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- A Summary of the George H. Crosby



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A Management Plan for George H. Crosby Manitou State Park

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Minnesota Department of Natural Resources

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This document is a summary of the George H. Crosby Manitou State Park management plan. All recommendations, both resource management and physical development are included here. The detailed inventory data and specific instructions for implementation of resource management and facility development have been compiled into a comprehensive management plan with technical appendices. These documents are on file in the:

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

A Summary of the
George H. Crosby Manitou
State Park
Management Plan

Minnesota Department of Natural Resources
Office of Planning
Printed - June 1983

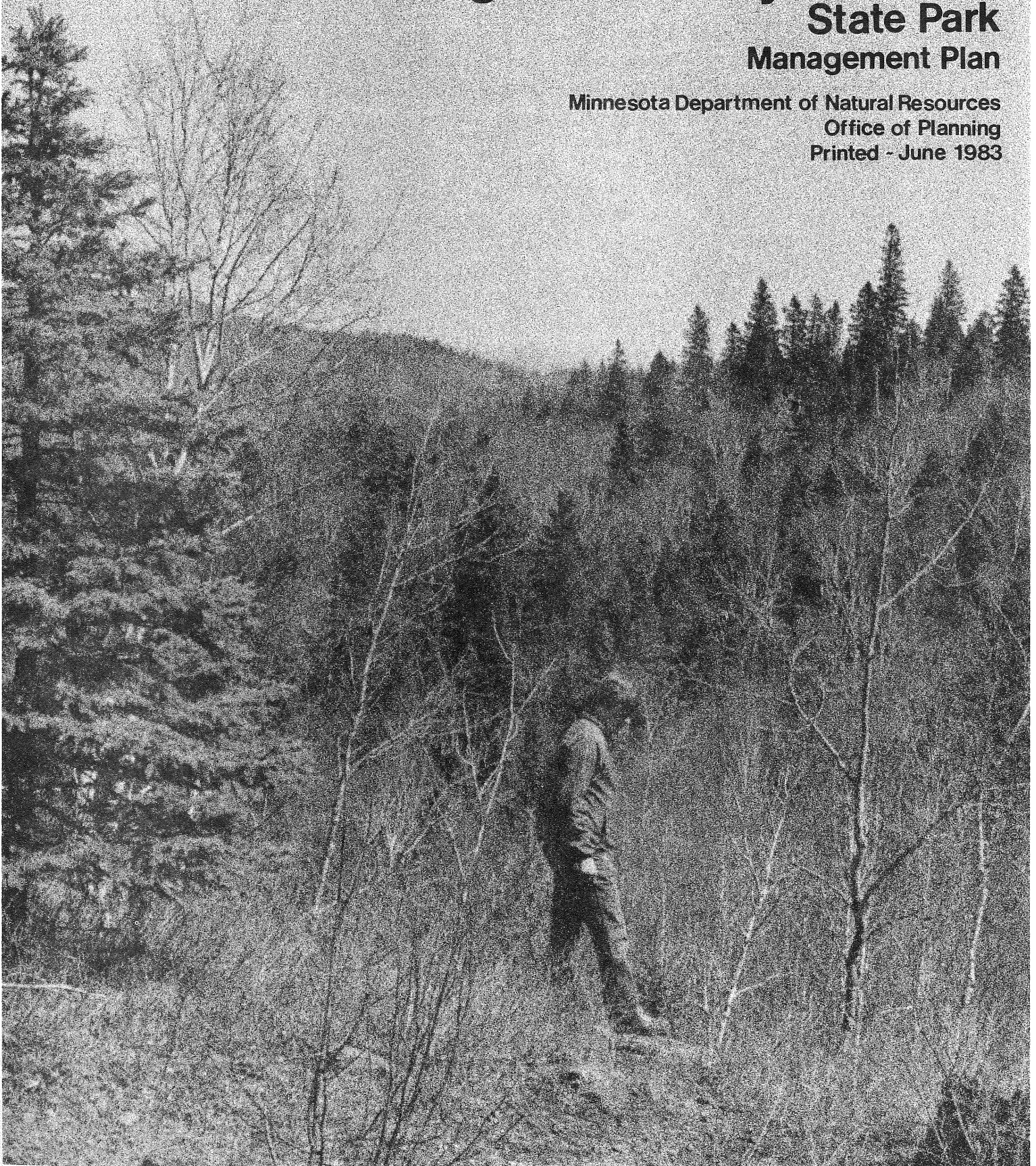


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Introduction

AN OVERVIEW OF CROSBY MANITOU STATE PARK

Crosby Manitou State Park is the only park in the state park system that offers a wilderness type of backpacking experience. It is located in Lake County, 7 miles northeast of Finland. Duluth is 73 miles and the Twin Cities are 220 miles to the southwest.

This 3,400 acre park was established in 1955 with the vast majority of the land donated by George H. Crosby.

The park contains 5 miles of the Manitou River which cascades through a highly scenic rocky gorge. The park also includes Bensen Lake, a 20 acre trout lake. There are 21 secluded backpack campsites scattered along the Manitou River and near Bensen Lake. The sites are accessible only by hiking trail. Most sites provide only a signed clearing, a wilderness toilet, log benches, and a stone fire ring. A carry-in boat access and a small picnic ground are also provided on Bensen Lake. Twenty three miles of rugged backpack trails and eleven miles of cross-country ski trails loop through the rugged, hilly terrain.

THE PLANNING PROCESS

In 1975 the Minnesota State Legislature passed the Outdoor Recreation Act (ORA). The intent of this legislation is to ensure, through long-range planning, the protection and perpetuation of Minnesota's outstanding resources. Also included in this legislation is the mandate to provide recreational facilities which are desired by the citizens of Minnesota but which do not compete with those provided by the private sector. The Park Planning Section of the DNR, Office of Planning was established to formulate long range resource management and recreation development plans for 82 state parks, recreation areas, and waysides. Funds for these plans are appropriated biennially by the Legislative Commission of Minnesota Resources (LCMR).

The park planning process consists of six steps:

1. An inventory of natural resources, visitor use, and existing facilities is compiled. Specialists from other DNR divisions and sections assist in collecting pertinent data. At this point the first public workshop is held.
2. Alternatives for park management and development are developed. A second public workshop may be held to review these alternatives and invite further public comment. These alternatives are then reviewed by the Park Planning staff and the DNR, Division of Parks and Recreation.
3. The recommendation for park classification is made, the park goal is developed, and the draft plan is written. This step culminates in the first interdepartmental review.
4. The draft plan is revised as the result of the interdepartmental review. The revised plan is made available to the public for a 30 day review period, after which the final public meeting is held.
5. The draft plan is revised according to information received from the public review. The plan is then sent to the Department of Energy, Planning, and Development for a 60 day review period. (This management plan was approved in February 1983.)
6. The plan is implemented by the DNR, Division of Parks and Recreation.

