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A Management Plan for

Bear Head Lake State Park

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linnesota Department of Natural Resources

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This document is a summary of the Bear Head 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
Department of Natural Resources
Box 10E Centennial Office Building
St. Paul, Minnesota 55155

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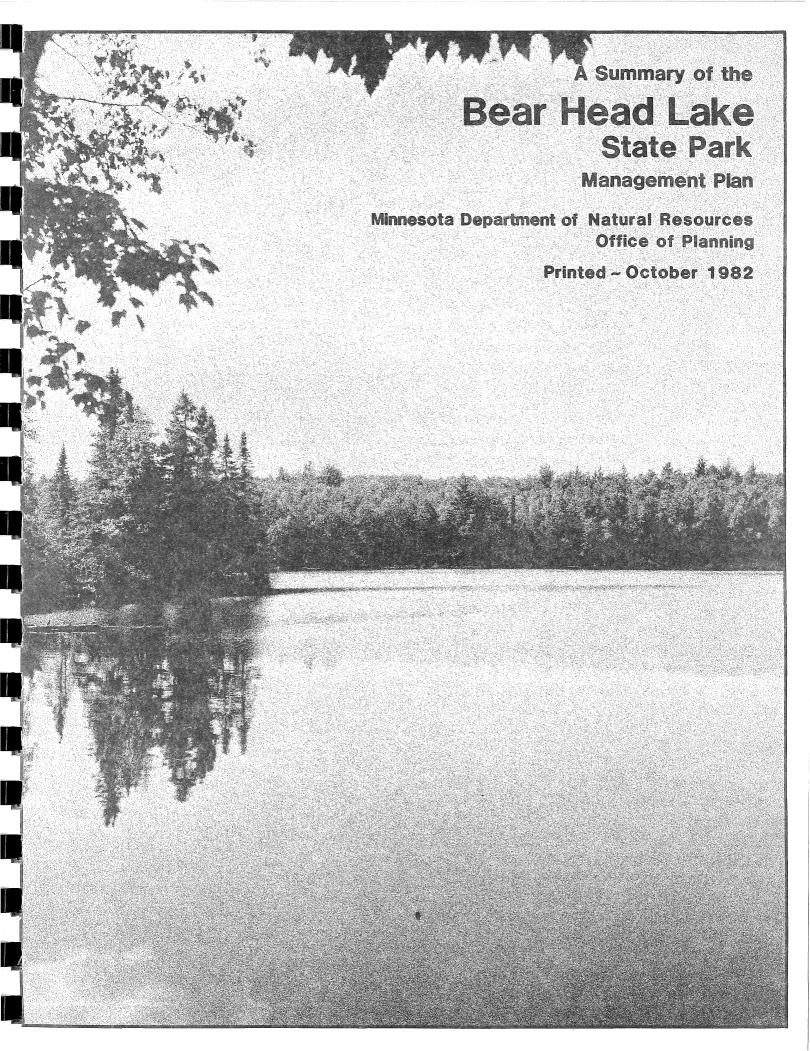


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Introduction

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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 the development of these plans are appropriated biennially by the Legislative Commission on 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 is 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 (DEPD) for a 60 day reviewal period. (This plan was approved in July 1982.)
- 6. The plan is implemented by the DNR, Division of Parks and Recreation.

A SUMMARY OF MANAGEMENT AND DEVELOPMENT PROPOSALS Resource Management

- Plant vegetation to enhance use areas and control erosion.
- Protect vegetation from wildlife depredation, insects, and disease.
- Develop a tree seedling growing area.
- Develop a prescribed burning plan.
- Monitor wildlife species of special concern (e.g., bald eagle and osprey).
- Maintain snags (dead standing and downed trees) and large uninterrupted tracts of mature forest for wildlife.
- Compile baseline data on acidification of park lakes.
- Continue present fish stocking programs.
- Field check development sites for archaeological significance prior to construction.

Camping

- Rehabilitate the campground and expand when use warrants.
- Remodel shower building and install sinks and toilets.
- Develop six designated boat tie-up sites.
- Develop shoreline erosion control plan.
- Construct trailer dump station.
- Develop five pack-in campsites near Becky and Blueberry lakes.
- Improve tent pads and parking facilities at the group camp.
- Install new boat ramp and pave road to the water's edge.

Water Access

- Install a double boat ramp on Bear Head Lake.
- Consider making park land available for a water access on Eagles Nest Lake No. 3.
- Construct 4-5 car parking lot at Cub Lake.

Picnicking

- Construct enclosed picnic shelter.
- Plant pine to enhance the natural character of the area.

Trails

- Expand ski touring and hiking trail systems.
- Construct adirondack shelters.
- Provide a bicycling access link, if the Taconite Trail is developed for biking.
- Plant trees on the site of the old boat access on Eagles Nest Lake No. 3.

