30 in.

Because the park is located in a valley, it is partially shielded from winds. There is a continual threat of floods in the valley. Even a moderate rainfall will cause the river to rise, and through the years there have been a number of major, very destructive floods.

GEOLOGY

According to an article by Dr. Richard Allen appearing in the Conservation Volunteer, the Whitewater River has cut its valley through a number of horizontal layers of sedimentary rock. The oldest exposed rock layer is composed chiefly of yellow sand grains, known as the Jordan formation. This formation is exposed near the base of the rock cliffs in numerous places along road cuts and stream banks. This sandstone was deposited in a shallow sea in the Cambrian period of earth history, 400 million years ago. The fine grains of quartz which make up the sandstone were carried into this shallow sea by streams and by the wind. The color is produced by coatings of iron oxide on individual sand grains, giving the rock a yellow tint.

The rock layer which overlies the Jordan sandstone is a massive, hard, buff-colored dolomite, locally called limestone. Dolomite is limestone containing a considerable amount of magnesium carbonate. One of these dolomites, Oneota, was formed in the Ordovician period, about 375 million years ago. At this time, southeastern Minnesota was still covered by an inland sea. A few fossilized remains of marine animals can be found in it. Oneota dolomite is the major cliff-forming rock in this valley and all along the Whitewater and Mississippi rivers. The dolomite is much harder and more resistant to weathering than the Jordan sandstone. Consequently, the sandstone crumbles and is eroded from beneath the dolomite, undermining it and causing blocks to fall away from the valley walls. This leaves vertical and sometimes overhanging cliffs.

Above the Oneota dolomite is a white, fine-grained sandstone, well-exposed in road cuts along TH 74 in the valley south and west of the park. This bed of sandstone, about thirty feet thick, is called the Root Valley formation. The sand grains of the Root Valley formation are not coated with iron oxide stain, as is the case in the Jordan formation. Exposures along the road lot show good examples of cross-bedding in the Root Valley sandstone. Cross-bedding is produced by changes in the direction of water currents when the sandstone was formed and is common characteristic of many sandstones.

The Shakopee formation, a hard, resistant dolomite, overlies the Root Valley sandstone. Although only about half as thick as the Oneota dolomite, it forms many bluffs and promontories in the park. In some places in southeastern Minnesota, the Oneota and Shakopee formations comprise a single high bluff, standing 300 ft. or more above the Jordan sandstone slopes. The Shakopee dolomite, like the older Oneota, is a buff-colored, hard rock.

Youngest of the rock formations in the park is St. Peter sandstone, well-exposed along the gorge of the Mississippi River in St. Paul and Minneapolis. The St. Peter sandstone lies directly over the Shakopee dolomite, but because of its soft character and tendency to crumble upon exposure to the weather, it can be seen only in occasional outcrops at the headwaters of the tributaries of the Whitewater River. The St. Peter, Shakopee, and Root Valley formations were, along with the Oneota, deposited in the Ordovician period of earth history.

Other rock layers once extended over the area now occupied by the park, but centuries of stream erosion have removed all traces of them.

The park's present landscape began to form in the Pleistocene period, when successive invasions of ice from the north spread out over much of Minnesota. Because the area was not covered by ice it is comparatively free of the great accumulations of boulders and glacial debris characteristic of northern portions of the state. Instead of ice, this area was covered by a thick blanket of loess, a type of wind-blown material originating in the floodplains of mud-choked rivers flowing from the melting ice. This loess forms the basis of the fertile soils of the upland farms and the alluvial soils of the floodplain of the Whitewater River.

During the period of stream erosion which preceded the final advance of the continental ice sheet, the Whitewater River cut the gorge it now occupies. When the last ice sheet had retreated to northern Minnesota, the meltwater, choked with mud and glacial debris, forced the Mississippi River to build up or aggrade its channel. This caused the Whitewater River to aggrade its channel in a similar fashion. Thus, for a time, the level of the Whitewater River was higher than it had been in pre-Wisconsin time, and higher than it is today. The Mississippi gradually cut down its channel again, and as the elevation of the Mississippi dropped, the Whitewater River cut down through the sands and gravels which filled its valley. A few of these high level terraces still remain in the park.

There are many outstanding geological features in the park. One of the most interesting is the abandoned river valley or wind gap just north of the park office. This valley was once occupied by the Whitewater River but was abandoned in favor of another course to the south.

Flat Iron Rock, in the northwest corner of the park, is a remnant of the upland surface. It is surrounded on three sides by the winding gorge of the Middle Fork Whitewater River, two hundred feet below.

Inspiration Point, just north of the picnic area, is a promontory of Shakopee dolomite, affording a magnificent panorama of the surrounding area.

Solution cavities in the Oneota and Shakopee formations are quite common in the park. Some are even large enough to be called caves. These cavities were formed by the slow removal of the rock by slightly acid groundwater.

Fossil collectors will find the park a rather disappointing hunting ground. The Oneota and Shakopee formation both contain fossil remains, but chiefly in the form of casts, hollow fossils which make poor specimens.

AREA HISTORY

The primary water bodies of the Whitewater River watershed are: the South Fork Whitewater River, the Middle Fork Whitewater River (which runs through the park), the North Fork Whitewater River, and, after this last confluence, the Whitewater River.

When Europeans settled these valleys, vast areas of timber were cleared for cultivation and grazing. By the beginning of the 20th centry, the hillsides had been heavily grazed. This destruction of ground cover caused serious flooding in the bottomlands.

Farmers continued to cultivate the hillsides, which had been cleared of timber and then overgrazed, causing faster run-off. The run-off carried away soil and debris. Almost overnight huge water–deposited ridges of land appeared on farms closest to the hillsides. Then, like a fan, these ridges spread out covering field after field. In 1890, the Miles Ellringer farmstead at Whitewater Falls was on a high spot, about 20 feet above the banks of the river. It is startling to view this spot today and discover river banks higher than the site of the old farmstead. In 1930, when a barn was torn down, it was discovered that livestock had been standing on what was originally a haymow floor. Since that time another 5 to 6 feet of sand and mud have been deposited in the area. TH 74 was built in the early 1920's to be an all–weather road. It bed was built 6 ft. above the surrounding terrain; now it is 6 ft. below in places. Residents still recall 1938 when the Whitewater, its river bed filled with sand, overflowed 28 times. The Highway Department was forced to close TH 74 each time.

At the junction of Whitewater River and Beaver Creek was the prospering town of Beaver. At its peak, Beaver had two stores, a hotel, a livery stable, a church, a school, two flour and grist mills, a blacksmith shop, a produce market, and two saloons. In the center of town was the village square or common. Most of Beaver's first settlers came from the New England states, bringing with them a style of architecture and this tradition of the town common. Years of heavy flooding and silt deposition made life in the small town unbearable. There was a migration to higher ground. Most business and residential property was disposed of before World War I. In the 1920's, the tempo of migration speeded up, and by the 1930's, most families had left. Buildings were torn down, either by owners as they left or by wrecking companies coming in to salvage materials. The once busy common is now a large swamp and trees and brush hide the ruins of most of the buildings.

PARK HISTORY

In 1916, a group of local citizens first advocated the establishment of a state park in the Whitewater River area. During the 1917 session of the Minnesota State Legislature, an appropriation bill of $20,000 was introduced in the House and the Senate for the creation of the Whitewater State Park. Because of the unusually large drain on the treasury during this session, the amount was reduced to $10,000. Although the bill was passed by the legislature, the governor vetoed the appropriation.

In 1917, Mr. L. A. Warming, of St. Charles, Minnesota, published a booklet of photographs called The Paradise of Minnesota, The Proposed Whitewater State Park. This publication was to stimulate interest and promote the establishment of Whitewater State Park. Photographs in this publication are high quality and give a good picture of the conditions in the Whitewater Valley at that time. Pictures of fishing and camping in various parts of the valley indicate that it was a popular vacation spot for many people in this region.

Mr. Warming and other interested citizens pursued this park project in the 1919 legislature and were rewarded with the establishment of the park. In 1920, negotiation and purchase of land was begun by a local committee and by 1923, 483 acres of land were acquired at a cost of $16,555. In 1927, Mr. John A. Latsch of Winona, Minnesota, donated 166 acres of land for Whitewater State Park.

With the 1930's came many work relief programs. In 1934, a CCC camp was established in Whitewater State Park near the site of the Gooseberry Glen Campground. The improvements made by the CCC under this program and subsequent WPA programs are still in use today. TH 74 was relocated through the park and two stone arch bridges, since destroyed by floods, were constructed during this period. Also constructed were the swimming pool, shelter building, toilet buildings, camper service building, administration buildings (including the manager's residence), and 5 tourist cabins. An additional 20 acres of land were acquired in this period, enlarging the park to 669 acres.

After the completion of the depression work programs late in 1941, camp buildings were used as a youth camp facility. During World War II, the camp buildings were used as a German prisoner of war camp. The prisoners provided labor to maintain food processing industries in Rochester and Plainview. Following World War II, the camp facilities were made available for use, under permit, to various youth organizations such as the Girl Scouts, 4H, and church groups for organized camping activities. In July, 1953, a tornado completely demolished the old CCC camp. Other buildings were damaged and many trees were uprooted in the picnic ground area.

SURROUNDING LAND USE

Directly south of the park are farmsteads and scattered woodlots. Seven miles further south, is the city of St. Charles. To the west are agricultural lands with scattered home sites. At the north end of the statutory boundary of the park, a few small farms are being subdivided and single family dwellings constructed. Two miles further north is the small town of Elba. Beyond that is the 24,297 acre Whitewater Wildlife Management Area and, to the east, more agricultural land.

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.

Objectives:

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

Whitewater State Park is recommended for classification as a natural state park.

ALTERNATIVE CONSIDERED

Whitewater State Park could be classified as either a natural state park or a recreational state park. Because of the sensitivity of the natural resources and relatively small number of recreational activities compatible with the existing resources, it was decided that a natural state park classification would be more appropriate.

CRITERIA

The Outdoor Recreation Act of 1975 requires that a park 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 illustration 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

The park is an outstanding example of the geological processes which formed the landscape characteristic of the Stream-dissected Landscape Region.

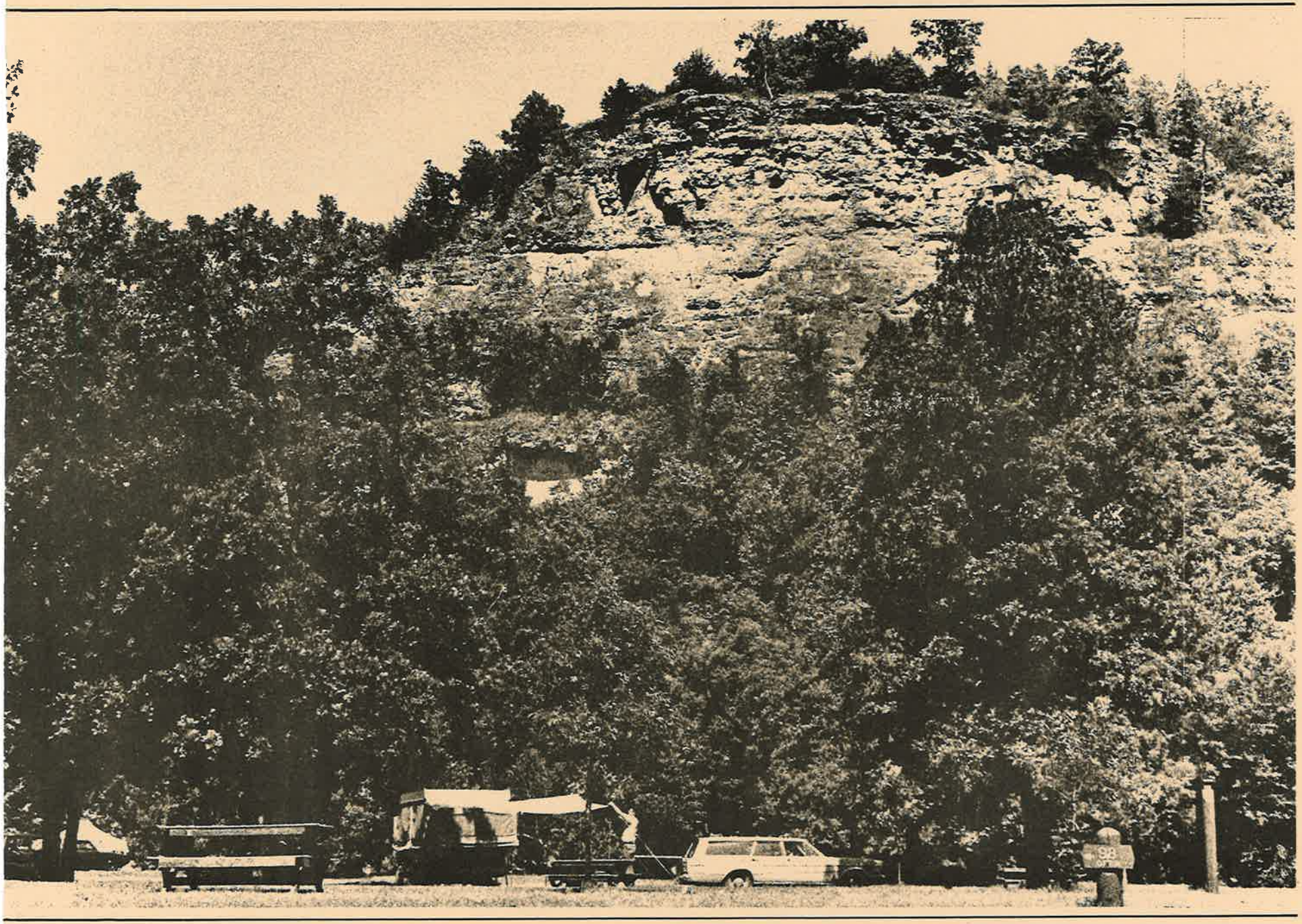
Presettlement vegetation of this region was hardwood forest, bounded by prairie to the southwest and big woods to the northwest. The vegetation on the valley walls in the park has not been disturbed, but the valley floor and the bluff tops have been altered by park development, roads, and agricultural use. With proper management the vegetation in the park can be restored to what it was in presettlement times.

In years without flooding, the park has repeatedly drawn at least 300 000 visitors. The 1974 State Park Users' Survey estimates park usage by state residents from within 50 miles of the park to be 20%, from beyond 50 miles 66%, and from out-of-state residents 14%.

The park's statutory boundary includes 2,863 acres. Now that the golf course has been removed, this acreage should be sufficient to protect the natural resources.

PARK GOAL

The goal for Whitewater State Park is to provide an area for the interpretation and enjoyment of the phenomena which typify the Stream-dissected Landscape Region of the state.



ZONING

Introduction

Before the specific management of Whitewater 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 archeological 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.

The final zoning map, (p. 31) is a composite of potential zones. All of the potential zones do not necessarily occur in every park. The zone with the most restrictive management was selected where more than one potential zone designation seemed appropriate.

Potential Zones

Zone 1 - Potential Ecological Protection Zone (map, p. 28) Three different areas are sufficiently sensitive and valuable to justify inclusion in this zone: steep slopes, streams, and prairie remnants.

The slopes rising out of the river valley are very steep, with many sheer rock cliffs. These steep slopes are very sensitive to erosion and should be disturbed as little as possible. Any hiking trails on these slopes must be carefully designed and constructed to control potential erosion.

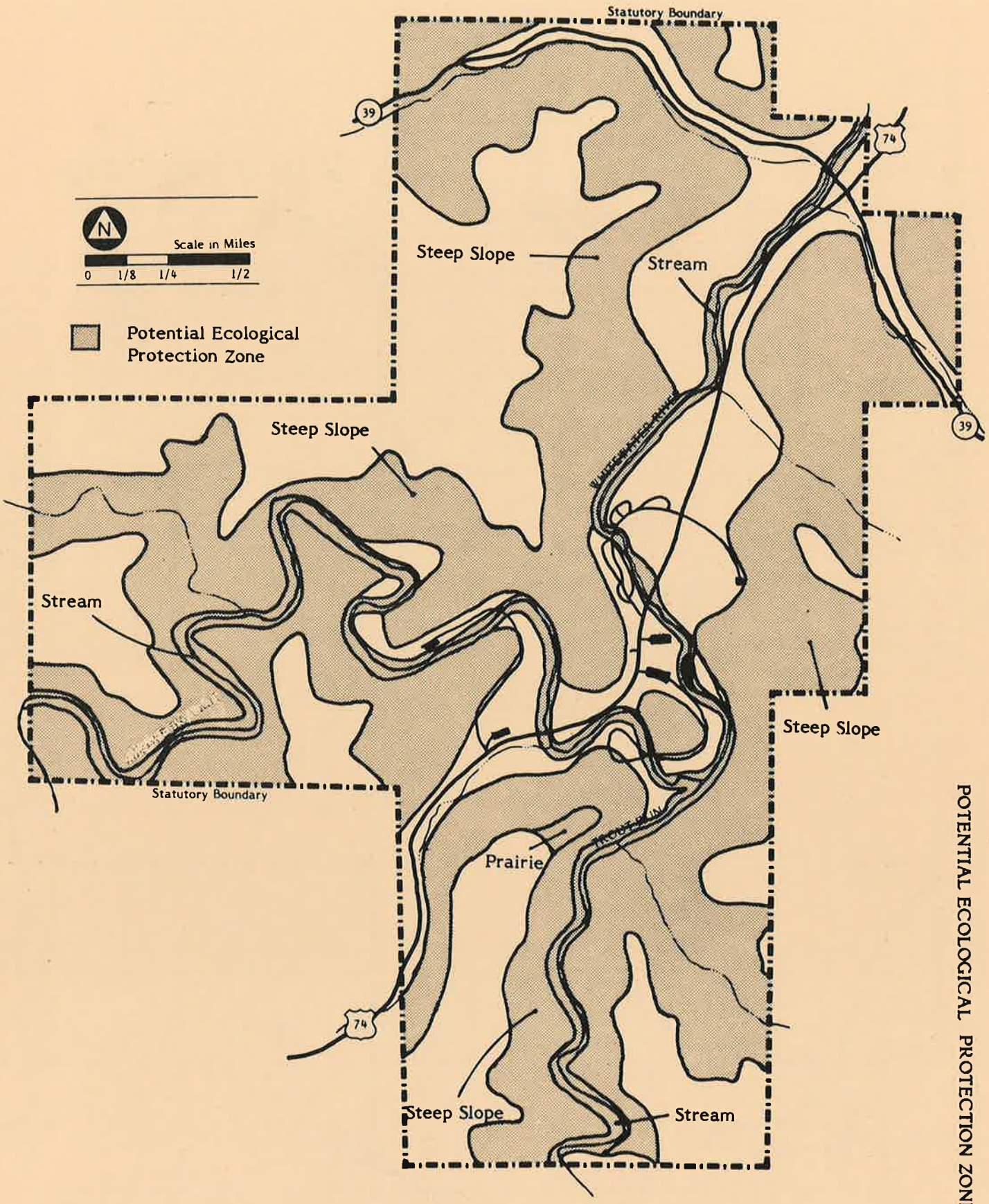
Zone 2 - Potential Outstanding Natural Feature Zone (map, p. 29) The outstanding natural features in this park consist of near-vertical limestone bluffs. These bluffs, towering above the narrow winding valleys with rushing trout streams, are a major scenic attraction of the park. They also provide excellent opportunities for scenic views and for geological history interpretation.

Zone 3 - Potential Primitive Zone No area within the park is remote enough or of sufficient size to qualify for this zone.

Zone 4 - Potential General Environment Zone All areas not designated as other zones will be included in this category.

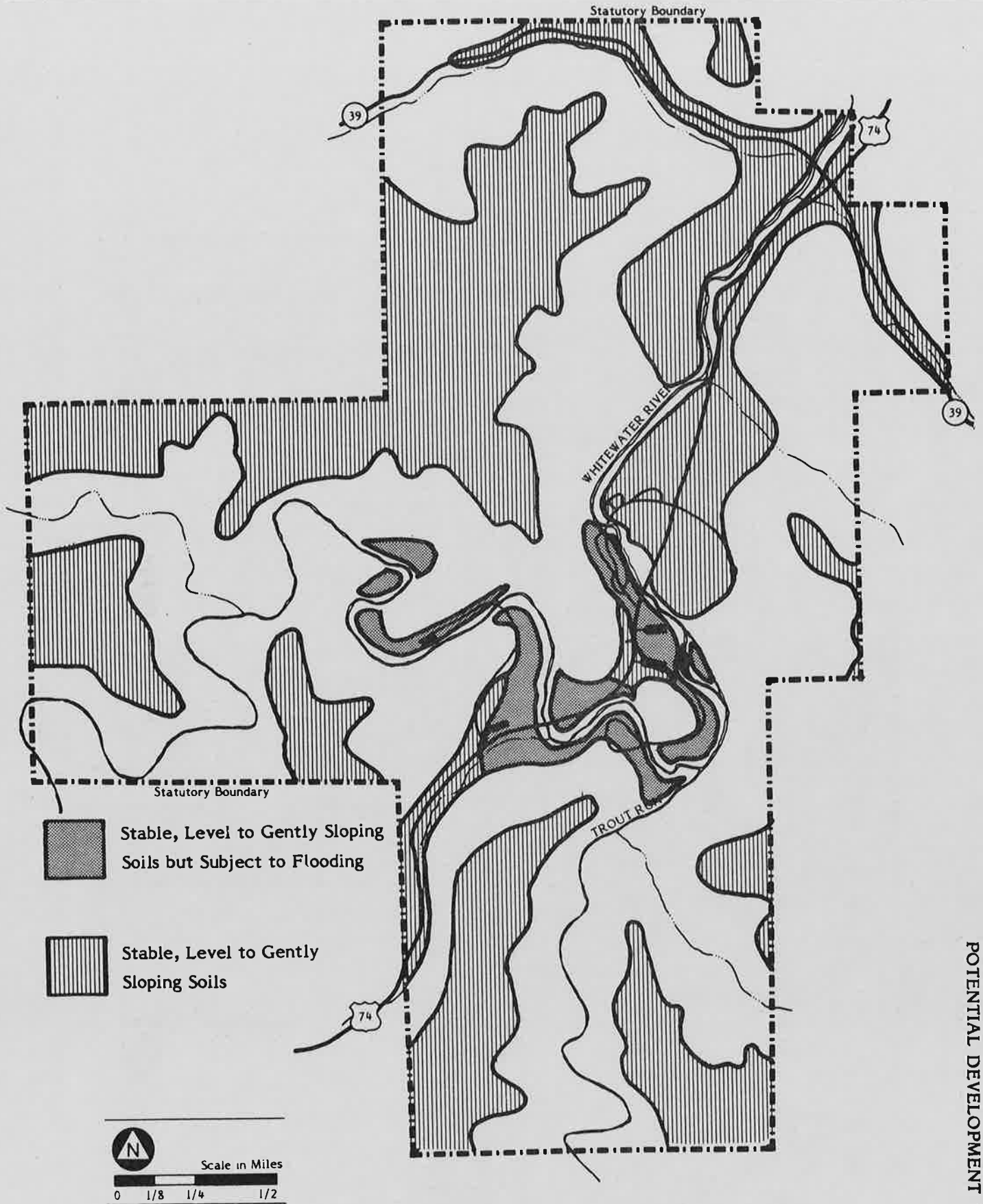
Zone 5 - Potential Historical and Cultural Zone No significant prehistoric or historic sites have been identified in the park to date. After a historical field survey is taken, any sites found should be considered for inclusion within this zone.

Zone 6 - Potential Development Zone (map, p. 30) The potential development zone areas depicted on the map reflect the suitability of the soils and the topography for development. These areas include both flood-free lands and lands subject to periodic flooding. The areas subject to periodic flooding will be utilized for day-use facilities, such as picnicking, but will not be used for overnight camping.

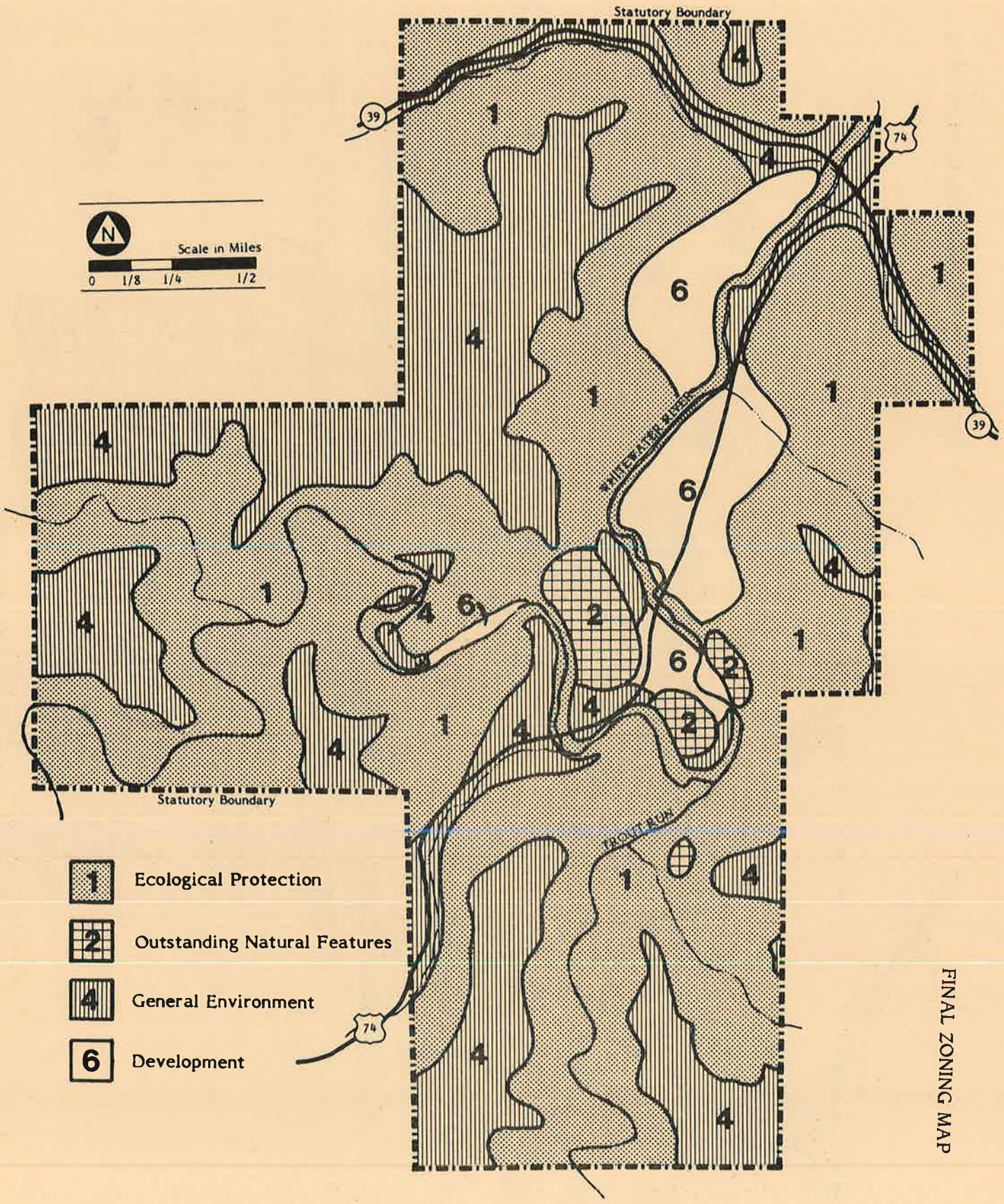


POTENTIAL ECOLOGICAL PROTECTION ZONE

POTENTIAL OUTSTANDING NATURAL FEATURE ZONE



POTENTIAL DEVELOPMENT ZONE



FINAL ZONING MAP

SOILS

Soil structure, type, and fertility play an important role in dictating what types of vegetation are presently found in the park or what types of plant communities might logically be reintroduced to replicate original plant communities.