A SUMMARY OF MANAGEMENT AND DEVELOPMENT PROPOSALS

Resource Management

- Maintain, protect, and monitor yellow birch stand on Yellow Birch Trail.
- Monitor the two gravel pit areas.
- Provide downed wood or prohibit open fires.
- Monitor forest diseases and pests.
- Manage powerline right-of-way paralleling TH 61 in accordance with the permit negotiated between the DNR and Minnesota Power Company.
- Prepare an informational pamphlet to familiarize visitors with the black bear.
- Provide pole between two trees near each campsite for suspending food out of the reach of bears.
- Maintain a maximum abundance of snags.
- Continue to recommend that visitors boil all water for 2 minutes before using it for cooking or drinking.
- Continue to enforce a no motor policy on Bensen Lake.
- Continue management programs which are currently implemented by the Fisheries Section.

Recreation Management

- Develop approximately 12 campsites.
- Restore and maintain existing campsites.
- Install metal fire rings at selected campsites.
- Provide poles for suspending food out-of-reach of bears.
- Construct group camp.
- Construct small trail/picnic shelter.
- Replace Crosby Cabin with trail shelter.
- Construct 9-10 miles of hiking trail.
- Construct narrow bridge across Manitou River.
- Construct shop at park service area.
- Expand summer parking lot to accommodate 15 more cars.
- Expand winter parking lot to accommodate 6 more cars.
- Provide snowmobile access to Bensen Lake during trout season on trial basis.
- Construct a one mile trail as shortcut for ski trails.

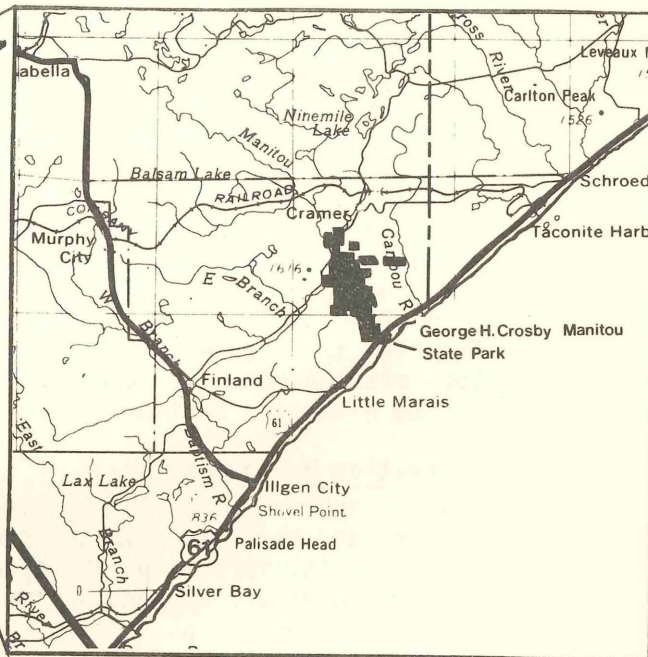
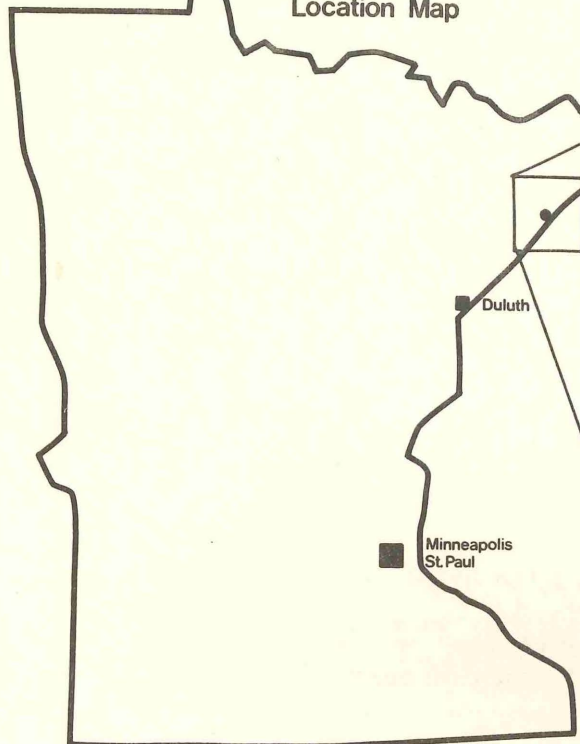
Interpretive Services

- Upgrade and continue to use existing handouts.
- Develop self-guided trail along the Sidewinder, Cedar Ridge, and Yellow Birch trails.

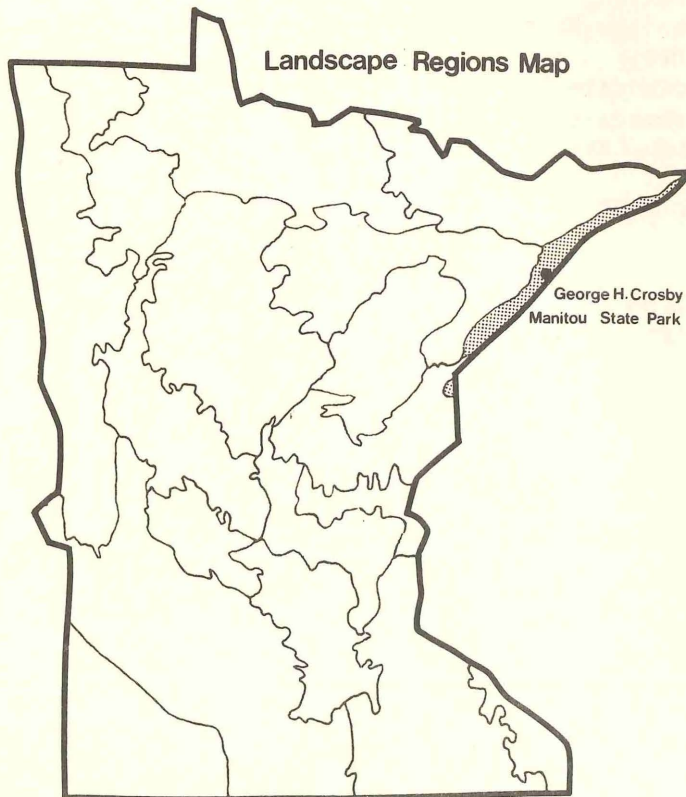
Park Boundary

- Survey and post park boundary.

Location Map



Landscape Regions Map



North Shore Highlands Landscape 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 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. The dominant forest cover today is aspen-birch regrowth.