Administrative/Support Facilities

- Build unheated storage building.
- Close existing road to service center.
- Pave all primary park roads.
- Install water filter system on the main park well.
- Construct new contact station.
- Construct new park manager's residence.
- Remove all unused structures in the park.
- Survey and sign the park boundary.

AN OVERVIEW OF BEAR HEAD LAKE STATE PARK

Bear Head Lake State Park is located in St. Louis County in northeastern Minnesota near the Boundary Waters Canoe Area Wilderness (BWCAW) and approximately 20 miles (32 km) southwest of Ely and 100 miles (160 km) northwest of Duluth. The park was established by an act of the Minnesota State Legislature in 1961, with a statutory boundary enclosing approximately 5,540 acres (2,242 hectares). Nearly 1,200 acres (486 hectares) are water. The park includes Bear Head Lake, Blueberry Lake, Square Lake, a portion of Eagles Nest Lake No. 3, and several smaller lakes, potholes, and bogs. These lakes provide excellent water based recreation opportunities.

The park's original vegetation communities were comprised primarily of white and Norway pine interspersed with aspen-birch, spruce-fir, and cedar. The area was heavily logged in the past. It has also been heavily impacted by numerous forest fires and subsequent fire suppression. As a result, existing vegetation communities are dominated by aspen and birch. Only remnant stands of pine remain.

The topography of the park is very rocky and rolling with elevation ranging from 1,450 ft (422 m) to 1,590 ft (484 m). The combination of water, vegetation, and topography results in a landscape which is typical of the border lakes area and resembles the scenic quality of BWCAW.

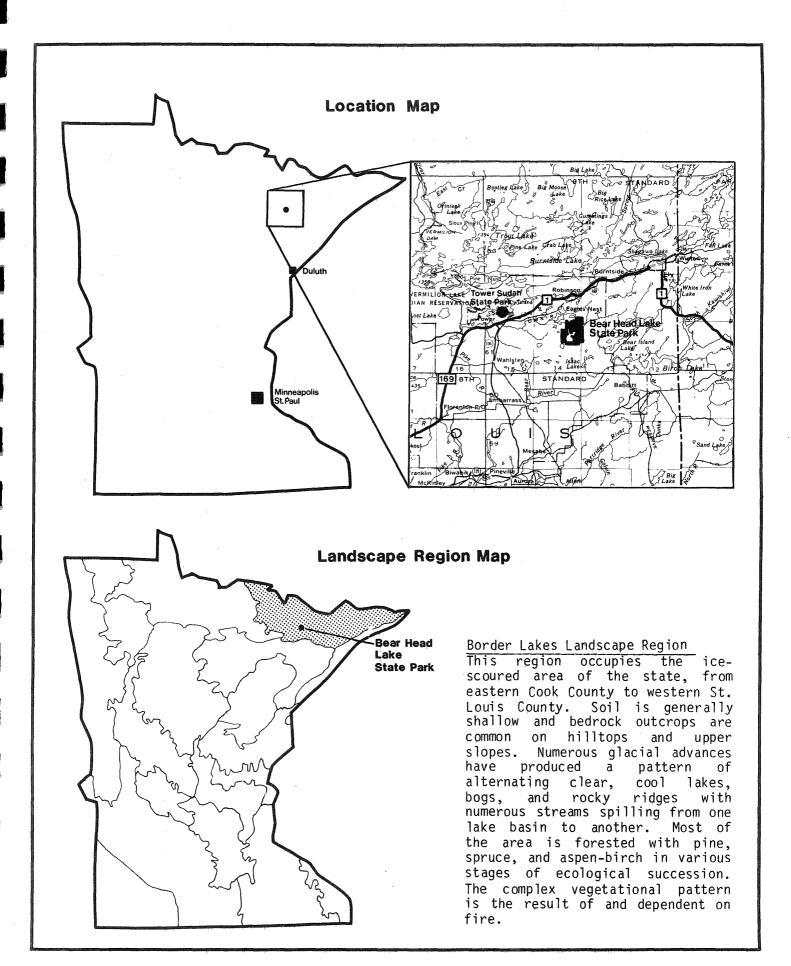
Recreational facilities in the park include: a vehicular camp-ground with 73 sites, 2 sanitation buildings, a shower building, 2 pit toilets, and a fish cleaning house; a boat access on Bear Head Lake; boat and canoe rental facilities; a primitive group camp with a hand pumped water supply and pit toilets; a large picnic area with a sandy swimming beach, 2 changing stalls and 2 pit toilets: many miles of hiking, skiing, and snowmobile trails; and an administration and maintenance area. The Taconite Trail passes through the northern portion of the park, providing additional recreational opportunities for the park and the surrounding area.