In developing a park management plan, detailed soil surveys of the park are a necessity. Soils data must be considered when locating park roads, recreation buildings, campgrounds, picnic areas, sewage lagoons, and septic tank filter fields.

Inventory

The inventory shows that loess soils occupy the gently rounded ridgetops. They require few limitations on development. Loess and limestone residual soils occupy the upper valley slopes along the tributary streams. They require few limitations to campground and picnic area development. They are not, however, generally suitable for drain fields and sewage lagoons. While alluvial soils found in the valleys, also pose few restrictions, flood danger limits much of this area to day-use. Finally, the steep, rocky land on the slopes is generally unsuited for development.

The soil limitation rating given to a particular soil by Soil Conservation Service is an important factor. However, in selecting a site for a particular use it was only one of many criteria considered. In some circumstances, development can be modified so that even those soils rated as having severe limitations can be used. This is especially important where good sites are scarce.

Management

Objectives:

To locate development on soils that can withstand the intended use

To control erosion

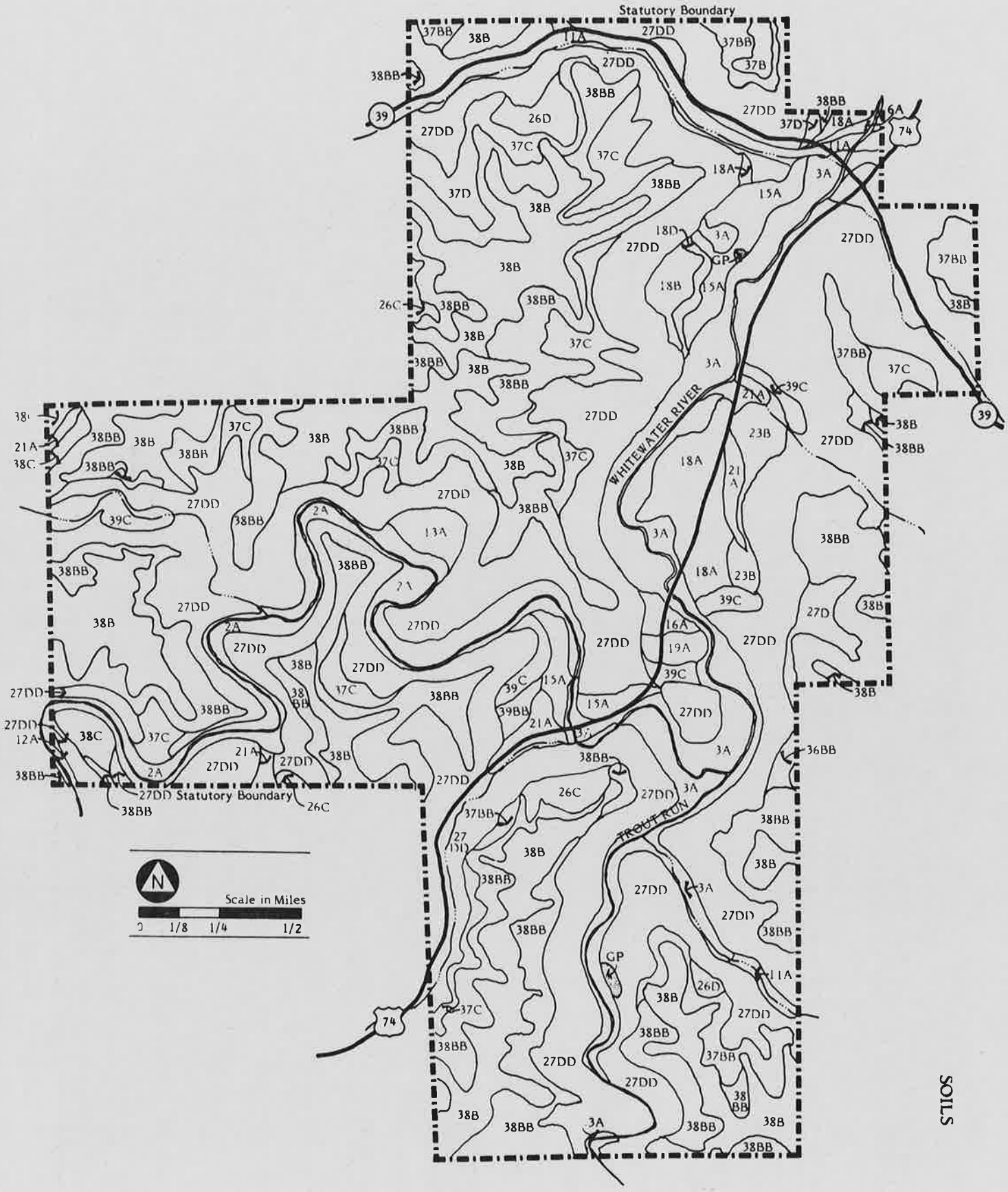
- Specific Management

All park facilities will be located on suitable soils. In the event that soils data are not available for a particular area, that specific site will be analyzed to ensure soil suitability.

A majority of land in this park has steep wooded slopes which are sensitive to erosion. Trail usage causes the most serious erosion in the park. Care must be taken to develop trails that will not become eroded gulleys. Portions of the existing trail system must be reconstructed or realigned and numerous undesignated trails must be closed.

Proposed trail alignments up steep slopes should be constructed with low trail-edge retaining walls, water bars, and steps to provide access to the bluff tops and to prevent erosion problems. Existing eroded areas not associated with trails should be corrected by using unobtrusive structures, such as water bars. Native groundcover species should also be reestablished to stop erosion.

For map code explanation see Soils Chart, pp. 35-36



Soil Type	Map Code	Slope	Permeability	Erosion Hazard	Potential Frost Action	Intensive		Paths and Trails	Recreation Buildings	Sewage Lagoons	Septic Tank Filter Fields
						Picnic Areas	Camp Areas				
					Alluvial Soils						
Cass Sandy Loam	2A										
Cass Silt Loam	3A	0-3%	0-43", .6-2.	* *	High	Severe[4,9]	Severe[4,9]	Severe[9]	Severe[4,9]	Severe[4,9]	Severe[4,9]
Ray Silt Loam	5A	0-3%	0-25', .6-2.	* *	High	Moderate[4]	Severe[4]	Moderate[4]	Severe[4]	Severe[4,5]	Severe[4]
Ray & Genese Soils, undif.	6A	0-3%	.6-2.	Slight	Moderate	Moderate[4]	Severe[4]	Moderate[2]	Severe[4]	Severe[4,5,6]	Severe[4]
Stony Colluvium	11A	0-3%	0-34", .6-2	* *	High	Severe[4,9]	Severe[4,9]	Moderate[4,9]	Severe[4,9]	Severe[4,5,9]	Severe[4,9]
Wabash	11B	3-8%	0-34, .6-2.	* *	High	Severe[4,9]	Severe[4,9]	Moderate[4,9]	Severe[4,9]	Severe[4,5,9]	Severe[4,9]
Wabash Silt Loam	13A	0-3%	0-12", .2-.6	* *	High	Severe[4,9]	Severe[4,9]	Severe[9]	Severe[4,8,9]	Severe[4,9]	Severe[4,6,9]
					Terrace Soils, Subject to Gully Erosion						
O'Neill Gravelly Sandy Loam	14A	0-3%	0-10", 2.-6.	* *	Low	Slight	Slight	Slight	Slight	Severe[5]	Slight
O'Neill Loam	15A	0-3%	.6-2.	* *	* *	Slight	Slight	Slight	Slight	Severe	Slight
O'Neill Sandy Loam	16A	0-3%	* *	* *	* *	Slight	Slight	Slight	Slight	Severe	Slight
					Terrace Soils, Subject to Sheet and Gully Erosion						
Bertrand Silt Loam	18A	0-3%	0-55", .6-2.	Slight	Low	Slight	Moderate[2]	Moderate[2]		Severe[5,6]	Slight
	18B	3-8%	0-55", .6-2.	Slight	Low	Slight	Moderate[2]	Moderate[2]	Slight	Severe[5,6]	Slight-Mod[1]
	18D	25-35%	0-55", .6-2.	Slight	Low	Severe[1,2]	Severe[1,2]	Severe[1,2]	Severe[1]	Severe[1,5,6]	Severe[1]
Jackson Silt Loam	19A	0-3%	0-56", .6-2	Slight	Moderate	Slight	Moderate[2]	Moderate[2]	Slight[8,10]	Severe[5,6]	Slight
Wabash-Judson Silt Loam	21A	0-3%	0-60", .6-2.	Slight	Moderate	Slight	Slight	Slight	Slight-Mod	Moderate	Slight
Wakesha Silt Loam	23B	3-8%	0-50", .6-2.	* *	High	Moderate[9]	Moderate[9]	Moderate[9]	Severe[8]	Severe[9]	Severe[9]

Soil Type	Slope	Stability	Permeability	Erodeability	Frost Heavage	Intensive		Paths and Trails	Recreation Buildings	Sewage Lagoons	Septic Tank Filter Fields
						Picnic Areas	Camp Areas				
			Upland Soils, Moderately or Highly Erodible, Derived from Sandstone								
Dubuque	26C	15-25%	.6-2.	Severe[1]	Low	Severe[1]	Severe[1]	Severe[1]	Severe[1]	Severe[1]	Severe[1]
	26D	25-35%	.6-2.	Severe[1]	Low	Severe[1]	Severe[1]	Severe[1]	Severe[1]	Severe[1]	Severe[1]
Rough Broken Land	27DD	35%+	No data	Severe[1]	**	Severe[1]	Severe[1]	Severe[1]	Severe[1]	Severe[1]	Severe[1]
			Upland Soils, Highly Erodible, Derived from Loess and Glacial Drift								
Carrington Loam Shallow Phase	36BB	8-15%	0-31"+, .6-2.	**	Moderate	Moderate[1]	Moderate[1]	Slight	Moderate[1]	Severe[1,3]	Severe[1,3]
Loam, Deep Pha		3-8%	**	Slight	Low	Slight	Slight	Slight	Slight	Severe[1]	Severe[1]
Carrington Loam Shallow Phase	37BB	8- 15%	**	Moderate	Low	Moderate[1]	Moderate[1]	Slight	Moderate[1]	Severe[1]	Severe[1]
	37C	15-25%	**	Severe[1]	**	Severe[1]	Severe[1]	Moderate	Severe[1]	Severe[1]	Severe[1]
Dubuque Silt Loam, Deep Phase	37D	25-35%	**	Severe[1]	**	Severe[1]	Severe[1]	Severe[1]	Severe[1]	Severe[1]	Severe[1]
Fayette Silt Loam	38B	3-8%	0-73", .6-2.	Slight	Moderate	Slight	Slight	Slight	Slight	Moderate	Slight
	38BB	8-15%	0-73", .6-2.	Slight-Mod[1]	Moderate	Moderate[1]	Moderate[1]	Slight	Moderate[1]	Severe[1]	Moderate[1]
	38C	15-25%	0-73", .6-2.	Moderate[1]	Moderate	Severe[1]	Severe[1]	Moderate[1]	Severe[1]	Severe[1]	Severe[1]
Fayette Valley Phase	39BB	8-15%	0-73", /6-2.	Slight-Mod[1]	Moderate	Moderate[1]	Moderate[1]	Slight	Moderate[1]	Severe[1]	Severe[1]
	39C	15-25%	0-73", .6-2	Moderate[1]	Moderate	Severe[1]	Severe[1]	Moderate[1]	Severe[1]	Severe[1]	Severe[1]

[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

** No Data

LIMITATIONS

[1] SLOPE

[2] SURFACE TEXTURE

[3] DEPTH TO BEDROCK

[4] FLOODING (DURATION & FREQUENCY)

[5] POLLUTION POTENTIAL

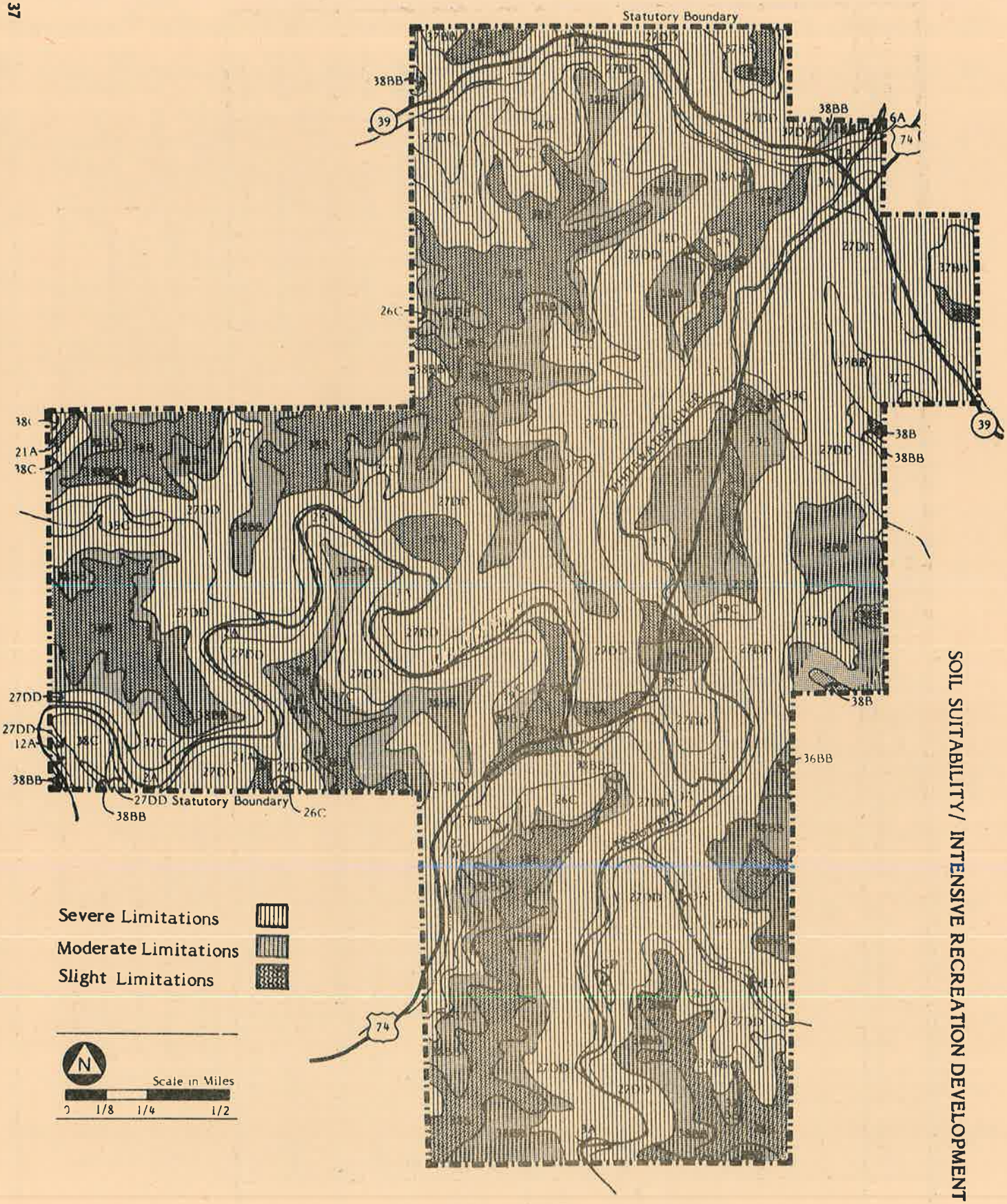
[6] PERMEABILITY

[7] WATER TABLE

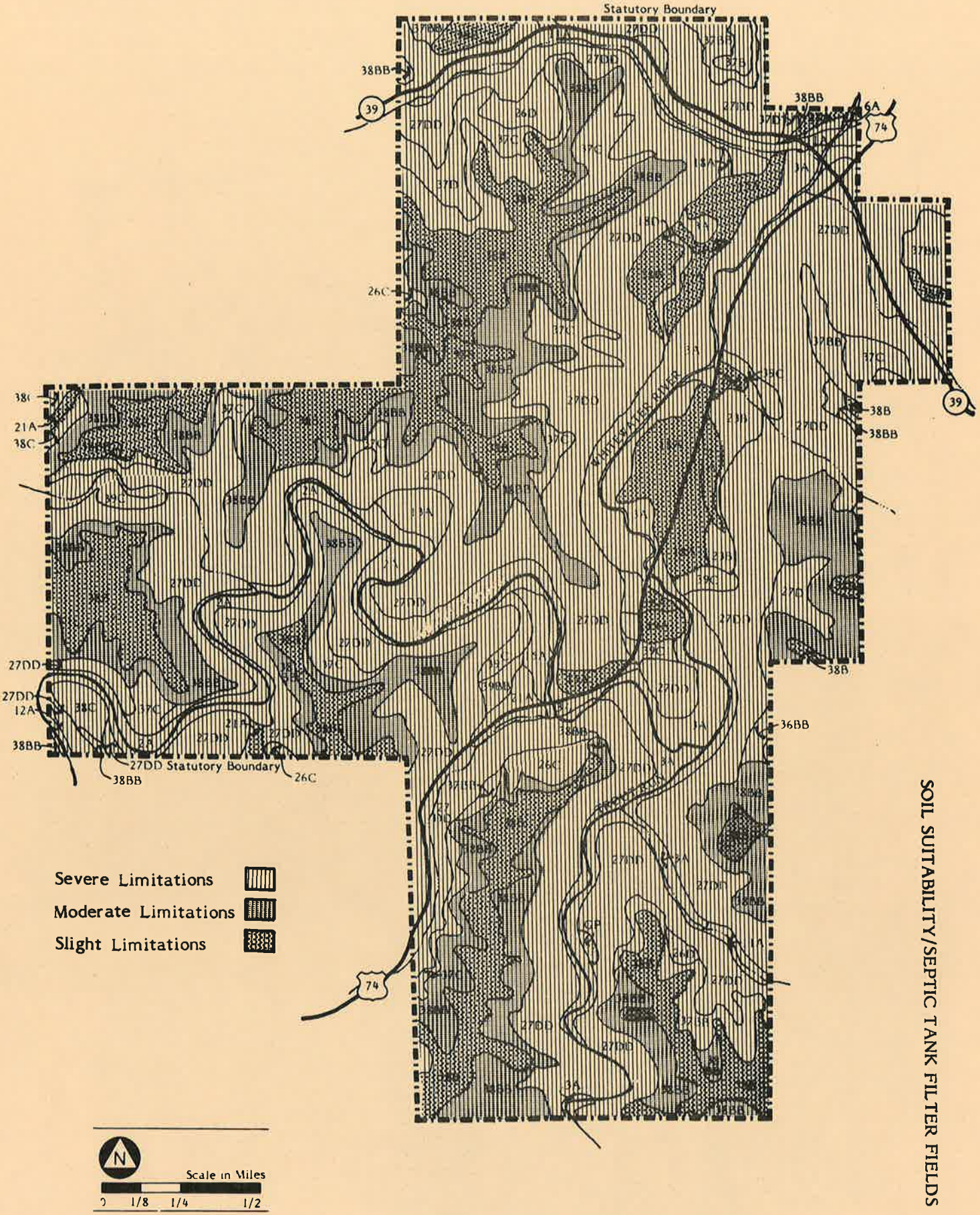
[8] FROST ACTION

[9] DRAINAGE

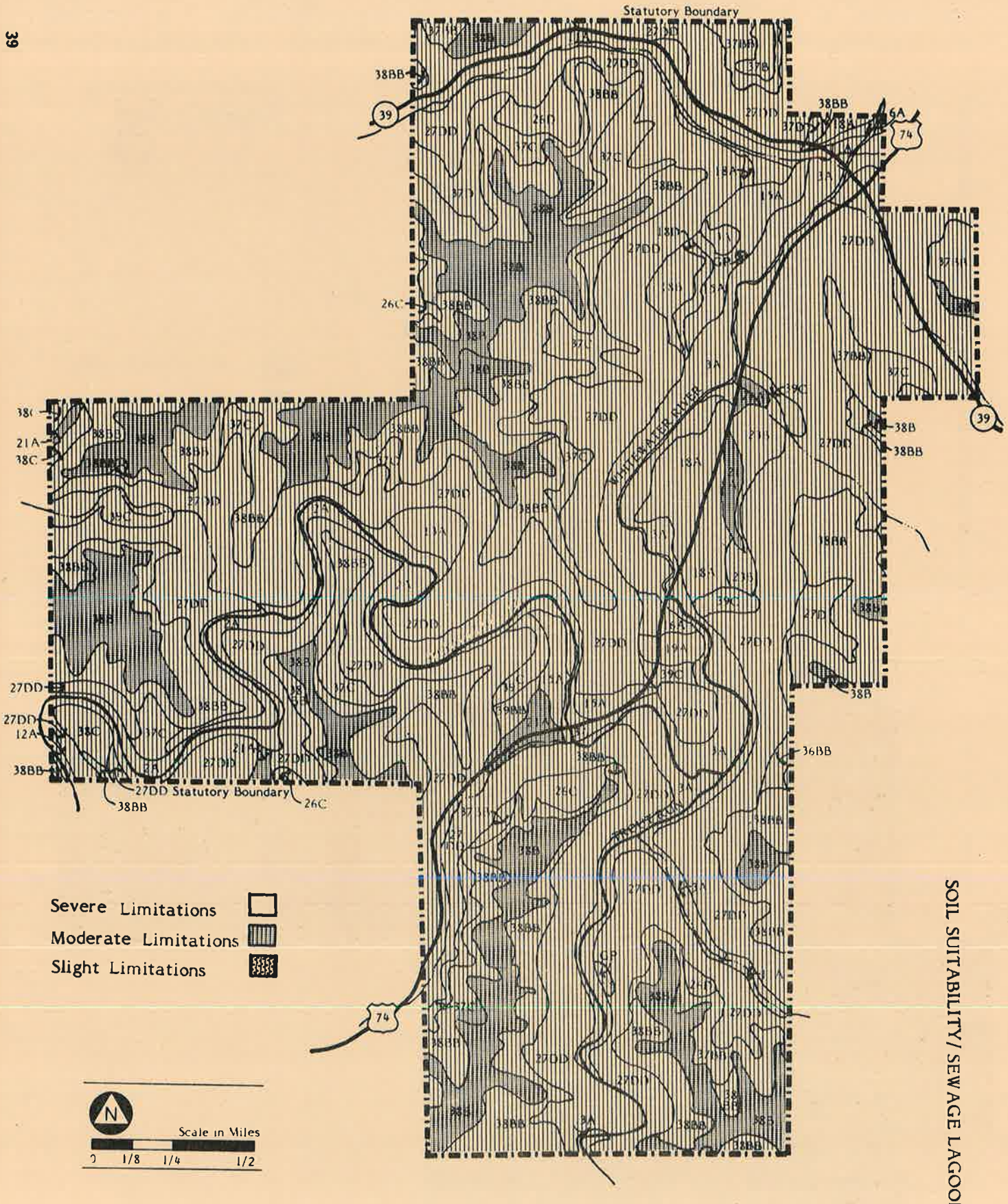
[10] SHRINK-SWELL



SOIL SUITABILITY/ INTENSIVE RECREATION DEVELOPMENT



SOIL SUITABILITY/SEPTIC TANK FILTER FIELDS



SOIL SUITABILITY/ SEWAGE LAGOONS

WATERS

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 may be employed on the water body.

Inventory - Groundwater Hydrology

Primitive Group Camp

Clay: 0-10 ft.
Sand and clay: 10-41 ft.
Sand (water): 41-45 ft.
Water sand: 45-51 ft.

Group Camp

Black dirt: 0-2 ft.
Limestone and sandstone: 2-40 ft.
Soft sandstone: 40-101 ft.
Solid Jordan sandstone: 101-145 ft.

South Campground

Gravel: 0-60 ft.
Jordan sandstone: 60-110 ft.
St. Lawrence limestone: 110-177 ft.
Franconia sandstone: 177-223 ft.

Gooseberry Glen Campground

Clay: 0-24 ft.
Clay and sandstone: 24-65 ft.
Jordan sandstone: 65-125 ft.
St. Lawrence limestone: 125-144 ft.
Franconia sandstone: 144-294 ft.