Classification

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. Inappropriate development can result in irreparable damage to the resource. To help ensure that this recreation/resource balance is maintained, the Minnesota State Legislature established, through the Outdoor Recreation Act of 1975 (ORA '75), a classification system whereby each unit in the state recreation system can be identified as one (or more) component in the system. These components are: natural state park; recreational state park; state trail; state scientific and natural area; state wilderness area; state forest and state forest sub-area; state wildlife management area; state water access site; state wild, scenic, and recreational rivers; state historic site; and state rest area. Included in this legislation are general criteria for classifying, planning, and managing each of these components.

Criteria for a Natural State Park Designation

DNR policy identifies four criteria, based on ORA, which a park must substantially meet to qualify for classification as a natural state park. Crosby Manitou State Park meets these criteria.

"Depict major components characteristic of the landscape region, or contain a natural component(s) of statewide significance representing a feature of the presettlement Minnesota landscape.

"Contain natural resources sufficiently diverse and interesting to attract people from throughout the state.

"Be sufficiently large and durable so as to provide opportunities for enjoyment of their special natural qualities by significant numbers of people now and in the future."

"Be sufficiently large to provide for the maintenance of ecosystems and the protection of other natural features which give an area its special qualities."

RECOMMENDED CLASSIFICATION

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

GOAL

The goal for Crosby Manitou State Park is that of all natural state parks as stated in DNR policy, namely, to:

"...protect and perpetuate extensive areas of the state possessing resources which illustrate and exemplify Minnesota's natural phenomena, and provide for the use, enjoyment, and understanding of such resources without impairment, for the enjoyment and recreation of future generations."

Park Resources

CLIMATE

Temperatures recorded at Two Harbors reflect the variations expected near Lake Superior. The inland portion of the park is somewhat cooler and is more accurately reflected by temperatures recorded at the Duluth airport.

	<u>Two Harbors</u>	<u>Duluth Airport</u>
Mean January Maximum	22°F	18°F
Mean January Minimum	2°F	-10°F
Mean July Maximum	76°F	76°F
Mean July Minimum	53°F	53°F
<u>Precipitation</u>	Annual Total 28 in. Annual Snow 65-70 in.	
<u>Prevailing Winds</u>	Northeast - exceeding 30 mph an ave. 30 days May through September.	

The cool summers are ideal for picnicking, hiking, and camping. The moderating effect of Lake Superior tends to extend the summer recreation season well into the fall. The winter recreation season is long, mild, and has abundant snowfall.

GEOLOGY

Crosby Manitou State Park is underlain by basalt bedrock, exposed primarily along the Manitou River and the bluff tops. Basalt is black, brown, or dark red-brown in color and was formed from lava about 1.1 billion years ago. The lava flowed up out of fractures to the surface and cooled rapidly. Gas bubbles which formed tended to float to the top leaving small pores in the upper levels. These lava flows were then buried under several thousands of feet of later flows. Over time, water slowly seeped down through the upper flows, picking up minerals and depositing them in the pores of the underlying earlier flows, forming, among other rocks, agate and thomsonite. Through time, the upper layers of rock were eroded, exposing the agates and thomsonite.

SOILS

Soils all along the North Shore are poor for development. Most are shallow and moist because of springs and seepages. Detailed soil information is included in the management plan details.

VEGETATION

Since the retreat of the last glacier, the vegetation of northeastern Minnesota has been slowly changing. Tundra occurred after the most recent glacial period, followed by a period dominated by spruce forests. Between 10,000 and 11,000 years ago, a general warming trend began which resulted in a decline in spruce and an increase in Norway pine, jack pine, and birch. During the peak of the warming trend (about 7,000 years ago), white pine began to appear in Minnesota. Pine stands were maintained by recurrent natural fires until the extensive logging of the turn of the century occurred. The species most frequently mentioned by original surveyors include: tamarack, sugar maple, black spruce, aspen, cedar, white birch, yellow birch, fir, white spruce, and white pine. Understory shrub species were typically alder, hazel, and "spotted" (probably mountain) maple. Cedar and fir were often mentioned as regenerating understory species.

In 1930 Marschner mapped the entire park area as aspen-birch, dominated by trembling and big tooth aspen and paper birch. Although the park itself was mapped as aspen-birch, communities adjacent to the eastern park boundary included a large area of mixed hardwood and pine. There are also significant stands of sugar maple in the park.

The two most influential disturbances to the vegetation of northeastern Minnesota have been fires and logging. In recent years, fire suppression has altered the natural fire cycle thereby impacting vegetational development.

The first logging operation began near Duluth about 1840, and by 1856 sawmills had been built along the shore as far as Two Harbors and Beaver Bay. Large quantities of white pine, cedar, tamarack, spruce, black ash, and trembling aspen were cut all along the North Shore. Logging was usually followed by repeated large scale slash (tree limbs and tops which had no economic value) fires to clear logging debris. Slash fires are different than natural fires in that generally no mature trees remain to provide a new seed source.

Birch and aspen establish themselves more quickly than other species in a cleared area and thus became more abundant after the logging era. Many large white pine remain in the park along the river gorge because they were generally inaccessible to loggers. One white pine stump which is visible from the Sidewinder Trail measures over 4 feet across.

There are six major cover types on a variety of topographic sites in the park study area (see map, p 35). The wetter areas are characterized by tamarack and black spruce and the dryer areas by aspen-birch and pine. Sugar maple is often found in the moderately moist (mesic) areas. The vegetation inventory of the park is included in the comprehensive plan and the management plan details.

WILDLIFE

A variety of plant communities provides habitat for a diversity of wildlife species. No formal wildlife records have been kept for the park. The DNR Nongame Program, the Forest Wildlife Research Program, and inventories conducted by Superior National Forest staff were used to study the park's wildlife. This information is included in the management plan details.

GROUND WATER

Ground water in the area varies greatly in quality and quantity. Many wells are artesian (or flowing) and some have high concentrations of salt. The well near the park manager's residence, drilled to a depth of 155 ft, has a low volume and during the summer, water is pumped and stored in a holding tank.

SURFACE WATERS

Three main water bodies in and adjacent to the park are the Manitou River, Bensen Lake, and Lake Superior. The portion of the Manitou River in the park is a rushing trout stream with a very rapid descent (about 600 ft in 5 miles). It has several waterfalls, the largest - High Falls - is 60-70 ft high. Bensen Lake is about 20 acres in size with a very soft bottom. It has little potential for swimming, but a carry-in boat access is provided.

FISHERIES

Both Bensen Lake and the Manitou River provide good fishing opportunities. The Manitou River is one of the best brook trout streams on the North Shore. It has a more uniform flow of water than most, an abundance of good pools, ample shade, and favorable stream bottom.