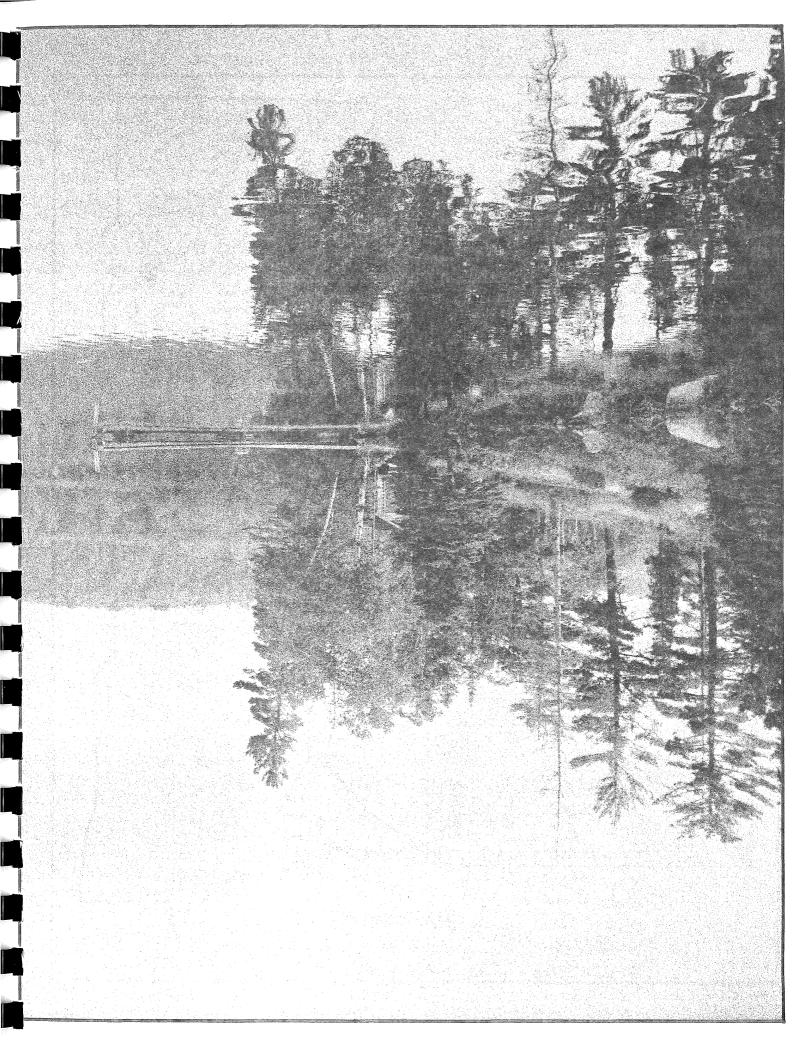
About 65 percent of the people using Bear Head Lake State Park are day users. It can be assumed that since Bear Head Lake is not on a major transportation route, the majority of day users probably come from the local area. The major day uses at Bear Head Lake State Park are fishing, snowmobiling, skiing, swimming, hiking, and picnicking.

Almost all of the camping in Bear Head Lake State Park occurs between the fishing opener and Labor Day. Campgrounds are moderately full on weekdays and weekends during June, and near or at capacity during all of July and August. In 1980, 18,461 people camped in Bear Head.

The relationship of Bear Head Lake State Park to other recreational facilities and population centers in the area was analyzed to assess the demand for particular recreational opportunities and to determine how the park should function in fulfilling this demand. The recommendations for development of the park were based on this analysis. A complete discussion of the regional analysis of the area surrounding the park is included in the comprehensive management plan.

The landscape region system divides the state into 18 regions (see map, p ll). These regions are differentiated according to the characteristic plant and animal life, landforms, and cultural patterns which existed before, during, and after European settlement. This system is a framework which provides information valuable in planning Minnesota's state parks. Bear Head Lake is in the Border Lakes Landscape Region.





Classification

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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. appropriate development can result in irreparable damage to the resource. To help ensure this recreation/resource balance, the Minnesota State Legislature established, through the Outdoor Recreation Act of 1975 (ORA'75) a classification process whereby each unit in the state recreation system can be identified as one (or more) component in the system. These comnatural state park; recreational state park; ponents are: 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 law 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 '75 which a park must substantially meet to qualify for classification as a natural state park. Bear Head Lake State Park meets these criteria.

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

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

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

"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."

Criteria for a State Trail Secondary Unit Designation

The corridor for the segment of the Taconite Trail within the park substantially meets the following DNR State Trail

Policy criteria and is consistent with the purpose and objectives of a natural state park.

"Trails shall have significant cultural, historical, recreational, or scenic attributes or connect or have the potential to connect units of the outdoor recreation system, the national trail system, or other recreational trails.

"Trail location shall take into consideration public needs.

"Trails shall utilize, to the greatest possible extent, public lands and rights-of-way.

"Trail rights-of-way should be acquired for long term use."

Bear Head Lake State Park substantially meets these criteria. It is recommended that the park be classified as a natural state park with a state trail secondary unit.

GOAL FOR THE PARK

The goal for Bear Head Lake State Park is consistent with the goals of natural state parks and state trails as included in DNR policy.

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

"To provide recreational or commuter travel routes which connect units of the outdoor recreation system or the national trail system or provide access to or passage through areas which have significant scenic, historical, scientific, or recreational qualities."

