Cascade River

State Park Management Plan

Draft

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PREFACE

The primary concern in the development of the park management plan format was the identification of the "audience." For whom are these plans to be written? Many audiences were identified. The requirements of each of the audiences are different. All audiences require a document which includes some technical data, but the degree of detail, as well as the manner of presentation, varies. Some audiences require that specific topics be discussed in detail in all phases from inventory through recommended management. Other groups require a short, non-technical, yet comprehensive and logical management plan. A plan, obviously, cannot be both technical and non-technical nor can it be both long and short.

It seemed logical then to produce two documents: 1) a short, comprehensive, non-technical document for the general public ("General Park Management Plan" GPMP), and 2) a detailed, technical document for specialists ("Management Plan Detail" MPD).

This document is the General Park Management Plan. All recommendations, both resource management and physical development, are included in this document. Detailed inventory data and specific instructions necessary for implementation of the plan are not included. This information has been compiled into technical appendices, which are available upon request from:

Park Planning
Department of Natural Resources
Box 10E
Centennial Office Building
St. Paul, MN 55155

I. INTRODUCTION

AN OVERVIEW OF CASCADE RIVER STATE PARK

Cascade River State Park is located in Cook County on the north shore of Lake Superior, 9 mi (14.4 km) southwest of Grand Marais. The park was established by an act of the Minnesota State Legislature in 1957, with a statutory boundary encompassing 2813 acres (1125 hectares).

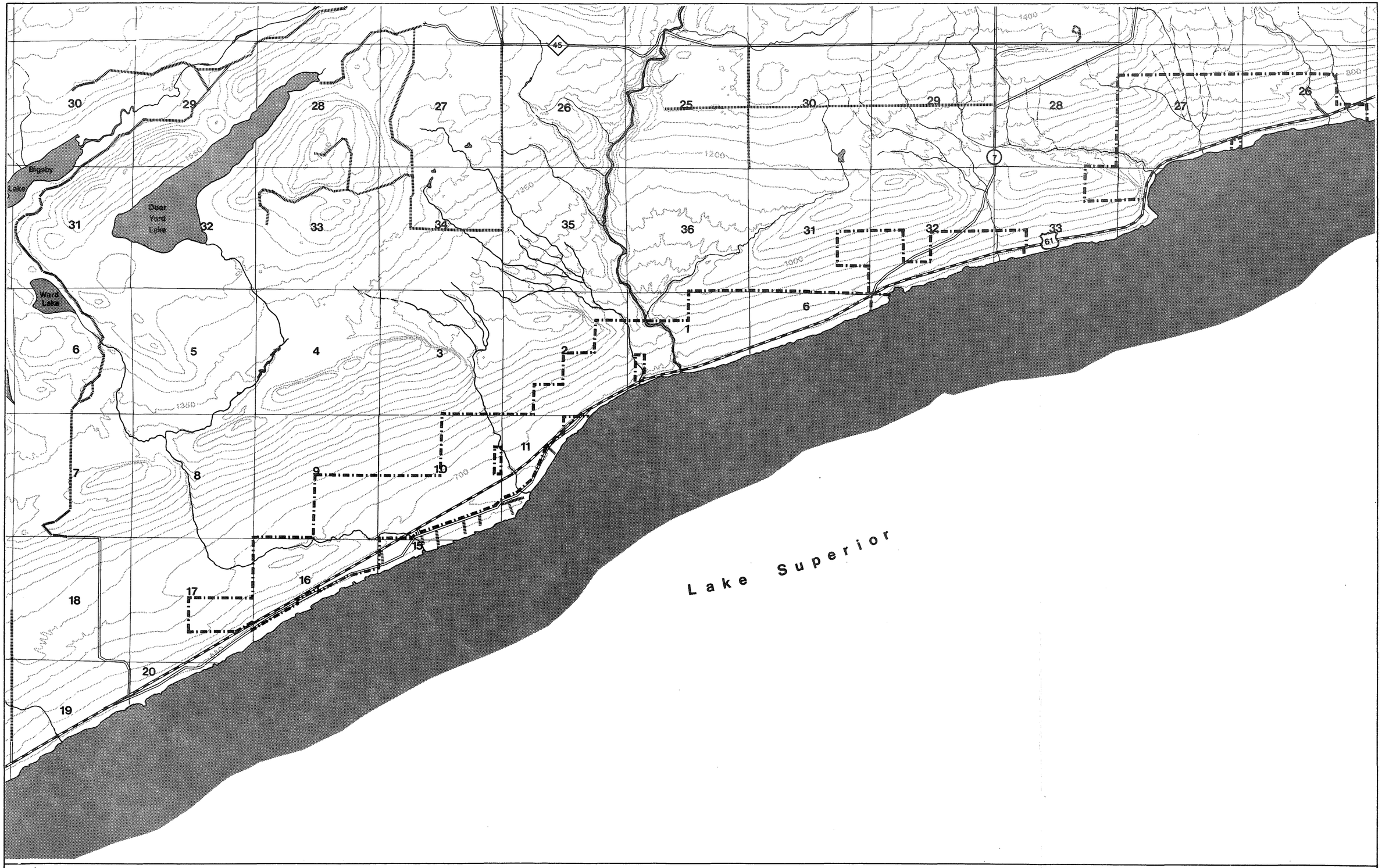
The park consists of a 10.5 mi (14.4 km) strip of land approximately .5 mi (.8 km) wide. Elevation ranges from 602 ft (183 m) at the surface of Lake Superior to just under 1200 ft (366 m) along the northern boundary. The topography is generally quite flat, sloping gently toward the rugged Lake Superior shoreline. The major topographic feature of the park is the steep-walled Cascade River gorge which was formed by the Cascade River eroding through volcanic bedrock ledges. In the final quarter-mile stretch, the river plunges 120 ft (36.5 m) through the deep, twisting gorge to Lake Superior, forming the spectacular series of cascades for which the river was named.

Original vegetation communities were comprised primarily of Norway and white pine stands and spruce-fir communities, interspersed by aspen, birch, and white cedar. Today, as a result of logging and extremely hot wild fires followed by nearly total fire supression, vegetation is dominated by a mixture of aspen-birch and spruce-fir. Very few pine and some isolated stands of white cedar can still be found.

Vehicular access into the area is via Trunk Highway 61 (TH 61) which parallels Lake Superior through the park. The only public transportation into the area is commercial bus service, with stops at Lutsen and Grand Marais. No direct public transportation is available to the park. Food and lodging are available adjacent to the park at several year-round resorts.

Existing organized recreational activities include camping, picnicking, hiking, skiing, and snowmobiling. There are unlimited opportunities for unstructured activities such as fishing, wildlife observation, rock hounding, photography, and sight seeing.

Day use visitor attendance has increased from just over 7,000 in 1958 to approximately 100,000 in 1979.



N

Miles 0 500' 1/4mi. 1/2mi. 1mi.

Kilometers 0 500m 1km

Cascade River State Park

The unique natural, cultural, and historical resources of Minnesota provide abundant opportunities for outdoor recreation and education. These opportunities should be available to all citizens of Minnesota now and in the future. In order to ensure that future generations will have the opportunity to enjoy these resources, we must plan now to manage, preserve and provide access to these resources. For this reason the Minnesota Legislature passed the Outdoor Recreation Act of 1975 (ORA '75).

This act mandated that a comprehensive management plan be completed for each of the major units. Through this plan each park will be classified in recognition of its resources and its role in the statewide park system.

This plan sets the long range goals and objectives for resource management and recreational development which are appropriate for the park's classification. The actions that should be taken to move toward fulfilling these goals and objectives are then stated and scheduled.

The planning process consists of five steps:

1. Compilation of an inventory of natural resources and existing facilities. Task forces of specialists from other DNR divisions and sections are mobilized to assist in collection pertinent data. At this point the first public workshop is held.

2. Identification of alternatives for park management and development. A second public workshop is held to review these alternatives and invite further public comment. These alternatives are then reviewed by the Division of Parks and Recreation.

3. Classification of park, development of park goal, and writing draft plan. This step culminates in the first interdepartmental review, followed by a 30 day public review. Within this 30 day period, the third public workshop is held.

4. Revision of the draft plan according to information received from public and interdepartmental reviews. Plan is then sent to the State Planning Agency for a 60 day reviewal period.

5. Implementation of development plan by the Division of Parks and Recreation.

SUMMARY

Cascade River State Park has been recommended for classification as a recreational state park. The park has potential for classification as either a natural state park or a recreational state park. However, Tettegousche Natural State Park, which is a much better example of the Northshore Highlands Biocultural Region, is only 40 mi (64 km) to the southwest. Classification of Cascade as a recreational state park will therefore provide excellent complimentary facilities.

Resource management in this plan will be directed toward providing recreational opportunities in a natural setting. Manageable resources include: soils, waters, fisheries, vegetation, and wildlife. Soils management will focus on location of development on the most suitable soils, elimination of existing erosion problems, and prevention of future soil damage. Water resource management will focus on preservation of water quality. Fisheries management of the Cascade River and several smaller stream will empahsize improvement of trout habitat. Vegetation management will be directed toward reestablishment of a significant example of the original vegetation community and diversification of vegetational type and age classes. This will improve wildlife habitat and increase the opportunities for wildlife observation. Wildlife management will promote population diversity through vegetation management and location of development away from sensitive wildlife areas.

Physical development is intended to provide only those facilities necessary to allow recreation in a natural setting. Proposed new development includes: constructing a new park entrance and a combination contact station/park office; rennovating the existing campground; developing a new primitive campground, a group camp, and walk-in campsites; converting a portion of the existing campground to a picnic area; providing a small boat landing near the mouth of the river; and rennovating and expanding the existing trail system.

IS A ROLE FOR THE PARK

STATE PARK ROLE ANALYSIS

Introduction

In order to determine a park's potential role in perpetuating natural resources and fulfulling recreational needs, a state park analysis process has been initiated. The analysis is designed to look at a given park's interrelationship with:

The state park system

the biocultural region system

regional recreational facility supply and demand

Recognition of a state park's interrelationship with these components will help to ensure that park development will be planned to protect natural and historic resources, meet appropriate recreational demands, and avoid undue competition with other recreation providers.

The State Park System

Minnesotan's traditionally have had a great apprecation for nature. The state has honored this tradition by setting aside lands which exemplify the state's outstanding natural and scenic resources. It is the management goal for all state recreational lands (of which the state park system is a part) to protect and perpetuate these resources for use and enjoyment by the citizens of Minnesota.

There is a delicate balance which must be maintained when recreational facilities are provided for large numbers of people in areas of outstanding and often sensitive resources. Generally, certain resources are best suited for particular types of recreation. To help ensure this recreation/resource balance, the Minnesota State Legislature outlined in the Outdoor Recreation Act of 1975 (ORA 75) the components which comprise the state recreational system. These components are historic sites; forests; water access sites; rest areas; state trails; wildlife management areas; scientific and natural areas; wild, scenic, and recreational rivers; wilderness areas; and state parks. Included in this legislation is a classification system which identifies general criteria for planning and management of all state recreational lands. Each unit is evaluated and classified based on these criteria.