Bensen Lake has been stocked with brook trout since 1932. In August 1955, the lake was poisoned to eliminate noxious fish species and parasites. This was followed by stocking of brook trout. The most recent fish survey in 1978 showed that both the population and size of brook trout was greater than local and statewide medians.

ARCHAEOLOGY/HISTORY

Prehistoric settlement along the North Shore is not well documented but there is evidence of prehistoric settlement along the southern shore of Lake Superior (Wisconsin) suggesting that humans inhabited the area prior to 5,000 B.C. Very little is known of these cultures except that they worked copper into spear points and other objects.

Pierre Esprit Radisson and Medard Chouart, Sieur des Groselliers were probably the first European visitors to the North Shore. They travelled up the shore of Lake Superior in 1660. Along with the Ojibwa Indian tribe, the French controlled the North Shore area until 1763. From 1763 to 1803, the British were in control of the North Shore. The first white residents to Lake and Cook counties were probably clerks at American Fur Company posts along the shore in the 1830s.

The Manitou River is one of the few North Shore streams which has retained its Ojibwa name, which means "spirit." In 1854, the Ojibwa tribe ceded their North Shore lands to the United States.

RESOURCE MANAGEMENT OBJECTIVES

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

To identify, evaluate, and preserve the park's archaeological and historical resources

To provide for visitor enjoyment without adversely affecting park resources

RESOURCE MANAGEMENT

The following resource management actions should be undertaken in Crosby Manitou. They will be funded from the operations budget or by other DNR sections or other state agencies and therefore will require no development dollars.

Maintain, protect, and monitor the yellow birch stand on the Yellow Birch Trail.

Monitor the two gravel pit areas.

Provide downed wood or prohibit open fires in areas where firewood has been over scavenged.

Monitor forest diseases and pests.

Determine management of the powerline right-of-way paralleling TH 61 in accordance with the permit negotiated between the DNR and the Minnesota Power Company.

Provide a horizontal pole between two trees near each campsite for suspending food out of the reach of bears.

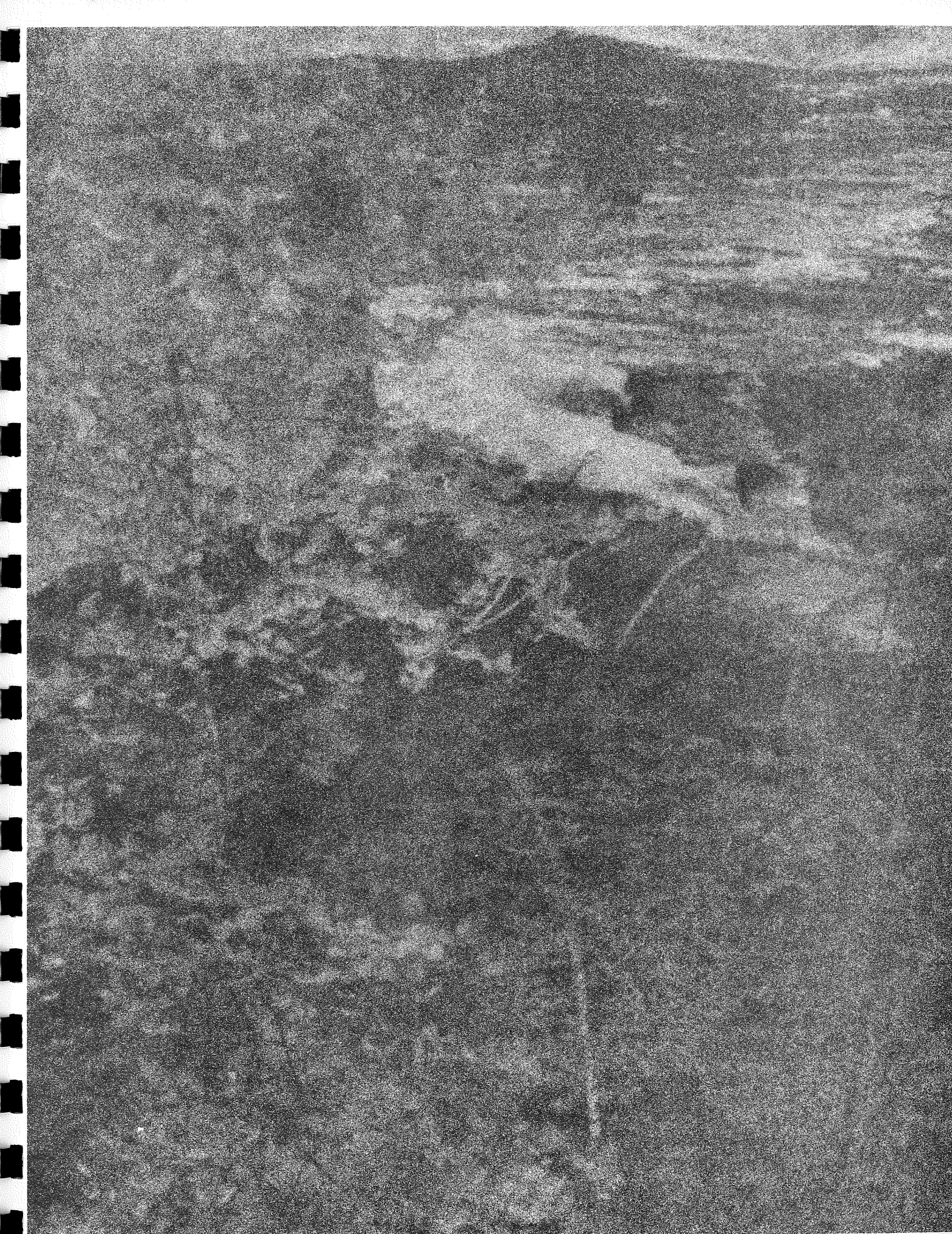
Maintain snags (dead standing and downed wood) for wildlife.

Continue to recommend that visitors boil all water for 2 minutes before using it for cooking or drinking.

Continue to enforce a "no motor" policy on Bensen Lake.

Continue the management programs which are currently being implemented by the Fisheries Section.

Prepare an informational pamphlet to familiarize visitors with the black bear. (See Proposed Development, Interpretive Services, p 31.)



Park Boundary

BOUNDARY MODIFICATION

In most cases, the Minnesota statute identifies a state park's statutory boundary which includes state owned land (in this case donated by George Crosby) and adjacent park quality lands that are private lands, county lands, municipal lands, or lands owned by other interests. The DNR, Division of Parks and Recreation may negotiate for purchase these lands within a statutory boundary from willing sellers.