Park Resources

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RESOURCE INVENTORY

Geology, Landforms, and Soils. Land forms and soils in the park are the result of glacial processes and bedrock outcrops. The Minnesota Soils Atlas identified three geomorphic regions in the park: the Walsten moraine, the Vermillion moraine, and the Tower/Ely drift/bedrock complex (see map, p 33). Suitability of park soils has been evaluated for different types of developments. This chart is included in the comprehensive management plan.

Minerals. Information on the bedrock geology in the area of the park is fairly good because of past iron ore mining, copper-nickel exploration, and the abundance of rock outcrops in the area. The park has been rated high for the potential occurence of several minerals. A chart is included in the comprehensive management plan. Mineral exploration is not consistent with DNR policy for natural state parks and will not be allowed on lands under the jurisdiction of the Division of Parks and Recreation.

There is a gravel pit in the park which is currently being mined. Mining should continue only until the excavated area can be blended into the surrounding area.

<u>Vegetation</u>. Since settlement there have been drastic change in vegetational succession in Minnesota. The vegetation in the park in presettlement times was largely birch, jack pine, fir, white and Norway pine, spruce, and tamarack. Marschner (1930) mapped the park as "white and Norway pine." Logging, slash fires, and suppression of wild fires has resulted in regeneration of aspen-birch. Vegetation management (see map, p 35) will be directed toward reestablishment of presettlement character through pine planting and fire management.

<u>Wildlife</u>. Information on park wildlife was gleaned from county, regional, and local surveys. Management will be directed toward identification of plant and animal "elements" for the Minnesota Natural Heritage Program, maintenance of snags (dead standing and downed trees) and larger uninterrupted

tracts of mature forest for wildlife habitat. Species of special concern such as the bald eagle and osprey will be carefully monitored. (See the Vegetation and Wildlife Management Map, p 35.)

<u>Surface Waters</u>. The park is in an area where surface water is abundant. Precipitation in the area greatly exceeds evaporation. The chart below lists the major lakes in or adjacent to the park.

Table of Park Lakes

Name	Area (Acres,	/Hectares)		Maximum Depth (Feet)	Annual Fluctuation (Feet)
Eagles Nest Lake No. 3	966.4	391	11.4**	49	2
Bear Head Lake	674	273	11.7	46	1
Grassy Lake	213.4	86	4.85	15	+1.5/6
Blueberry Lake	NA	NA	1.3	NA	NA
Square Lake	NA	NA	.68	NA	NA
Cub Lake	10*	4	.4*	38	NA
Norberg Lake	8*	3	.5*	29	NA

* - Approximation

** - Not all of the shoreline is in the park.

NA - Not available

Acid precipitation is of great concern because the lakes in the park are highly susceptible to acidification. Baseline data for the park will be compiled and updated periodically.

Groundwater. Bedrock outcrops and thin soils permit easy contamination of the groundwater. Excessive amounts of iron and manganese in the water supply, affects its taste and color, stains fixtures and clothes, and encrusts well screens. A filter system will be evaluated and installed.

<u>Fisheries</u>. There are excellent fishing resources in this park. Four park lakes are being actively managed by the DNR, Division of Fisheries. They are classified as follows:

Name
Bear Head Lake
Norberg Lake
Cub Lake
Eagles Nest Lake No. 3

Management Classification
Walleye
Rainbow trout
Walleye
Centrarchid (largemouth bass)

Stocking by the Section of Fisheries has been going on in the park since, 1947. It is recommended that current stocking programs continue.

Archaeology and History. The Bear Head area is steeped in history. Human habitation of the park area has been evidenced as early as the copper era (4,000 BC). To date, no burial mounds or habitation sites have been located in the park.

European fur traders began working the area in the 1700s. In 1865 there was a gold rush around Lake Vermillion. But little gold was found. The value of the area's iron deposits was soon realized and by 1884, the mining industry was underway. At about this time, the logging industry was also a predominant industry in the area. Unidentified ruins of a logging camp and the remnants of several logging railroads have been found in the park.

All development sites in the park will be surveyed for archaeological significance prior to construction.

RESOURCE MANAGEMENT OBJECTIVES

To employ resource management that will enhance the park's natural resources and ensure use by future generations

To direct wildlife management programs toward establishing and controlling wildlife populations by natural means

To direct resource management toward reestablishing and maintaining the natural character prior to settlement

To direct management toward conserving and protecting park water resources

To give special attention to those species, communities or other natural features of statewide or national significance as determined by the Minnesota Natural Heritage Program

To direct vegetation management in use areas toward restoration and prevention of resource degradation