Management

Objectives:

To maintain high quality groundwater

To provide sufficient quantities of high quality drinking water for park users

- Specific Management

Wells located in the alluvial soils on the valley floor are shallow and are subject to pollution. Therefore, any proposed septic tank drain fields must be located some distance away from any wells which draw water from these soils.

Because of the dissected nature of horizontal layers of sedimentary rock in this area, a specific strata does not always contain water. Therefore, each well location will have to be considered individually.

Inventory - Surface Hydrology

The Middle Fork Whitewater River and Trout Run Creek are small streams running in deep gorges cut by glacial meltwater. These fast, cold streams running beneath steep limestone bluffs are used by park visitors for trout fishing, wading, and nature studying.

The Middle Fork Whitewater River is subject to flooding during the spring melt and flash flooding after a heavy rain. Flash floods are a continual recurring problem in Whitewater State Park. They build up quickly, forcing campers to leave on very short notice. Flood warning devices have been installed by the National Weather Service to warn campers of imminent flash floods.

Middle Fork Whitewater River (1957 DNR Fish and Wildlife Survey)

Length:	6.5 mi. (in the park)
Width:	Averages 20 ft.; maximum 50 ft.
Depth:	Averages 10-12 in.; maximum 8 ft.
Gradient:	200 ft. in 6.5 mi. or approximately 31 ft. @ mi.
Pools:	30%
Riffles:	55%
Flats:	15%
Flowage:	5 c.f.s.* where it enters the park; 10-15 c.f.s. where it leaves the park
Water Level Fluctuation:	10-15 ft.

Trout Run Creek is also subject to flooding, but not to the extent of the Middle Fork Whitewater River. This creek joins the Middle Fork Whitewater River near the South Campground.

Trout Run Creek (1957 DNR Fish and Wildlife Survey)

Length:	1.1 mi. (in the park)
Width:	Averages 13 ft.; maximum 26 ft.
Depth:	Averages 9 in.; maximum 5 ft.
Gradient:	53 ft. @ mi.
Pools:	30%
Riffles:	64%
Flats:	6%
Flowage:	3.3 c.f.s.
Water Level Fluctuation:	6-8 ft.

*c.f.s. - cubic feet per second

Management

Objectives:

To maintain high water quality in park streams for recreational purposes

To control flooding in the park

To protect park users from the hazards of flash floods

To control major river bank erosion

- Specific Management

Because flooding poses the greatest hazard to campers, these facilities must be developed above the floodplain. The structured group camp is in a beautiful, but potentially hazardous location. A detailed survey and flood hazard assessment will be implemented to determine how to utilize this area safely.

There is severe river bank erosion between Gooseberry Glen and Cedar Hill campgrounds. Boulders will be placed along the eroding bank to deflect the current instead of the typical, less natural-appearing riprap technique. This technique was used successfully to correct a similar problem in Forestville State Park.

In 1964, the Upper Zumbro Soil and Water Conservation District, Winona Soil and Water Conservation District, Olmstead County Board of Commissioners, and Winona County Board of Commissioners applied for assistance under federal legislation (PL-566) to deal with watershed problems on the Middle Fork Whitewater River. A preliminary investigative report prepared in 1970 determined all combinations of structures to control flooding were not economically feasible. This report was updated in 1975 using U.S. Department of Agriculture (U.S.D.A.) planning procedures and again it resulted in an unfavorable cost-benefit ratio. The sponsors have withdrawn their application for PL-566 program funds.

In 1970, the U.S.D.A. was authorized to conduct an 8-year Type-4 Study of the Southern Minnesota Rivers Basin. The Whitewater River Valley is included as a southeast tributary to the Mississippi Sub-basin. This study will attempt to identify goals for the basin, consider local needs and desires, coordinate efforts of all agencies concerned, and arrive at a definite plan for the area. Preliminary findings of the commission indicate soil and water conservation practices and other non-structural measures on individual farms on the uplands and terraces are currently the only feasible way of dealing with flood problems in the Whitewater River Valley.

FISHERIES

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 fisheries surveys are conducted to determine species diversity and the size and condition of fish populations. Classifications and site-specific management goals are based on the results of these surveys.

Inventory

Two streams are located in Whitewater State Park: the Middle Fork Whitewater River, and Trout Run Creek. Both these streams are fished for brown trout and are stocked three to four times a year.

- Middle Fork Whitewater River

The Middle Fork Whitewater River receives heavy fishing pressure. The trout carrying capacity is estimated at 40 lbs./acre with the total fish carrying capacity at 150-200 lbs./acre.

A field check in 1975 by the Division of Fish and Wildlife, DNR inventoried the following fish populations in the Middle Fork Whitewater River:

Brown trout	Common
Blacknose dace	Abundant
Longnose dace	Abundant
Creek club	Abundant
Common shiner	Present
Bigmouth shiner	Present
Brassy minnow	Present
Fathead minnow	Present
Stoneroller	Common
Johnny darter	Present
Fantail darter	Present
Slimy sculpin	Abundant
White sucker	Common
Rainbow trout	Occasional
Brook trout	Occasional

• Trout Run Creek

Trout Run Creek receives light fishing pressure. The trout carrying capacity is estimated at 20 lbs./acre. The population is mostly fingerlings because of the lack of cover for adults. The total fish carrying capacity at 50 lbs./acre. Some natural reproduction takes place in this stream.

The fish population in 1975 was estimated to be as follows:

Brown trout	Common
Longnose dace	Abundant
White sucker	Present
Brook stickle back	Present
Slimy sculpin	Abundant

This short 1.1 mile tributary stream is a good, cool water, wild (non-stocked) brown trout stream. It provides up to 20% of the Middle Fork Whitewater River flow. The incoming water is rarely over 60°F. Reproduction of brown trout in Trout Run Creek provides a viable fishing population in the Middle Fork Whitewater River.

Management

Objective:

To maintain and increase the wild trout population

• Specific Management

The Middle Fork Whitewater River has been divided into two management sectors based upon characteristics of the trout population. Below Trout Run Creek the trout population is composed mainly (over 90%) of wild brown trout. Above Trout Run Creek, it consists mainly (over 90%) of stocked brown trout. Fish management of Middle Fork Whitewater River below Trout Run Creek will be directed at maintaining and, if possible, increasing the fishable wild trout population.

Management techniques may include: stocking, environmental protection (reducing bank erosion), habitat improvement, beaver and beaver dam control, and monitoring the trout population. Rock dams built by park users will be removed when they become detrimental to the fish population. Their construction will be discouraged through interpretive programs. Beaver dam control will ensure access to the stream for spawning trout. However, the beaver pond on a small tributary will be allowed to remain for interpretive purposes.

Reintroduction of native brook trout into the upper half of the stream is being considered.

A fish movement study will be initiated as part of the fish monitoring program on both streams to further document the influence of Trout Run Creek on the trout population of the Middle Fork Whitewater River.

VEGETATION

To rapidly inventory the vegetation components of a park, a system was devised which would not only categorize vegetation but would also recognize those species of wildlife normally associated with specific plant communities. The system used to describe vegetation/wildlife associations is called the ecological community system. In designing the system, several factors were considered including: existing land use patterns, soil wetness, plant species composition, physical appearance (i.e., grassy, brush, forested, or bare), and the habitat choices of the various species of wildlife commonly found in Minnesota. The method chosen for the inventory process was the use of 9 x 9 stereoscopic aerial photographs, with field checking.

Original Vegetation

When European settlers first arrived in this area, the vegetation around the Whitewater Valley was a mixture of bottomland hardwoods, oak savanna, big woods, and dry prairie. Bottomland forest was located on the broad, moist floodplains near the Whitewater River. Both oak savanna and big woods vegetation were located on the steep valley walls. The big woods was established primarily on the north and east slopes and oak savanna on the dryer south and west slopes. The upper gently rolling plateau was primarily prairie grasses.

Inventory

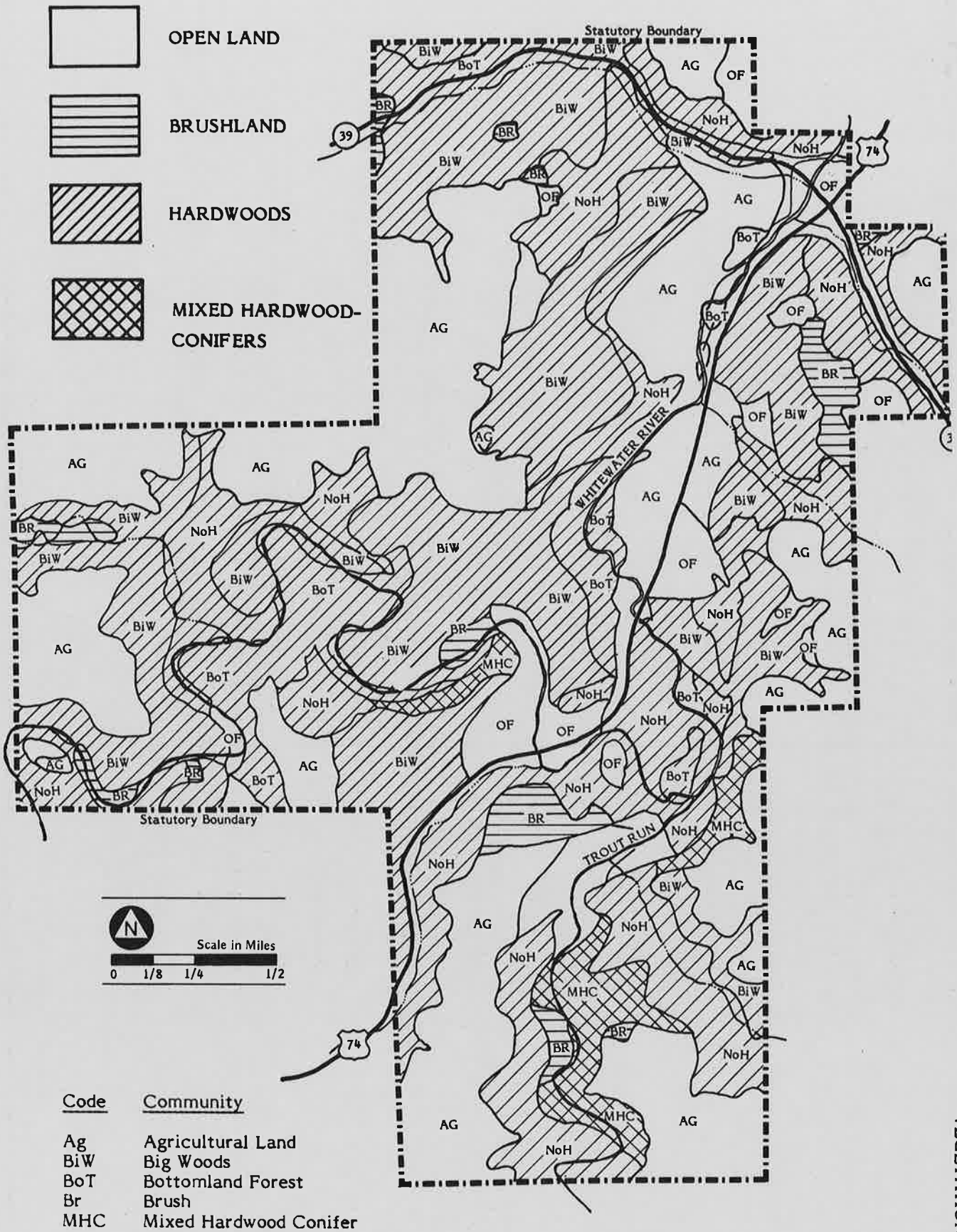
The ecological communities identified in the park are listed below. The percentage notation shows the total park acreage covered with that particular vegetation type.

Agricultural Land (Ag) 899 acres (31%)

Agricultural land is primarily located on the upland plateau around the periphery of the park. However, some major parcels are located in the valley, down river from the existing development area. Most agricultural land is either in private ownership or administered by the Division of Fish and Wildlife.

Big Woods (BIW) 783 acres (28%)

The big woods area in the park is composed primarily of sugar maple, basswood, red oak, white pine, black walnut, and butternut. This vegetation type is scattered throughout the park, but is generally confined to the steep slopes.



Code	Community
Ag	Agricultural Land
BiW	Big Woods
BoT	Bottomland Forest
Br	Brush
MHC	Mixed Hardwood Conifer
NoH	Northern Hardwoods
OF	Old Field

Bottomland Forest (BoT) 176 acres (6%)

This vegetation type is located primarily on the floodplain, along portions of the Middle Fork Whitewater River. The overstory consists primarily of cottonwood, silver maple, green ash, elm, and basswood.

Brush (Br) 83 acres (4%)

Scattered areas of brush occur throughout the park. This vegetation type is composed of primarily low growing, woody plant materials such as sumac, snowberry, blackberry, and gooseberry.

Mixed Hardwood - Conifer (MHC) 94 acres (3%)

Two types of vegetation are included under this designation: a bur oak and red cedar combination and northern hardwood stands that contain a high percentage of white pine in the overstory.

Northern Hardwoods (NoH) 686 acres (24%)

This vegetational type is composed primarily of red oak, basswood, elm, ironwood, sugar maple, and hackberry. Areas of this designation are found primarily on the steep slopes.

Old Field (OF) 109 acres (4%)

These areas were formerly cultivated fields or other disturbed areas which are now characterized by bluegrass, bromegrass, and a variety of wild flowers.

Management

Objectives:

To retain or reestablish pre-European settlement vegetative cover in the majority of the park

To manage vegetation for scenic and wildlife diversity

To manage vegetation in development areas, allowing intensive use without resource deterioration

To preserve rare or unusual plant communities

• Specific Management

The following numbered paragraphs refer to the corresponding areas numbered on the Vegetation Management Map, p. **49**.

1 Existing Vegetation: Agricultural and old field
Proposed Management: Plant bottomland hardwoods

This 60-acre area has been cleared for agriculture, but before settlement it was probably covered with bottomland hardwoods. In the future, this area will be utilized as a campground. Shade and brush screening are desirable. A variety of bottomland hardwood species will be planted including: green ash, basswood, cottonwood, black walnut, and butternut. A variety of sizes should be planted to provide age class diversity and some shade in the near future.

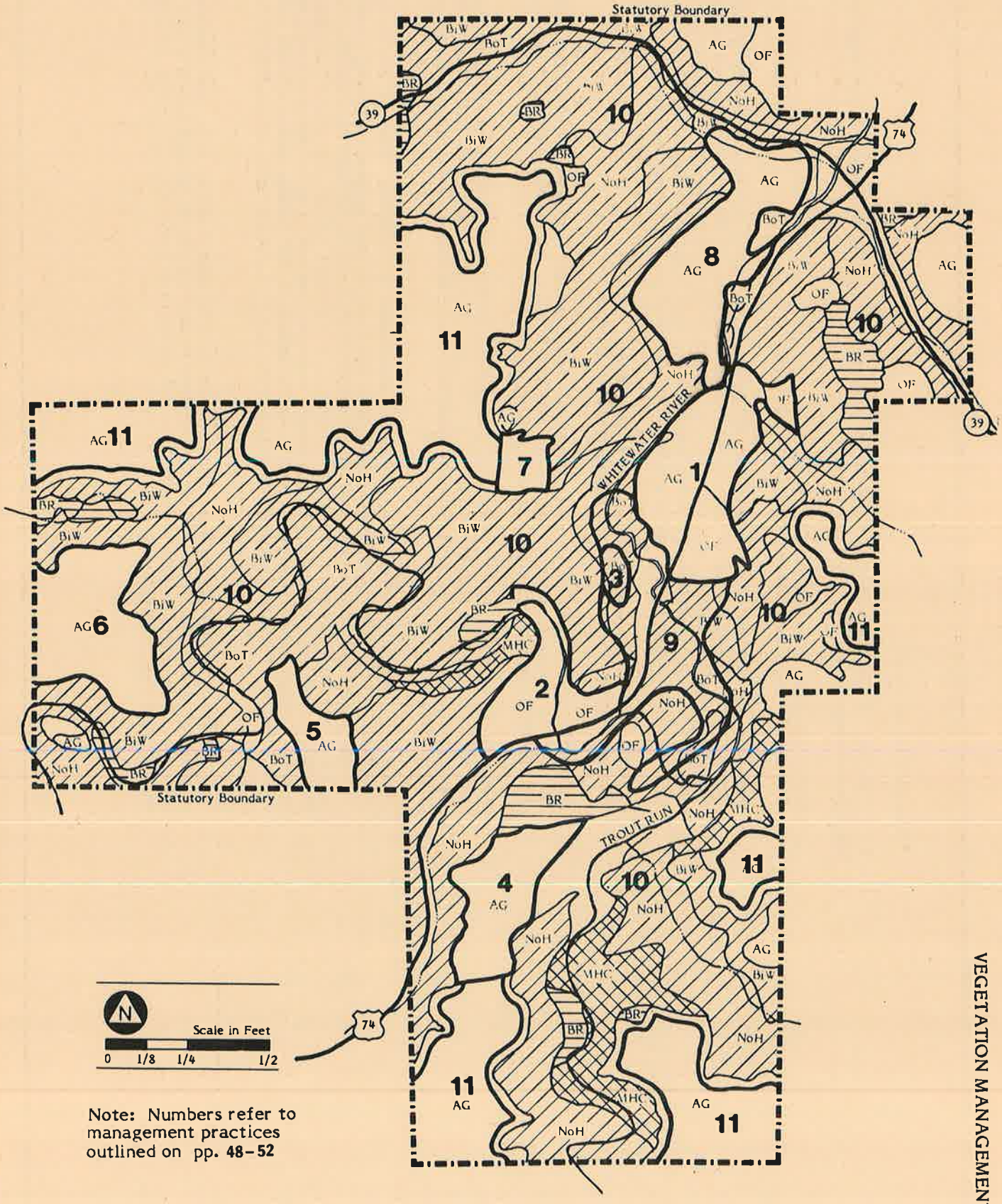
2. Existing Vegetation: Old field (formerly a golf course)
Proposed Management: Mosaic of vegetational communities

At present most of this 50 acre area is covered with Kentucky blue grass. Floods have seeded parts of the area with a variety of grasses and wild flowers. One small, low area with moist soil is supporting wetland meadow and marsh species.

Management of this area will proceed in two phases. Phase I, which has been underway for a few years, is to assess the microclimates in this site. The plant species that are establishing themselves now will be good indicators, especially when combined with mid-summer infrared photographs.

Phase II, active management, will begin as this assessment is completed. Methods used for this phase will include planting, mowing, closing drainage channels, and perhaps prescribed burning. The end product of this management will be an area with a variety of plant communities, each in their natural location. The plant communities expected to develop are: bottomland hardwoods, wetland meadow, marsh, big woods, and open meadow. Each of these will include a variety of plant species typically found in each community, but usually scattered over many acres. The result will be a natural arboretum which will be a valuable area for the interpretive program.

By maintaining open areas such as upland meadows, a wetland meadow, and a marsh between wooded communities such as bottomland hardwoods and big woods, spatial diversity will be created. This diversity will enhance the trail user's experience while providing excellent wildlife (including raptor) habitat.



Note: Numbers refer to management practices outlined on pp. **48–52**

3 Existing Vegetation: Old field (existing campground)
Proposed Management: Plant bottomland hardwoods

This 7 acre area is the South Campground. It will be relocated to avoid flood hazards and to provide level, natural, wooded areas accessible from picnicking and other camping facilities. Many trees have been planted in this area. As roads and spur roads are removed, more trees will be planted. Only trail alignments will be mowed to allow natural vegetation patterns to become established.

4 Existing Vegetation: Old field and upland brush
Proposed Management: Prairie management

This area of the bluff is primarily brush, with a variety of prairie plants. Existing prairie openings and some brush clumps should be burned every 2 years for the next 4 to 6 years to reestablish this area as a prairie community. Once this area is established as a seed source, nearby portions of old fields should be burned to allow prairie species to be reestablished in the area. Eventually, 70 acres will be prairie, except for small valleys along the bluff top which will not be burned and will succeed to northern hardwoods.

5 Existing Vegetation: Old field
Proposed Management: Prairie management

This 30 acre bluff point does not appear to have the prairie species diversity that area 4 has, but burning on a three to four-year schedule should reestablish some prairie species. If, after two to three burns, there is no increase in the native prairie species, prairie grass seed harvested from area 4 will be planted and the burning schedule continued.

6 Existing Vegetation: Agricultural (DNR Fish and Wildlife food plot)
Proposed Management: Mixed upland pioneer successional steps

This area will be allowed to succeed naturally into scattered brush and pioneer hardwoods. Scattered irregularly shaped plots covering approximately 1/10 of the area will be cut annually. The area will be retained in a mixture of open meadows, young brush, and pioneer saplings less than 10 years old.

7 Existing Vegetation: Agricultural
Proposed Management: Reestablish prairie

This 13 acre field, located on the bluff edge, was probably vegetated with prairie and perhaps scattered bur oaks when it was first settled. The first step in reestablishing this plant community will be to seed it with native grasses. As these species become established, seed from other prairies within the park will be sown. Once enough thatch has been deposited to carry a fire, the area should be burned every three to four years.

8 Existing Vegetation: Agricultural
Proposed Management: Plant bottomland hardwoods

This 90 acre area has been cleared for agriculture, but was likely vegetated with bottomland hardwoods. Upon acquisition, it should be planted with a variety of bottomland hardwood species including: green ash, basswood, cottonwood, black walnut, and butternut. A variety of sizes should be planted to provide age class diversity and some shade in the near future.

9 Existing Vegetation: Bottomland hardwood and old field
Proposed Management: Reduce mowing and remove hazardous trees

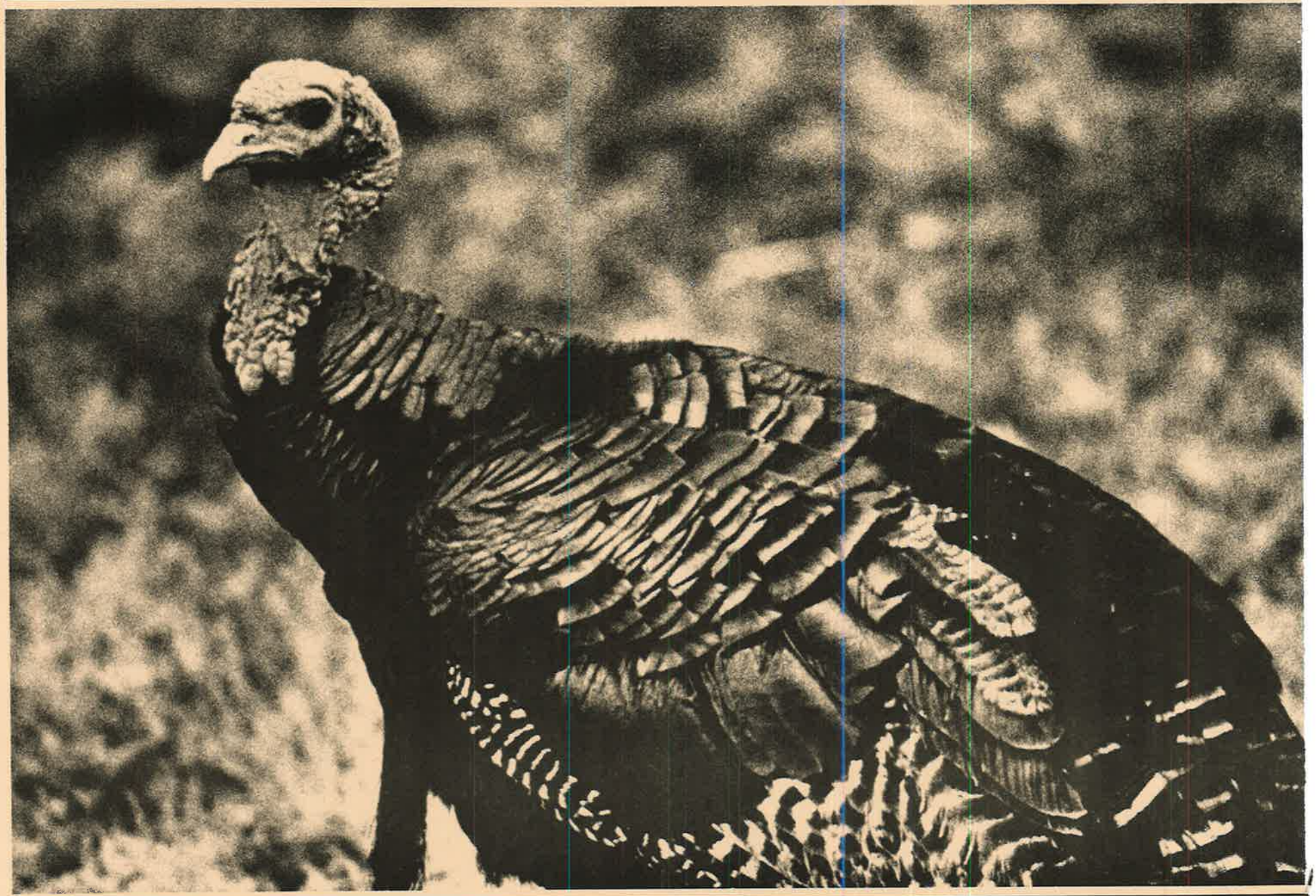
This area includes the existing picnic ground, the Gooseberry Glen Campground, and 2 of the 3 loops of Cedar Hill Campground. Small islands of grass will be left unmowed to allow brush, understory, trees, and wild flowers to be established. These islands will break the area into smaller spaces of varied color and texture. Hazardous, dead, or dying trees will be removed to ensure safety in this use area.

10 Existing Vegetation: Variety of communities
Proposed Management: Passive

This management area includes steep slopes and some narrow valley floors. Most of this area is vegetated with hardwoods, although at present there is good white pine regeneration in the understory. Management will be limited to wild fire control and the removal of hazardous trees along trails. The hardwood vegetation on the steep slopes is inaccessible for intensive management and, although the species composition of these plant communities may change through the years, their primary character will remain. Although white pine are stable now, they should be monitored and managed, if necessary. Isolated areas may need management to control erosion. Non-structural management, such as understory planting, tree removal, or thinning to allow sunlight to the understory is preferred, but appropriate erosion control structures should be used where necessary.