In the case of Crosby Manitou State Park, there was never an attempt to discern which lands adjacent to the donated state owned lands should be included in the statutory boundary. Rather, the 1955 Minnesota statute which legally defines the park was copied directly from the 1954 quit claim deed. The land that George Crosby donated is quite irregular in shape and it is fragmented into several pieces. There are several 40 and 80 acre parcels that are completely separated from the main park body. Fortunately, the donated land does contain the great majority of the Manitou River from TH 61 to just south of Cty Rd 7 (Cramer Road). (See Ownership Map, p 41.)

Objective:

To consolidate park lands into a contiguous unit that contains the lands most suitable for trails and backpack campsites.

Action #1. Initiate a land exchange to consolidate and enhance the existing park.

The most plausible way to make Crosby Manitou into a contiguous park is to initiate a series of land exchanges involving the DNR, Division of Parks and Recreation; the DNR, Division of Forestry, and Lake County. This plan identifies the parcels of land donated by George Crosby that are considered expendable lands (not of park quality), if more usable properties can be obtained. These expendable lands should be traded for priority acquisitions which are mostly tax forfeited lands (Lake County) and state trust fund lands (administered by the DNR, Division of Forestry). See the map on p 43 for acquisition and trading recommendations.

The North Shore Trail passes through the portion of the park west of Cty Rd 7 (see Existing Development Map, p 37). The trail passes through both "may be traded" and "should be traded" lands. Before any existing park lands through which the North Shore Trail passes are traded, a trail easement should be attached to the land abstracts. This action will ensure protection of the current North Shore Trail alignment.

COST No Development Cost

Action #2. Resurvey the SW 1/4 of the SW 1/4 of Section 3 (T57N, R6W) and include the parcel into the legal statutory boundary.

This 40 acre parcel is in private ownership and comes close to or crosses the Manitou River. A 1958 survey contracted by the DNR (then Department of Conservation) showed the northeast corner of the parcel to lie across the river, however, the accuracy of this survey should be verified and brought up-to-date. Because the parcel is so close to (or includes a part of) the river, it should be included in the statutory boundary.

COST DNR, Bureau of Engineering

Action #3. Support Lake County in designating the entire township (T58N, R6W) which surrounds the park as a county memorial forest.

Lake County has already designated two townships as county memorial forest and is currently considering the township surrounding the park for the same designation. This action would preserve the county tax forfeit land for county forest management practices. With Lake County's approval, there is the possibility that the park trail system could extend onto adjacent tax forfeit land within the county memorial forest.

COST No Development Cost

Action #4. Do not include the mouth of the Manitou River in the statutory boundary.

At one time the entire mouth of the Manitou River was considered for inclusion in the statutory boundary. After careful consideration, it was determined that this area does not fit the character of a remote backpacking park. Although it has spectacular and outstanding scenic amenities, its access to TH 61 would require an additional park entrance from the highway corridor. The current access to the interior of the North Shore Highlands via the city of Finland is more suited to the experience that the park should provide. The Manitou River mouth area is currently owned and operated as a private resort.

COST No Development Cost

Action #5. Survey and post the park boundary.

Once the land exchanges proposed in Action #1 have been implemented, the boundary should be surveyed and posted. A posted boundary is necessary to avoid trespass timber harvest problems and to enforce park rules and regulations.

Action	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
COST					\$28,000	\$28,000

Physical Development and Recreation Management

Management

Decision

Single

Development

Physics

EXISTING DEVELOPMENT

Development at Crosby Manitou has intentionally been kept primitive. It consists of the following structures and facilities:

Manager's Residence/Park Office/Contact Station

This building has no telephone or electric service. Communications with other local park managers is maintained with a battery operated shortwave radio.

Shop

A garage and attached lean-to is used as a park shop.

Backpack Campsites

There are 21 sites which are accessible by hiking trail only. Most sites provide only a signed clearing for the campsite, a wilderness toilet, log benches, and a loose stone fire ring.

Parking Lot

This 30-space, gravel parking lot is for campers and day users.

Carry-in Boat Access

A service road accesses Bensen Lake. From this road, visitors can carry small boats or canoes to the lake. A boat ramp is not provided. After dropping off the boat and equipment, cars must be returned to the parking lot.

Entrance Road

A half mile gravel road provides access past the contact station to the parking lot.

Trails

The hiking trail system provides 23 miles of trail that traverse very rugged topography. Log steps are provided on steep slopes and narrow half log treadways are provided through wet areas. There is an 11 mile cross-country ski trail system. Two miles of trail are rated "easy", four miles are rated "more difficult", and five miles are rated "most difficult". Ski trails are not groomed.

Crosby Cabin

This is a small frame cabin built many years ago on a high, rocky point overlooking the river valley. It is used as a trail shelter.

RECREATION MANAGEMENT OBJECTIVE

To provide those facilities necessary to protect the environment, provide primitive hiking access, and provide minimal user convenience

PROPOSED DEVELOPMENT

Action	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Conditional	Total
1 Develop 12 back-pack campsites.	\$ 1,000		\$ 1,000			\$ 3,000	\$ 5,000
2 Restore existing campsites.		No development cost					
3 Install metal fire rings at some campsites.		\$ 1,500					1,500
4 Provide horizontal poles for suspending food out of reach of bears.		No development cost					
5 Construct group camp.					\$ 4,000		4,000
6 Construct trail/picnic shelter.			4,000				4,000
7 Replace Crosby Cabin with trail shelter.		(Action underway)					
8 Construct 9-10 miles of hiking trail.		3,500				24,000	27,500
9 Construct narrow bridge across Manitou River.			15,000			15,000	
10 Construct shop at park service area.		13,000					13,000
11 Expand summer parking lot to accommodate 15 more cars.				3,000			3,000
12 Expand winter parking lot to accommodate 6 more cars.					1,000		1,000

Action	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Conditional	Total
13 Provide snowmobile access to Bensen Lake during trout season on trial basis.		No development cost					
14 Construct one mile trail as shortcut for ski trails.		\$ 5,000					\$ 5,000
<u>Interpretive Services</u>							
15 Prepare brochure on bear behavior.	\$ 500						500
16 Upgrade existing handouts.		No Development Cost					
17 Develop Sidewinder, Cedar Ridge, and Yellow Birch trails into self-guided interpretive trails.		2,500					2,500
<u>Boundary Modification</u>							
18 Survey and post park boundary.					\$28,000		28,000
Total	\$ 1,500	\$20,500	\$23,000	\$ 5,000	\$28,000	\$27,000	\$105,000