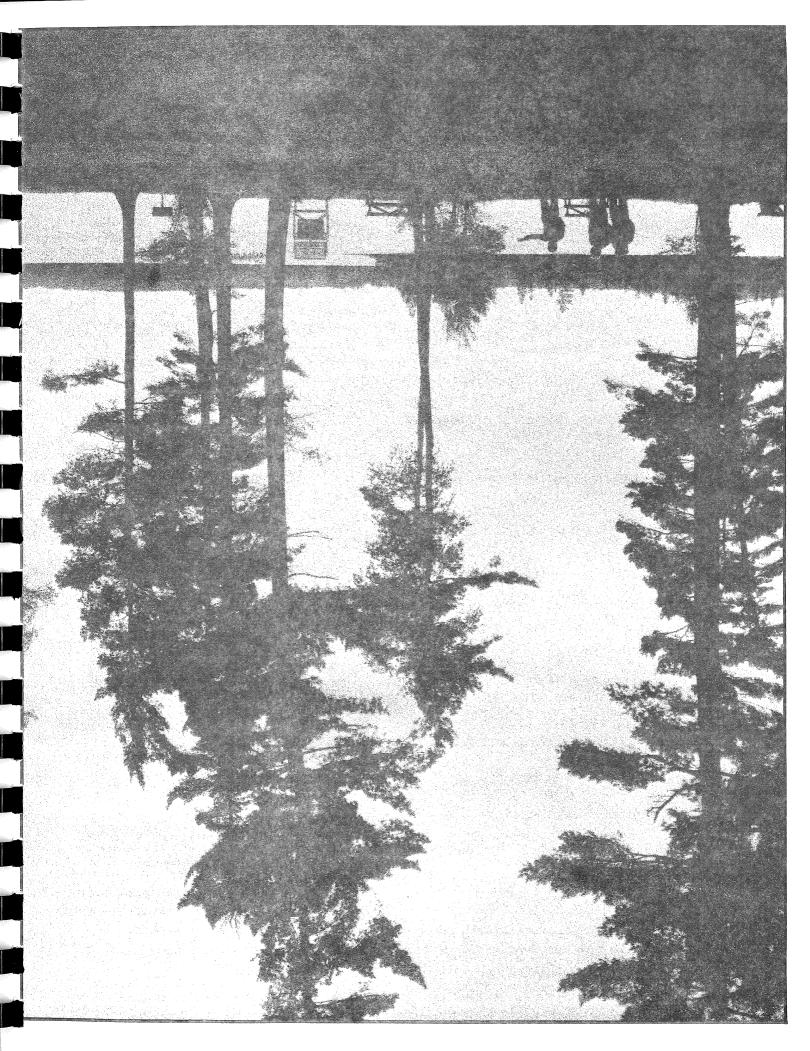
To prohibit surface and subsurface mineral extraction for commercial purposes

RESOURCE MANAGEMENT

The DNR, Nongame Program will be consulted regarding the short term and long range impacts of vegetation management on wildlife. All development and management areas will be surveyed for Minnesota Natural Heritage Elements. The following recommendations will require development funding under the biennial appropriation of the LCMR, unless specified otherwise.

	ion	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
	erals Restore gravel pit to a natural condition.	Cost cov	vered in	park opera	tions		
	etation Plant Norway and white pine in the picnic area.	Cost cov	vered und	er Picnic	Grounds,	Action #2	p 28
2	Plant mixed pine in campground expansion area.	4,000	4,000				8,000
3	Plant vegetative screening in the existing campground.		5,000				5,000
4	Plant vegetation for lake- side erosion control.	Cost cov	vered und	er Camping	, Action	#5, p 28	
5	Protect planted vegetation with wildlife deterents.	500	500	500	500	500	Ongoing
6	Provide insect and disease control.	500	500	500	500	500	Ongoing
7	Develop tree seedling growing area.	2,000	1				2,000
8	Plant white pine under mature aspen-birch stands.	3,000	1	2,000		2,000	7,000
9	Conduct prescribed burns in Norway pine stands.		2,000)	2,000)	Ongoing
10	Prepare fire plan for the park.	1,000	ï		500	To be	l,500 e reviewed ry 5 yrs.

٨٥٠	ion	Phase	Phase 2	Phase 3	Phase 4	Phase 5 1	ot al
4447	dlife			<u> </u>	4	<u> </u>	Otal
<u> </u>	Prepare management plan for bald eagles and osprey.	1,000			500)	1,500
2	Report annual status of						
2	bald eagle and osprey.	Covered	by park	operations	budget		
3	Maintain maximum abun- dance of snags.	No cost					
4	Maintain large uninter- rupted tracts of mature forest.	No cost					
Sur	face Waters						
T	Compile minimal baseline						
	data on acidification of park lakes.	500		oordinated agencies d		propriate Iniversities	500
His	tory/Archaeology						
l	Field check proposed development sites.	5,000					5,000



Physical Development and Recreation Management

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EXISTING DEVELOPMENT (see map, p 37)

Campground
73 campsites
2 toilet buildings (barrier-free)
1 shower building
1 fish cleaning house
2 pit toilets (Loop A barrier-free)

Group Camp
4 pit toilets (2 barrier-free)
Hand pumped water supply
Boat landing

Picnic Ground
15 picnic tables
2 changing stalls (open roof)
2 pit toilets
Sand swimming beach