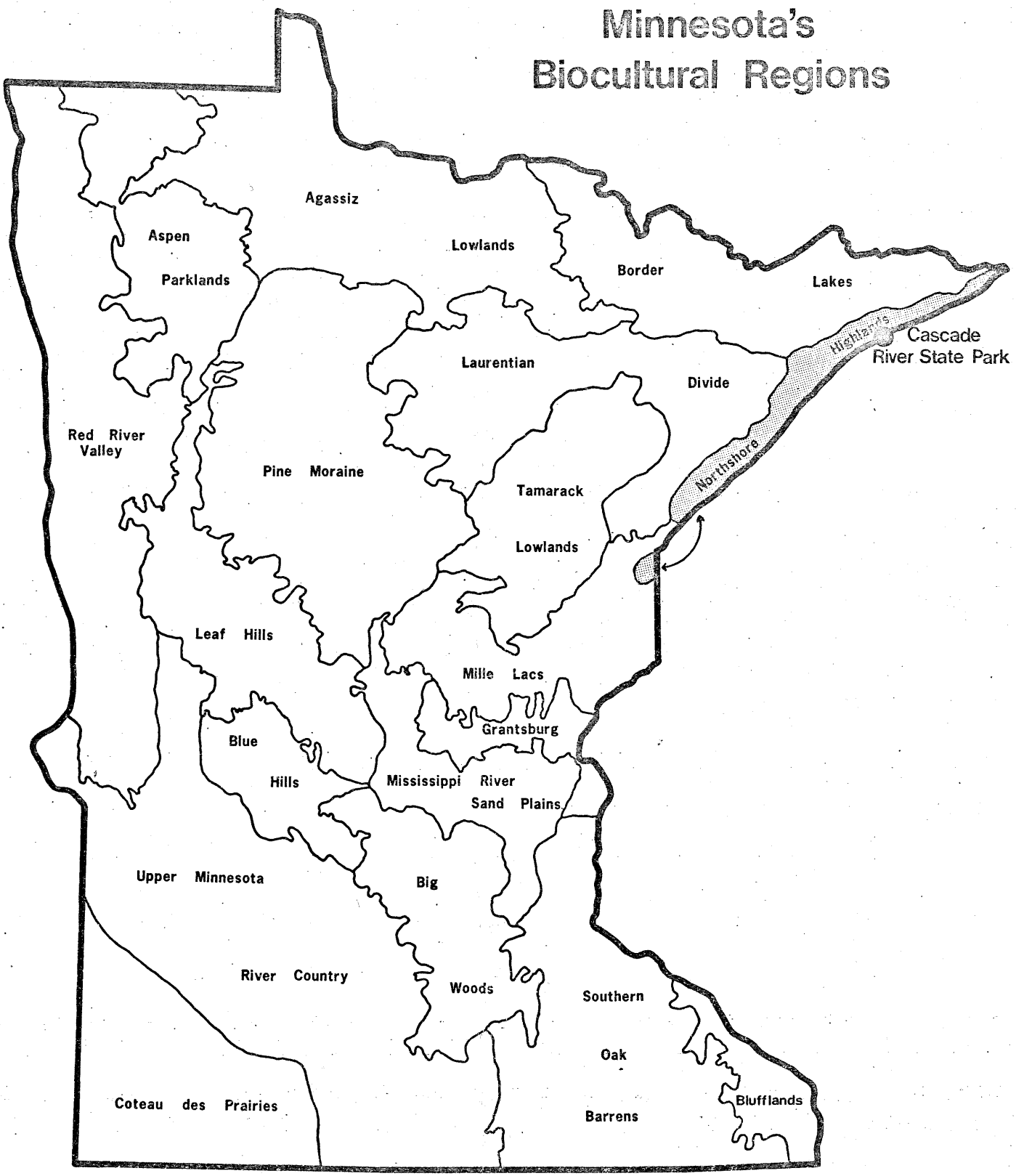
This classification system identifies the role for each recreational unit in the statewide system. (See the Classification Section, p 23 for further discussion.) The two primary classifications for state parks are natural and recreational. These two, along with other classifications, are considered during the planning process and the most appropriate are recommended for the park. If a state park does not meet the established classification criteria for a state recreation unit, the DNR will consider the possibility of eliminating the park from the state recreational system.

Biocultural Region System (Formerly Landscape Region System)

The ORA 75 defines a landscape region as "an identifiable geographic region with generally homogeneous natural characteristics which exemplify the natural processes which formed the geography, geology, topography, and biology of the state." Since 1975, it has become apparent that human impact on the landscape has not been included to a sufficient extent in this system. As a result, several studies have been directed toward amending the system to include the interrelationship of cultural, biological, and geological impacts on the environment. The system has been renamed the biocultural region system. This system divides the state into 18 regions which are differentiated according to the characteristic plant life, animal life, and landforms of presettlement times and the cultural impacts which have altered them since settlement.

Cascade State Park is located in the North Shore Highlands Biocultural Region. This region is famous for its bare rock cliffs along the Lake Superior shore. During the Ice Age, the Lake Superior basin was scoured, the cliffs were sheared off, and parts of the upland areas were covered by glacial deposits. The shoreland escarpment of 500 to 1000 ft (152 to 305m) is broken by numerous steep-walled valleys with cascading streams which flow into the lake. The northern half of the region was, at the time of European settlement, covered with spruce-fir forest. The southern half was covered by a mixture of pine and northern hardwoods. Due to lumbering activities and fire suppression, the dominant forest cover today is aspen-birch regrowth.

Minnesota's Biocultural Regions



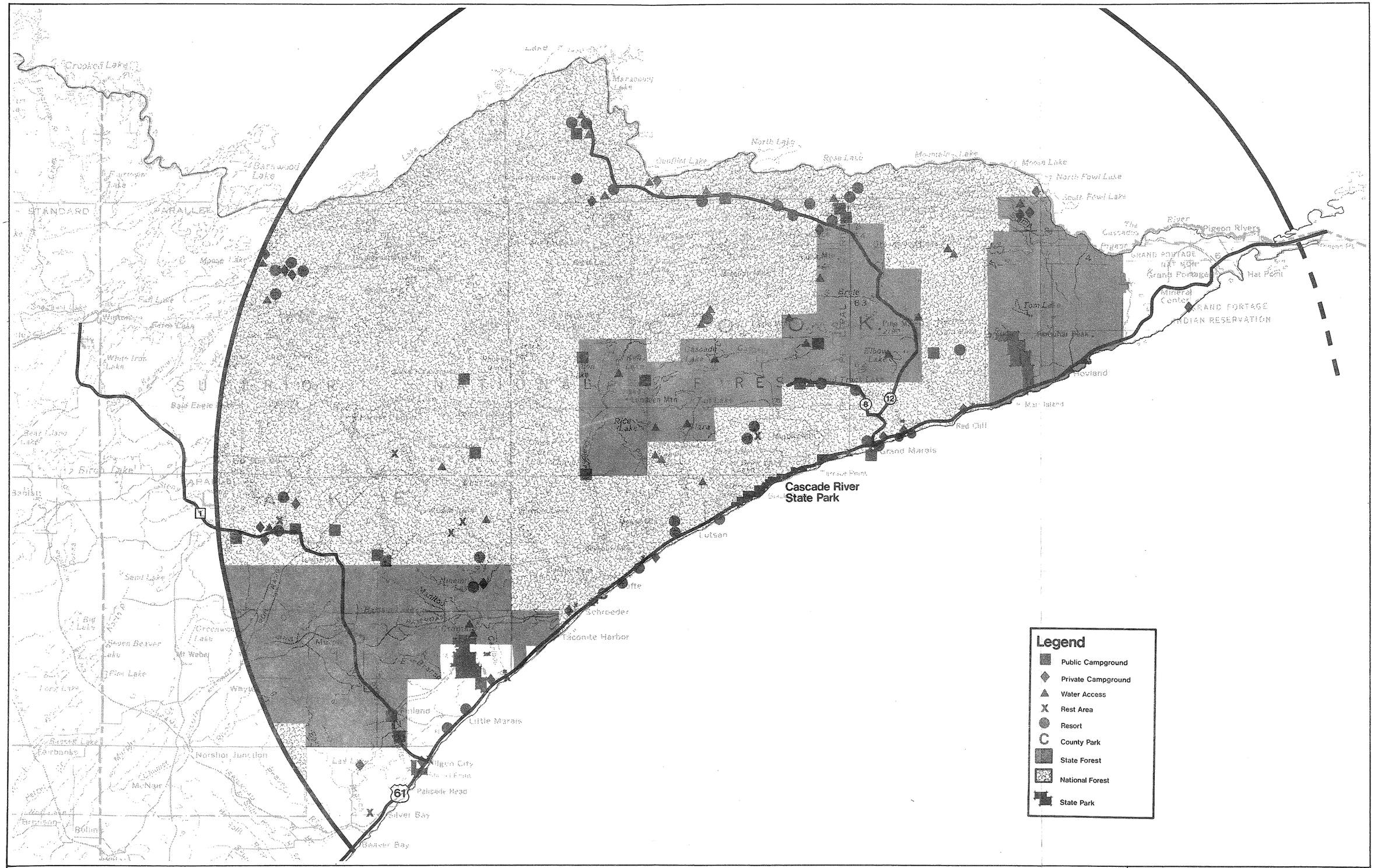
It is important in the planning for Cascade that the DNR analyze the interrelationship of Cascade with other North Shore recreational units to accurately assess the demands for particular activities in this region and how Cascade might function as a component in a North Shore recreation system. This recreation system includes federal, state, county, municipal, and privately owned facilities which are linked into a corridor by Trunk Highway 61 (TH 61). Use of this recreational corridor is highest close to the shore along TH 61 and decreases rapidly inland. Use is also highest at those facilities closest to Duluth and decreases farther north toward the Candian border. Although Cascade may not be as intensively used as facilities located close to Duluth, it is a popular overnight stopover for people traveling to Canada or around Lake Superior and it plays an integral part in providing recreational facilities for North Shore travelers.

Accessibility

The park's accessibility in terms of time and distance from major population centers and in terms of the availability of alternative modes of transportation must be evaluated when resource and recreation programs and developments are considered.

Cascade River State Park is located 9 mi (14km) les southwest of Grand Marais, 100 mi (160 km) northeast of Duluth and 247 mi (395 km) from the Minneapolis-St. Paul metropolitan area. TH 61 is the primary access route from Duluth along the North Shore, with TH 1 serving as the major access to Ely and the Iron Range. Cascade River is a 2-hour drive from Duluth, the second largest population center in Minnesota and 6 hours from the Minneapolis-St. Paul metropolitan area.

As gasoline prices continue to rise, people are seeking alternative modes of transportation. Bicycling is becoming more and more popular along the North Shore. A bicycle route is planned from Duluth to the Canadian border. It has been completed through Lake County. Bus transportation also has potential for providing access to Cascade River. Existing bus service includes stops at Lutsen and Grand Marais, from Minneapolis-St. Paul Metro area. Since the park is mid-way between these two cities, bus service directly to the park should be actively sought by the DNR.



Cascade River State Park

Regional Analysis

Park Users

Historically, the North Shore was important as a source of lumber and the location of ports for the shipment of iron ore from inland mines. While these functions still play a major role in the economic life of the region, recreation and tourism are becoming increasingly important in the lifestyle and economy of the area. The rugged topography and the vast expanse of Lake Superior combine to make the North Shore one of the most scenic areas of North America, attracting thousands of tourists from throughout the United States and Canada. In order to understand Cascade's current role and, more importantly, its potential role as a component in the North Shore recreation system, park use must be analyzed.

Cascade River is located in a sparsely populated area of the state. The population of Grand Marais is approximately 1344 and the entire population of Cook County is approximately 3300. According to the Minnesota Department of Health, the population of Lake County will drop to 2459 by the year 2000. According to the park manager, local use of the park is minimal. This is probably due to the small population base of the area and the abundance of other recreational facilities. Specific data on day use and camper registration is in the process of computer analysis and will be added to the plan when it is available.