Maps

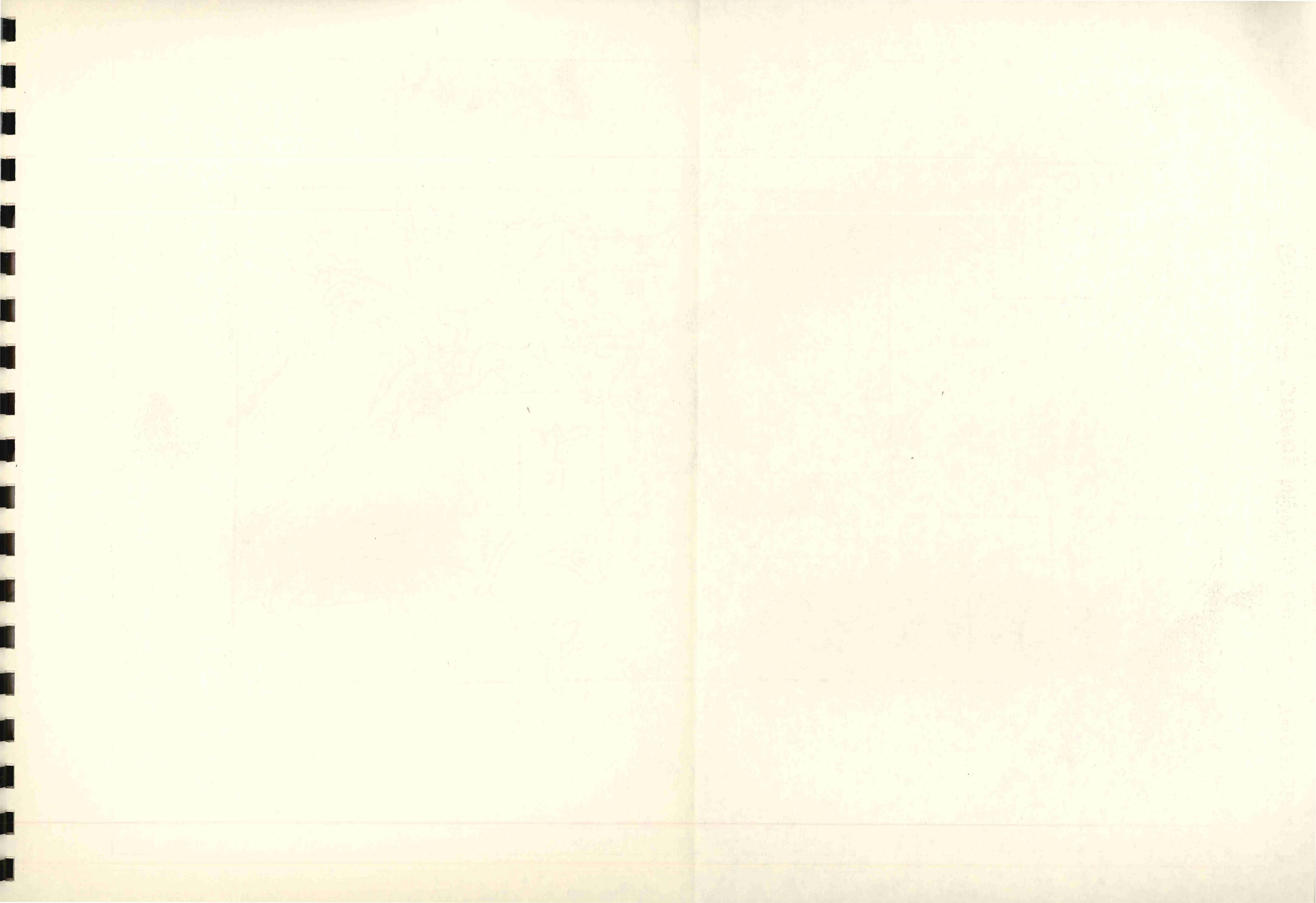
WISDOM

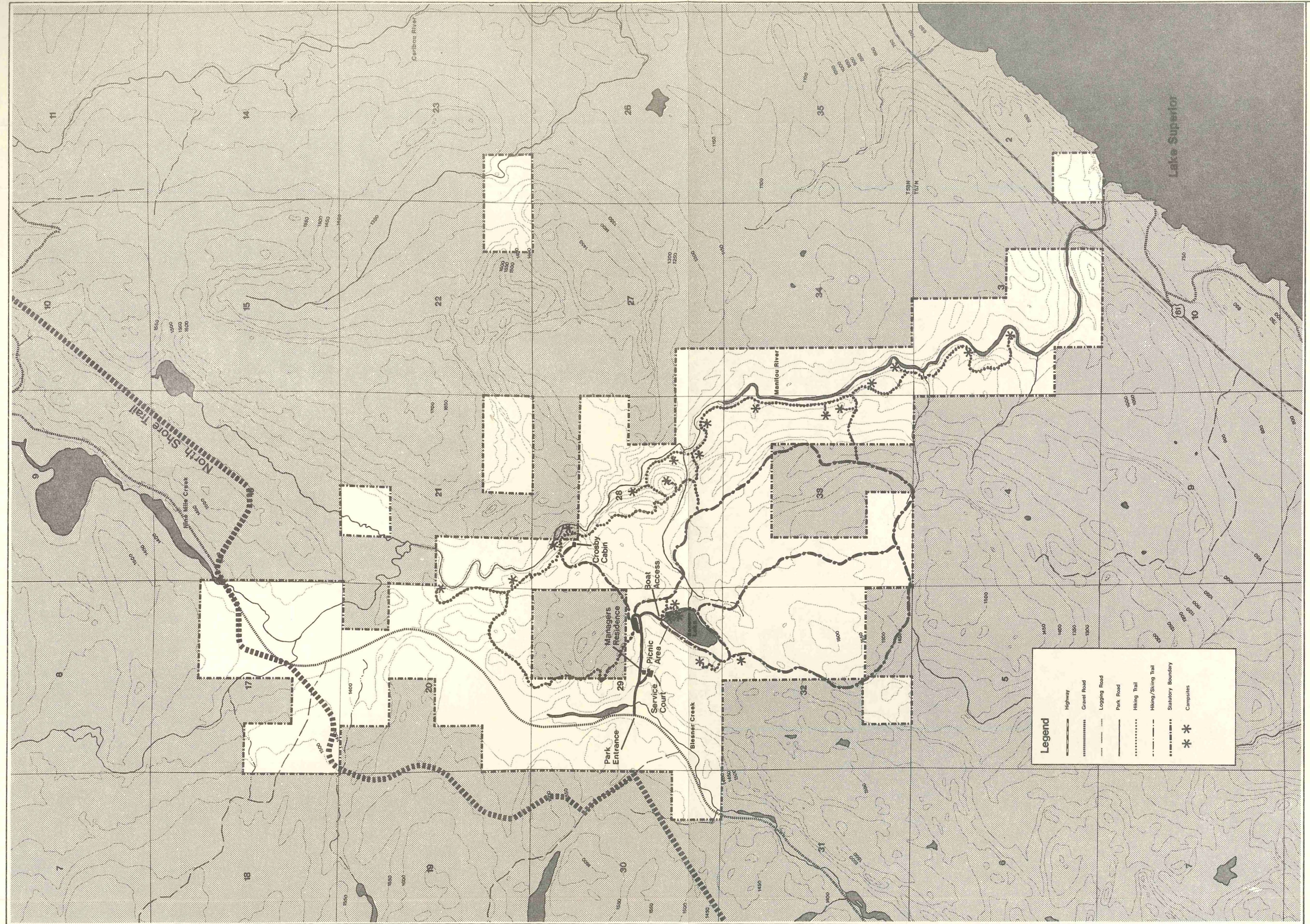


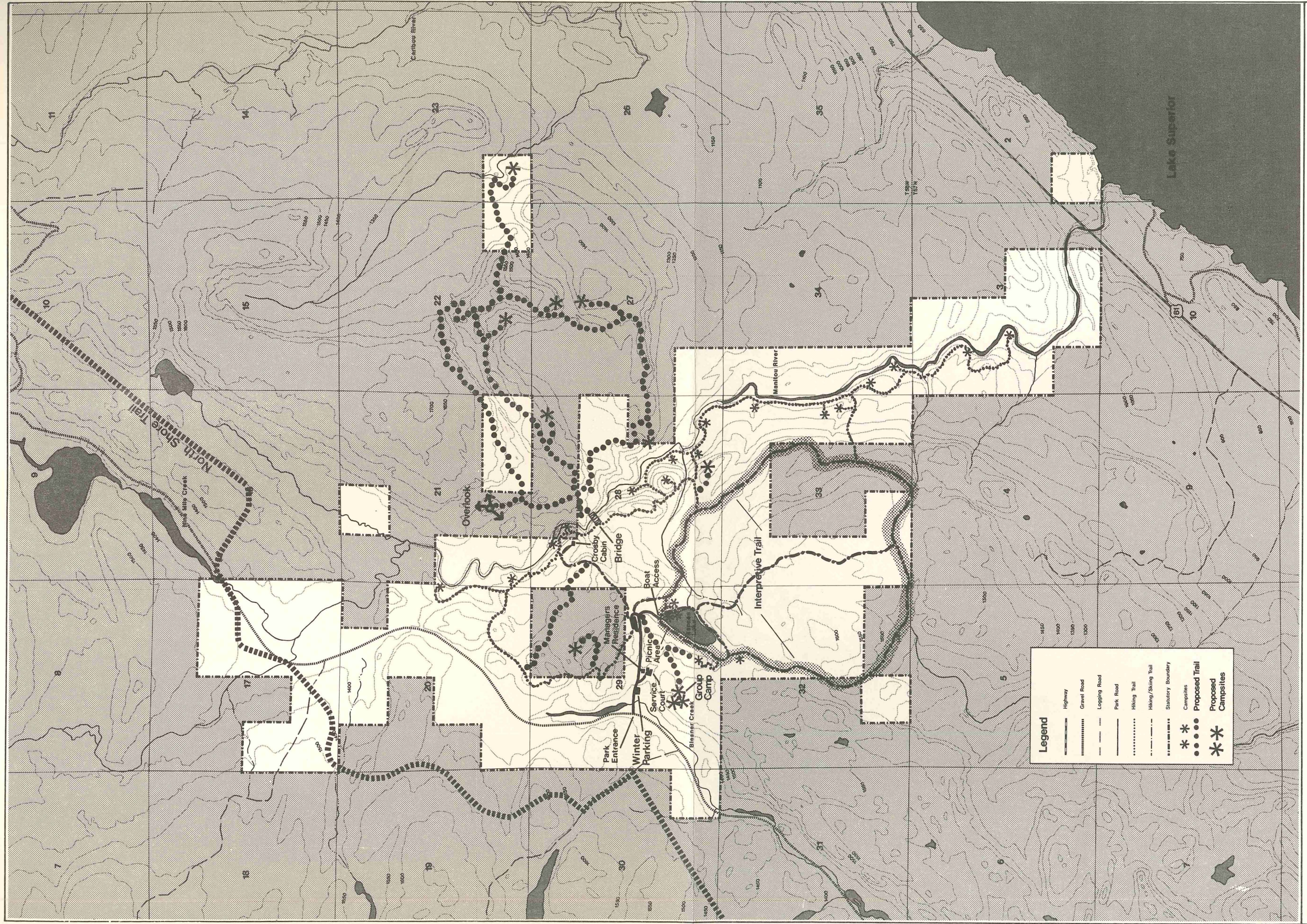
Legend

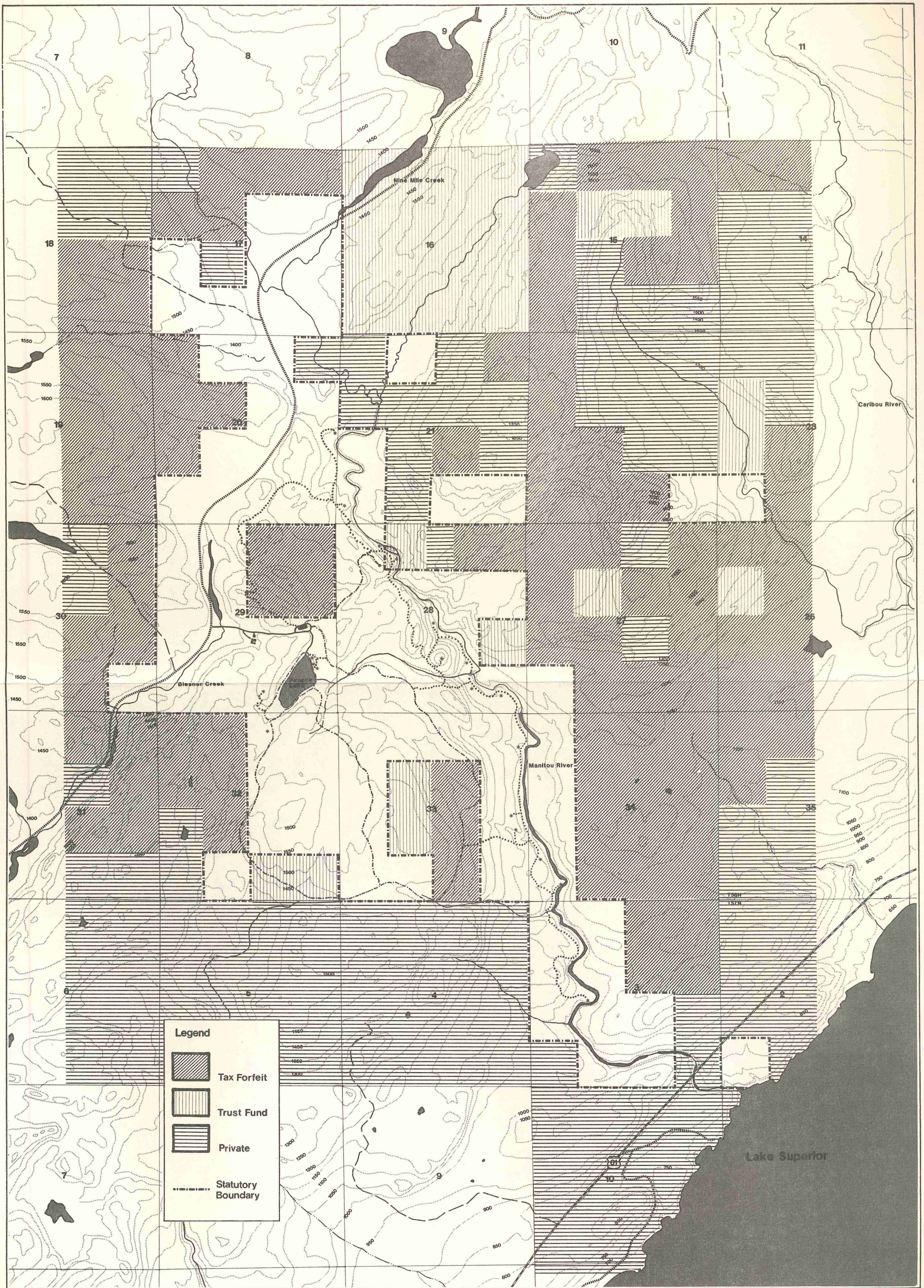
- NHC Northern Hardwoods-Conifer
- MH/C Mixed Hardwood /Conifer
- LS Lowland Shrub
- LC Lowland Conifer