Boat Launch
Boat ramp (metal grate)
Gravel parking lot

Administrative Facilities
Shop building (half heated)
Manager's residence
Contact station (includes manager's office)
Seasonal residence
Oil house
Well house
Woodshed

Trails
Hiking 12 miles (19 km)
Multi-use 5 miles (8 km)
Ski touring 7 miles (11 km)

RECREATION MANAGEMENT OBJECTIVES

To provide a broad selection of outdoor activities consistent with the policy and purpose for natural state parks

To complement regional facilities and contribute to statewide recreation goals identified by Outdoor Recreation Act of ORA $^{\prime}75$ and DNR policy

To provide barrier-free access to major park facilities

To enhance and promote the use and enjoyment of the resources of the area without adversely effecting them

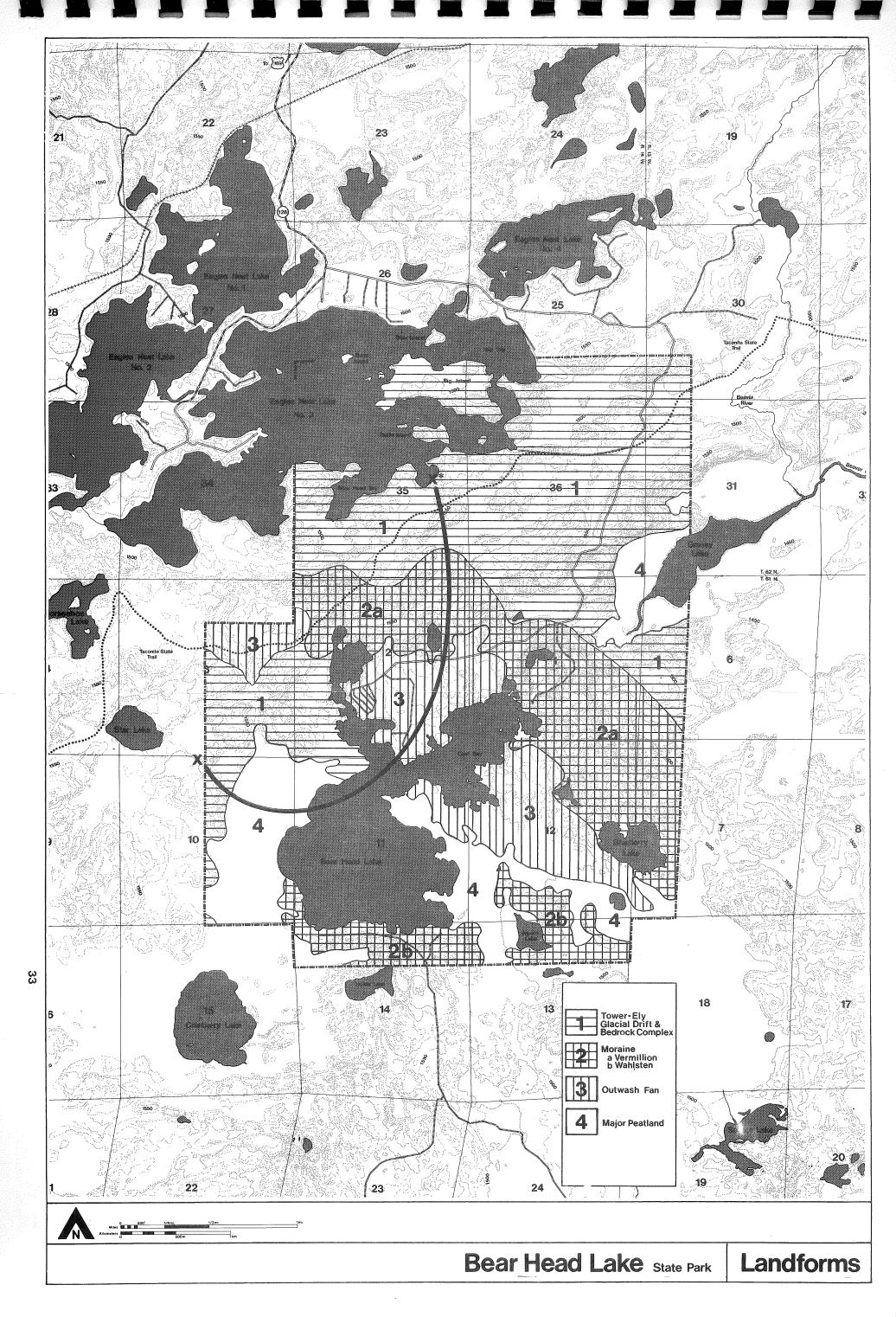
Act	ion	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
Cam	ping Redesign and rehabilitate existing campground.		50,000	The second secon			50,000
2	Develop new camping loop (E) east of road to picnic ground.	2,000	1,000	1,000		60,000	64,000
3	Remodel shower building.	To be de	termined	by Bureau	of Engin	eering	
4	Develop 6 boat landing/ tie-up areas.		12,000				12,000
5	Develop shoreline erosion control plan.		15,000		5,000	5,000	Ongoing
6	Construct dump station.	10,000					10,000
7	Develop five hike-in camp sites near Becky and Blueberry lakes.	3,000					3,000
8	Improve and rehab- ilitate group camp.			2,000			2,000
9	Improve vehicle turnaround and parking in group camp.			10,000			10,000
Wat	er Access Install double ajoined concrete plank boat ramp.	8,000					8,000
2	Consider park land for access on Eagles Nest Lake No. 3.	No cost					
3	Develop 4-5 car parking lot near Cub Lake.	1,500					1,500
	nic Grounds Construct enclosed picnic shelter.		40,000				40,000
2	Plant pine.	1,000	1,000	1,000	1,000	1,000	Ongoing
Tra T	ils Develop a new ski touring trail system.	8,000			2,000		10,000
2	Build two log adirondack shelters.	1,000					1,000