Activity/Facility Analysis

The recreational facilities within a 25 mi (40 km) radius of the park were mentioned. It is important to note that facilities near a park may duplicate services. However, some people will consistently choose to frequent one area over another in the pursuit of a particular experience. For example, camping is a recreational activity which state parks provide. Municipal and county parks in the vicinity of a state park may also have campsites. However, some people will consistently travel to a state park because of the type of experience it offers, namely, camping in a natural setting augmented by other recreational opportunities such as hiking, wildlife observation, and historical interpretation. While camping facilities may be duplicated elsewhere, the total activity experience is not.

Camping

Camping is one of the fastest growing outdoor recreational activities in Minnesota. According to the State Comprehensive Outdoor Recreation Plan of 1979 (SCORP '79).

Camping ranks second statewide behind bicycling as the activity most desired by the people of Minnesota. Camping ranks first as the activity most desired in Development Region 3.*

The following table illustrates the camping facilities located within a 25 mi (40 km) radius of the park.

Administration	Number of Campgrounds	Number of Sites
US Forest Service	13	276
DNR	2	91
Private	8	139
Municipal	1	80
Totals	24	586 semi-modern 20 primitive 606

Although there are state and private camping opportunities available within 25 mi (40 km), the park offers a combination of recreational activities not duplicated in the area.

Picnicking

There are several areas to picnic within a 25 mi (40 km) radius of the park. The following chart summarizes these facilities.

Administration	Number of Areas	Number of Sites
MN/Dot	5	8
Municipal	1	4
US Forest Service	1	3
DNR	3	13
Private	11	38
Totals	21	66

*Region 3 refers to the economic development region which includes Cook, Lake, St. Louis, Aitkin, Itasca, Carlton, and Koochiching counties.

SCORP 1979 shows that picnicking ranks seventh behind camping, fishing, bicycling, tennis, swimming and boating as the summer activity for which people in Region 3 most desire facilities. SCORP '79 recommends that all levels of government make a effort to provide additional picnicking facilities.

Hiking

Hiking ranks sixth in the state behind bicycling, camping, fishing, tennis, and swimming, and eighth behind camping, fishing, bicycling, tennis, swimming, and boating in Region 3. There is a relatively high demand for hiking and trails statewide in Region 3.

Because of the demand for more hiking opportunities statewide and, the potential of the park to meet this demand, the development of hiking trails in this park should be a priority.

Other facilities which offer hiking opportunities include the Superior National Forest, Temperance River and Judge C. R. Magney state parks, Cross River State Wayside, and numerous private trails associated with resorts and campgrounds.

Fishing

The North Shore has an abundance of fishing streams and rivers which attract people from throughout the state. The Lake Superior trout program has been very successful in reintroducing, trout to Lake Superior, adding to the attractiveness of the area to fishing enthusiasts. SCORP '79 indicates that fishing ranks third behind bicycling and camping statewide, and second only to camping as the most popular summer activity by the people of Region 3.

Ski Touring

The popularity of ski touring has grown rapidly in recent years. SCORP '79 projections indicate ski touring will have the second largest increase in participation of all winter activities over the next 10 years in Region 3. Only orienteering is projected to show a greater increase. Furthermore, ski touring is expected to rank third behind ice skating and snowmobiling in number of activity occasions in this region during the same period. Only hunting exceeds ski touring as the activity most desired in Region 3.

Snowmobiling

The demand for snowmobiling on the statewide and regional level remains high, with 10-year SCORP '79 projections indicating a slow, but steady increase in snowmobiling occasions. A strong desire for more snowmobiling opportunities is expressed by Minnesotans statewide. Snowmobiling ranks third behind hunting and ski touring statewide, and second behind hunting in Region 3, as the most desired winter recreation acitvity. There is an extensive network of snowmobiling trails in the Cascade River area. The trails in this network include grant-in-aid trails and a portion of the State North Shore Corridor Trail. This network also connects the snowmobile trails in the Superior National Forest, local grant-in-aid trails, and trails in other North Shore state parks. Additional links to trails in the Iron Range increases the variety of opportunities for snowmobiling in the area.

Swimming

There are no publicly owned swimming beaches, but there are 15 privately owned beaches within a 25 mi (40 km) radius of Cascade River State Park. The privately owned beaches are all associated with private resorts and campgrounds.

According to SCORP '79, swimming ranks fifth in Region 3 behind camping, fishing, bicycling, and tennis as the most desired facility for summer recreation.

Bicycling

There are no bicycle trails within 25 mi (40 km) of Cascade River, with the exception of small trails located at private resorts. A bicycle trail along TH 61 has been completed through Lake County. It will eventually extend all the way up the North Shore to the Canadian border.

SURROUNDING LAND USE

The way the land surrounding a park is used can have a positive or negative impact on the park. Understanding these impacts will help to direct future development and landscape resource management.

Most of the land surrounding Cascade River State Park is used for forest production and is in public ownership. The extreme western boundary and the northern boundary east to Lookout Mountain are adjacent to US Forest Service land. From Lookout Mountain to Section 36 is a mixture of US Forest Service and school trust fund lands. East from Section 36, the park is bordered by federal, county, and private lands in about equal proportions.

County Road 1 (Cty Rd .1) forms the southern boundary of the western 1/2 of the park. Most of the land on the lakeside of the boundary is in private ownership and is used primarily for lake cabins. One year-round resort is located in this area.

At the present time, there are no conflicts between the existing surrounding land use and the park. The major portion of the park from Section 1 west is within the proposed DNR Cascade River Management Area. Although this area is only proposed and its management has not been formalized, it is now being managed as a multiple use area. No development is proposed in this area and future management will be primarily for forestry and wildlife. It is proposed that park land in Sections 9, 10, 16, and 17 and the two other parcels indicated on the Boundary Adjustments Map, p 74 be deleted from the statutory boundary. A parcel in Sections 31 and 32 near Thomsonite Beach is a proposed scientific and natural area. Park land on Good Harbor Bay will also be removed from the statutory boundary, but it will probably remain in state ownership.

III. A GOAL FOR THE PARK

CLASSIFICATION

Purpose

The purpose of the classification process as stated in the ORA '75 is to establish "an outdoor recreation system which will (1) preserve an accurate representation of Minnesota's natural and historical heritage for public understanding and enjoyment and (2) provide an adequate supply of scenic, accessible, and usable lands and waters to accommodate the outdoor recreational needs of Minnesota's citizens."

Process

In accordance with the ORA '75, 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 11 classifications from ORA '75 was most appropriate for the unit.

B. Whether sub-units (e.g., scientific and natural areas or other sub-units authorized in ORA '75) should be considered to deal with special areas within the unit.

C. Whether administration of the unit should be reassigned to other governmental bodies (e.g., other state agencies, county, or local governments).

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

The ORA '75 classification alternatives considered for Cascade River State Park were natural state park or recreational state park.

ORA Criteria

1. "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."

   Cascade River is located in the North Shore Highlands Biocultural Region. There are eight state parks in this region -- Jay Cooke, Gooseberry Falls, Split Rock Lighthouse, Tettegouche, George H. Crosby Manitou, Temperance River, and Judge C. R. Magney. Although Cascade River State Park is located in an area that is very scenic and picturesque, it does not exemplify the biocultural region. The geological features in the park are not representative of the region and the vegetation communities in the park and surrounding area have been considerably altered. The original pine communities have been replaced by aspen and birch. Since most of the land surrounding the park is being managed for production of forest products or for wildlife, the vegetation will not be returned to that of pre-European settlement times in the foreseeable future. The park itself is not large enough to restore the ecological communities which would exemplify the biocultural region, therefore it will be managed to conform with surrounding resource management.

2. "Contains natural resources sufficiently diverse to attract people from throughout the state."

Cascade does not contain resources which attract people from throughout the state. Most people who come to Cascade are attracted to the entire North Shore. Campers generally tend to stay only one night and most day users simply stop to see the waterfalls, hike for a short period of time, then move on to the next attraction.

3. "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."

After the proposed deletions of park land from the statutory boundary, the park will not be large enough to meet this criteria.

Recreational State Park

ORA Criteria

1. "Contains natural or artificial resources which provide outstanding outdoor recreational opportunities that will attract visitors from beyond the local area.

With a major change in the statutory boundary and with proper recreational development, Cascade would provide outstanding outdoor recreational opportunities which would attract visitors from beyond the local area.

2. "Contains resources which permit intensive recreational use by large numbers of people."

With a sound development plan and effective coordination of recreational development with surrounding publicly owned land, Cascade River could withstand intensive recreational use by large numbers of people. The surrounding public land could also provide dispersed recreational use by large numbers of people.

3. "May be located in areas which have serious deficiencies in public outdoor recreation facilities, provided that recreational state parks should not be provided in lieu of municipal, county, or regional facilities."

SCORP '79 identifies Region 3 as having a greater need for additional camping, picnicking and trail facilities than any other region in the state.

Recommended Classification

Cascade River State Park is being recommended for classification as a recreational state park.

THE GOAL

The goal for Cascade River State Park can be found in the purpose for all recreational state parks as stated in the ORA '75.

> To provide lands throughout Minnesota characterized by natural (as opposed to man-made) resources, which offer a broad range of publicly desirable and appropriate socially oriented recreational opportunities complementing other parts of the state-administered outdoor recreation system.

The specific goal for Cascade River State Park is:

> To provide a broad selection of outdoor recreational opportunties for large numbers of people in a natural setting

The resources within the park will be developed to accommodate a wide variety of recreational activities, while maintaining the natural character of the area. The recreational facilities provided will be related primarily to Lake Superior and the Cascade River. The overall objectives of resource management will be: to avoid or eliminate undesirable ecological impacts, to maintain the scenic quality of the area, and to enhance the large wildlife populations in the area.

V. PARK RESOURCES

RESOURCE MANAGEMENT OBJECTIVES

The following general objectives are designed to give direction to the management of all the park's resources. In order to ensure consistent management throughout the state park system, comprehensive objectives have been formulated for all state parks.

They are:

To maintain or reestablish plant and animal life which represents pre-European settlement biotic communities

To utilize resource management techniques that will harmonize with the park's natural systems

The topography of Cascade River State Park was formed by continental glaciation of ancient volcanic rock formations. These volcanic rock formations date back over one billion years. At that time, a series of lava flows known as the North Shore Volcanic Group occurred. Over time, later flows forced their way into fissures in the older rock. These flows cooled to different hardnesses. The softer flows eroded away, and the harder flows collapsed, creating the Lake Superior basin and its shoreline cliffs. During the Ice Age, glacial scouring and the erosive power of glacial meltwater formed the landscape seen today.

The surface geology in the park can be catagorized into two types, exposed or thinly covered bedrock and lake clay. The exposed or thinly covered bedrock lies in a narrow band along the Lake Superior shoreline and includes most of the existing park. Where there is soil overlying the bedrock, it consists of a thin layer of unconsolidated deposits.

Lake clay areas are found in a narrow band immediately inland from the bedrock area. This type consists mostly of stratified clay with some silt, sand, and ice-rafted boulders. It is generally over 6 ft (1.8 km) thick throughout the park.

This plan proposes that the park boundary be expanded approximately one mile upstream. If this occurs, a third surface geology type will be included in the park -- the ground and end moraine. This type consists of till, unstratified clay, silt, sand, gravel, and boulders. This moranic material is generally over 6 ft (1.8 km) thick.

The possibility of finding minerals in economically recoverable quantities at Cascade River is low.