- SM Sedge Meadow
- AB Aspen-Birch
- GP Gravel Pit
- OW Open Water

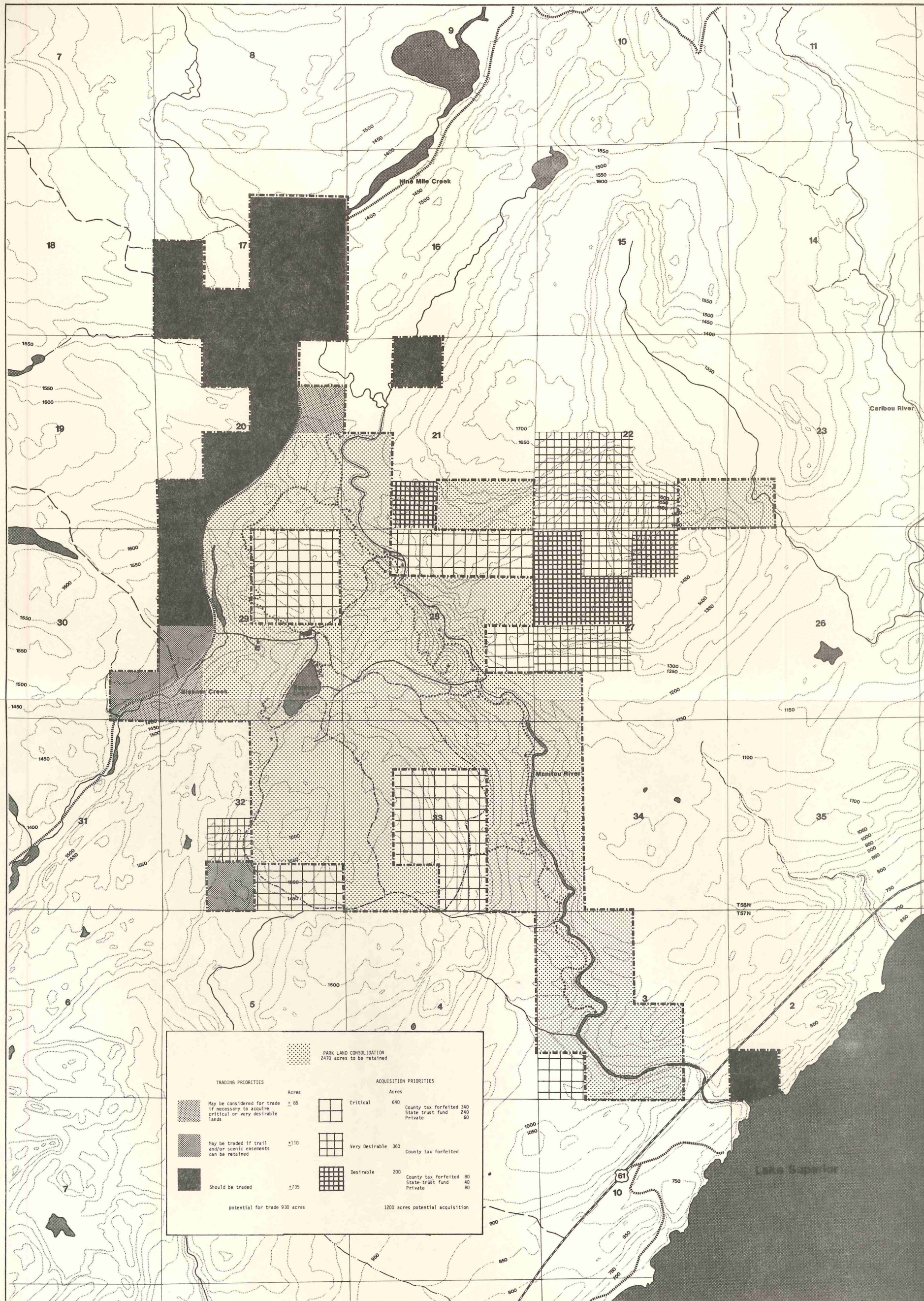












PARK LAND CONSOLIDATION
2470 acres to be retained

TRADING PRIORITIES

	Acres
	+ 85
	+110
	+735

potential for trade 930 acres

ACQUISITION PRIORITIES

	Acres
	Critical 640
	Very Desirable 360
	Desirable 200

1200 acres potential acquisition

County tax forfeited 360
State trust fund 240
Private 60

County tax forfeited
County tax forfeited

County tax forfeited 80
State trust fund 40
Private 80



George H. Crosby Manitou State Park Boundary Modification