Act	ion	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
3	Provide bicycle access from Taconite Trail to trail center.	Continge	nt on Tac	onite Tra	ail devel	opment for	bicycles
4	Plant 10' trees on the old boat landing site on Eagles Nest Lake No. 3.	500					500
A dm	inistrative/Support Facilities Build unheated storage building.	<u> </u>	80,000)			80,000
2	Close existing road to shop area.		4,000)			4,000
3	Install water filter system.		10,000)			10,000
4	Construct new contact station.				100,00	0	100,000
5	Provide control over park access at all points of entrance.	Covered	in park o	perations	s budget		
6	Pave primary park roads.				60,00	0	60,000
7	Build new manager's residence.	110,000					110,000
8	Sell seasonal residence and remove from the park.	No cost					
Vis	itor Services Develop signage plan for the park.	DNR, Bure	eau of En	ıgineering	J		
2	Continue and improve information dissemination.		1,000	1	1,00	0	Ongoing
Int	erpretive Program Prepare and print self- guided trail brochure.		5,000	ı			5,000
Par	k Boundary Survey and sign boundaries.		5,000	ı			5,000

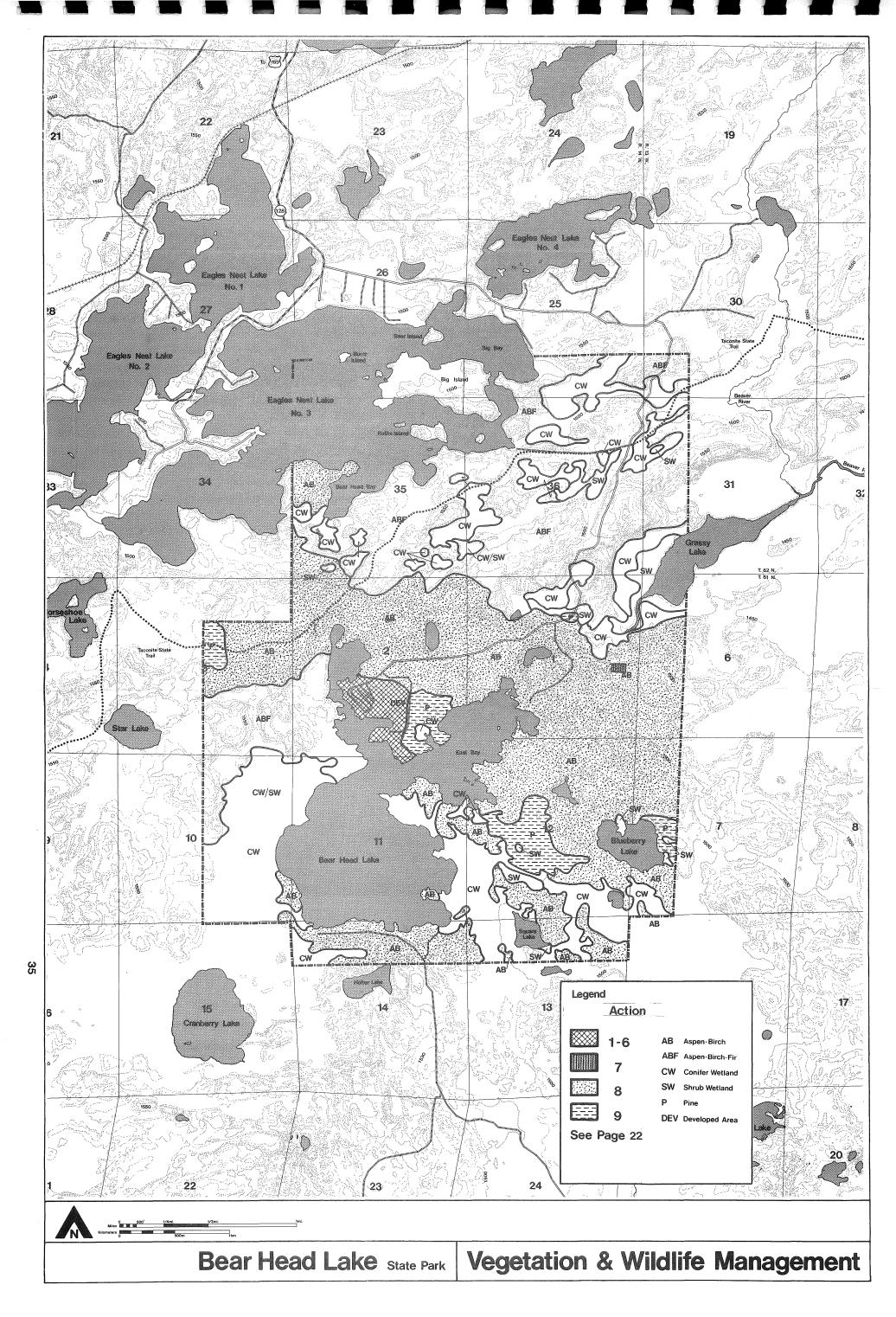
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Maps