SLOPE/ELEVATION

The park terrain generally slopes toward Lake Superior and is characterized by steep gorges cut by the Cascade River and associated tributaries. As a result, much of the park surface consists of 12% or greater slope (see Slope Map, p 31). However, there are small areas of flat terrain.

The elevation of the park ranges from 602 ft (189 m) Mean Sea Level (MSL) at the lakeshore to 1000 ft (305 m) MSL along the inland ridges. If the park is expanded inland, the highest point will be over 1200 ft (366 m) MSL.

Cascade River State Park

Slope

CLIMATE

Because of the influence of Lake Superior, the Cascade River State Park tends to be cooler in the summer and warmer in the winter than the inland areas of the state.

The climate of Cascade is ideal for recreation throughout the year. The moderating effect of Lake Superior tends to extend the normal summer recreation season well into the fall, making the area ideal for picnicking, hiking, and camping. Winter recreation conditions are also ideal. The season is long and mild and has abundant snowfall. In contrast to the metropolitan area which has an average of 166 days a year below freezing, the Cascade area only has 144 days below freezing. There is usually a suitable snowcover for winter sports from the beginning of December until the middle of April.

Mean July temperatures are 72°F (22.2°C) maximum and 53°F (11.7°C) minimum. Mean January temperatures are 21°F (-6.1°C) maximum and 2°F (-16.7°C) minimum. Mean annual percipation is 27 in. (67.5 cm) with approximately 70 in. (177.8 cm) of snowfall.

Sources.

Climate of Minnesota, Hydrologic Year Data, 1978, Minnesota Department of Natural Resources.

Kuehnast, Earl L., 1959. Climate of Minnesota. United States Department of Commerce.

Inventory

The soils of Cascade River State Park are dominated by the Barto-Mesaba complex of gravelly silt loams. Approximately 40% of this complex is comprised of Barto soils which overlay the bedrock at a depth of 8-20 in. (20-50 cm). Mesaba soils also comprise about 40% of the complex. They usually range in depth from 20-40 in. (50-100 cm). Twenty percent of the complex consists of Quetico soils which range from 4-8 in. (10-20 cm) in depth. In many areas of the park, the bedrock is exposed.

The shallow depth and stoniness of the soils create problems for park development, especially building construction. There are, however, level areas with good drainage that are suitable for development.

The Barto-Mesaba complex has absorption properties that make it good for drain fields, provided the soil is built up into mounds with clay mixed in.

Other soils found in the park include Amasa, Duluth, Hibbing, Quetico, Suamico, and Udorthents.

The park has a 50 acre (20 hectare) area of Amasa soil. This soil is good for all development except sewage lagoons. However, it is located far away from the park's existing development and will probably be turned over to another DNR division (Wildlife or Forestry) for management.

The existing park has little Hibbing or Duluth soil. However, expansion upriver would add extensive areas of these soils. Both are fair for development, but because of soil limitations, the cost of construction of buildings or sewage disposal systems may be higher and the construction methods more difficult. The Duluth soils can accommodate roads. However, road building on Hibbing soils requires extremely expensive construction methods.

Miles 0 500' 1/4mi. 1/2mi. 1mi.
Kilometers 0 500m 1km

Cascade River State Park

Soils

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				
Amasa gravelly fine sandy loam	512BC	2-12%	2.0-6.0 in./hr.	SLIGHT *	LOW	GOOD	GOOD	GOOD	SLIGHT	POOR seepage	GOOD
Barto-Mesaba complex gravelly silt loam	890BD	2-18%	2.0-6.0 in./hr.	MODERATE	MODERATE	FAIR slope, small stones large stones	FAIR slope, small stones large stones	GOOD TO FAIR small stones	FAIR-POOR shallow depth to rock slope	POOR seepage, shallow depth to bedrock	POOR - shallow depth to bedrock FAIR TO GOOD with modifications
Duluth very fine sandy loam	504 504BC	0-2% 2-12%	.06-2.0 in./hr.	MODERATE *	MODERATE	GOOD	MODERATE slow percolation	GOOD	FAIR shrink-swell	POOR slope	POOR slow percolation
Hibbing silt loam	254B	2-6%	.06-2.0 in./hr.	SLIGHT	MODERATE	GOOD	POOR slow percolation	GOOD	POOR low strength shrink-swell	FAIR slope	POOR slow percolation
Quetico rock outcrop	952BD	2-18%	0.6-2.0 in./hr.	HIGH	MODERATE	POOR large stones	POOR large stones	FAIR large stones	POOR shallow depth to rock	POOR seepage, shallow depth to rock, slope	POOR shallow depth to rock
	952EF	18-60%	0.6-2.0 in./hr.	HIGH	MODERATE	POOR slope, large stones	POOR slope, large stones	POOR slope	POOR slope, shallow depth to rock	POOR shallow depth to rock, slope	POOR shallow depth to rock, slope
Suamico muck	550	0-1%	.06-5.0 in./hr.	LOW	HIGH	POOR wetness, floods, excess humus	POOR wetness, floods, excess humus	POOR wetness, floods, excess humus	POOR wetness, floods, low strength	POOR wetness, floods, excess humus	POOR wetness, floods, slow percolation
Udorthents	1020	18-45%	No Data	HIGH	MODERATE	POOR slope	POOR slope	POOR slope	POOR slope	POOR slope	POOR slope

* Author's estimate from available data

Quetico, Suamico, and Udorthents are all poor soils for any recreational development. Quetico and Udorthents are unsuitable for development because of steep slopes (up to 60%) and Suamico is too wet. If necessary, trails can be developed on all three, however special construction techniques will be required because of erosion potential and wetness.

Management

Objectives:

To correct all existing erosion problems

To protect soils from future erosion

To maintain current data on park soils

Although most of the soils in the park are not excellent for development, facilities can be constructed without excessive modifications and cost. The Soils Limitations CHART, p 35, delineates the areas of good, fair, and poor soils for development.

Some segments of the park trail system are eroded because of poor location and overuse. The shallow soils along the river are the most sensitive and the most eroded. Trails along the river will require special construction methods. (See Proposed Development, Trails, pp 62-65 for specific recommendations.)

Detailed Recommendations

Action #1. Conduct site surveys and borings at all potential development sites.

The variable nature of park soils requires site specific information. The fringe and expansion areas of the park have never been surveyed.

Cost. Covered in the cost of each development project.

VEGETATION

Original Vegetation

The original pre-settlement vegetation in Cascade River area was a mixture of northern hardwoods and conifers. The hardwoods consisted almost entirely of aspen and birch. The conifers consisted of white and Norway pine, balsam, fir, spruce, and white cedar.

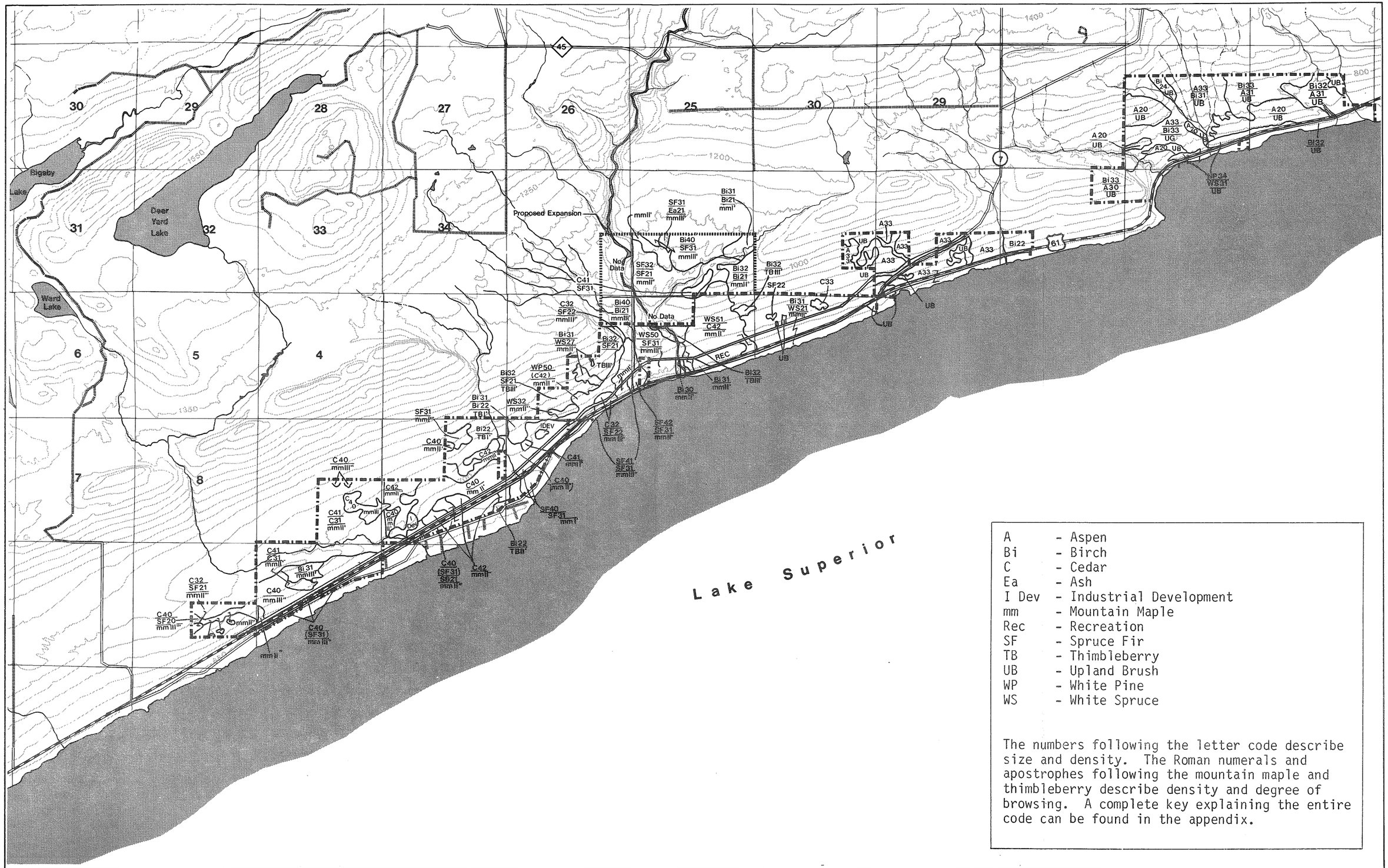
Existing Vegetation

The present vegetation in the park is a mixture of northern hardwoods and conifers. However, few of the larger pine remain because of heavy logging activity at the turn of the century.

Three species are predominant in the park. Paper birch (29%), white cedar (28%), and aspen (21%) make up 78% of the vegetative cover. White spruce, upland brush, spruce-fir, mountain maple, white pine, and Norway pine, along with industrial and recreational development, make up the balance. None of these latter groups exceeds 7% of the total acreage.

The proposed boundary changes will reduce the vegetative diversity considerably. Aspen will no longer be found in the park and the total acreage of cedar will be significantly reduced. On the other hand, the amount of spruce-fir and birch will be increased. Of the proposed 520 acres (210 hectare) addition, 320 acres (129 hectares) have been inventoried. Management recommendations for this area have been included in this plan.

The main vegetative problem in the park is blowdown of overmature trees. Balsam fir is the primary victim, however, spruce and cedar are also susceptable.