11 Existing Vegetation: Agricultural
Proposed Mangement: Agricultural

Most of this area will be retained under private ownership as agricultural land. See Boundary Modification, p. 111.



WILDLIFE

One of the most intriguing assets of any park is its resident wildlife. 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. Managers can then improve habitat to attract certain species and 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 updated as new data are reported. Therefore, additional detailed studies must be continued in those areas where management needs for wildlife have been identified.

Inventory

The park, along with the Whitewater Wildlife Management Area, contains enough vegetational and hydrological variety to provide good habitat for a diverse population of birds, mammals, reptiles, and amphibians. Park visitors are often rewarded by chance sitings of a variety of species.

Certain wildlife species occurring in a park are noteworthy because special precautions are required in their management and protection, or because they have the potential for causing damage to vegetation, property, or park visitors. These wildlife species and their potential problems are discussed below.

Endangered, Threatened, or Rare Species

Species in this group are those which are in danger of extinction in Minnesota in 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 because of changes in land and water use patterns.

- Birds

  Bobwhite quail

Species of Special Interest

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

- Reptiles and Amphibians

  Wood turtle
  Six-lined racer

Troublesome Species

Troublesome species include those species of wildlife which might be detrimental to either the natural resources of a park, park property, or park visitors.

- Mammals

Species	Potential Problems
Raccoon	Raiding garbage cans
White-tailed deer	Overbrowsing vegetation
Beaver	Overutilization vegetation and increasing stream temperatures

- Reptiles and Amphibians

Species	Potential Problems
Timber rattlesnake	Some hazard to trail users

Sensitivity to Humans

Species in 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.

- Mammals

  Red fox
  Gray fox
  Coyote

Management

Objectives:

To maintain a diverse native wildlife population

To re-introduce, where practicable, species that were present in the general area of the park before European settlement, but which have since been extirpated

To maintain a beaver population in the park

To provide opportunities for park visitors to observe wildlife and learn more about their habits and habitat

- Specific Management

Due to the close proximity of the Whitewater Wildlife Management Area, this park is not essential to sustain local wildlife populations. Nevertheless, it is desirable to preserve diverse wildlife species in the park for park visitor enjoyment.

Many of the proposed vegetation management techniques are intended to improve wildlife habitat by expanding the amount of edge (i.e., the transition area between open meadow and woods) which a variety of wildlife needs for food and cover. Vegetation management areas #2, #4, #5, #6, and #7 will provide some edge. Management areas #2 and #6 will provide the most diverse habitat (see pp. **48 - 52**).

Vegetation management area #6 is currently maintained by the Division of Fish and Wildlife as agricultural land on a lease basis with 2/3 of the crop harvested each year and 1/3 left in the field for wildlife. When this area is turned over to the Division of Parks and Recreation, it will be managed as a natural wildlife food plot.

Beaver are found along Trout Run Creek in the park. They pose problems for fisheries management, but should be retained in limited numbers for observation by park users. Dams in the main channel of the Trout Run Creek will be removed, but the tributary which the beavers have dammed to form a pond will be left undisturbed.

The following definitions are used to describe wildlife population characteristics on the Whitewater State Park wildlife charts on pp. **58** to **62**.

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	SEASONAL OCCURRENCE: 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						●	●			●		

Definitions

Abundant - Trained observer may see several individuals in one day during the residency period of the species.

Common - Trained observer may see one or more individuals in one day.

Uncommon - Trained observer may see one individual in the course of one summer.

Rare - Species normally not observed by the trained observer.

Endangered - Listed in the Federal Register as a threatened or endangered species.

Unknown - Abundance of an individual species in the park has not been determined.

Permanent Resident - Resident in the park area on a year-around basis.

Summer Resident - Only found in the park area during the summer months, presence may or may not indicate breeding activity.

Migrant - Normally found in the park area only during the spring or fall migratory season.

Winter Visitant - Normally found in the park area only during the winter months.

Uncertain - Seasonal occurrence status is not known for the species in park area.

Seasonal Inactive - Species is seasonally inactive in the park area, may enter dormancy, hibernation, or aestivation.

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	SEASONAL OCCURRENCE: WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
	Common Loon												
	Red-throated Loon												
	Red-necked Grebe												
	Horned Grebe												
	Eared Grebe												
	Western Grebe												
	Pied-billed Grebe												
	White Pelican												
	Double-crested Cormorant												
	Great Blue Heron												
	Green Heron												
	Cattle Egret												
	Great Egret												
	Black-crowned Night Heron												
	Yellow-crowned Night Heron												
●	Least Bittern					●							●
	American Bittern												
	Whistling Swan												
	Canada Goose												
	White-fronted Goose												
	Snow Goose												
	Mallard												
	Black Duck												
	Gadwall												
	Pintail												
	Green-winged Teal												
●	Blue-winged Teal					●							●
	American Wigeon												
	Northern Shoveler												
●	Wood Duck					●							●
	Redhead												
	Ring-necked Duck												
	Canvasback												
	Greater Scaup												
	Lesser Scaup												
	Common Goldeneye												
	Bufflehead												
	Oldsquaw												
	Harlequin Duck												
	White-winged Scoter												
	Surf Scoter												
	Black Scoter												
	Ruddy Duck												
	Hooded Merganser												
	Common Merganser												
	Red-breasted Merganser												
●	Turkey Vulture					●							●
	Goshawk												
	Sharp-shinned Hawk												
	Cooper's Hawk												
●	Red-tailed Hawk					●							●

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	SEASONAL OCCURRENCE: WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
	Red-shouldered Hawk												
	Broad-winged Hawk												
	Swainson's Hawk												
	Rough-legged Hawk												
	Ferruginous Hawk												
	Golden Eagle												
	Bald Eagle												
	Marsh Hawk												
	Osprey												
	Peregrine Falcon												
	Merlin												
●	American Kestrel						●						●
	Spruce Grouse												
●	Ruffed Grouse						●						●
	Greater Prairie Chicken												
	Sharp-tailed Grouse												
●	Bobwhite												
●	Ring-necked Pheasant						●						●
	Chukar												
	Gray Partridge												
	Sandhill Crane												
	King Rail												
	Virginia Rail												
●	Sora						●						●
	Yellow Rail												
	Common Gallinule												
	American Coot												
	Semipalmated Plover												
	Piping Plover												
●	Killdeer						●						●
	American Golden Plover												
	Black-bellied Plover												
	Ruddy Turnstone												
●	American Woodcock						●						●
●	Common Snipe												
	Whimbrel												
	Upland Sandpiper												
●	Spotted Sandpiper						●						●
	Solitary Sandpiper												
	Greater Yellowlegs												
●	Lesser Yellowlegs						●						●
	Willet												
	Red Knot												
●	Pectoral Sandpiper						●						●
	White-rumped Sandpiper												
	Baird's Sandpiper												
●	Least Sandpiper						●						●
	Dunlin												
	Semipalmated Sandpiper												
	Western Sandpiper												
	Sanderling												

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
	Short-billed Dowitcher												
	Long-billed Dowitcher												
	Stilt Sandpiper												
	Buff-breasted Sandpiper												
	Marbled Godwit												
	Hudsonian Godwit												
	American Avocet												
	Wilson's Phalarope												
	Northern Phalarope												
	Parasitic Jaeger												
	GlaucousGull												
	Herring Gull												
	Ring-billed Gull												
	Franklin's Gull												
	Bonaparte's Gull												
	Forster's Tern												
	Common Tern												
	Caspian Tern												
	Black Tern												
	Rock Dove												
●	Mourning Dove						●						●
	Yellow-billed Cuckoo												
	Black-billed Cuckoo												
	Screech Owl												
	Great Horned Owl												
	Snowy Owl												
	Hawk-Owl												
	Burrowing Owl												
	Barred Owl												
	Great Gray Owl												
	Long-eared Owl												
	Short-eared Owl												
	Saw-whet Owl												
	Whip-poor-will												
	Common Nighthawk												
	Chimney Swift												
●	Ruby-throated Hummingbird						●						●
●	Belted Kingfisher						●						●
●	Common Flicker						●						●
●	Pileated Woodpecker						●						●
●	Red-bellied Woodpecker						●						●
●	Red-headed Woodpecker						●						●
●	Yellow-bellied Sapsucker						●						●
	Hairy Woodpecker												
●	Downy Woodpecker						●						●
	Black-backed 3-toed Woodpecker												
	Northern 3-toed Woodpecker												
●	Eastern Kingbird						●						●
	Western Kingbird												
●	Great Crested Flycatcher						●						●
●	Eastern Phoebe						●						●

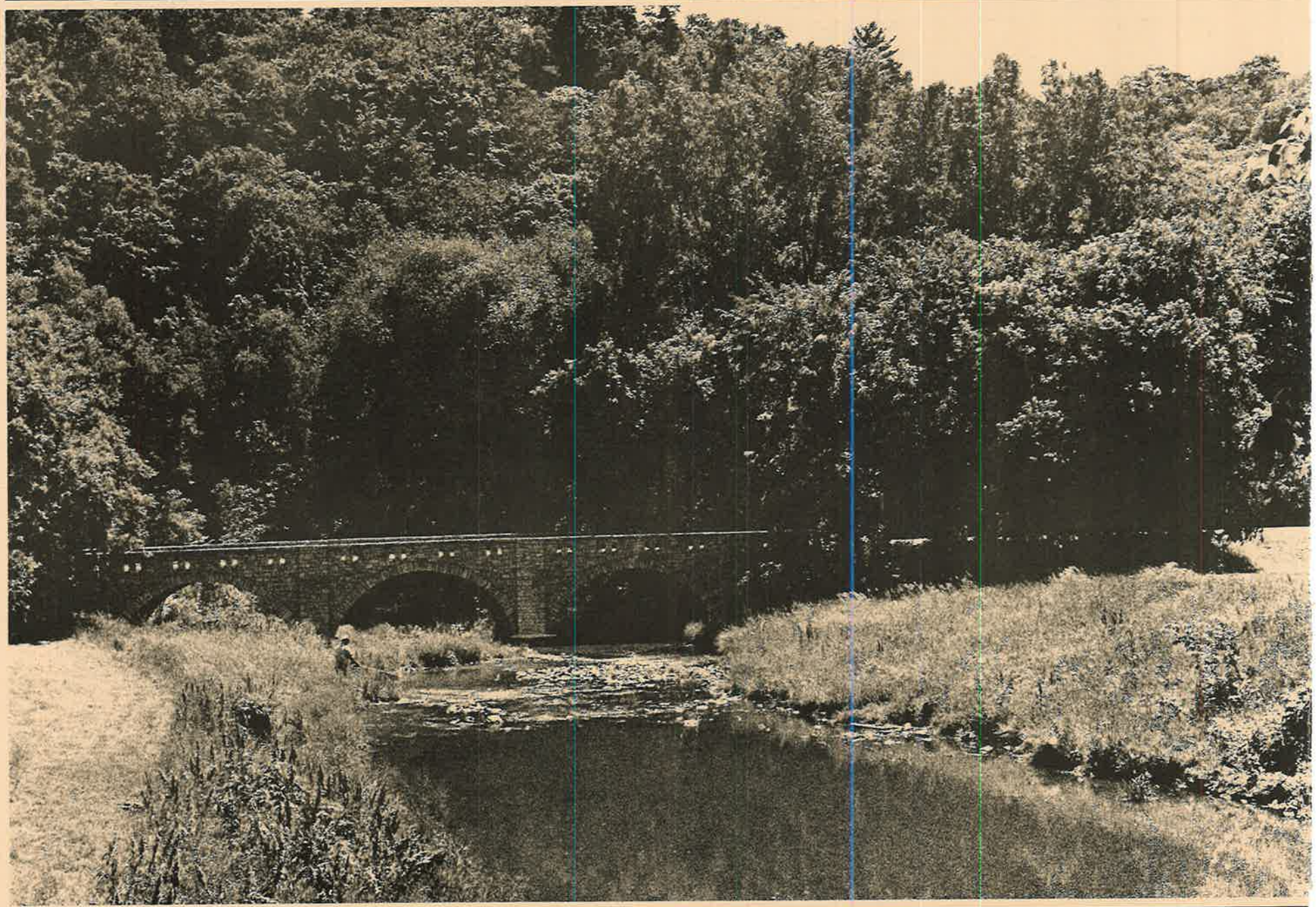
FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
	Yellow-bellied Flycatcher												
	Acadian Flycatcher												
	Willow Flycatcher												
●	Alder Flycatcher						●						●
●	Least Flycatcher						●						●
●	Eastern Wood Pewee						●						●
	Olive-sided Flycatcher												
	Horned Lark												
●	Tree Swallow						●						●
●	Bank Swallow						●						●
●	Rough-winged Swallow						●						●
●	Barn Swallow						●						●
	Cliff Swallow												
	Purple Martin												
	Gray Jay												
●	Blue Jay						●						●
	Black-billed Magpie												
	Common Raven												
●	Common Crow						●						●
●	Black-capped Chickadee						●						●
	Boreal Chickadee												
●	Tufted Titmouse						●						●
●	White-breasted Nuthatch						●						●
	Red-breasted Nuthatch												
	Brown Creeper												
●	House Wren						●						●
	Winter Wren												
	Long-billed Marsh Wren												
	Short-billed Marsh Wren												
	Mockingbird												
●	Gray Catbird						●						●
●	Brown Thrasher						●						●
●	American Robin						●						●
	Varied Thrush												
	Wood Thrush												
●	Hermit Thrush						●						●
	Swainson's Thrush												
●	Gray-cheeked Thrush						●						●
	Veery												
●	Eastern Bluebird						●						●
	Blue-gray Gnatcatcher												
	Golden-crowned Kinglet												
●	Ruby-crowned Kinglet						●						●
	Water Pipit												
	Sprague's Pipit												
	Bohemian Waxwing												
●	Cedar Waxwing						●						●
	Northern Shrike												
	Loggerhead Shrike												
●	Starling						●						●
	Bell's Vireo												

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	SEASONAL OCCURRENCE: PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
	Yellow-throated Vireo												
	Solitary Vireo												
●	Red-eyed Vireo						●					●	
	Philadelphia Vireo												
●	Warbling Vireo						●					●	
	Black-and-white Warbler												
	Prothonotary Warbler												
	Golden-winged Warbler												
●	Blue-winged Warbler						●					●	
●	Tennessee Warbler						●					●	
	Orange-crowned Warbler												
●	Nashville Warbler						●					●	
	Northern Parula												
●	Yellow Warbler						●					●	
	Magnolia Warbler												
	Cape May Warbler												
	Black-throated Blue Warbler												
	Yellow-rumped Warbler												
	Black-throated Green Warbler												
●	Cerulean Warbler						●					●	
	Blackburnian Warbler												
	Chestnut-sided Warbler												
	Bay-breated Warbler												
●	Blackpoll Warbler						●					●	
	Pine Warbler												
	Palm Warbler												
	Ovenbird												
●	Northern Waterthrush						●					●	
	Louisiana Waterthrush												
	Connecticut Warbler												
●	Mourning Warbler						●					●	
	Common Yellowthroat												
●	Wilson's Warbler						●					●	
	Canada Warbler												
●	American Redstart						●					●	
●	House Sparrow						●					●	
●	Bobolink						●					●	
	Eastern Meadowlark												
	Western Meadowlark												
	Yellow-headed Blackbird												
	Red-winged Blackbird												
	Orchard Oriole												
	Northern Oriole												
	Rusty Blackbird												
	Brewer's Blackbird												
●	Common Grackle						●					●	
●	Brown-headed Cowbird						●					●	
●	Scarlet Tanager						●					●	
●	Cardinal						●					●	
●	Rose-breasted Grosbeak						●					●	
	Blue Grosbeak												

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	SEASONAL OCCURRENCE: PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
●	Indigo Bunting						●						●
	Dickcissel												
	Evening Grosbeak												
	Purple Finch												
	Pine Grosbeak												
	Hoary Redpoll												
	Common Redpoll												
	Pine Siskin												
●	American Goldfinch						●						●
	Red Crossbill												
	White-winged Crossbill												
●	Rufous-sided Towhee						●						●
	Lark Bunting												
●	Savannah Sparrow						●						●
	Grasshopper Sparrow												
	Henslow's Sparrow												
	Le Conte's Sparrow												
	Sharp-tailed Sparrow												
●	Vesper Sparrow						●						●
	Lark Sparrow												
	Dark-eyed Junco												
●	Tree Sparrow						●						●
●	Chipping Sparrow						●						●
●	Clay-colored Sparrow						●						●
●	Field Sparrow						●						●
●	Harris' Sparrow						●						●
●	White-crowned Sparrow						●						●
●	White-throated Sparrow						●						●
●	Fox Sparrow						●						●
●	Lincoln's Sparrow						●						●
●	Swamp Sparrow						●						●
●	Song Sparrow						●						●
	Lapland Longspur												
	Smith's Longspur												
	Chestnut-collared Longspur												
	Snow Bunting												
●	Turkey						●						●

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	SEASONAL OCCURRENCE: PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
●	Opossum			●				●				●	
●	Eastern Mole						●	●					
	Star-nose Mole												
●	Cinerous Shrew						●	●					
●	Richardson Shrew			●				●					
	Water Shrew												
	Pygmy Shrew												
	Least Shrew												
●	Short-tailed Shrew			●				●					
●	Little Brown Bat		●					●					
●	Keen Myotis						●	●					
●	Big Brown Bat						●	●					
	Pipistrelle Bat												
	Silver-haired Bat												
●	Red Bat			●				●					
	Hoary Bat												
●	White-tailed Jackrabbit				●			●					
	Snowshoe Hare												
●	Eastern Cottontail Rabbit		●					●					
●	Woodchuck		●					●					
●	Richardson's Ground Squirrel				●			●				●	
●	Thirteen-lined Ground Squirrel						●	●				●	
●	Franklin Ground Squirrel							●				●	
	Least Chipmunk												
●	Eastern Chipmunk						●	●				●	
●	Red Squirrel			●				●					
●	Eastern Gray Squirrel		●					●					
●	Fox Squirrel		●					●					
●	Southern Flying Squirrel						●						
	Northern Flying Squirrel												
●	Northern Pocket Gopher		●					●					
	Plains Pocket Gopher												
	Pocket Mouse												
●	Beaver		●					●					
●	Western Harvest Mouse		●					●					
●	Northern Grasshopper Mouse				●			●					
●	Prairie Deer Mouse						●	●					
	Woodland Deer Mouse												
●	White-footed Mouse						●	●					
	Bog Lemming												
	Northern Bog Lemming												
●	Boreal Redback Vole						●	●					
●	Meadow Vole						●	●					
	Rock Vole												
●	Prairie Vole			●				●					
	Pine Vole												
●	Muskrat		●					●					
●	Norway Rat						●	●					
●	House Mouse						●	●					
●	Meadow Jumping Mouse						●	●					
	Woodland Jumping Mouse												

FOUND IN PARK	SPECIES	RELATIVE ABUNDANCE: ABUNDANT	COMMON	UNCOMMON	RARE	ENDANGERED	UNKNOWN	SEASONAL OCCURRENCE: PERMANENT RESIDENT	SUMMER RESIDENT	MIGRANT	WINTER VISITANT	SEASONALLY INACTIVE	UNCERTAIN
	Porcupine												
	Black Bear												
●	Raccoon		●					●			●		
	Fisher												
	Marten												
	Short-tailed Weasel												
●	Long-tailed Weasel						●	●					
●	Least Weasel						●	●					
●	Mink		●					●					
	River Otter												
●	Spotted Skunk			●				●					
●	Striped Skunk		●					●			●		
●	Badger			●				●			●		
●	Red Fox		●					●					
●	Gray Fox		●					●					
●	Coyote				●								●
	Timber Wolf												
	Canada Lynx												
	Bobcat												
●	White-tailed Deer	●						●					
	Moose												
●	Mule Deer				●								



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 of 1976 created an "energy crisis" overnight. This development and its implications have had a direct impact upon travel patterns.

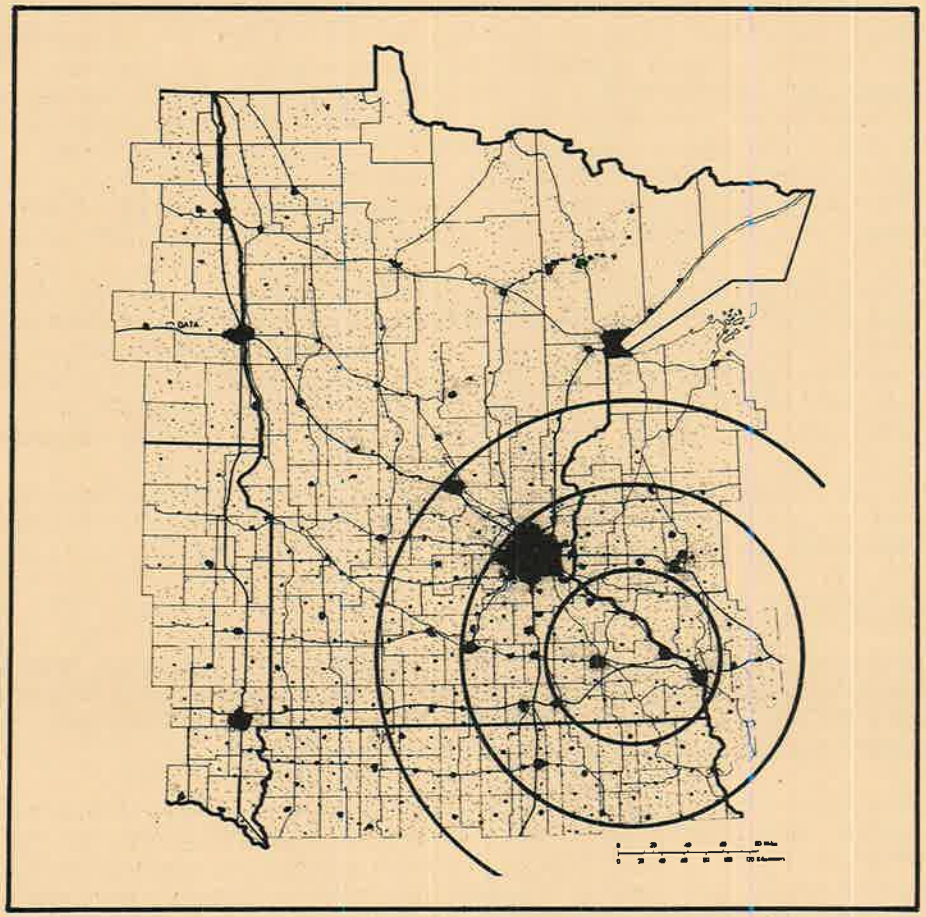
There are two basic aspects of recreational demand. The first involves measurement of the amount and kind of recreational opportunities/facilities currently demanded by the public (e.g., the size of the park or the number of campsites). The second aspect involves an estimate of latent demand for recreational 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.

Statewide Analysis

Minnesota's population in 1970 was 3,805,000. The Population Distribution Map (p. **65**) indicates distribution of residents throughout the state in that year. The heaviest population concentration is in the Twin Cities metropolitan area. Other important urban centers include Duluth-Superior, Fargo-Moorhead, Rochester, St. Cloud, and Austin-Albert Lea.

Minnesota covers approximately 84,000 square miles, of which nearly 4,000 miles is water. More than 12,000 lakes of 10 acres or more in size are scattered across the landscape, thousands of miles of rivers and streams wind through the state, and approximately 19 million acres of land are forested. These waters and forests, coupled with seasonal changes and abundant wildlife, form a unique resource base providing outstanding recreational opportunities.



Circles denote 50, 100, and 150 mile radii from park

Not all of Minnesota is appreciated the same way. For instance, one person might prefer a forest experience over a prairie experience or vice versa. One thing is clear: when a significant portion of the population identifies an area as a vacation destination, it is the result of a complex process of positive reinforcement between lodging facilities, natural resources, and other supporting businesses. It would appear that those areas offering the greatest diversity of opportunities receive the greatest use.

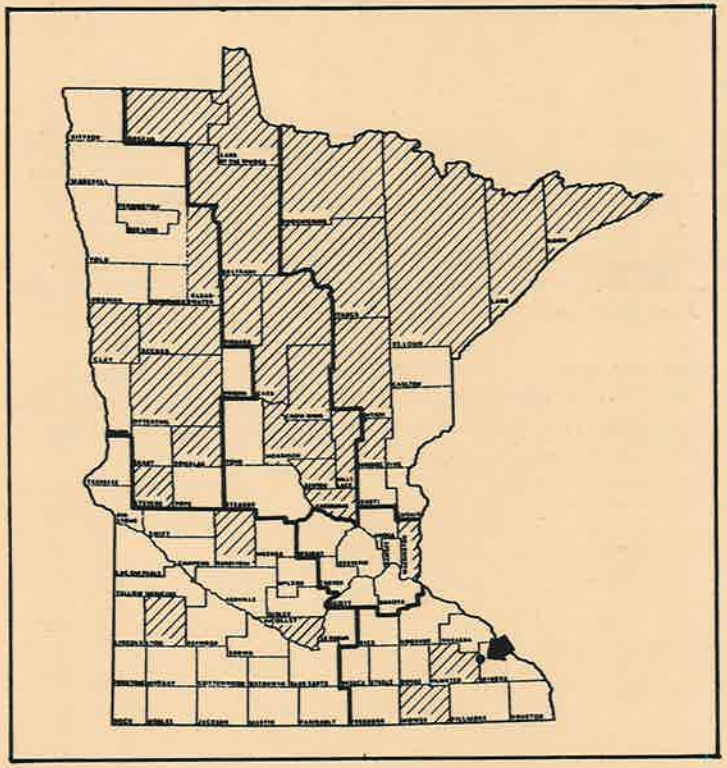
Regional and Park Considerations

Hiawathaland, the location of Whitewater State Park, consists of 12 counties in southeastern Minnesota. Although Hiawathaland as a whole is not a prime tourism region, both Mower and Olmsted counties were among the top 10 in the state for total tourist-travel expenditures in 1974.