A	- Aspen
Bi	- Birch
C	- Cedar
Ea	- Ash
I Dev	- Industrial Development
mm	- Mountain Maple
Rec	- Recreation
SF	- Spruce Fir
TB	- Thimbleberry
UB	- Upland Brush
WP	- White Pine
WS	- White Spruce

The numbers following the letter code describe size and density. The Roman numerals and apostrophes following the mountain maple and thimbleberry describe density and degree of browsing. A complete key explaining the entire code can be found in the appendix.

N

Miles 0 500' 1/4 mi. 1/2 mi. 1 mi.

Kilometers 0 500m 1 km

Cascade River State Park

Vegetation

Management

Objectives:

To improve the aesthetic quality and vigor of the park's vegetation

To improve wildlife habitat

To enlarge the northern conifer forest

To eliminate vegetation hazards near park facilities and trails.

The management program outlined in this plan includes recommendations for areas included in the boundary expansion. The 160 acres (68 hectares) of US Forest Service land has not yet been inventoried and is not included in this plan. Park land in Sections 26 and 27 of T61N RIW and Section 9, 10, 16, and 17 of T60N R2W will be transferred to the Section of Wildlife. Park land in Section 31,32, 33, and 34 T61N R1W will be administered by the Scientific and Natural Areas Section.

Some areas within the reduced park boundary do not require active management. Some of the stands are young and in good condition, others are self-sustaining and some are just too small to feasibly manage.

Detailed Recommendations

Description of specific management techniques and suggested plant materials are included in the appendix. The map codes listed after each action correspond with those on the Vegetation Management Map, p 41 .

Action #1. (Map Codes 1a, 1b, 3a, 3b, 3c, 5c) Remove down, diseased, and damaged, standing vegetation. Plant conifers.

These stands are suffering from blowdown of balsam, birch, and spruce. Clearing downed trees will reduce the fire hazard and generally rejuvenate the stands.

*Cost. $32,000 - contracted timber sales
$126,500 - park staff

Action #2. (Map Codes 1c, 2, 7b) Perform regular sanitation cuts.

These stands are generally in better condition than those listed in Action #1. Recreational development will be located in these areas. This action will keep the trails and recreational facilities free from down vegetation and protect park visitors from the hazard of falling limbs.

Cost. $6,000

Action #3. (Map Codes 4, 6a, 6b) Rock rake the existing vegetation. Plant conifers.

These stands provide a food source for deer and other wildlife. However, they do not have adequate cover. And area 4 has grown beyond feeding reach for most species of wildlife. This action will correct both problems. The rock raking will stimulate regeneration of the mountain maple for a food source and open up areas for spruce planting, which will provide cover.

Cost. $10,400

Action #4. (Map Code 5b) Convert part of the stand to conifers.

This stand does not have any problems, however, it is comprised of only birch which is the dominant vegetation type in the park. This action will increase the park's vegetational diversity.

Cost. $10,000 - contracted timber sales or firewood permits
$45,500, - park staff

*Throughout this section estimated costs for vegetation management by both contacted timber sales and force account funding are included.

Miles 0 500' 1/4mi. 1/2mi. 1mi.
Kilometers 0 500m 1km

Cascade River State Park

Vegetation Management

Action #5. (Map Code 5d) Perform sanitation and special site cutting and planting.

This area is the location chosen for the new campground.

The vegetation is generally in good condition, This action is necessary to keep the area free from down and hazardous trees. Some planting will also be required.

Cost. Included in Proposed Development, Camping Action #4, p 60 .

Action #6. (Map Code 7a) Reforest the east part of the campground.

The west end of the existing campground will be rehabilitated as a picnic area. The east end is too wet for continued use. Reforestation of this large open area will enhance the aesthetic quality of the area and further screen the manager's residence from the picnic area.

Cost. $2,800

Action #7. (Map Codes 1a, 1b, 5a, 5b) Create permanent wildlife openings.

Cascade River is almost entirely forested. Many wildlife species prefer a forest edge environment. By creating openings, more edge is provided and habitat improved.

Cost. $3,200 - contracted timber sales or firewood permits
$17,800 - park staff

Action #8. (Map Code 8) Maintain brushy runways across the grassy opening of the power line right-of-way (RoW).

The power line RoW is maintained by the utility company under a permit from the DNR. This action will provide for the continued maintenance of the grassy opening and the addition of runways across the opening. These runways will be vegetated with brush and small trees to provide cover for wildlife.

Cost. No Cost

Inventory

Most of Cascade River State Park is included in the Cascade Management Area. This area is a unit cooperatively managed by three DNR divisions--Parks and Recreation, Forestry, and Fish and Wildlife. It encompasses all of the of T60N R2W and Sections 25, 26, 35, and 36 of T61N R2W. It includes most of the largest winter deer concentration area on the North Shore -- the Jonvik Deer Yard. This area will continue to be managed jointly, but it is recommended that some changes be made in the area that each division manages (see pp71-72 for further discussion.)

Located along the North Shore flyway, the area's deciduous, deciduous-conifer, and conifer forests provide habitat for northern warblers and many species of waterfowl and raptors. Some of the more rare or unusual birds that visit the park include the harlequin duck, black scoter, Cooper's hawk, bald eagle, peregrine falcon, great gray owl, boreal owl, and gyrfalcon.

Most of the northern forest mammals are known to inhabit the Cascade River area. Some of the more interesting species which are believed to be common in the park area include moose, timber wolf, snowshoe hare, little brown bat, cinerous and short-tailed shrews, woodland deer mouse, and boreal red back vole.

The major wildlife problem in the park is the high number of deer road kills along TH 61. Though road kills are common along the North Shore, a significant percentage occurs along the 7.35 mi (12 km) stretch through the park. During the five winters from 1966 through 1970, an average 17 deer per year were killed along the park section of the highway. The five winters 1974 through 1978 averaged 27 deer kills per year. These numbers are conservative figures. Many deer are only crippled when hit and manage to escape into the woods and die, and some are illegally taken after being hit. There are two explanations for the heavier deer kill in the park. Lake Superior acts as a giant insulator keeping a narrow band of land along the shore warmer during the winter. This area also seems to receive less snow than inland areas, thus more food sources are available. Deer move across the highway to find better foor and shelter along the lake.

The second explanation is that people who live adjacent to the park feed the deer. Though their motives are good, feeding tempts the deer to cross the highway increasing the chances of road kill.

The deer kill problem is complicated and finding an answer seems remote, however a study will be undertaken in an attempt to improve the situation.

The only other known wildlife problem in the area is the loss of habitat. See the Vegetation Section, p 37 for further discussion.

Management

Objectives:

To protect nest and den sites of rare animals in the park

To attempt to reduce the number of deer road kills on the highway

Detailed Recommendations

Action #1. Temporarily close or relocate sections of trails that disrupt den or nest sites of rare or endangered species.

Cost. Covered in the operational budget.

Action #2. Post additional, larger signs along the highway warning motorists of the danger of deer crossing the road.

Cost. $1,000

Action #3. Initiate a study coordinated by the area wildlife manager which will help to remedy the road kill problem.

The study should include an analysis of similar road kill problem areas and attempted solutions.

Cost. Covered by DNR, DIVISION OF FISH & WILDLIFE

As is common along the North Shore, groundwater supply and quality are extremely variable. The existing well in the park is a flowing artesian well of unknown depth. It provides an adequate supply, however, the water contains concentrations of salt. The concentration level is not high enough to be harmful, but it affects the water's taste. Another problem with the present system is that the manager's residence is the only facility in the park that has a winter water supply. The water system can be improved by either drilling new well(s), installing a filter system and year-round lines to the present well, or a combination of both. All of the available options are extremely expensive but some combination of these two solutions must be implemented if an adequate supply of good quality water is to be provided in the park.

Management

Objectives:

To provide an adequate supply of good quality water to all the park facilities

To protect groundwater from pollution

Detailed Recommendations

Action #1. Drill a well in the new primitive campground. This campground area is too far to consider laying a water line from the existing well.

Cost. Included in Proposed Development, Camping, Action #4, p60.

Action #2. Drill a well between the shop and the manager's residence to provide a year-round water supply to both facilities.

The existing well provides year-round water for the residence, but not the shop. A well located in this area would require only short water lines to both facilities.

Cost. Included in Proposed Development, Administrative/Support Facilities, Action #2, p 66.

Action #3 Winterize campground water system.

Install a submersible pump and deep buried water lines from the existing well to a new vault toilet building near the trail center. This is necessary because the park's winter use has increased considerably in recent years and visitors are requesting a water supply and winterized rest rooms.

Cost. See Proposed Development, Camping, Action #3, p 60.

SURFACE WATER

Surface water in Cascade River State Park includes Lake Superior, Cascade River, Indian Camp, Deer Yard, Sprice, Cutface (Good Harbor) creeks, and five unnamed creeks. Boundary adjustment would remove most of the minor creeks from the park.

The Cascade River is the park's main attraction. The cascading falls drop 120 ft (37 m) in a narrow, twisting gorge through the park. In its 17.5 mi (28 km) length, this river drops 1400 ft (427 m), an average of 90 ft per mile (27 m per kilometer). However, over 900 ft (274 m) of this drop occurs in the last three miles.

The three named creeks are small, three to five miles (5 to 8 km) in length with flows that diminish to intermittant during the summer. Deer Yard and Cutface are typical North Shore streams with falls, cascades, and steep banked gorges. Spruce has two 20 ft (6 m) falls which are barriers to lake run fish. Cutface has a barrier in the form of a 200 ft (61 m) length of ledgerock that lifts upstream at a 40^{o} angle. Indian Camp has no permanent barriers, only log jams, and has gently to moderately sloped, soil-covered banks. The three streams are all classified trout streams and are actively managed.

The other five streams are not actively managed and no information is available on them.

The water quality of North Shore streams is generally very good to excellent. The Cascade River was tested in the early seventies. It was within drinking water standard limits in all categories except fecel and total coliform, carbon, iron, and phenols. It was within limits for all categories for recreation and fisheries waters except oil and grease. There is no apparent reason for the oil and grease reading and it has created no problems with the fisheries management of the river.

The one surface water problem in the park is in the campground. The eastern part of the campground was located on a natural seepage (spring) area and the surface is wet nearly all summer. The campground roads and spurs have been built up with gravel so they stay reasonably dry. But they act as barriers to the natural drainage. Ditches and culverts have been constructed to drain the water off.

The Section of Fisheries actively manages the Cascade River and Spruce and Indian Camp creeks. The Cascade River is managed as a trout (rainbow, brown, and brook) stream. The first 675 ft (206 m) upstream from the mouth to the barrier falls is the only part which is managed. The river has been stocked off and on since 1906. Chinook salmon have been stocked at the Pike Lake Road since 1974. The river has good spawning areas, but needs more pools.

Stream improvements on Indian Camp Creek (from old TH 61 upstream) were initiated in 1970. Maintenance of these projects and other new construction have increased pool areas in the stream. The natural trout reproduction has been good in this stream in the past. In fact, in 1960, the highest concentration of rainbow trout of all the North Shore rivers was found in this stream. It has good spawning conditions with plenty of shade and gravel. More new construction to increase pool areas and water storage is scheduled for 1980.

Deer Yard Creek has good spawning conditions with plenty of gravel, but lacks the pools to complement the riffle areas. Brook trout were introduced in 1923 and stocked through 1942 and from 1955 to the present. Stream improvement work was initiated in 1979 with more work scheduled for 1980. Construction of pool areas is the major project to be completed. An initial stocking of steelhead fry is planned for 1980.

Cutface Creek is also a designated trout stream. It is not stocked, but it is actively managed.

Management

Objectives:

To increase natural fish reproduction in park trout streams

To increase trout fishing opportunities along the North Shore

To provide fishing access to Lake Superior

Detailed Recommendations

Action #1. Continue stocking programs in the Cascade River and Deer Yard Creek.