A 60% attendance increase was registered in the first 9 months of 1976 over the first 9 months of 1975 for the 11 state parks in Hiawathaland. However, this figure may be misleading because much of the increase may be attributed to a flood-free year in Whitewater.

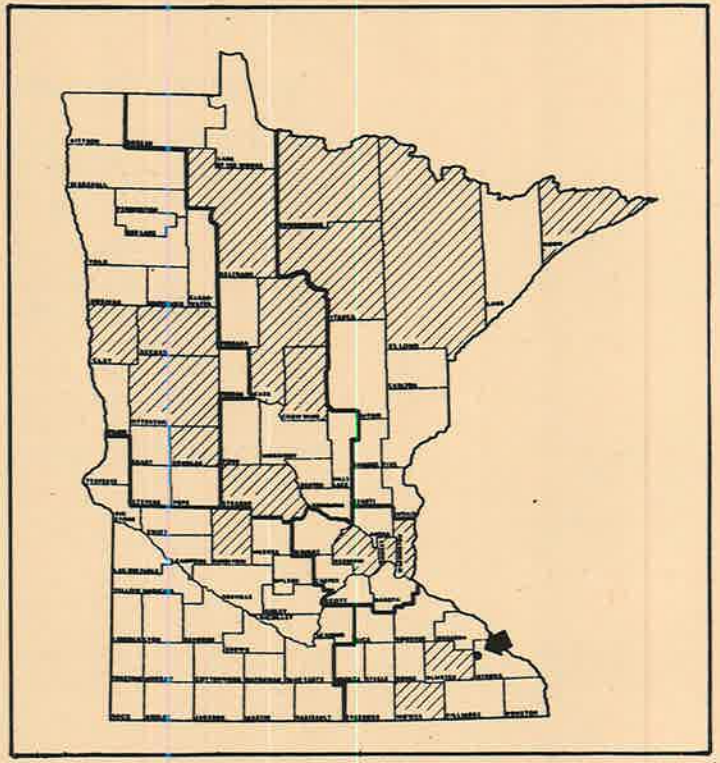
Whitewater State Park has been heavily used for years. There are several reasons why use will probably increase in the future. Because of the park is close to the Twin Cities, Rochester, Winona, and LaCrosse, it is accessible to millions of people. In the event of an energy crisis, park use will increase because it is so close to these metropolitan areas.

TOURISM - TRAVEL MAP #1



Minnesota Counties with Tourism - Travel Expenditures as Percent of County Gross Sales Above State Average

TOURISM - TRAVEL MAP #2



Minnesota Counties with Estimated Tourist-Travel Expenditures of $10,000 and Over in 1974

Regional Park Attendance Summary for January-September

State Park	1974	1975	1976
Beaver Creek	15,186	15,512	15,504
Carley	6,214	12,400	11,860
Forestville	38,530	41,902	46,764
Frontenac	60,121	46,980	62,036
Helmer Myre	92,080	107,411	104,847
John Latsch	3,488	2,768	2,593
Lake Louise	17,022	23,017	28,584
Nerstrand Woods	52,293	64,532	49,020
O. L. Kipp	---	---	3,837
Rice Lake	24,061	38,387	51,562
Sakatah	36,963	41,841	39,911
Whitewater	108,737*	103,642*	253,668
Percentage of Attendance Increase		5%	60%

*Flood curtailed some use.

Whitewater has a great attendance fluctuation which is probably not the result of changing attitudes on the part of park users, but rather whether or not the facility was flooded during that year. Because many of the campsites are in the floodplain of the Middle Fork Whitewater River, flooding litters the use area with debris from upstream. This debris disrupts use of these campsites. In a flood-free year, Whitewater is one of the most heavily used parks in the state park system. Care will have to be exercised to prevent use from exceeding the park's resource carrying capacity.

A variety of recreational opportunities are also available on public land in the three-county area near the park including Carley and O. L. Kipp state parks, John Latsch State Wayside, 8 small state wildlife management areas, Whitewater Wildlife Management Area, the federal Upper Mississippi River Wildlife and Fish and Refuge, and part of the Richard J. Dorer Memorial Hardwood Forest.

Parks, waysides, wildlife management areas, and forests all have different goals and objectives. Together, they provide a diversity of recreational opportunities. Parks provide facilities for intensive use such as camping, picnicking, and hiking. Wildlife management areas provide hunting, non-trail hiking, and skiing opportunities. Forests provide primitive camping, horseback riding, snowmobiling, and hiking. In order to maintain a variety of future recreational options, it is desirable to provide land connections between these state owned recreational areas.

The following descriptions of Whitewater Wildlife Management Area, Richard J. Dorer Memorial Hardwood Forest, and the Upper Mississippi River Wildlife and Fish Refuge, all located near the park, demonstrate both the diversity of the recreational opportunities in the area and the differences in public land management.

Whitewater Wildlife Management Area (WWMA)

Minnesota's wildlife management areas are administered by the Commissioner of Natural Resources to perpetuate and, if necessary, reestablish quality wildlife habitat for the maximum production of a variety of wildlife species. These areas are land and water habitats with high potential for wildlife production perpetuated for the purpose of producing wildlife for public hunting, trapping, fishing, and other compatible outdoor recreational uses. These uses will be continued as long as they are consistent with the natural resource limitations.

The WWMA presently includes 24,841 acres of state owned land. The area is comprised of parts of ten townships in northeast Olmsted, northwest Winona, and southeast Wabasha counties.

Habitat management began in the 1950's with food plot development, timber management, and marsh impoundment. Present management is directed toward the maintenance of productive habitats. Annual food plot plantings, timber sales, selective cutting favoring nut-bearing trees, browse production, and water level manipulations in the impounded marshes are the current techniques used to maintain diverse and productive wildlife habitats.

The area was originally established to protect and perpetuate the wildlife, the trout streams, and the outstanding scenic nature of the Whitewater River Valley, and to provide Minnesotans the opportunity to enjoy them. The area is intensively used for recreation, education, and research. (About 300,000 visitors came to the wildlife management area in 1966 and 500,000 came in 1976.) Since hunter's monies have paid for the acquisition, development, and operation of most of the WWMA, a primary concern of the unit will be to provide a high quality public hunting opportunity. Hunting will not endanger the perpetuation of any wildlife or plant species and will provide excellent outdoor recreational opportunities.

Richard J. Dorer Memorial Hardwood Forest

In 1961, the Minnesota legislature established the Richard J. Dorer Memorial Hardwood Forest as a memorial to the state's pioneers and veterans of all wars. The forest includes portions of Dakota, Dodge, Fillmore, Goodhue, Houston, Olmsted, and Winona counties. It is 125 miles long and 50 miles wide and includes 1,966,000 acres within the statutory boundary. Nearly 600,000 acres of this land are rated as non-agricultural, of which the state is authorized to purchase 200,000 acres. As of February, 1977, state ownership was 33,393 acres.

The goals of forest management are to foster timber production, wildlife management, and soil and water conservation. Plans include the development of facilities for camping, hiking, stream access, and picnicking. Facility development will be minimal, with the emphasis on keeping the area as natural as possible.

As a guide to acquisition, the lands within the forest boundary were divided into compartments conforming to the major watershed boundaries. The WWMA comprises most of the Whitewater purchase compartment. Approximately 1,605 acres of land adjacent to the management area are administered by the Division of Forestry. Eight miles of marked recreational trails are maintained in these adjacent lands.

- Upper Mississippi River Wildlife and Fish Refuge

This national refuge was created in 1924 by an Act of Congress. It stretches 284 miles along the Mississippi River. Of the 197,440 acres in the refuge, 32,667 acres are in Minnesota. Lands were acquired by the Fish and Wildlife Service and by transfer from the Corps of Engineers under a cooperative agreement.

The Upper Mississippi Wildlife and Fish Refuge is managed as part of the national wildlife refuge system with the specific objectives of protecting and perpetuating the wild lands and natural beauty of river bottoms. The refuge is dedicated to providing protection for endangered species of fish, wildlife, and plants. It also encourages the production of wood ducks and providing hunting and sport fishing. By maintaining habitats and their associated wildlife, an understanding and appreciation of these resources may be fostered through outdoor recreation coupled with various educational programs.

Selected Public Recreational Areas In Olmsted, Wabasha, and Winona Counties

Area	Name	Olmsted	Wabasha	Winona
State Parks (acres)	Carley		211	
	O. L. Kipp			2,835
	Whitewater			2,863
State Waysides (acres)	John Latsch			1,534
Wildlife Management Areas (acres)	Whitewater	2,924	3,775	32,481
	Keller	66		
	Rochester	550		
	Schuman	73		
	Suess	73		
	Mazeppa		3	
	I.W.L.		80	
	McCarthy		3,521	
	Zumbro		1,337	
State Forest (acres)	Richard J. Dorer Memorial Hardwood	269	5,255	6,025
Public Access Sites			3	8
Trails (miles)	Snowmobile	4	6	31
	Hiking	7	9	31
	Horseback	4	4	5
	Bicycle	7		
	Multiple Use	7	6	
Camping Areas	Tent	1		2
	Vehicle	5	5	6
	Total Campsites	173	194	354
Picnic Areas		24	12	12
	Total Tables	109	229	214
Water Activities	Swimming Beaches	1	3	1
	Marinas		6	3
	Marina Capacity (boats)		354	44

Assuming that the Stream-dissected Landscape Region of Minnesota will be managed as a total recreation package with many of the parks having similar potentials, park management should be coordinated to eliminate duplication and maximize the range of experiences available to the user.

Following the example of the U. S. Forest Service's 1974 Superior National Forest Plan, a Need Fulfillment Matrix has been developed for parks in the region. Although it is recognized that other facilities should be added to this system (e.g. Whitewater Wildlife Management Area, Richard J. Dorer Memorial Hardwood Forest, and DNR corridor trail system), the scope of this study does not permit it at this time. This matrix system is somewhat unrefined, but as a broad statement of park development direction, it does have utility.

Human needs may be divided into two distinct groups -- the physiological and the psychological. The physiological needs are those that must be satisfied in order for one to sustain life. This group includes the need for food, water, air, elimination, and protective shelter. These basic physiological needs are within the capability of most people to provide for themselves, or are provided for through appropriate community services, and therefore are not of specific concern here. However, the psychological needs of man are of major concern since they imply satisfaction through experiences, situations, features, spaces, facilities, objects, characteristics, and conditions that are within the realm and capability of the state park system to provide within a recreational context.

The following list gives the need definitions and the descriptions of the relative conditions necessary for the satisfaction of those needs to specified degrees.

Solitude: Solitude is the need to be apart from others, and implies intimacy with maximal audio and visual privacy for its satisfaction.

High	Human visual and auditory presence is absent.
Moderate	Human visual and auditory presence is discernible.
Low	Human visual and auditory presence is obvious.

Achievement: Achievement is the need to accomplish or master difficult tasks, to meet challenges and succeed in the face of adversity or obstacles, and to attain a high standard for oneself. It implies the presence of areas and situations where opportunities for unique accomplishment, long-term involvement, and competition with a standard of excellence exist.

High	The presence of opportunities for unique accomplishment with long-term involvement under adverse conditions, in competition with a standard of excellence.

Moderate — The presence of opportunities to master difficult tasks and meet challenges, with possible adversity and in competition with one's own standard of excellence.

Low — The presence of opportunities to master certain tasks and meet some challenges as a basis for establishing a standard of excellence for one's self.

Autonomy: Autonomy is the need to be independent and free; to be self-sufficient and able to act without restraint; to be unattached and able to determine one's own pattern or course. It implies the opportunity for, as well as the availability of, choices and experiences with as few restraints as necessary. Where restraints are needed, they should be explicit and reasonable.

High — The opportunity to be independent and able to determine one's own course without restraint or control.

Moderate — The opportunity to determine one's own course from a range of choices within a framework of subtle control.

Low — One's course is determined from a limited range of choices within a highly structured and controlled situation.

Aesthetic: The aesthetic need is the human desire for beauty in either its natural state or in man-created forms. It implies that areas, objects, or facilities that inspire, impress, intrigue, or invite contemplation seek to satisfy this need.

High — The satisfaction of the aesthetic need is to a high degree essential for all levels of recreational experience, since it is this aspect of one's visual and physical experiences that determines to a great extent the quality of opportunities for recreational experiences.

Security: Security is the need for a sense of well-being and a desire to be free from fear, anxiety, risk, and danger. It implies that there is a clear definition of patterns and routes; that the intended meaning and use of areas and spaces is well defined; and that sequences are discernible, allowing for choices and reassurance.

High — A structured and clearly defined situation where appropriate measures are taken to ensure public safety.

Moderate — Situations with predictable patterns of use where public safety is of concern.

Low — Unpredictable situations exist where man is responsible for his own well-being.

Orientation: Orientation is the need for a consistent and stable way of perceiving and comprehending one's surroundings. It implies the presence of distinctive features or landmarks that provide a sense of form and place and distinguishes it from other places or of a discernible understructure that provides a frame of reference and direction.

High	A consistently discernible format that is similar to one's normal personal environment.
Moderate	The presence of a discernible format with little similarity to one's normal personal environment.
Low	The absence of a discernible format, without similarity to one's normal personal environment.

Affiliation: Affiliation is the need to belong, to associate with others, and to win approval and affection. It implies the convenience of gathering places where conversation is possible and where one can observe what is happening without having to participate.

High	Accommodations for groups of people in an organized and structured setting.
Moderate	Unstructured accommodations for the gathering of people within an area.
Low	No accommodations for the gathering of people within an area.

The Regional Need Fulfillment Matrix shows what needs the parks within the stream-dissected area are presently fulfilling and what needs they may fulfill in the future. At present, Whitewater is rated low in solitude, medium in achievement, and high in affiliation. Future management will strive to retain this profile. However, it will be complemented by primitive, challenging experiences in both John Latsch State Wayside and Whitewater Wildlife Management Area (high in solitude, achievement, and autonomy) and a more safe and secure environment in Carley State Park (high in security and orientation). John Latsch and Carley are nearly connected to Whitewater State Park through the Whitewater Wildlife Management Area. People are free to hike or ski through the wildlife management area, but no improved or designated trails will be provided.

The Regional Activities Summary (p. 77) describes the present potential and future development tentatively planned for the park. As can be seen, Whitewater State Park is the only unit which provides swimming. It is also in a good position to serve as a jumping off point for hikers, bikers, auto tourists, and cross-country skiers to the Whitewater Wildlife Management Area, Carley State Park, and John Latsch State Wayside. As for use by the handicapped, the extreme terrain limits use to the valley floor, which at present is heavily developed. Renaturalization of portions of the valley floor will provide natural areas accessible by everyone from the high-use areas.

Need Fulfillment Matrix

Needs Fulfilled	O.L. Kipp	John Latsch	White-water	Forest-ville	Carley	Frontenac	Beaver Creek
Solitude							
Present Development	High	High	Low	Moderate	Low	Low	Moderate
Future Direction	Moderate	High	Low	Moderate	Moderate	Low	Moderate
Achievement							
Present Development	High	High	Moderate	Moderate	Low	Moderate	Moderate
Future Direction	Moderate	High	High	High	Low	High	Moderate
Autonomy							
Present Development	High	High	Low	Moderate	Low	Low	Moderate
Future Direction	Moderate	High	Low	High	Moderate	Moderate	Moderate
Aesthetics							
Present Development	High	High	High	High	Moderate	Moderate	High
Future Direction	High	High	High	High	Moderate	High	High
Security							
Present Development	Low	Low	Moderate	High	High	Moderate	High
Future Direction	Moderate	Low	Moderate	Moderate	High	Moderate	Moderate
Orientation							
Present Development	Low	Low	Moderate	Moderate	High	Moderate	High
Future Direction	Moderate	Low	Moderate	Moderate	High	Moderate	Moderate
Affiliation							
Present Development	Moderate	Moderate	High	Moderate	Moderate	Moderate	Moderate
Future Direction	High	Moderate	High	Moderate	Moderate	High	Moderate

Regional Activities Summary

Key: L - Low Present Potential M - Medium Present Potential H - High Present Potential X - Tentative Development Projected	Camping					Water				Trails					Miscellaneous			
	River	Backpack	Rustic	Semi-Modern	Group	Swimming	Fishing	Boating	Canoeing	Hiking	Equestrain	Bicycle	Snowmobile	Cross-Country	Auto-Sight Seeing	Handicap Access	Picnicking	Interpretive Center
O. L. Kipp																		
Present Potential	L	H	H	M	M	L	L	L	L	H	L	L	M	M	L	M	L	H
Future Development Direction			X	X	X					X			X	X		X	X	X
John Latsch																		
Present Potential	M	H	M	L	L	L	M	M	L	H	M	L	M	M	L	L	H	L
Future Development Direction	X	X					X	X		X				X			X	
Whitewater																		
Present Potential	L	M	M	H	H	M	H	L	L	H	L	M	M	M	L	M	H	H
Future Development Direction		X		X	X	X	X			X		X		X		X	X	X
Forestville																		
Present Potential	L	M	H	H	M	L	H	L	L	H	H	M	H	H	L	H	L	M
Future Development Direction				X	X		X			X	X		X	X		X	X	X
Carley																		
Present Potential	L	L	H	L	L	L	H	L	L	M	L	M	L	L	L	M	L	L
Future Development Direction			X				X			X		X				X		
Frontenac																		
Present Potential	M	L	M	H	H	M	M	M	L	H	H	H	H	M	L	M	H	H
Future Development Direction				X	X		X			X	X	X	X	X			X	
Beaver Creek																		
Present Potential	L	L	H	M	L	L	M	L	L	M	L	L	L	L	L	M	M	L
Future Development Direction			X				X			X						X	X	

DEVELOPMENT

Existing Development

The table on p. **81** inventories the buildings in the park. Most of Whitewater's buildings are in fair to good condition.

South Campground - was developed on the site formerly occupied by an old CCC camp. It has parking space for 49 vehicles. The area is quite open and there are few trees except along the river bank, making the sites uncomfortably hot in mid summer. In spite of this fact, it is often filled to capacity.

The Gooseberry Glen Campground - was the first campground to be developed in the park expressly for the use of tourists. There are 39 spurs in the campground. They are very popular because they are located in a heavily wooded area next to the Middle Fork Whitewater River.

A sanitation building near the center of the campground has toilets and showers. Sewage disposal is through an Imhoff tank just west of the building. The effluent is disposed by soil absorption in a seepage pit and tile field.

The Cedar Hill Campground - is the latest campground to be developed (1967). It is located to the north of most development and has 39 camping spurs. Sanitary needs are provided by a modern building with toilets and showers. Sewage is disposed through a septic tank and tile drain field adjacent to the toilet building.

Structured Group Camp - has a 132 person capacity, 6 non-winterized barracks, 4 winterized barracks, and a winterized dinner hall/meeting room with kitchen facilities.

Primitive Group Campground - has a 75 person capacity, pit toilets, and a hand water pump.

Temporary Interpretive Center - has capacity of approximately 30 people and is equipped with flush toilets and water. Part of this building is also used as the assistant manager's residence.

The sewage system in the park needs repair. The drain fields in the interpretive area and near the manager's residence are not functioning at an acceptable level. In addition, the Imhoff septic tank located in the floodplain could potentially contaminate groundwater sources. It is conceivable that the entire system must be rebuilt.

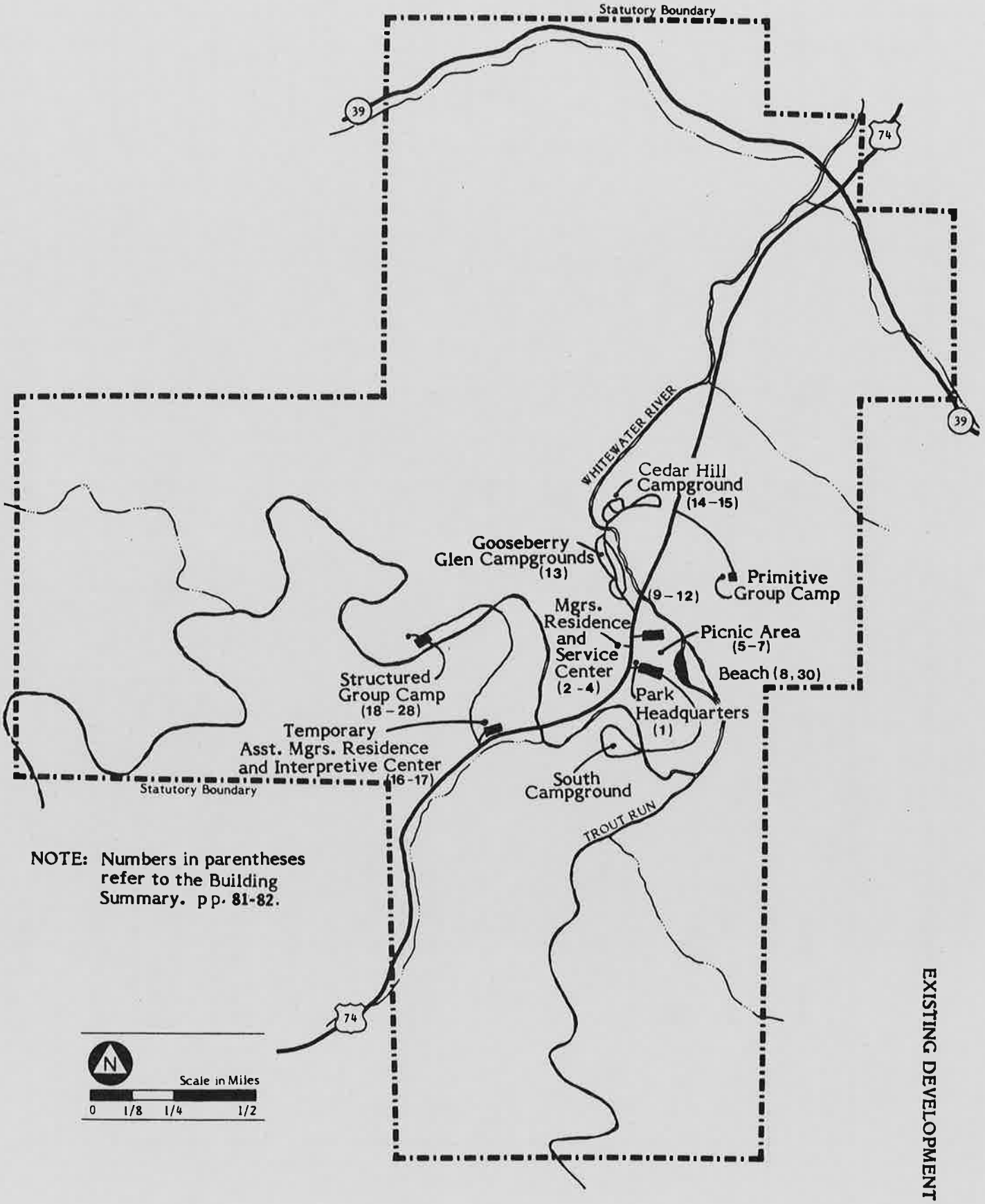
Other existing facilities include:

Park Headquarters - includes a contact station, manager's residence, and service center.

Picnic Area - a shelter, sanitation building (flush toilet), refectory, and 105 tables are provided.

Swimming Pool - pool with bath house is provided.

Trails - 15 miles of hiking trails and 6 miles of cross-country ski trails.



NOTE: Numbers in parentheses refer to the Building Summary. pp. 81-82.

EXISTING DEVELOPMENT

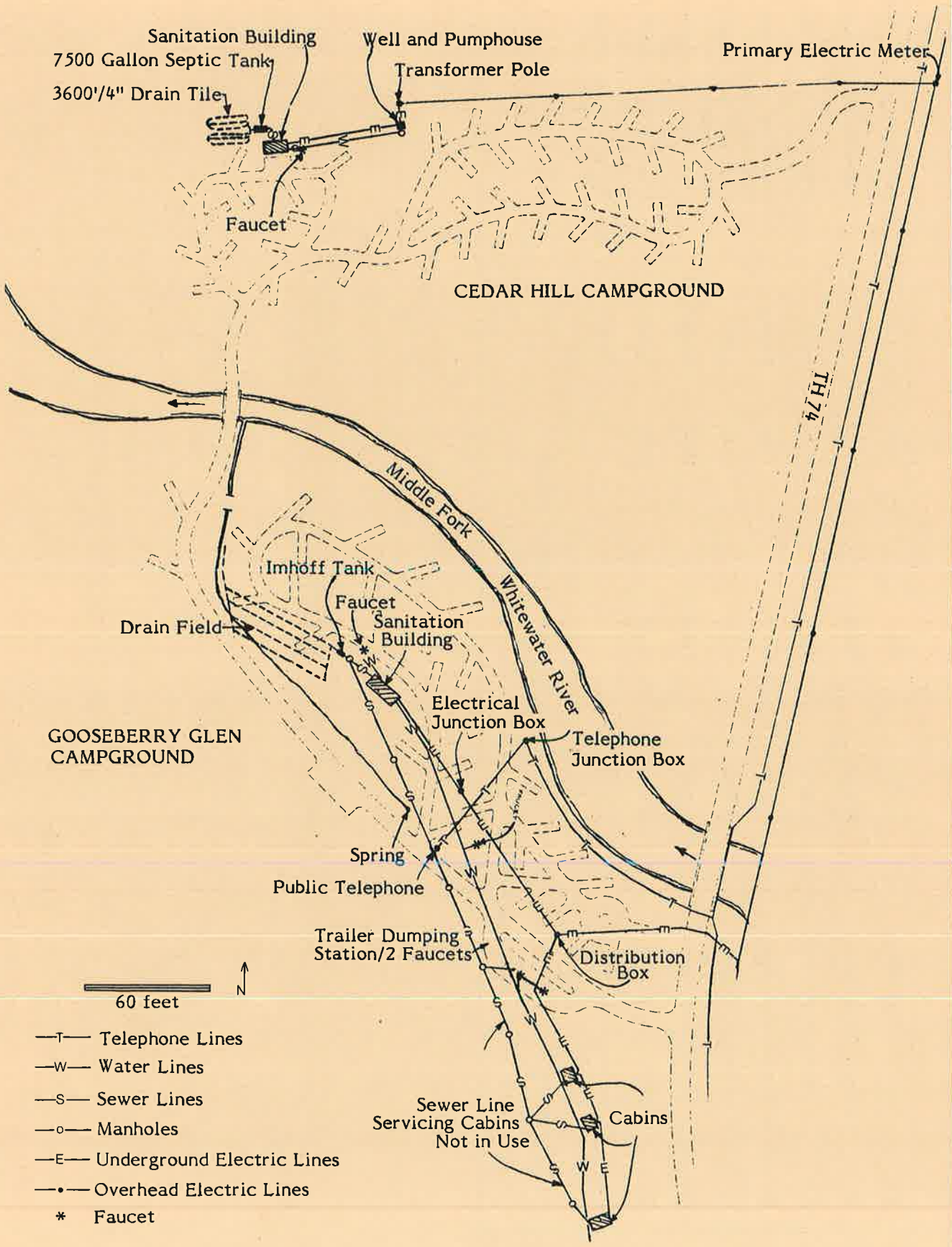
Summary of Buildings

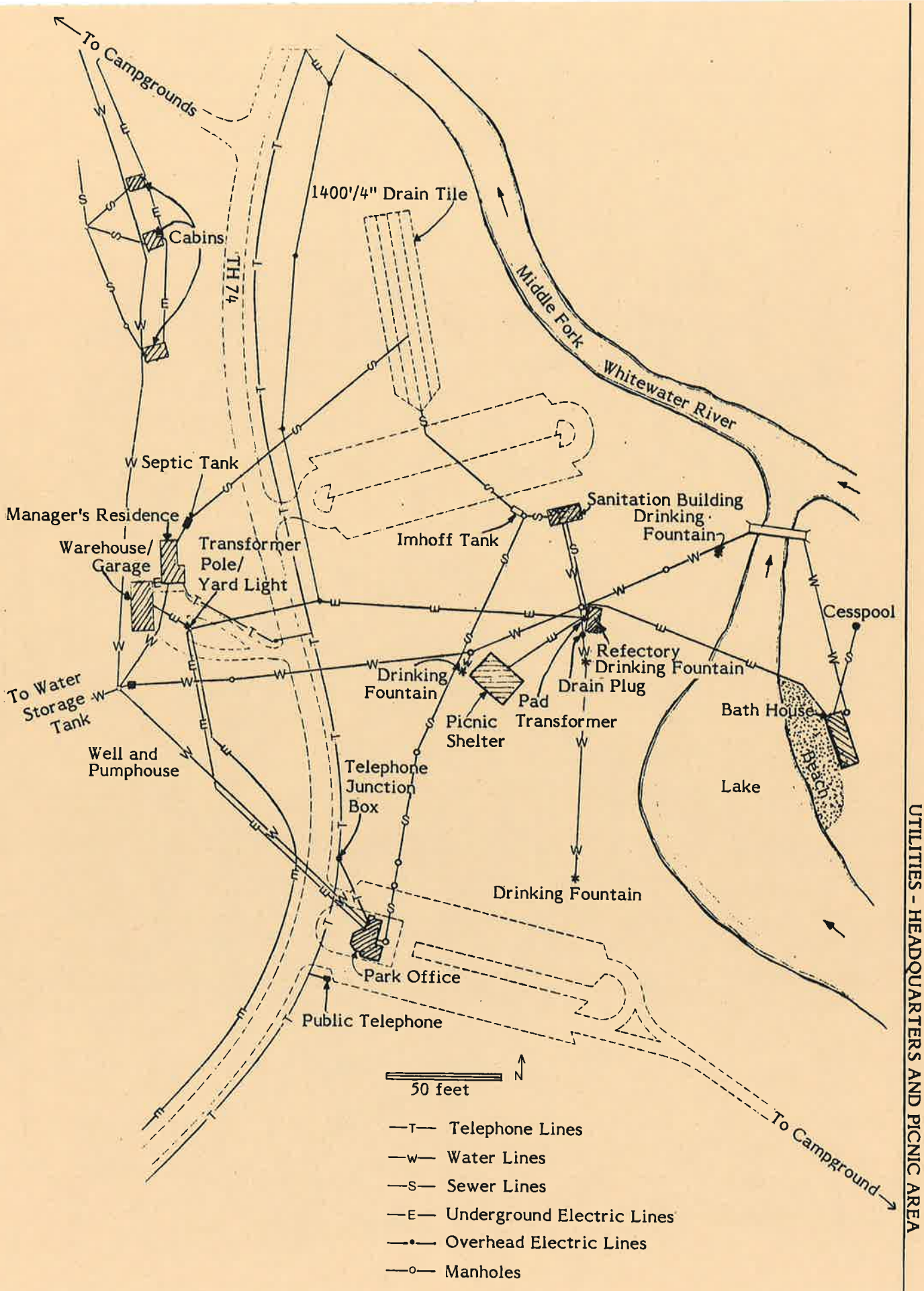
Map Key	Building Description	Outside Dimensions	Construction	Date Built	Condition of Building*	Proposed Disposition
1	Contact station	24'x48'	Wood	1962	Good	Retain and maintain until TH 74 is closed.
2	Shop and garage	29'x66'	Stone and wood	1936	Good	Retain to supplement new service center facilities
3	Pump house	12'x14'	Stone	1936	Good	Retain and maintain.
4	Residence	31'x51'	Stone	1936	Fair	Remodel as interpretive center.
5	Picnic area sanitation building	29'x18'	Block	1936	Fair	Retain and maintain.
6	Refectory	16'x44'	Stone	1936	Good	Retain and maintain.
7	Shelter		Stone and wood	1936	Good	Retain and maintain.
8	Beach house	23'x85'	Stone and wood	1936	Good	Remodel to include modern sanitation facilities.
9	Cabin	17'x21'	Stone and wood	1936	Poor**	Remove.
10	Cabin	17'x21'	Stone and wood	1936	Poor**	Remove.
11	Cabin	17'x21'	Stone and wood	1936	Poor**	Remove.
12	Cabin	17'x21'	Stone and wood	1936	Poor**	Remove.
13	Gooseberry Glen sanitation building	28'x59'	Stone and wood	1936	Fair	Retain and maintain until this campground is phased out.
14	Cedar Hill sanitation building.	25'x25'	Block	1964	Good	Retain and maintain.
15	Pump house	11'x11'	Block	1967	Good	Retain and maintain.
16	Garage	27'x37'	Stone and wood	1936	Good	Remodel as a trail shelter.
17	Ass't. mgrs. res. and interpretive center	28'x53'	Wood	1936	Poor	Retain and maintain as a temporary assistant manager's residence.
18	Wood shed	14'x33'	Wood	1960	Fair	Move to new service area.
19	Group camp dining hall	24'x90' 24'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
20	Group camp sanitation building	36'x40'	Wood	1956	Fair	Dependent on proposed flood hazard study.
21	Group camp staff building	20'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
22	Group camp pump house	10'x11'	Wood	1956	Good	Dependent on proposed flood hazard study.

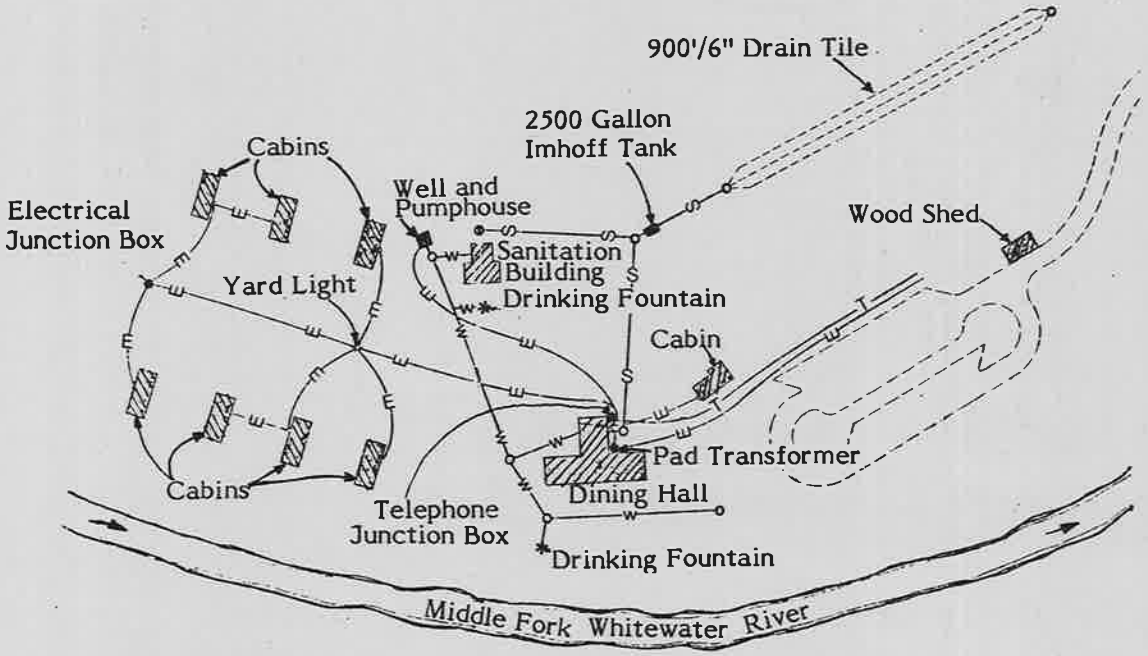
23	Group camp cabin	20'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
24	Group camp cabin	20'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
25	Group camp cabin	20'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
26	Group camp cabin	20'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
27	Group camp cabin	20'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
28	Group camp cabin	20'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
29	Group camp cabin	20'x36'	Wood	1956	Good	Dependent on proposed flood hazard study.
30	Beach vault toilets				Poor	Remove as per sewage system study.

* As rated by Orville Stensgard, Building Maintenance Supervisor, DNR as of 1/75.

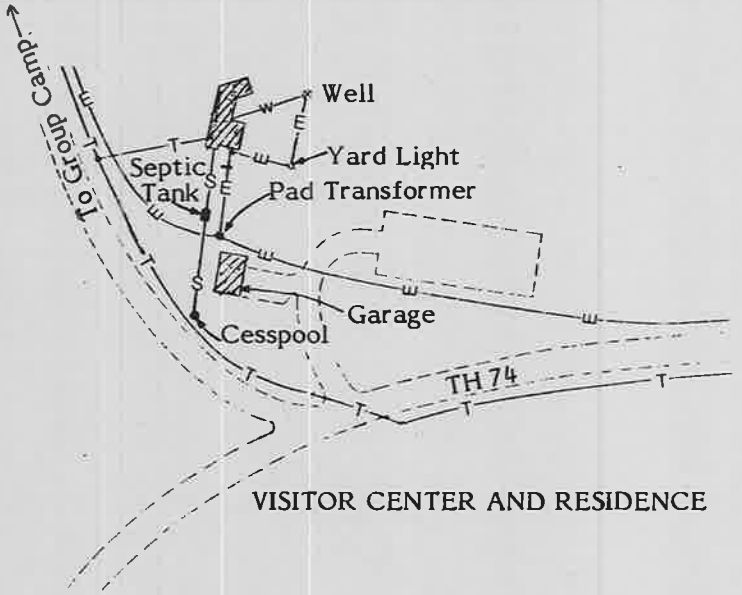
** As rated by Harold Becker, Park Manager, 8/76.


Sanitation Building
7500 Gallon Septic Tank
3600'/4" Drain Tile
Well and Pumphouse
Transformer Pole
Primary Electric Meter
Faucet
CEDAR HILL CAMPGROUND
TH 74
Middle Fork
Whitewater River
Imhoff Tank
Faucet
Sanitation Building
Drain Field
Electrical Junction Box
Telephone Junction Box
GOOSEBERRY GLEN CAMPGROUND
Spring
Public Telephone
Trailer Dumping Station/2 Faucets
Distribution Box
60 feet
N
—T— Telephone Lines
—W— Water Lines
—S— Sewer Lines
—o— Manholes
—E— Underground Electric Lines
—•— Overhead Electric Lines
* Faucet
Sewer Line Servicing Cabins Not in Use
Cabins


To Campgrounds
1400'/4" Drain Tile
Cabins
TH 74
Middle Fork Whitewater River
Septic Tank
Manager's Residence
Warehouse/ Garage
Transformer Pole/ Yard Light
Imhoff Tank
Sanitation Building Drinking Fountain
Cesspool
Refectory Drinking Fountain
Drain Plug
Drinking Fountain
Pad Transformer
Picnic Shelter
To Water Storage Tank
Well and Pumphouse
Telephone Junction Box
Bath House
Beach
Lake
Drinking Fountain
Park Office
Public Telephone
50 feet
N
To Campground
—T— Telephone Lines
—W— Water Lines
—S— Sewer Lines
—E— Underground Electric Lines
—•— Overhead Electric Lines
—o— Manholes



GROUP CAMP



VISITOR CENTER AND RESIDENCE

50 feet

N

—T— Telephone Lines
—W— Water Lines
—S— Sewer Lines
—O— Manholes
—E— Underground Electric Lines

Proposed Development

Proposed new development and changes in existing development in Whitewater State Park, as detailed in the following discussions, are based on these general objectives.

To coordinate park development with private and other public facilities and resources in the vicinity

To limit park development to that which is necessary for efficient management, and for the public to experience, study, and enjoy the natural resources

To locate park development where it will have the least impact on sensitive natural or historic resources, will not detract from the enjoyment of other users, and will allow easy access to areas of high scenic or study value

To make major facilities in the park accessible to special populations, such as people with physical disabilities, the elderly, and the very young

- Campgrounds

Objectives:

To provide an opportunity for park visitors to experience the natural environment on a 24-hour-a-day basis

To provide a variety of campground types, while maintaining consistency with the natural state park classification

To remove campsites from flood hazard areas

Action:

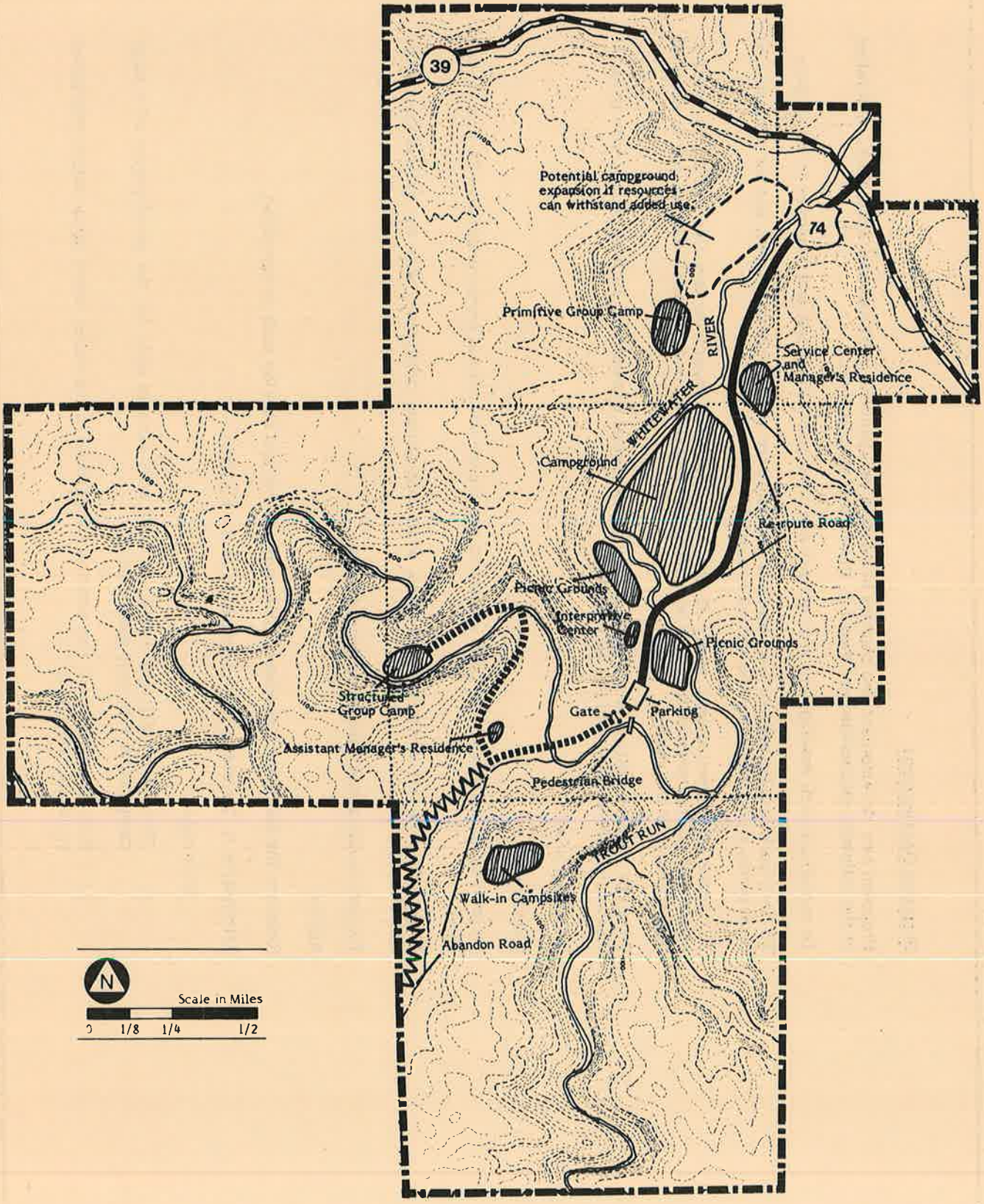
Relocate the South and Gooseberry Glen campgrounds and develop walk-in campsites.

Alternative 1: Develop a new campground on the blufftop.

Advantages

1. There is a sufficient amount of land with suitable soils for the development of a large campground with well-spaced sites.

2. Removal of some of the existing campground in the valley would allow native vegetation to regenerate there.



PROPOSED DEVELOPMENT

Disadvantages

1. The blufftop is agricultural land, which, if not used for campgrounds, could be deleted from the statutory boundary.

2. The campground would be located in a totally different environment -- an open blufftop rather than an enclosed valley. The cool, protected, forested valley environment, is generally desired by the typical park visitor.

3. Unauthorized hiking trails on the steep valley slopes are causing severe erosion problems. If the campground was located on the top of the bluff, all campground users would need to go up and down the slope to the creeks, the beach, and the interpretive programs. Such division of facilities would not only be inconvenient for campers, but would increase erosion problems.

4. There is no suitable road alignment for constructing an interior park road from the valley to the blufftop. Therefore, it would be necessary to provide another park entrance and contact station. This action would increase the annual operating budget.

Because of the disadvantages, this alternative was dropped.

Alternative 2: Develop a new campground directly north of the existing Cedar Hill Campground. (See map, p. 87 .)

Advantages

1. There is sufficient land with good soils which can provide approximately the same number of campsites as provided by the South and Gooseberry Glen campgrounds. If TH 74 is realigned, even more campsites can be provided.

2. By changing the location of the campground, the existing Gooseberry Glen Campground may be converted to a picnic ground, and the existing South Campground can be revegetated with native groundcover and returned to its natural state. This development will also help disperse the existing cluster of use areas.

3. Vehicular access to this site can be fairly well controlled from the existing contact station, if the interior park road system is revised as proposed.

Disadvantages

1. Final completion of the campground is contingent upon realigning TH 74.

2. Development is not as dispersed as it would be if the blufftop campground was developed.

Discussion:

At present there are 3 vehicular campgrounds in the park: South Campground, Gooseberry Glen Campground, and Cedar Hill Campground. Both the South Campground and the Gooseberry Glen Campground are in the floodplain. Because of flash floods, camping in these 2 campgrounds could be, and occasionally has been, hazardous. Therefore, camping in these 2 areas should be phased out. The Cedar Hill Campground is above the floodplain and should remain.

New campground development will be concentrated north and east of the Cedar Hill Campground. This campground reorganization will provide a good dispersal of sites on suitable soils without the danger of flooding. Much of this area is currently agricultural land and a major tree planting program will be implemented immediately (see Vegetation Management Section, p. **51**) to establish shade trees, making the campsites more desirable.

This campground development plan will not substantially increase the number of campsites provided. However, as acquisition progresses, another tract of land directly north on the west side of the river has good potential for campground development. Whether or not this expansion of camping facilities is desirable is yet to be determined. The present park development area and trails are being eroded by overuse. After the proposed reorganization has taken place (users dispersed and trails redeveloped and realigned), the park's capacity should be reassessed and the camping facilities modified in accordance with the findings.

Walk-in campsites will also be provided on the blufftop, south of the existing South Campground. Walk-in campers will park in the lot near the contact station and hike up to the blufftop campsites.

• Picnic Grounds

Objectives:

To provide a scenic, shaded environment where park visitors can prepare and enjoy meals in relative privacy

To provide modern sanitation facilities

To expand the number of picnic sites in the park

Action:

Increase screening between sites in the picnic area and convert Gooseberry Glen Campground into a picnic area.

Discussion:

The picnic area has 105 tables and is largely located in the floodplain. The Soil Suitability Map, p. 37 shows that the soils in this vicinity are not suitable for picnic area development because of potential flooding and poor drainage. It is not an ideal location for picnicking, but because of the small amount of developable land in the park, use of this area is necessary. Picnic facilities are more suitable on a floodplain than camping facilities. There are sufficient day-time personnel to warn picnickers of an impending danger. Therefore, the existing picnic area will be retained. Scattered areas of vegetation will be allowed to grow (see Vegetation Management Section, p. 51). These areas of natural vegetation will serve as visual screens, breaking this large canopied area into smaller spaces, providing color and textural variety.

The refectory will be remodeled into a small semi-enclosed picnic shelter with an attached cooking shelter.

Once the existing Gooseberry Glen Campground is phased out, the area will be utilized as a picnic ground expansion area with 50-60 tables. The existing toilet building will be retained and a parking lot will be developed. Also, a pedestrian path will connect the 2 picnic areas under the TH 74 bridge over the Middle Fork Whitewater River.

- Swimming Beach

Objectives:

To provide a safe, enjoyable swimming facility

Action:

Remodel and/or expand the bath house, providing modern sanitation facilities with showers, changing rooms, and an area for beverage and food vending machines.

Discussion:

The swimming beach is a focal point of activity in the park on warm summer days. Since a swimming pool was built in the nearby town of St. Charles, use of the swimming beach has decreased to a level within its capacity. It should continue to be used within acceptable levels despite the proposed day-use expansion.

A 1977 Department of Health report on Whitewater State Park showed that bathing in streams subject to animal and human pollution increases the possible danger of human and animal-borne viral and bacterial infections. Since the stream water quality in this area is subject to rapid changes, the Department of Health recommends that consideration be given to the installation of shower facilities and a water carriage sewage disposal system. The Bureau of Engineering (BOE) will prepare a detailed sewage disposal study for the park. The existing sanitation building should be incorporated into the bath house structure and, if consistent with the sewage disposal study, connected into a central sewage disposal system.

- Structured Group Camp

Objectives:

To provide facilities where groups inexperienced in camping, particularly children, can experience, study and enjoy the natural environment on a 24-hour-a-day basis throughout the year

To provide a facility where users will not be in danger during floods

Action:

Request a detailed flood hazard assessment and abide by its findings.

Discussion:

The structured group camp is located adjacent to the Middle Fork Whitewater River north and west of Eagle Point, upstream from Gooseberry Glen and Cedar Hill campgrounds. This facility is used by organized groups such as school environmental education classes, church groups, YMCA's, and 4-H clubs who wish to learn about nature and yet have such conveniences as cabins, modern sanitation facilities, electricity, and a modern kitchen. There are 7 cabins accommodating a total of 132 persons. A combination kitchen and dining hall also serves as a classroom. It has sinks and facilities for food preparation and serving. This building and four of the cabins have been winterized. Sanitation facilities for the camp are provided by a central building which has toilets and showers. Sewage disposal is by a septic tank and drain tile field.

This area has been inundated by two recent floods on June 20, 1974, and July 5, 1975. Although the floods did no structural damage to the building, the parking lot was eroded and the heavy concrete car stops were moved to one end of the lot. The campers made their way to the bluff on one occasion and were trapped in the dining hall on the other. Both of these floods were flash floods with little or no warning.

An early warning system has been implemented that will alert the park manager if the level in the upper reaches of the river begins to rise. This should help alleviate some of the hazard, but it will still be necessary to do a detailed contour survey and a flood hazard assessment. These studies will be used to determine a method that will make the group camp safe. If it is not possible to use this general vicinity safely, this facility should be eliminated or used only during the flood free months, (from August through March).

- Primitive Group Camp

Objectives:

To provide facilities where groups, especially children, can experience, study and enjoy the natural environment on a 24-hour-a-day basis

Action:

With the campground expansion, this facility will be relocated.

Discussion:

The primitive group camp will remain in its present location unless TH 74 through the park is closed. If the land is purchased by the state, the existing primitive group camp site would be included in the vehicular campground and the primitive group camp would be developed on the west side of the Middle Fork Whitewater River. This site will be accessed by a low-water crossing, with a flood exit provided by an existing driveway. A gate across this driveway will be kept locked unless this emergency exit is needed.

This relocated group camp will have 75-person capacity, a 50-car parking lot, drinking water, tent pads, fire rings, picnic tables, and pit toilets.

- Contact Station

Objectives:

To provide facility information to visitors, rent campsites, collect fees, and monitor use

To provide an operational office for the park manager

Action:

Maintain the existing contact station.

Discussion:

The park road system will be rerouted so that all campers and picnickers will pass the contact station (see Highways, p. **102**). This action will improve visitor control and protection. An outside ticket window may be desired when this road system change is implemented.

- Interpretive Center

Objectives:

To provide a facility for conducting interpretive programs, dispensing orientation information, and providing interpretive staff office space

To provide a winter warming house/trail center which is easily accessible to most park users

Action:

Remodel the existing manager's residence and shop into an interpretive center (alternative 4 below) upon completion of the new manager's residence.

Discussion:

At present, a portion of the Gooseberry Glen Campground sanitation building is being used as a temporary interpretive center. This facility is small, not easily accessible to picnickers or group camp users, provides poor access to the interpretive area, and has no parking facilities.