Brook, brown, and steelhead trout and chinook salmon should be stocked in the Cascade River. Brook and steelhead should be stocked in Deer Yard Creek. This stocking program will supplement natural reproduction and enhance Lake Superior's overall fishery potential.

Cost. DNR, Section of Fisheries

Action #2. Continue maintenance programs on Indian Camp and Deer Yard creeks.

The wide fluctuation in the flow of North Shore streams damages stream improvement structures making continual maintenance necessary.

Cost. DNR, Section of Fisheries

Action #3. Start a steelhead fry stocking program in Indian Camp Creek.

Stocking to supplement natural reproduction in this stream should begin in the next few years.

Cost. DNR, Section of Fisheries

Action #4. Construct a carry-in, small boat landing on Lake Superior near the mouth of the Cascade River. (See Proposed Development, Water Activities, Action #1, p 65 .)

Cost. DNR, Section of Fisheries

IV. MANAGEMENT AREAS

SPECIALIZED MANAGEMENT AREA

To more effectively manage the natural and recreation resources within the park, specialized management areas were identified. By identifying these areas, management strategies can be more effectively directed toward fulfilling the overall park goal.

Because Cascade River is surrounded by the cooperatively managed Cascade Management Area, only one specialized resource management area is proposed. (See Management Areas Map, p52 .)

The proposed management area is where all major park development will be located. Since there is no ideal location in the park for development, ample space is included in the management area to ensure flexibility in the location and design of facilities and to accommodate resource limitations.

As resource management takes place within the Cascade Management Area, specific management policies may be proposed for sub-units that could include portions of the park. This plan will be amended to include these changes.

Cascade River State Park

Management Areas

III PHYSICAL DEVELOPMENT AND RECREATION MANAGEMENT

EXISTING DEVELOPMENT

Development in the park includes a 36 site semi-modern campground, a sanitation building with flush toilets and showers, a 4-site picnic area, 15 mi (24 km) of hiking trail, 2 mi (3 km) of multiple-use trail, and 14 mi (22 km) of ski touring trail. All park trails adjoin trails on adjacent public lands. This adds 18 mi (29 km) of hiking trail, 12 mi (19 km) of multiple-use trail, and 16 mi (26 km) of ski touring trail to the Cascade system.

Administrative development includes the shop/maintenance building, wood storage building, the manager's house/office, a trail center, and a contact station.

PROPOSED DEVELOPMENT

Objectives:

To provide a broad selection of outdoor activities which are consistent with the resource management objectives of the park and the adjacent Cascade Management Area

To provide only those facilities necessary for appropriate use and enjoyment of the resources

Overview

Proposed new development will include:

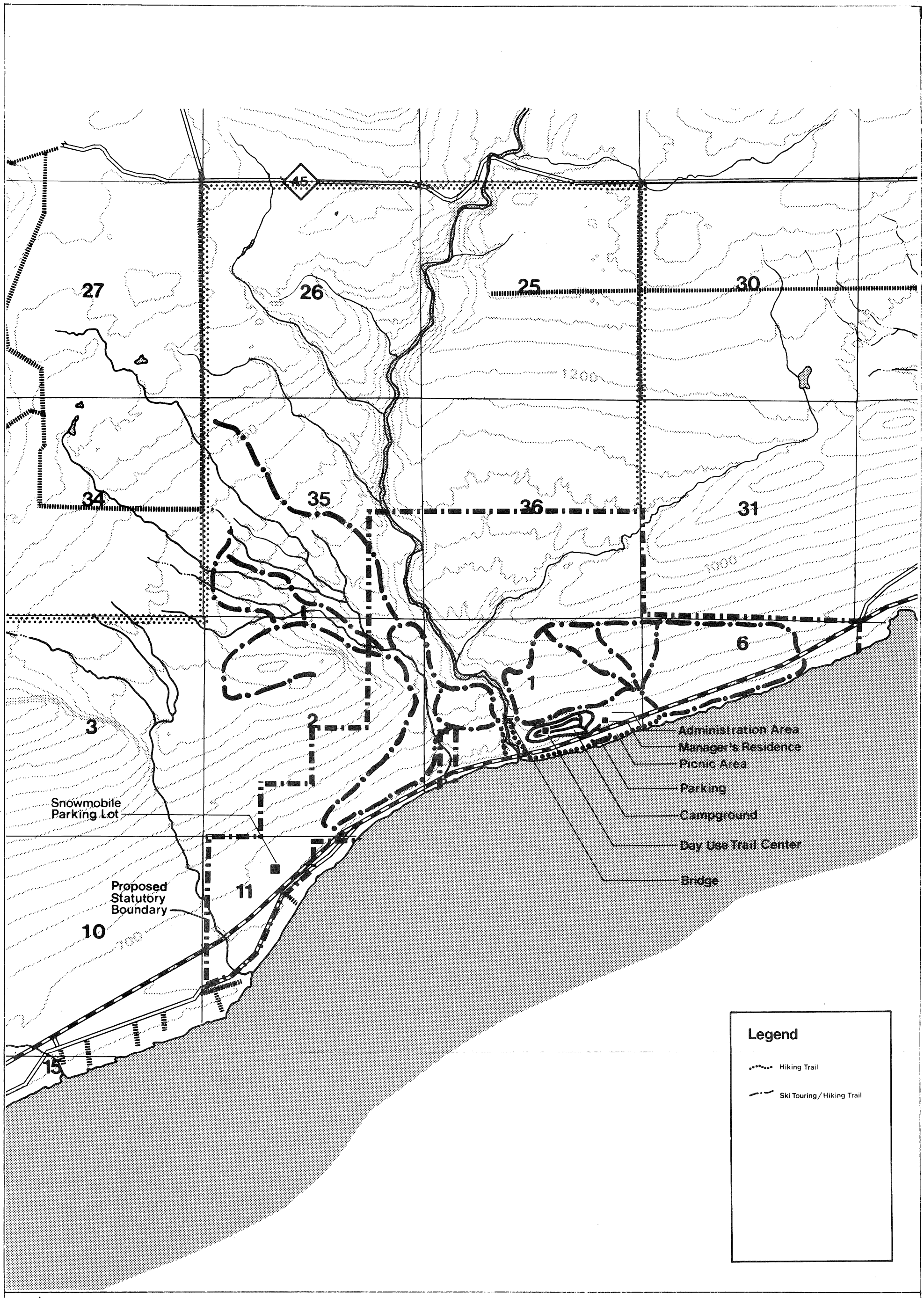
Constructing a combination park office/contact station

Rennovating the existing campground

Developing a new primitive campground

Developing a group camp

Developing a new picnic area



Cascade River State Park

Existing Trails & Development

Constructing a new fairweather boat launch near the mouth of the Cascade River on Lake Superior

Rennovating and upgrading the trail system

The Cascade River is the primary attraction of the park, therefore the main emphasis on development will be toward enhancing the park visitors enjoyment of the river gorge. Secondary emphasis will be placed on access to the surrounding recreational resources of Lake Superior and the Cascade Management Area. Since a recreational classification is recommended for Cascade, a wide variety of recreational facilties will be provided, on a year-round basis.

Architectural Theme

Objective:

To establish and maintain a unified building style in all the state parks along the North Shore

The parks and secondary units of the North Shore actually function as many components of a North Shore recreation system. The present collection of buildings, in parks on the North Shore is a hodge podge of architectural styles.

A consultant architect should be hired to develop an architectural theme that can be used in all the parks along the shore. The theme should reflect the landscape elements of the North Shore, including native stone, wood, and color. Building design should be modern, but should be compatible with the Civilian Conservation Corps (CCC) style buildings. The design should maintain the low profile, simplistic form, and rustic and massive character of the old style buildings. A common color scheme should be used throughout the North Shore for all park and secondary units. Signing should be consistent with the statewide signing system.

Public use buildings specifically designed for Cascade River should fit the proposed North Shore architectural theme. Administrative buildings not open to the public need not fit the theme, but should be compatible with other park buildings.

Preliminary Research

Objective:

To acquire a complete data base before detailed engineering and design begins

Action #1. Conduct a sewage system study.

Cost. DNR, Bureau of Engineering

Action #2. Conduct a water system study.

Cost. DNR, Bureau of Engineering

Action #3. Conduct an archaeological study (survey).

Cost. DNR, Bureau of Engineering

Detailed Recommendations

Roads

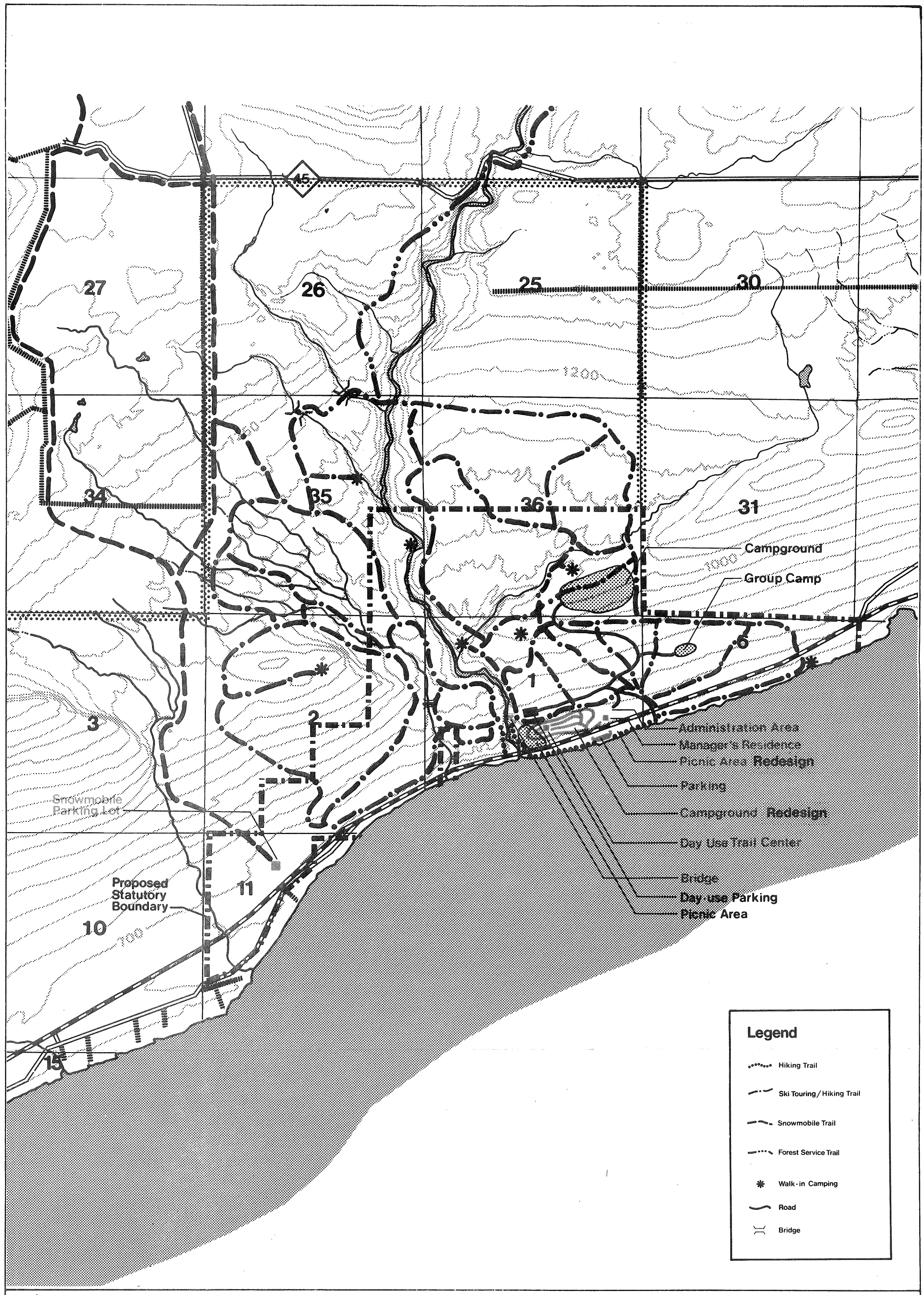
Objectives:

To provide vehicular access to all major recreational facilities in the park

To eliminate existing vehicular ciruclation problems

Action #1. Redesign the contact station area and park entrance road in a new location (see map, p58.)