Alternatives:

Alternative 1: Remodel and use the existing contact station if TH 74 is closed.

The existing contact station is in a good location, convenient to park users and near interpretive areas and trails. But this structure would not be available for use unless TH 74 is closed, necessitating the use of substandard, temporary structures.

Alternative 2: Remodel, expand, and use the assistant manager's garage.

The garage is too small for an interpretive center and would therefore need major expansion and remodeling. The location has good access to the interpretive areas, trails, and the group camp, but it is not easily accessible from the picnic areas or campgrounds.

Alternative 3: Construct a new building.

A new building could be constructed, but each potential site identified would be easily accessible from only one major use area because of the desirability of dispersing new buildings away from the existing over-developed core. Removing existing buildings and constructing a new one in the highly developed portion of the park is not desirable because the existing buildings are constructed of stone and heavy timber which is very expensive to duplicate. Therefore, remodeling one of the existing structures is preferred.

Alternative 4: Remodel and use the existing manager's residence.

The existing manager's residence, with its nearby shop and garage, is large enough for the interpretive center. The buildings are structurally sound and their stone facings are visually appropriate for an interpretive center. The location is easily accessible from the campground and picnic ground and is not too far from the group camp. There is also good access to the interpretive area and the trails. Sufficient space is available nearby to construct a parking lot.

If funding is not available for remodeling when the new manager's residence is completed, the building can be used with some minimal improvements during the interim until funding is secured. A request for a BOE study on remodeling costs should be made prior to a funding request.

Alternative 5: Remodel, expand, and use the picnic area refectory.

An interpretive center on this site would draw even more people into the picnic area, which is very heavily used at present. Minimal space for parking lot expansion is available in the immediate vicinity. The existing structure is very small and major expansion and remodeling would be necessary.

- Service Center and Manager's Residence

Objectives:

To provide efficient storage and work space, not visible to park users, for the operations and maintenance of the park

To control the park entrance from the park office

To provide easy access to the service center from the manager's residence

To ensure easy access to the manager's residency by access to park users for emergencies, yet maintain privacy for the manager's family

To provide a location in the park where park personnel or their families would be available to warn park users if the flood warning alarm should sound

Action:

Construct a new manager's residence and service center.

Discussion:

The existing manager's residence and service center are located directly across TH 74 from the picnic ground. This location provides good visual observation of the high-use areas, but the existing facilities are small, there is little room for expansion, and the site offers little privacy to the manager's family.

The proposed location for the service center and manager's residence is directly north of the proposed campground on the east side of the road. This area has sufficient space to allow the construction of a three-bedroom residence and two 30 x 50 ft. service buildings wired for electricity. One of these will be a heated equipment maintenance building and the other will be an unheated storage building. A small oil and gas storage building, a parking lot, a loading ramp, and a storage area screened from public view will also be developed.

- Assistant Manager's Residence

Objective:

To provide a residence for the assistant manager which will provide the necessary security for the public and park facilities in the south end of the park

Action:

Retain the existing residence for the next few years until a new residence can be constructed.

Discussion:

TH 74 passing through the park provides multiple accesses which requires continual patrolling. TH 74 is susceptible to flash flooding which creates extreme hazards to park visitors. A flash flood could wash out the road, dividing the park in half. These two major problems plus normal maintenance and 24-hour public service require constant on-site supervision by the manager and assistant. The best method of meeting these responsibilities is to provide residences at each end of the park.

• Sewage Disposal

At present there is no single sewage disposal facility in the park. As various areas of the park have been developed, sanitary facilities such as: pit toilets, septic tanks, Imhoff tanks, and drain tile fields were provided for each area (see Utilities Map, pp. **83 - 85**). As use increased, some of these facilities have become inadequate and have required extensive maintenance.

The private consulting agency of Agnebery, Sankstone, and Associates Inc., in a 1968 report on the sewage disposal system in Whitewater, recommended construction of a single, two-stage pond system east of TH 74 and north of the existing primitive group camp. It was proposed to be large enough to treat sewage from all the major use areas in the park. Treated effluent could be drained into the Middle Fork Whitewater River during high water spring runoffs when the volume of water in the river is great enough to dilute the effluent to safe levels for aquatic life.

The Pollution Control Agency has failed to issue permits on a number of proposed sewage lagoons throughout the state, citing potential environmental damage as the reason of rejection. Until the DNR can prove that this disposal system is harmless to the environment approval will be withheld.

Objective:

To provide an economical, efficient, and ecologically sound sewage disposal system

Action:

Request a detailed sewage disposal study and proposal by the BOE.

Discussion:

The BOE study will consider the existing disposal systems, the recommendation on record, the existing Pollution Control Agency standards, the park's resources (i.e. soils, underground and surface hydrology), and the proposed development. Funds are available for implementation in the 1978-79 biennium, if an approved solution can be developed.

An improved sewage disposal system is imperative for this park. Since there is a very limited selection of suitable sites, the site or sites necessary for an economical, efficient, and ecologically sound sewage disposal system will be given higher priority than other recreational developments. A sewage disposal system which allows recreational development in close proximity, such as a soil absorption type, would be preferred.

• Trails

Objectives:

To provide handicapped accessible trails between the high-use areas and an interpretive trail system

To provide trails that will allow for the enjoyment and interpretation of a variety of natural elements in the park

To align and construct trails that will not erode or require frequent maintenance

Action:

Rehabilitate and realign the existing trail system and develop some new trails.

Discussion:

The park's trail system includes: hiking, cross-country skiing, and snowmobiling trails. These uses often conflict, therefore a trail plan has been developed which separates incompatible trail uses.

Whitewater is a park of extremes. From the floodplain of the campgrounds and picnic ground, the topography rises several hundred feet. Trails were arbitrarily developed as people climbed up or slid down the bluffs. Because of the combination of the fragile soil types and topography, these trails have deteriorated to a point where complete rehabilitation or realignment is needed.

Chimney Rock Trail - This trail exemplifies the extent of the deterioration of the trails in Whitewater. It rises along the face of a steep hillside to Chimney Rock. The entire length of the trail (approximately 1/4 mi.) needs repair. It is only a narrow path along most of the rise, and at the point where it switches back toward Chimney Rock, the grade is extremely steep and badly eroded.

Area 1 on the Trail Map (p. **99**) should be rehabilitated by widening the trail slightly, building retaining walls uphill from the trail, and stabilizing the down hill side. Stairs should be constructed whenever necessary to maintain a gentle trail gradient. Materials used should be limestone or, if necessary, pressure-treated lumber. Limestone construction will last a long time, be relatively maintenance-free, and blend very well with the native limestone cliffs. However, the cost of the materials and labor may be prohibitive. Although construction of retaining walls and steps with

pressure-treated lumber would not be as costly, more maintenance would be required and the structures would be more visually obstrusive.

In order to reduce the use on any given portion of Chimney Rock Trail, a new return trail should be established to provide a loop rather than a dead-end system. Presently, there is a trail leading down the other side of the ridge. This trail will require some rehabilitation work and the rock retaining wall at the bridge must be remodeled. As a safety consideration, a spur can connect this trail with the existing primitive group camp and proposed vehicular campground to decrease the number of people crossing the river on the highway bridge.

Inspiration Trail - This trail is generally in good condition. However, areas 2-5 (see map, p. **99**) will need rehabilitation and the construction of either stone or wood steps.

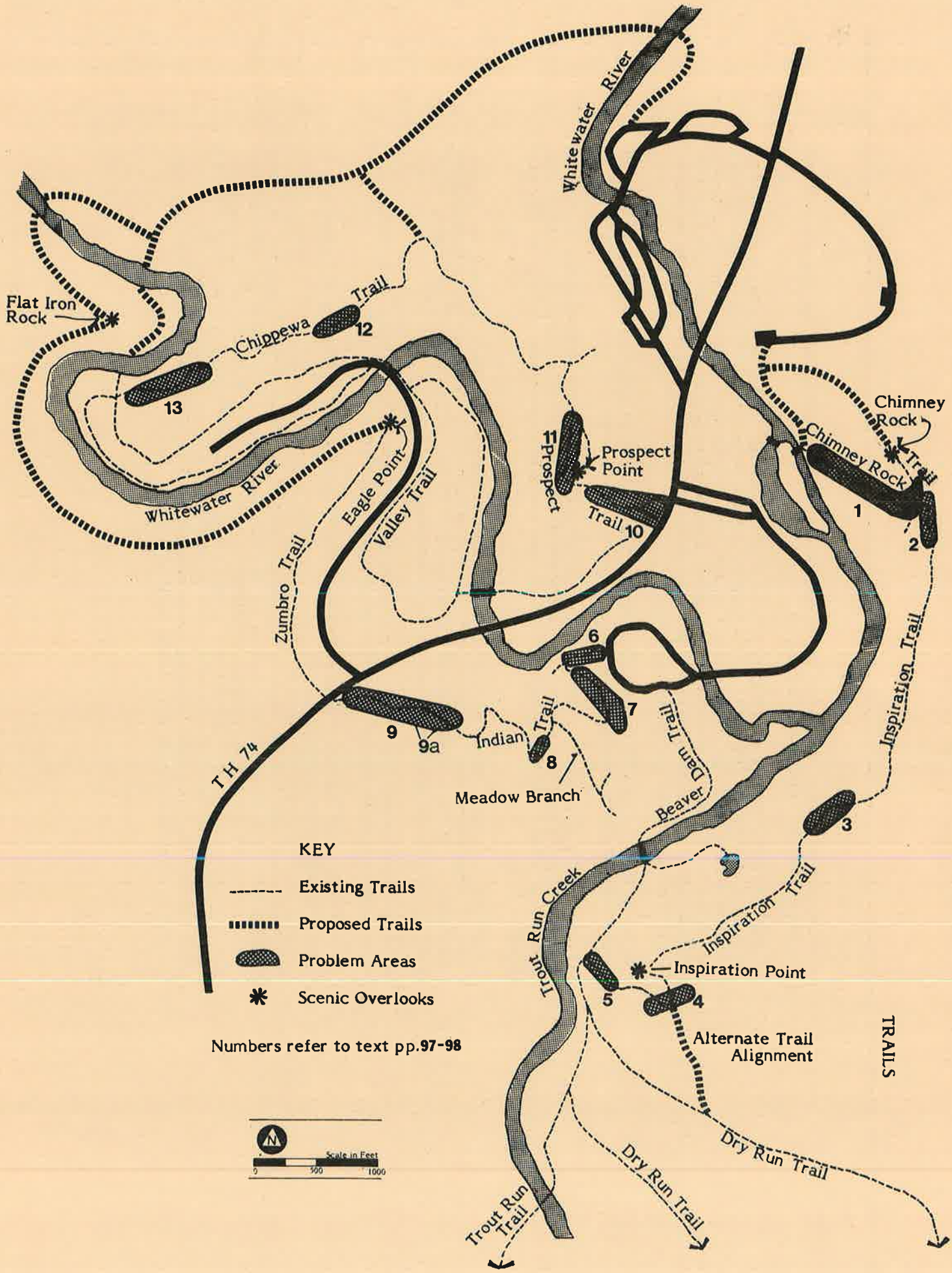
At area 3, the trail crosses a intermittent stream. Since there is considerable erosion, a drop box or similar structure should be constructed to control the erosion. An alternative to repairing the erosion problems at areas 4 and 5 is to realign the trail down the hillside connecting with the new Dry Run Trail.

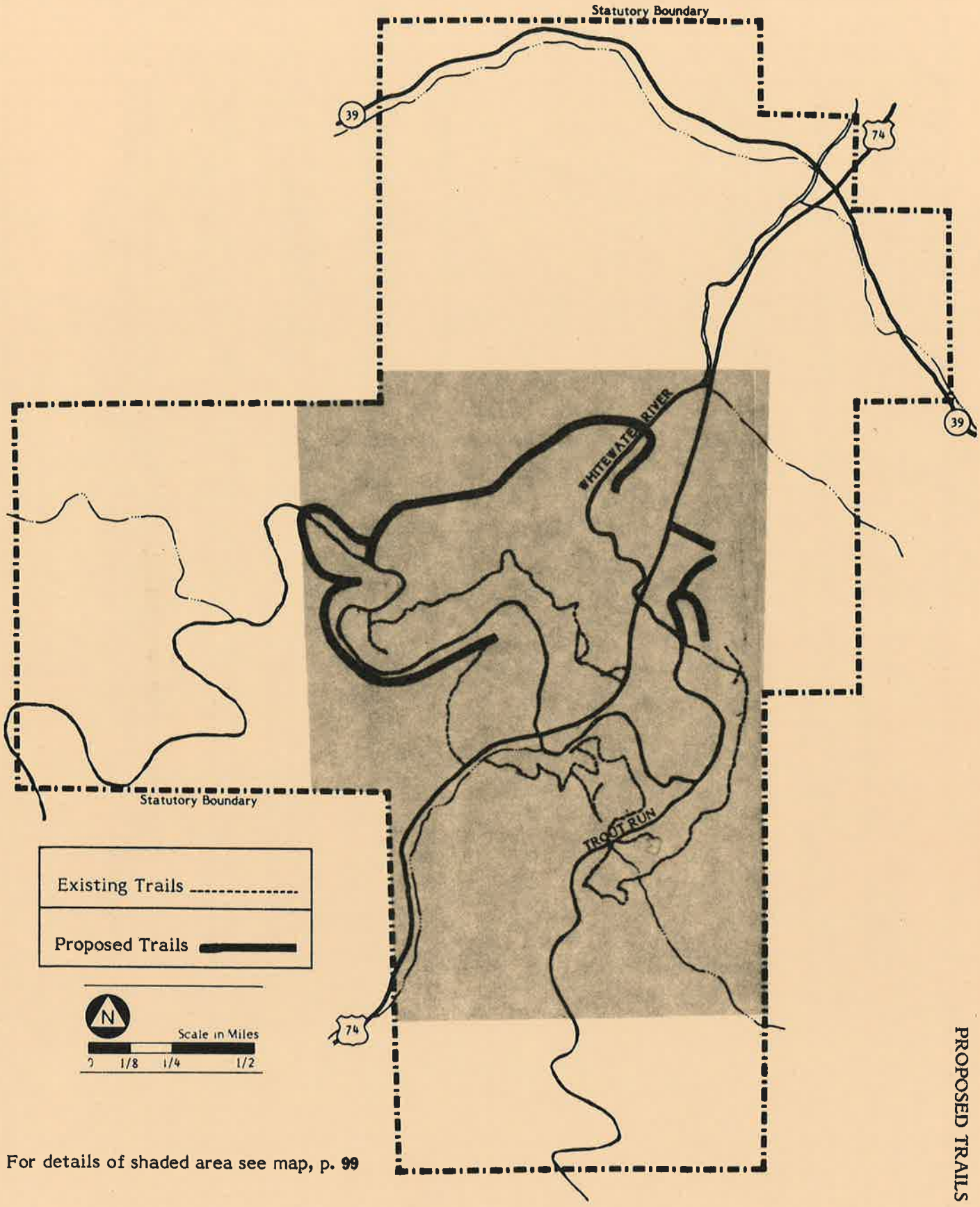
Indian Trail - Indian Trail is generally in fair condition. However, because areas 6-9 are eroded, stone or wood steps must be constructed, the trail widened, and the uphill and downhill slopes stabilized. At TH 74, a flight of stairs approximately 12 ft. long will be constructed to allow easier access out of the road ditch and to control the severe bank erosion.

In two locations in area 9, the trail crosses an intermittent stream. A drop box must be constructed at each site to stop the uphill creep of the wash and provide a crossing.

Zumbro Trail - The Zumbro Trail is in very good condition. The only work required on this trail is some widening in one or two locations.

Chippewa Trail and Prospect Trail - The worst portion of these trails is between the park headquarters and Prospect Point. In area 10, the trail has eroded a foot below the ground level. Steps or a switchback will be required to stabilize the trail. In area 11, there are two locations where the trail has a very steep alignment and is very badly eroded. Here stairs will be constructed to control erosion and allow the vegetation to be reestablished. Where the trail crosses a deep dry run (area 12), near the group camp, a bridge will be constructed. Where the trail descends from the ridge into the group camp (area 13), steps will be constructed.


White water River
Flat Iron Rock
Chippewa Trail
12
13
Whitewater River
Eagle Point
Valley Trail
Zumbro Trail
11
Prospect
Prospect Point
Trail 10
Chimney Rock
Chimney Rock Trail
1
2
Inspiration Trail
6
7
9
9a
Indian Trail
8
Meadow Branch
Dam Trail
TH 74
Beaver
3
Trout Run Creek
Inspiration Trail
Inspiration Point
5
4
Alternate Trail Alignment
Dry Run Trail
Dry Run Trail
Trout Run Trail
KEY
Existing Trails
Proposed Trails
Problem Areas
Scenic Overlooks
Numbers refer to text pp.97-98
Scale in Feet
0
500
1000



For details of shaded area see map, p. 99

Valley Trail - This is a new hiking/interpretive/ski touring trail. It should be upgraded to accommodate the handicapped.

Other Trails - The Dry Run, Beaver Dam, and Meadow Branch trails all require some upgrading, but no major problem areas currently exist.

Bridges - Due to the varying water levels and flooding problems, bridges have not been constructed, despite the demand. Two bridges are needed to cross Trout Run Creek on the existing trails and three more will be required when the new trail alignments are constructed. They must be designed to withstand spring flooding and occasional flash flooding. One solution would be to chain one end in such a way that during high water it would float free and swing against the bank.

- Winter Trails

Objectives:

To link Whitewater's snowmobile trails with the county grant-in-aid trail system

To separate ski touring and snowmobiling trails

Action:

Develop a 6 to 7 mile ski touring trail in the valley and develop a snowmobile trail that links with the county grant-in-aid system.

This trail will begin at the existing manager's residence (the proposed interpretive center). One loop will follow the Middle Fork Whitewater River upstream past the structured group camp and the other will follow Trout Run Creek upriver.

At present a 90 mi. grant-in-aid snowmobile trail has been developed, west and south out of Elba. If this trail can be extended to the vicinity of the TH 74 alignment, a trail center will be developed west of the existing intersection of TH 74 and CSAH 39 as the land is acquired.

This facility will provide a parking lot, pit toilets, and a warming house. From this point a trail will be provided west, up the bluff and along the bluff edge, connecting with other, future grant-in-aid systems.

Because of the extremely varied topography of the park, winter trails must utilize either the valley floor or the bluff tops. Snowmobile trails will not be developed in the valley because trail mileage is very limited and the noise of the machines is amplified by the steep, enclosed valley walls.

• Highways

Objectives:

To provide a safe, slow-paced, relaxing atmosphere in the park for visitors

To control the user entrance and exit from the park with minimum annual costs, while facilitating the collection of use fees, the protection of resources and visitors from theft and vandalism, and the control of the number of visitors in the park

To limit the disruption of local traffic flows

To provide easy access to the park

To provide vehicular access to the nearest county state aid or trunk highway

At present TH 74 runs through the middle of the park, within 200 feet of the picnic area, contact station, and both campgrounds. The paved road currently has a speed limit of 40 mph within the park. It is used by local citizens as the primary link between St. Charles, Elba, and Plainview, as well as by the residents of other small towns in the immediate vicinity. It is also the main route to the park and the Whitewater Wiidlife Management Area. Minnesota Department of Transportation (Mn/DOT) figures show it has an average daily traffic rating in the winter of 620 vehicles. Summer figures are considerably higher.

Problems due to the existing TH 74 alignment are:

1. the road presents a safety hazard to park users
2. the road introduces types and levels of noise which are incompatible with a natural outdoor experience
3. the road provides many entry points into the park, thus making control difficult
4. the road and its traffic create visual and auditory distractions
5. recurring flooding makes this road expensive to maintain

Alternatives

Two alignment alternatives have been identified that would reduce or alleviate the existing use conflicts between Whitewater State Park and TH 74.

Alternative #1

Action:

Keep TH 74 open through the park, but realign it to provide larger undissected blocks of valley bottomland. Develop below grade crossings for park roads and trails.

Discussion:

This alternative would reduce the traffic hazard and provide a controlled park entrance. However, it would not affect the noise levels and would increase the amount of land used for roads as well as the number of visual distractions. It is estimated that this redevelopment would cost $500,000. Also, the temporary bridge would eventually have to be replaced (approx. $300,000). Then high maintenance costs and potential future bridge replacements due to flood damage must also be considered.

Alternative #2

Action:

Realign TH 74 around Whitewater State Park. The former TH 74 alignment north of the existing contact station would then be used as a park road. The remainder of the alignment will be narrowed and used as a service road, and the remaining portion obliterated. (See map, p. **104**.)

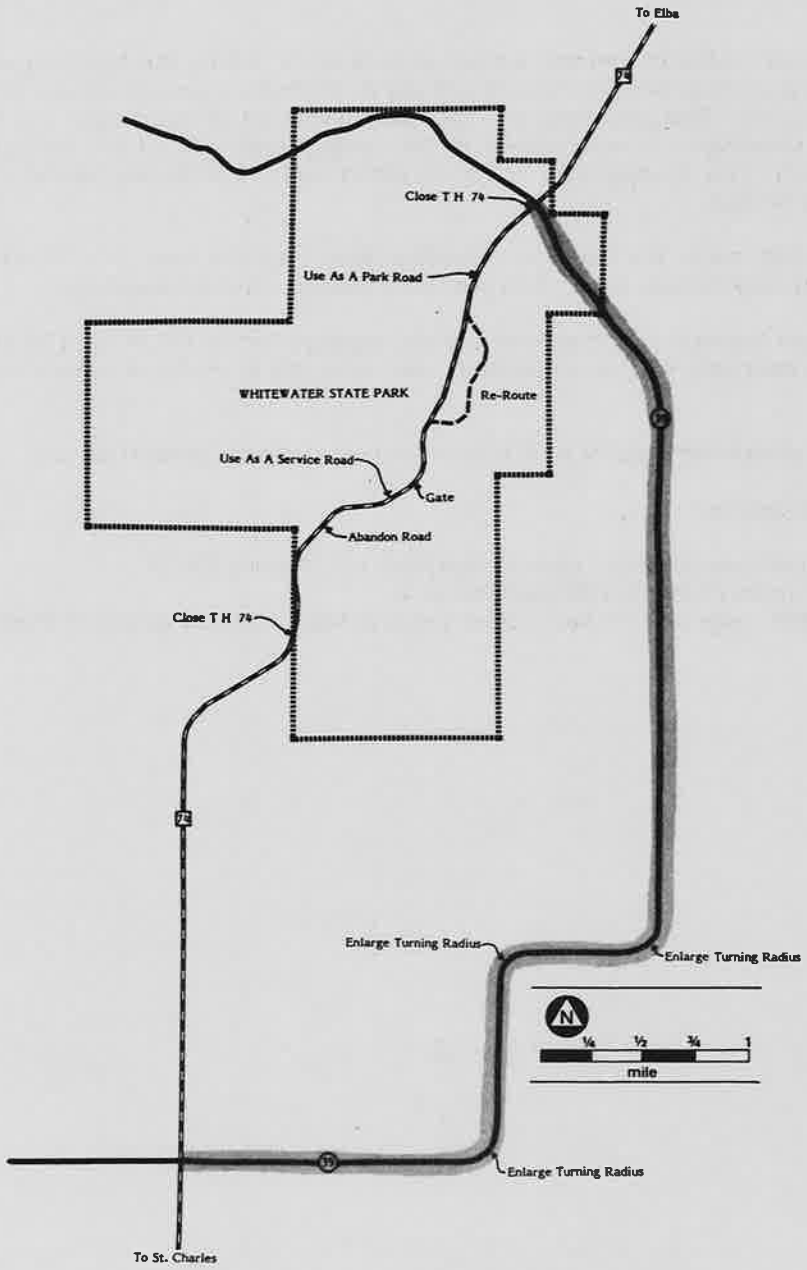
Discussion:

This alternative would alleviate traffic noise and through-traffic hazard to park users, establish one entry point, and minimize visual distractions. Bringing CSAH 39 up trunk highway standards would cost roughly $2,000,000. Although this initial cost is significantly higher than alternative #1, the continuing maintenance of the highway along its present alignment through a flood prone area would be avoided.

Recommendation:

Rerouting TH 74 (alternative #2) would allow the park design to provide visitors with an excellent facility to relax, enjoy, and learn about this highly scenic area. Because of the high estimated costs and local public concern, this alternative cannot be implemented at present. Therefore, until the situation changes, TH 74 will remain open through the park. However, some modifications will be made to the roads in the park to alleviate some of the existing problems.

POTENTIAL T H 74 REALIGNMENT



In order to reduce traffic hazards and the number of park entry points, the following development will be implemented. A park road will be constructed north from the contact station parking lot to the picnic ground parking lot. This park road will then pass under TH 74 and connect to the existing park road and low water crossing to provide access to the campground. TH 74 will be realigned to curve west away from Cedar Hill Campground and then curve back to cross the Middle Fork Whitewater River on the existing bridge.

This solution does not solve the noise or flooding problems and does not alleviate the general disruption of the park experience, but it does provide a feasible interim solution.

Emergency exits from the new picnic ground and the campground to TH 74 must be provided. During floods, the TH 74 underpass will be impassable and alternative direct accesses to TH 74 will be opened.

Walkways should be developed parallel to TH 74 to concentrate park pedestrian use.

Mn/DOT should also consider:

1. Installing a pedestrian operated stop-and-go light for crossing TH 74
2. Posting speed limits of 30 mph through the park
3. Installing rumble strips at park boundaries and at other hazardous points in the park

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 h istoric 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 and maintenance of our state park system

Interpretive programs 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 park environments -- free to enjoy them 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 and gradually increase their 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 own ties with the land and with our state's cultural heritage.

INTERPRETIVE THEMES

Land Use

The steep topography and easily eroded soils in the Whitewater area were poorly suited for agriculture. This was compounded by poor land use practices, leading to a rapid deterioration in the area's value for farming. Finally, deteriorating watersheds, resulting in flooding and siltation, forced the abandonment of many farms and settlements in the valley. The town of Beaver, for example, was flooded 28 times in 1938. It now lies beneath 12 feet of silt.