The existing contact station is located between the main use area of the park and TH 61. The present design does not allow sufficient space for efficient vehicular circulation at the contact station. There is only room for two or three vehicles in the area at one time. During busy periods, vehicles entering the park are frequently backed up on TH 61, creating a traffic hazard.



Cascade River State Park

Proposed Trails & Development

A new park entrance road should be constructed about a quarter mile east of the existing entrance. The project should include a new park sign, a new contact station/park office (see Administrative/Support Facilities, Action #1, p65) and a turn around loop. The whole area should be landscaped to serve as a focal point for the park entrance. The existing contact station should be moved to the new entrance location and used until the new facility is built.

Cost.$75,000 - road

$30,000 - sign and landscaping

Action #2. Provide access to the primitive campground, group camp, and walk-in campground.

When the semi-modern campground is designed, the unused campground roads should be obliterated. Approximately 2 mi (3.2 km) of new road will be constructed to access the new camping facilities. All new roads should be paved with asphalt for year-round use.

Cost. $75,000

Camping

Objective:

To provide a wide variety of camping opportunities in a natural setting

Action #1. Rehabilitate and redesign the existing campground.

The existing campground is poorly designed and needs to be rehabilitated. Its present location does not provide a high quality primitive camping experience. There are also drainage problems in the eastern portion of the campground. (See Surface Water, p47 for further discussion.)

The campground will be redesigned with 25 campsites. The vault sanitation building will be rehabilitated. The vault must be repaired and the building heated for winter use. The campsites should be laid out to minimize disturbance by using the best of the existing campsites. Natural screening should be provided by planting dense areas of native vegetation.

Cost. $44,000

Action #2. Obliterate campsites that will not be used for picnic sites.

The unused campsites should be restored to a natural condition. Some minor grading and planting should be all that is necessary. Eliminating use will allow natural regeneration to take place.

Cost. $2,000

Action #3. Winterize existing water system.

The existing system is only usable during the summer months. The system should be modified for year-round use.

Cost. Contingent on DNR, Bureau of Engineering Study

Action #4. Develop a primitive campground in the south 1/2 of the southeast 1/4 of Section 36. (See Proposed Development Map, p58a.)

Based on the 1979 DNR statewide camping survey, nearly 70 percent of Minnesota campers are tent campers and prefer less developed campsites. A primitive campground in Cascade would provide an alternative to the semi-modern campsites in the existing campground.

The campground should contain approximately 40 campsites. It should be designed so campsites are widely spaced and screened from each other. Each campsite should be designed with a short automobile parking spur to reduce the impact of automobiles. Each site should have a table, fire ring, and tent pad. A hand water pump and vault toilets will be provided.

Cost. $88,000

Action #5. Develop walk-in campsites along Lake Superior and inland within 1/2 mi (.8 km) of the proposed primitive campground.

Tent camping is growing in popularity in all state parks. Tent campers frequently request isolated campsites.

Up to 20 sites should be developed, however only 5 sites should be provided initially to test their desirability. Additional sites should be developed as use justifies it.

Each site should have a fire ring, picnic table, tent pad, and be within 400 ft (122 m) of a pit toilet. Parking will be provided near the contact station and in a parking lot near the proposed primitive campground.

Cost. $15,000

Action #6. Develop three group campsites.

Group campsites are requested on a fairly regular basis and no facilities are available. Each of the group campsites should accommodate 25 people. Each should be equipped with vault toilets, drinking water, 5 picnic tables, a tenting area, and parking for 6 cars.

Cost. $20,000

Picnicking

Objective:

To provide day use areas adjacent to the Cascade River and Lake Superior for short term park users

Action #1. Redesign the west 1/3 of the existing campground to serve as a picnic area.

The west end of the existing campground is ideally suited for picnicking. The site is adjacent to the trail center and it is near the new park entrance and the Cascade River gorge. The resources of the site are more suitable for picnicking than camping. The area is well-drained, it has good vegetation, and is large enough to accommodate the picnicking demand in the park. The remaining portion of the existing campground will be redesigned. (See Camping, Action #1, pp59-60.

Approximately 20 walk-in picnic sites should be developed, using existing campsites. Parking will be provided at the trail center parking lot. Each will be provided with a table and cooking grill.

Cost. $5,000

Action #2. Develop walk-in picnic sites along Lake Superior, near the mouth of the Cascade River.

Picnicking along Lake Superior is popular and developed sites can be provided without disrupting the shoreline. Six picnic sites with tables and fire grills should be sufficient to accommodate expected demand.

Cost. $5,000

Trails

Objectives:

To provide access to a variety of areas in the park along alignments chosen for their scenic views, points of interest, linkage of use areas, avoidance of sensitive areas, and separation of conflicting uses

To provide barrier-free trails connecting main use areas of the park

Snowmobile Trails

Action #1. Develop an independent trail alignment from TH 61 to the Pike Lake Road as a link to the North Shore Corridor Trail.

The existing alignment is a multi-use trail shared by both skiers and snowmobilers. There are only minor problems at the present time because very few snowmobilers use the trail. However, snowmobile use increases and conflicts develop, two trail alignments should be developed. If snowmobile use decreases, the alignment will be designated for ski touring only.

Cost. $2,500

Hiking/Skiing Trails

Action #2. Redesign and expand the existing hiking/skiing trail system to include more of the Cascade River and additional scenic overlooks.

Winter and summer trail use is the fastest growing activity in Cascade. The existing trail system is very good, but some minor realignments and additional routes are needed.

Cost. $20,000

Action #3. Make the trail from the trail center to the pedestrian bridge over the Cascade River accessible to special populations.

The area of the existing bridge is the most scenic area of the park. With a small amount of reconstruction this area of the park could be made barrier-free and accessible to all park users.

Cost. $5,000

Action #4. Develop connecting links from the Cascade trail system to a hiking trail which is proposed for the area.

A hiking trail along the Lake Superior crest has been proposed by the US Forest Service, the DNR, and by local citizens. (Details of the trail alignment will be worked out by the DNR, Trails and Waterways Unit.)

Cost. DNR, TRAILS & WATERWAYS

Action #5. Construct an additional bridge over the Cascade River a mile upstream from the existing bridge.

The proposed bridge should be at least 4 ft (1.2 m) wide. It should be designed to serve as a year-round pedestrian bridge. It must also accommodate trail maintenance equipment, which the existing bridge cannot do. An additional river crossing would disperse park users along the river and would add variety to the trail system.

Cost. $75,000

Action #6. Construct two new trail bridges over Cascade Creek.

The existing trail crosses the creek at two points without bridges. In the winter months, ice makes crossing very difficult. During the summer months the stream is also difficult to cross, except during low water.

Cost. $40,000

Action #7. Construct small bridges over intermittant streams.

Approximately eight small bridges ranging in size from 5 to 10 ft (1.5 to 3 m) are needed to cross small streams throughout the park. Without bridges, the crossings become extremely muddy resulting in an increased silt load carried into the Cascade River.

Cost. $5,000

Signing

Action #8. Develop a comprehensive signing system.

The existing system should be completed and upgraded. It should also be expanded to include the entire Cascade Management Area.

Cost. $3,000

Water Activities

Objective:

To provide a safe access for small boats to Lake Superior

Action #1. Develop a small (carry-in only) boat landing near the mouth of the Cascade River.

The waters of Lake Superior just off the mouth of the Cascade River have become one of the best lake trout fishing areas on the North Shore. At the present time, the closest boat landing is at Grand Marais, 10 mi (16 km) to the northeast. Anglers and the DNR, Section of Fisheries staff have asked that an area suitable for launching small fishing boats be provided in the area. The landing will also make it easier to take small boats out of the water in the event of rough water on Lake Superior.

Cost. DNR, Section of Fisheries

Administrative/Support Facilities

Objective:

To provide the essential administrative facilities which will ensure effective, efficient operation of the park

Action #1. Develop a combination contact station/park office near the relocated park entrance.

The existing contact station is not suitable even for its present limited use. The building is small and unheated. It does not have toilet facilities and it is not suitable for remodeling. Ideally, the contact station should be open year-round. The park office is located in the manager's residence so the contact station is rarely used. A new combination contact station/park office will eliminate duplication of office space, save energy, and centralize park administration. The building should be designed according to the park's architectural theme and should include complete landscaping.

Cost. $115,000

Action #2. Complete the service area at the existing site.

A well-designed, properly equipped service area is essential to park operations. The existing service area consists of a heated shop building, a small lumber storage building, and a large building for storage of firewood for retail sales.

The unheated storage building with at least 1500 sq ft (103 sq m) is needed to store both equipment and supplies. Also needed is a gas and oil storage building. The existing shop building is properly equipped, although it does not have a water supply or toilets. A new well will be drilled to supply both the manager's residence and the shop. (See Groundwater, Action #2, p45.) When water is provided at the shop, a drainfield should be built and a toilet installed.

Materials have already been purchased, the only cost involved would be labor.

Cost. $92,000

Action #3. Pave service area.

The soils in the park are very erodable and have very little bearing strength. Asphalt paving will overcome these problems and allow use early in the season when park personnel are preparing for the early spring tourist season.

Cost. $25,000

Action #4. Remodel the manager's residence.

This residence will be a very suitable building with the following modifications: as adding one more bedroom, insulating walls and windows, covering plywood floors, plasterboarding and paneling walls, and rewiring.

Cost. $8,000

Action #5. Construct a two and a half car garage for the manager's residence.

The manager does not have a sufficient storage space for personal property. At the present time, anything which must be secured or out of sight is kept in the main shop. This takes up space that could be better used for park purposes.

Cost. $13,000

Action #6. Landscape the service area and manager's residence.

Landscaping is primarily intended to screen the service area and manager's residence to reduce their visual impact. Screening also provides security by removing property and equipment from public view.

Cost. $15,000

VISITOR SERVICES

Objectives:

To provide orientation information

To provide interpretive information with minimal expenditure of time by existing staff

To interpret the natural history aspects of the park and vicinity

At the present time, there is no interpretive program in the park. A major interpretive program relating to the natural resources of the North Shore will be located in Tettegouche, 46 mi (74 km) southwest of Cascade. The National Park Service (NPS) has a major historical interpretive program at Grand Portage, 45 mi (67 km) northeast of Cascade.

Since Cascade River State Park is being proposed for classification as a recreational state park and the biocultural region will be interpreted at Jay Cooke, Gooseberry Falls, and Tettegouche state parks. Only a minor interpretive program will be conducted at Cascade River.

Therefore, the only interpretive facilities proposed for this park will be a self-guided trail system and displays in the trail center.

These displays should focus on the ecological communities of the North Shore Highlands Biocultural Region and the resource management of the Cascade Management Area.

Action #1. Expand the interpretive program at the trail center.

The building should be used as a combination trail/interpretive center. Displays should be developed and visitors should be directed to self-guided interpretive trails.

Cost. $5,000

Action #2. Develop a self-guided interpretive trail system.

Self-guided interpretive trails with resource management as a theme should be developed. The trails should begin at the trail/interpretive center and should utilize resources both within the park and within the cooperative Cascade Management Area.

Cost. $5,000

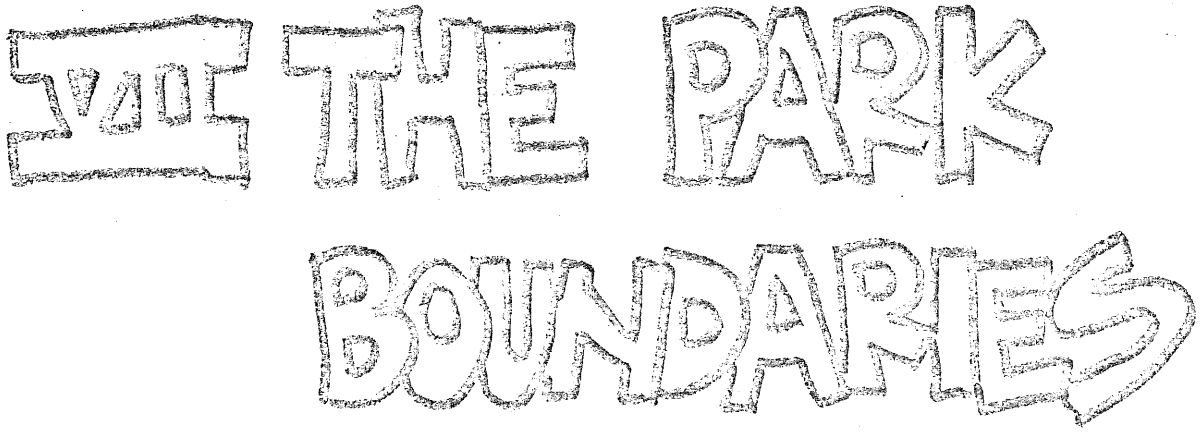
Additional interpretive facilities may be developed in the future, but not until a detailed interpretive plan is prepared by the DNR, Division of Parks and Recreation.

Cascade River State Park is actually a secondary unit within the proposed Cascade Management Area. This area is cooperatively managed by the US Forest Service and three DNR divisions--Fish and Wildlife, Forestry, and Parks and Recreation. Although this plan does not affect the entire area, the park does have a major impact on recreation and resource management of the whole area. The resource management and development sections of this plan were written assumming cooperative management will informally continue or will officially be mandated by legislation.

Highway Rest Areas

There are three highway rest areas within the existing park boundary. One is located at the Cascade River, the second at Good Harbor Hill, and the third at Cutface Creek. No sanitation facilities are available at Cutface Creek. The waysides at the Cascade River and at Good Harbor Hill are not much more than a wide spot in the road with insufficient parking, pedestrian conflicts, and no turn lanes. The Cutface Creek Wayside has a small parking lot with no turn around provisions for large vehicles such as motorhomes and travel trailers. The Cutface area also has poor sight distances for vehicles entering and existing TH 61.

If the proposed park boundary changes are implemented, (see pp71-72) only the wayside at the mouth of the Cascade River would remain in the park. No changes to this wayside are recommended, although more emphasis should be placed on pedestrian safety.


THE PARK
BOUNDARIES

BOUNDARY ADJUSTMENTS

Major boundary changes are proposed for Cascade. The Boundary Adjustments Map on p 74 illustrates the following proposals:

Parcel #1 - Add to the statutory boundary. This area is proposed for addition in order to increase the amount of river in the park by 3/4 mi (1.2 km). It would also add an area for the proposed primitive campground. It is primarily trust fund land and will not be added to the park boundary until the divisions of Forestry and Parks and Recreation agree on a system of reimbursing the school district.

Parcel #2 - This area will not be added to the park. It should be managed to protect the scenic quality of Lookout Mountain and the Cascade gorge under the cooperative management of the Cascade Management Area.

Parcel #3 - Delete from the statutory boundary. This area is a proposed scientific and natural area and is being deleted so a specific management plan can be developed. This area is called Thompsonite Beach and is the only area in the world where a large rock outcropping containing the semi-precious gem Thompsonite can be found. The proposed plan for this area will include a plan dealing specifically with amateur rock hounding, a practice not legal in state parks.

Parcel #4 - Delete from the statutory boundary add to Thomsonite Beach Scientific and Natural Area.

Parcel #5 - Delete from the statutory boundary. This area is known as the Good Harbor Bay. It has no real park value since it is so far removed from the main portion of the park. This area has been identified in the North Shore Recreation Study (DNR, 1978) as a suitable site for a class II highway rest area. The US Forest Service (USFS) has also expressed interest in finding a site west of Grand Marais to locate a Boundary Waters Canoe Area (BWCA) permit station to relieve congestion at the Gunflint District Ranger Station. A portion of this site will be offered to the Mn/DOT for a rest area. If they choose not to develop a rest area, it will be offered to the USFS in exchange for other USFS land. If neither the Mn/DOT or the USFS wants the site, it will continue to be administered by the DNR as wildlife land.

Parcel #6 - Delete from the statutory boundary. This area, known as the Jonvick Deer Yard, will remain in state ownership, but will be administered by the DNR, Division of Fish and Wildlife as a component of the proposed Cascade Management Area. By removing it from the statutory boundary, a great deal of red tape and administrative cost will be eliminated. At the present time, all management proposals must get clearance from both the divisions of Fish and Wildlife and Parks and Recreation prior to implementation.

Parcel #7 - No major changes in management recommended. Continued emphasis should be placed on forestry and wildlife management.

Cascade River State Park

Ownership

Cascade River State Park

Boundary Adjustments

VALUE COSTS AND PHASING SUMMARY

32078

The following cost estimates were generated in January 1979. These cost estimates are based on current prices and available information. As new information is made available and as new or modified programs are initiated, revised cost estimates will be prepared to more realistically represent costs at that time. This plan is intended to be implemented in 10 years. The phases noted suggest the level of funding to be requested each biennium. However, there is no guarantee that this amount of funding would be received from the legislature. Therefore, some change to these phases can be expected.

		Phase I	Phase II	Phase III	Phase IV	Phase V	Total
RESOURCE MANAGEMENT							
Vegetation							
Action #1	Remove down, diseased vegetation.	$ 6,400	$ 6,400	$ 6,400	$6,400	$6,400	$ 32,000 C
	Plant conifers.	25,300	25,300	25,300	25,300	25,300	126,500 PS
Action #2	Perform regular sanitation cuts.	1,200	1,200	1,200	1,200	1,200	6,000
Action #3	Perform regular sanitation cuts.	2,500	2,700	2,600	1,700	900	10,400
Action #4	Convert part of stand to conifers.	2,000	2,000	2,000	2,000	2,000	10,000 C
		9,100	9,100	9,100	9,100	9,100	45,500 PS
Action #5	Perform sanitation and special site cutting and planting.	Physical Development, Camping, Action #4					
Action #6	Reforest the east part of the campground.	700	700		700	700	2,800
Action #7	Create permanent wildlife openings.	1,900	300	200	400	400	3,200 C
		12,000	1,400	1,400	1,500	1,500	17,800 PS
Action #8	Maintain brush and small tree runways across existing grass openings.	No Cost					

		Phase I	Phase II	Phase III	Phase IV	Phase V	Total
Action #1	Temporarily close or relocate sections of trail.	Operations Budget					
Action #2	Post additional deer crossing signs.		$ 1,000	$ 1,000			$ 2,000
Action #3	Study deer road kill problem.	DNR, Division of Fish and Wildlife					
Groundwater							
Action #1	Drill well in new campground.	Physical Development, Camping, Action #4					
Action #2	Drill well for shop and manager's residence.	Physical Development, Administrative/Support Facilities, Action #2					
Action #3	Winterize campground waste system.	Physical Development, Camping, Action #3					
Fisheries							
Action #1	Continue stocking programs.	DNR, Section of Fisheries					
Action #2	Continue maintenance programs on Indian Camp and Deer Yard creeks.	DNR, Section of Fisheries					
Action #3	Stock steelhead fry in Indian Camp Creek.	DNR, Section of Fisheries					
Action #4	Construct a carry-in small boat landing near river mouth.	DNR, Section of Fisheries					
Resource Management Total		$ 14,700 C 50,800 PS	$ 14,300 C 41,400 PS	$ 13,400 C 40,600 PS	$ 12,400 C 39,500 PS	$ 9,800 C 38,700 PS	$ 66,400 C 211,000 PS

		Phase I	Phase II	Phase III	Phase IV	Phase V	Total
PHYSICAL DEVELOPMENT							
Research							
Action #1	Sewage system study.	DNR, Bureau of Engineering					
Action #2	Water system study.	DNR, Bureau of Engineering					
Action #3	Archaeologic study.	DNR, Bureau of Engineering					
Roads							
Action #1	Redesign and relocate park entrance road.			$105,000			$ 105,000
Action #2	Provide access to new park facilities.		$ 75,000				75,000
Camping							
Action #1	Rehabilitate existing campground.			44,000			44,000
Action #2	Obliterate unused campsites.			2,000			2,000
Action #3	Winterize water system.	Contingent upon DNR, Bureau of Engineering Study					
Action #4	Develop a primitive campground.		88,000				88,000
Action #5	Develop walk-in campsites.		5,000	10,000			15,000
Action #6	Develop three group campsites.			20,000			20,000
Picnicking							
Action #1	Redesign 1/3 of existing campground to serve as a picnic area.			5,000			5,000
Action #2	Provide walk-in picnic sites along Lake Superior.		5,000				5,000

		Phase I	Phase II	Phase III	Phase IV	Phase V	Total
Trails							
Action #1	Develop an independent snowmobile trail alignment from TH 61 to the Pike Lake road.	$ 2,500					$ 2,500
Action #2	Redesign and expand the existing hiking/skiing trail system.	20,000					20,000
Action #3	Rebuild trails between trail center and the existing river bridge.	5,000					5,000
Action #4	Develop connecting trails to the proposed North Shore Trail.	DNR, Trails and Waterways					
Action #5	Construct an additional bridge over Cascade River.		$ 75,000				75,000
Action #6	Construct two new trail bridges over Cascade Creek.		40,000				40,000
Action #7	Construct small bridges over intermittant streams.		5,000				5,000
Action #8	Develop a comprehensive signing system.	3,000					3,000
Water Activities							
Action #1	Develop small carry-in boat landing.	DNR, Section of Fisheries					
Administrative/Support Facilities							
Action #1	Develop a combination contact station/park office.			$115,000			115,000
Action #2	Complete development of service area buildings.	32,000			$60,000		92,000
Action #3	Pave service area.				25,000		25,000

		Phase I	Phase II	Phase III	Phase IV	Phase V	Total
Action #4	Remodel the manager's residence.	$ 8,000					$ 8,000
Action #5	Construct a 2½ car garage for manager's residence.	13,000					13,000
Action #6	Landscape service area and manager's residence - includes oblitering existing entrance.			$ 10,000	$ 5,000		15,000
Visitor Services							
Action #1	Expand interpretive program at trail center.	5,000					5,000
Action #2	Develop a self-guided interpretive trails.	5,000					5,000
Physical Development Total		$ 93,500	$ 293,000	$311,000	$90,000		$ 787,500