In the early 1930's the state began one of the largest reclamation projects in its history by purchasing and incorporating area farms into the Whitewater Wildlife Management Area, which now contains 28,000 acres.

This chain of events provides an opportunity to interpret land use practices in terms of soil and watershed management and reclamation and wildlife and fisheries management, as well as the history of the area.

Scenic Values

Aesthetically, Whitewater State Park is one of the best resources in the Minnesota state park system. It is located in the heavily-wooded Whitewater River Valley, with impressive dolomite cliffs that rise 600 ft. above the valley floor. The combination of high cliffs, the river, and forests provides a great number of high quality overlooks that are unique to the region and state.

Wildlife

There are many wildlife species in Whitewater State Park. Mammals, birds, reptiles, amphibians, and fish all provide opportunities for interpretive programming.

Animals such as the southern flying squirrel, oppossum, timber rattlesnake, and turkey vulture are either little-understood or hard-to-observe. Whitewater offers an opportunity to interpret these animals. Some species, such as wild turkey, had left the park, but were recently re-introduced. This is an excellent example of the benefitial effects of wildlife management.

Vegetation

There is a great diversity of trees and plants in the park. A variety of interpretive themes could be developed around them. Five different types of orchids grow here, along with remnant stands of white pine, walnut, hickory, and butternut. Aesthetics, forestry, watershed management, and wildlife utilization are some of the many aspects of the park's vegetation that may be interpreted.

Ecological Communities

There are seven known ecological communities in Whitewater State Park. Many basic ecological concepts such as climax, community, niche, predator-prey relationships, and food chains can be easily illustrated in light of such diversity. The communities existing in the park, followed by examples of some interpretive themes that can be developed around them, are listed below:

1. Floodplain - disturbances, land use
2. Maple Basswood Forest - the big woods, forestry, maple sugaring, and wildflowers
3. Prairie Remnants - prairie restoration, diversity, grasses
4. Stream - food chains, trout
5. Oak Woods - importance of wildlife, disease (e.g. oak wilt)
6. Meadow - land use, history of the area
7. White Pine Remnants - concept of remnant species, forest regeneration, timber production

PROPOSED PROGRAMS

More programs directed toward school and special interest groups are needed. Also, because the park is used all year, interpretive programs should be provided all year. Details of future interpretive programs will be outlined after completion of the statewide interpretive prospectus. Several general topics are under consideration. For example, in cooperation with the Division of Fish and Wildlife, DNR an interpretive program highlighting wildlife management and fisheries practices can be established.

The Whitewater Wildlife Management Area will be used as part of a naturalist-directed interpretive program in the park. The program will consist of a bus tour, describing the history of land use in the valley, explaining management programs, and stressing the significance of fish and wildlife habitats. The program will be conducted by a state park naturalist with tours of the area scheduled by the regional wildlife manager. Tours will be scheduled between May 1 and September 1 and will originate and terminate in the park. Points of interest included in the tour will be approved by the WMA manager who will have the option of eliminating specific sites from the tour if problems develop.

Proposed stops include the lookout on Hoosier Ridge to discuss land abuse and recovery in the valley; the lower Dorer Pool to demonstrate wetland management objectives and values; a share-cropped agricultural field and timber harvest area to discuss the reasons and benefits of farming and forestry for wildlife; a prairie tract to explain the significance of natural processes, such as fire, in maintaining diverse plant communities and their associated fauna; and the Crystal Springs fish-rearing station to discuss stream management and fisheries objectives in southeastern Minnesota.

Boundary Modification

Introduction

There are 2,863 acres of land within the statutory boundary of Whitewater State Park. About 1,168 acres of this are under the custodial control of the Division of Parks and Recreation, DNR, 575 acres are under the custodial control of the Division of Fish and Wildlife, DNR, and 1,120 acres are privately owned.

Objectives:

To include sufficient acreage within the statutory boundary to preserve and perpetuate the natural resources and still provide areas for recreational facilities and activities

To control by fee title or easement all land within the statutory boundary

Specific Recommendations

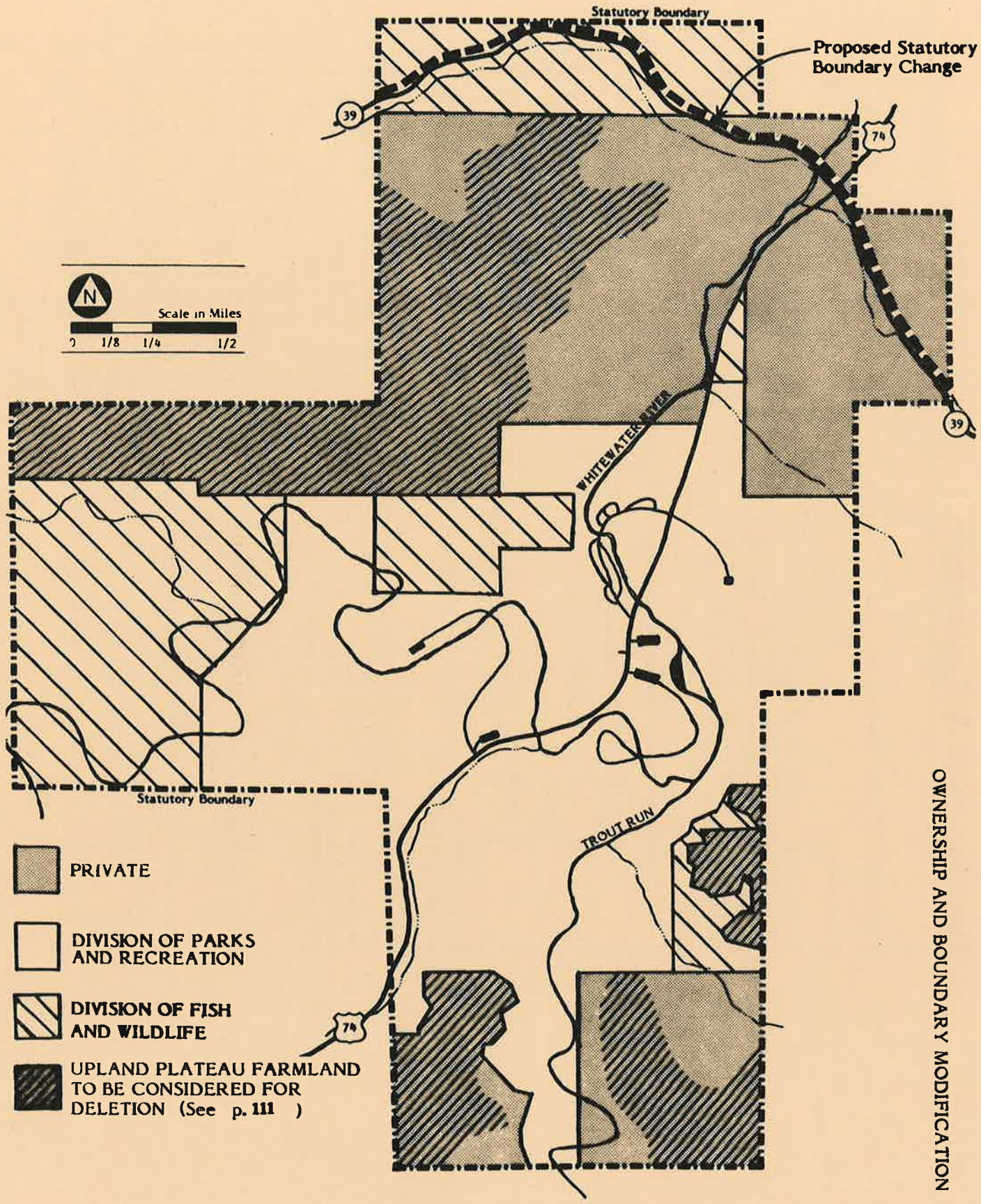
The Outdoor Recreation Act of 1975 (ORA '75) specifically excludes lands under the custodial control of the Division of Wildlife from being within the statutory boundary of a state park. The land north of CSAH 39 (77 acres) will be deleted from the statutory boundary of the park and transferred to the Division of Fish and Wildlife. The remaining 498 acres will be turned over to the custodial control of the Division of Parks and Recreation through a land exchange or compensation agreement.

The private land north and east of CSAH 39 should also be deleted from the statutory boundary. Because this land is separated from the rest of the park by the highway, it would have little utility for park use.

This park has historically, through its development and use, been focused on the valley environment with spectacular views from the bluff areas. Therefore, the most important land parcels to be purchased are those that allow trail and use extension along the valleys.

Some parcels of upland plateau are essential to maintain prairie and prairie edge environments. But, much of the land within the boundary on the level upland plateau should be retained in private ownership and used for agricultural purposes. If Winona County will consent to zone these areas so that they will be retained as agricultural land, DNR will request that the legislature delete them from the park's statutory boundary when the sidehill and bottomland parcels are purchased by the state. (See Ownership Map, p. 112 .) In this way, good agricultural land will be preserved and non-conforming land uses will not intrude into the park environment.

It would be desirable to extend state ownership up the valleys outside of the existing statutory boundary in order to help preserve the watershed and provide for trail expansion. It is proposed that the Division of Forestry, DNR purchase these areas of steep terrain from willing sellers.



OWNERSHIP AND BOUNDARY MODIFICATION

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 occurred 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 make 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 Whitewater State Park

Park Management Duties and Responsibilities

The park manager at Whitewater State Park will administer the complete park maintenance and operations program and implement segments of the development program under the direct supervision of the park supervisor at DNR regional headquarters, Rochester, Minnesota. Management consists of supervising park employees and public services, providing law enforcement, conducting interpretive activities, maintaining public relations, recruiting employees, soliciting volunteers, and assisting in park operation activities when possible. It should be noted, however, that management responsibilities limit the time available for actual participation in maintenance and operations activities.

Additional full time and seasonal personnel, as listed in the following pages, are necessary to provide adequate public protection, services, and maintenance to bring facilities up to standards and to fully implement the provisions of this plan. In addition, Carley State Park and John Latsch Wayside are dependent upon Whitewater's staff for hauling garbage, snowplowing, and other assistance when they do not have personnel on duty.

PARK OPERATIONS

Contact station personnel (park workers) provide initial public contact and information, permit sales, camper registration, and firewood sales. Permit sales are conducted at the picnic parking lot on Saturday and Sunday. Violation tags are issued for those who have not acquired permits.

The clerk typist provides contact station services, group camp registrations and reservations, and office clerical duties 9 months per year.

Two lifeguards are on duty from June through mid-September.

Snack bar sales were provided in the picnic area by park workers three days a week in the past. This service will be converted to a vending machine operation.

Interpretive services in the past have been conducted by one 4 month naturalist and one volunteer. Indoor interpretive programs are conducted in the picnic shelter with outdoor activities conducted by the naturalist using trails and natural areas. Other interpretive services are available in the temporary interpretive center.

Maintenance personnel (laborers, park workers and student workers) have a broad range of duties. These include maintaining buildings, 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 be valuable assistance when available, however, they require qualified park employees for supervision.

Operating Seasons

The broad range of recreational opportunities in Whitewater provide the public with 12 months of outstanding activities. Modern sanitation facilities are open in mid–April through mid–October.

Spring: Trout fishing begins March 1st bringing large crowds. The group camp is in use by mid–April. Camping begins in early April with capacity weekend crowds by May 1st. Maintenance and development programs are limited to projects which can be accomplished during the few slack periods.

Summer: Capacity use of all facilities between Memorial Day and Labor Day requires full scale operations, 98 hours per week, and night patrol for an additional 28 to 35 hours. Maintenance and improvements are limited to routine duties and projects which can be accomplished during the few slack periods.

Fall: Capacity camping on weekends occurs from Labor Day through the hunting seasons in November. Hunters camp at the park and hunt in the adjacent wildlife management area. Group camp use continues into October. This season offers the best opportunity for park staff to carry out improvement projects.

Winter: Recreation continues through the winter in this park, which is one of the few areas in southeast Minnesota where snowmobiles are prohibited. Skiing, camping, and picnicking are all activities which can be comfortably enjoyed in this protected valley. This season is used for vacations, administrative duties, and maintenance of fixtures and equipment by management and maintenance personnel.

Operations and Maintenance Problems

1. Flood danger in the group camp and Gooseberry Glen Campground is a major concern. An alarm system has been installed between the group camp and the service area by the National Weather Service. A 3 foot rise in water level in the river near the group camp where the system is located will activate the alarm in the service area which is connected by telephone to the group camp.

Park staff must check the alarm function light at the shop daily and the total system weekly to ensure that it is operational. The National Weather Service will repair malfunctions.

Recommendation: Campers and group camp guests will be evacuated when the alarm is activated. Because of this warning system and evacuation procedures, the group camp can remain in its present location.

2. Staffing currently consists of a full time manager, an assistant, a seasonal clerk, and other seasonal and part time workers. In order to properly provide adequate maintenance, services, and meet the responsibilities set forth in this plan, additional personnel is needed.

   Recommendation: See the Staffing Chart, p. **120** for recommended staff additions and changes.

3. Highway traffic creates the biggest operational problem and expense in Whitewater. Control of visitors entering and leaving, enforcing permit sales, and pedestrian safety are major problems. Currently there are 6 exits from TH 74 into park use areas that must be patrolled to enforce permits and limit unauthorized use. An additional permit sales location at the picnic parking area and issuance of violation tags in all areas are costly and time consuming.

   Recommendation: One controlled entrance must eventually be provided to protect the park and park visitors, to eliminate the extra permit problems, and to reduce operational costs.

4. Group camp operation is a major responsibility from April through September. There is demand for 12 month use which would require winterizing the sanitation building. Beds and mattresses need continual maintenance and replacement.

5. Campground operation is the most time consuming and expensive visitor service in Whitewater. Information, registration, firewood sales, and facility maintenance are required from early April into November, 98 hours per week. Night patrol is necessary 28 to 35 hours per week on weekends during April, May, October, and November and 7 days a week from Memorial to Labor Day.

   Recommendation: Additional personnel is required, see Staffing Chart, p. **120**.

6. Concession operation currently is conducted 3 days per week in the enclosed shelter building of the picnic area. This operation is unprofitable, and requires many work-hours which could be better used elsewhere in the park.

   Recommendation: Install vending machines and remodel the building so it can be used as an enclosed shelter for both winter and summer use.

7. Buildings and bridges constructed of rock and timber require extensive maintenance and rehabilitation to preserve them and make them serviceable, comfortable, and attractive. Whitewater has 28 buildings, 2 foot bridges, and 3 vehicle bridges which must be maintained.

   Recommendation: Additional personnel is required, see Staffing Chart, p. **120**.

8. Trail maintenance and improvements on extremely steep terrain require realignment, repair, and new construction in order to prevent erosion.

   Recommendation: The trail rehabilitation section of this plan provides the funds necessary for upgrading these trails. Competent maintenance personnel are necessary to implement trail rehabilitation and provide future maintenance to handle the heavy use these trails receive.

9. Solid waste collection and disposal is currently done through an annual contract with a private vendor.

   Recommendation: Depending on the results of a BOE sewage system study (p. **96**), this arrangement should continue.

10. Snow removal is currently accomplished with a tractor and a 4 wheel drive vehicle which is assigned to Carley State Park during the summer.

    Recommendation: This equipment, if replaced regularly, is adequate for Whitewater.

11. The CB communications system currently used is inadequate.

    Recommendation: Provide a complete high band system on the state park frequency with communications to the Rochester regional office, including radio tower, base station, 3 mobile units, and 2 hand units.

12. Rattlesnakes are occasionally sighted, but pose little danger to visitors.

    Recommendation: Only those snakes which pose a direct danger to visitors will be removed. Park personnel will be trained to administer first aid for snake bites and will have proper supplies and equipment available for emergencies.

13. Humidity is extremely high at all times, causing condensation and mold on the concrete floors.

Recommendation: Install dehumidifiers in appropriate places, to eliminate damage to buildings, supplies, and equipment.

14. Rock climbing has some potential in Whitewater.

Recommendation: Regulations will be established for all parks having rock climbing potential. All persons wishing to climb must register with the park manager. The manager will then direct climbers to a site away from concentrations of other park users. Climbing is considered a safe activity, with proper training and equipment. It will be permitted only where there will be no damage to outcroppings. Permanent park staff will be trained to handle emergency rescue and removal operations.

Staffing Chart

This chart shows existing staff and additional staff needed to provide current maintenance and operations demands. These needs are based upon a workload study which identifies present park tasks and the work-hours necessary to accomplish them.

	Original - 1976		Identified Needs for 1977 and Beyond	
Administrative Personnel:				
Park Manager	12 mo.	$15,800		$ 15,800
Assistant	12 mo.	$10,800		$ 10,800
Clerk	9 mo.	$ 5,625	10 mo.	$ 6,250
Technician	--	--	12 mo.	$ 9,700
Public Services Personnel:				
Naturalist	4 mo.	$ 3,600	12 mo. 6 mo. funded by I & E*	
			6 mo.	$ 5,400
Naturalist	--	--	4 mo.	$ 3,600
Park Worker	3 @ 7½ mo.	$14,050	3 @ 7½ mo.	$ 14,050
Park Worker	2 @ 4 mo.	$ 4,440	3 @ 4 mo.	$ 6,660
Park Worker	--	--	2 @ 3 mo.	$ 3,350
Lifeguard	3½ mo.	$ 1,950	3½ mo.	$ 1,950
Lifeguard	3 mo.	$ 1,800	3 mo.	$ 1,800
Night Watchman (Laborer)	--	--	5½ mo.	$ 4,850
Maintenance Personnel:				
General Repair Worker	--	--	12 mo.	$ 12,500
Laborer	3 @ 5½ mo.	$14,850	3 @ 5½ mo.	$ 14,850
Laborer	1 @ 3½ mo.	$ 3,150	Convert to Technician	
Laborer	2 @ 3 mo.	$ 5,400	Convert to Technicians	
Laborer	1 @ 3½ mo.	$ 3,150	1 @ 7½ mo.	$ 6,220
TOTAL		$84,615		$117,780

*Bureau of Information and Education, DNR.

CETA and other programs should be used to supplement maintenance and cleanup duties and for public services in emergency situations only. Funds for student workers would provide additional personnel for maintenance and provide needed jobs for students.

The items of equipment listed below, when replaced on a regularly scheduled basis, are considered essential for the current operations of this park. However, 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 costs of repairs on old equipment, and the cost of maintenance and improvement projects.

1978-1987 Projected Equipment Replacement Schedule

Unit	Model Year	1978-79	1980-81	1982-83	1984-85	1986-87	Total
Sedan	1973	$ 4,100			$ 5,500		$ 9,600
1/2 Ton	*1973	4,400			5,800		10,200
1/2 Ton	1975		$ 4,800			$ 6,400	11,200
1/2 Ton	1976			$ 5,300			5,300
1/2 Ton	Needed	4,100			5,500		9,600
4 Wheel Drive	**1968	5,500			7,200		12,700
Dump	***1959			No Cost			
Tractor	1966 Cub	3,000					3,000
Tractor	1967 Internat'l.		10,000				10,000
Small (lawn mowers) etc.		4,000	4,200	4,400	4,600	4,800	22,000
Other - Radios		8,000					8,000
Total		$ 33,100	$ 19,000	$ 9,700	$ 28,600	$ 11,200	$ 101,600

*Assigned to John Latsch State Wayside during the summer.
**Assigned to Carley State Park during the summer.
***Replace from regional equipment.

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 could 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 continual use they receive. Other motorized equipment will be purchased and replaced as needed.

Other equipment: Interpretive furniture, fixtures, and supplies 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% biennial salary inflation cost.

		Biennium			
	78-79	80-81	82-83	84-85	86-87
PERSONNEL					
Existing 76-77 $169,000					
Actual Needs (for current operations based on staffing chart)	$ 235,500				
Personnel Costs (from previous biennium)		$ 259,000	$ 290,400	$ 332,600	$ 365,800
Additional Personnel Needs (to operate new facilities, see p.124)		5,000(1)	12,000(2)		12,000 (3)
Sub Total	235,500	264,000	302,400	332,600	377,800
*10% Salary Inflation	23,500	26,400	30,200	33,200	37,700
TOTAL BIENNIAL PERSONNEL COSTS	259,000	290,400	332,600	365,800	415,500
SUPPLIES: Administrative Overhead and Expenses (20% of total biennial personnel costs)	51,800	58,000	66,500	73,100	83,100
EQUIPMENT: (from equipment schedule, see p.121)	33,100	19,000	9,700	28,600	11,200
TOTAL PROJECTED BIENNIAL MAINTENANCE AND OPERATIONS COSTS	$ 343,900	$ 367,400	$ 408,800	$ 467,500	$ 509,800
ANNUAL COST BREAKDOWN	$ 171,950	$ 183,700	$ 204,400	$ 233,750	$ 254,900
TOTAL 10 YEAR COST PROJECTION: $2,097,400					

*Figures rounded-off

Personnel Needs to Operate Future Facilities

The development of new facilities requires additional personnel for maintenance and operations. The figures below are annual estimated increased costs which are calculated on the summary chart as biennial costs.

(1) 1980-81 - Anticipated winterizing and winter use of the group camp will require extension of the park clerk to 12 months.

	Annual	Biennial
Estimated Cost:	$ 2,500	$ 5,000

(2) 1982-83 - Construction of a new trail center and additional trails will require added maintenance.

	Annual	Biennial
Estimated Cost:	$ 6,000	$12,000

(3) 1986-87 - Construction of a new campground will require additional maintenance.

	Annual	Biennial
Estimated Cost:	$ 6,000	$12,000

Vegetation Management Budget

Project	'78-'79	'80-'81	Biennium '82-'83	'84-'85	'86-'87	TOTAL
1. Plant bottomland hardwoods	$20,000	$10,000				$30,000
2. Mosaic of vegetational communities	5,000	5,000				10,000
3. Plant bottomland hardwoods			$2,000			2,000
4. Prairie management	2,000	1,500	1,500	$ 1,500	$1,500	8,000
5. Prairie management		1,000		500		1,500
6. Mixed upland pioneer hardwood successional steps			1,000	1,000	1,000	3,000
7. Reestablish prairie	2,000		1,000		1,000	4,000
8. Plant bottomland hardwoods				15,000		15,000
9. Reduce mowing & remove hazardous trees	Part of ongoing maintenance					
10. Passive	Part of ongoing maintenance					
11. Agriculture	Retain as privately owned agriculture					
TOTAL	$ 29,000	$ 17,500	$ 5,500	$ 18,000	$3,500	$73,500

Recreation Development Budget

	Biennium					
	'78-'79	'80-'81	'82-'83	'84-'85	'86-'87	Total
Campgrounds						
Obliterate South Campground			$ 3,000			$ 3,000
Obliterate Gooseberry Glen Campground					$ 5,000	5,000
Develop 120 Campsites and 2 Modern Sanitation Buildings		$ 150,000			150,000	300,000
Rehabilitate Existing Cedar Hill Sanitation Building		5,000				5,000
Rehabilitate Existing Gooseberry Glen Sanitation Building		11,500				11,500
Picnic Grounds						
Rehabilitate Sanitation Building	$ 4,000					4,000
Rehabilitate Refectory	2,000					2,000
Rehabilitate Shelter Building	1,000					1,000
Rehabilitate Picnic Ground			30,000			30,000
Contact Station						
Temporary Rehabilitation		2,000				2,000
New Contact Station/Office				$ 75,000 [1]		75,000
Service Center & Manager's Residence						
Construct New Residence	140,000	35,000				175,000
Rehabilitate Existing Manager's Residence for Interpretive Center		BOE*				

[1] Contingent on the clsoure of TH 74 through the park.
*Cost to be determined by a proposed study by the Bureau of Engineering (BOE).

	'78-'79	'80-'81	'82-'83	'84-'85	'86-'87	Total
Swimming Beach						
Rehabilitate Beach House		30,000				30,000
Improve Beach	7,000					7,000
Group Camp						
Rehabilitate Sanitation Building		10,000				10,000
Rehabilitate Staff Building & 7 Cabins		5,000				5,000
Winterize Cabins			25,000			25,000
Winterize Pumphouse	8,000					8,000
Floodplain Hazard Study	BOE*					
Further Research						
Survey Historical Sites		3,000				3,000
Group Camp & Gooseberry Glen Flood Study	BOE*					
TH 74 Realignment Feasibility Study	Mn/DOT**					
Signing	2,000	2,000	2,000	2,000	2,000	10,000
Sewage Disposal System Study & Construction	200,000	200,000[1]				400,000
Realigning Park Entrance Road				200,000[2]		200,000
Boundary Survey and Posting			30,000		20,000	50,000
Assistant Manager's Residence & Interpretive Center						
Remodel for Residence Only		5,000				5,000

[1]Contingent on BOE's needs assessment

[2]Contingent on the closure of TH 74 through the park.

*Bureau of Engineering

**Department of Transportation

	'78-'79	'80-'81	'82-'83	'84-'85	'86-'87	Total
Trail Center					50,000	50,000
Primitive Group Camp					10,000	10,000
Trails						
Rehabilitate Chimney Rock Trail	30,000					30,000
Construct New Loop Trail	20,000					20,000
Rehabilitate Inspiration Trail			20,000			20,000
Rehabilitate Indian Trail			25,000			25,000
Rehabilitate Chippewa Trail		15,000				15,000
Rehabilitate Prospect Trail		30,000				30,000
Valley Trail		25,000				25,000
Develop Flat Iron Rock Trail			5,000			5,000
Develop Bluff Edge Trail		10,000				10,000
Develop Trout Run Trail (3 Bridges)		30,000				30,000
Dry Run Trail			20,000			20,000
Beaver Dam Trail			2,000			2,000
Meadow Branch Trail			2,000			2,000
Snowmobile Trail					20,000	20,000
TOTAL	$414,000	$568,500 [1]	$164,000	$277,000 [2]	$257,000	$1,680,500

[1] Contingent on BOE's needs assessment.

[2] Contingent on the closure of TH 74 through the park.

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 facilitate 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

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.

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.

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.

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

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

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.

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.

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.

Director supervises and monitors the program.

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

Director approves the completed project.

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.