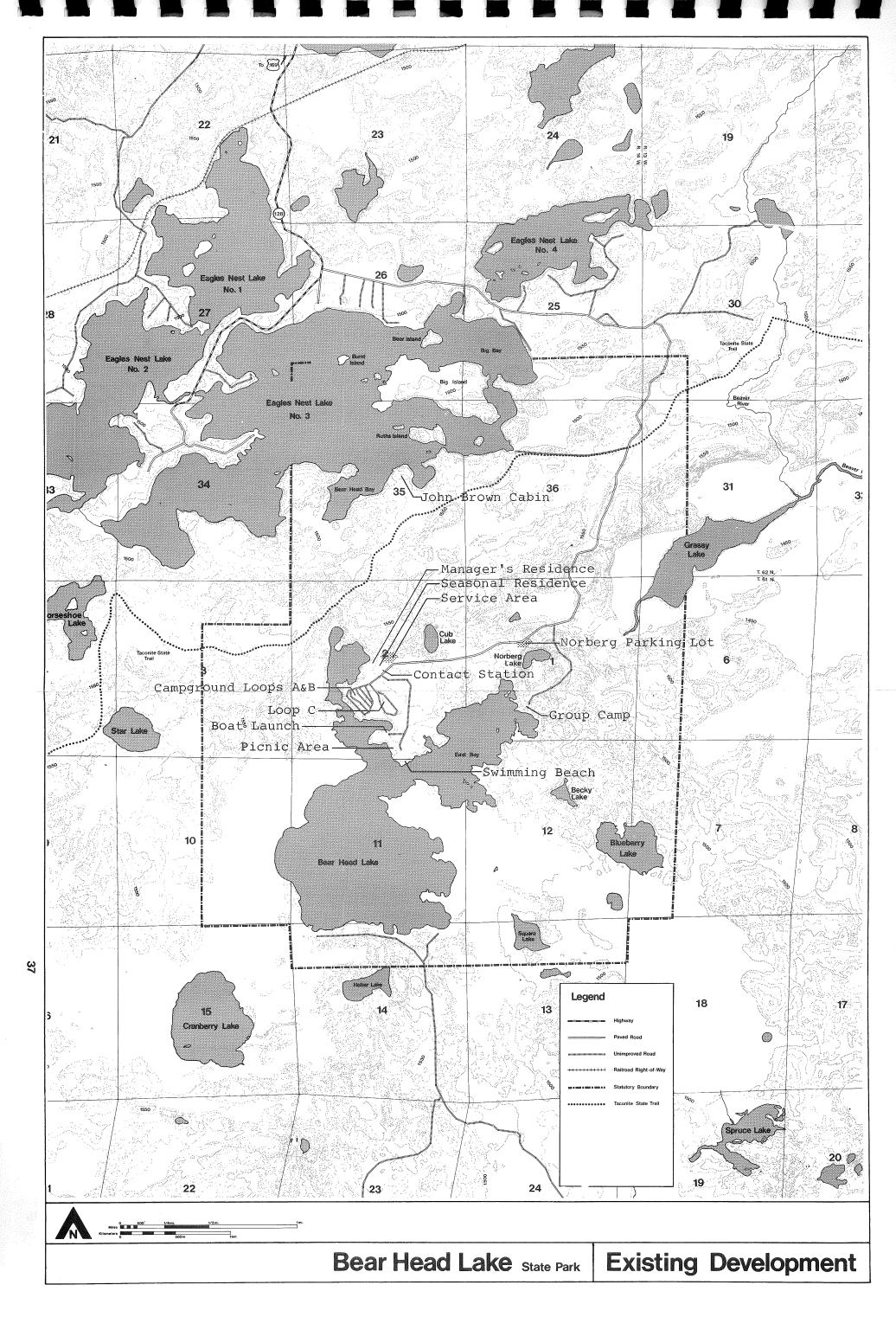
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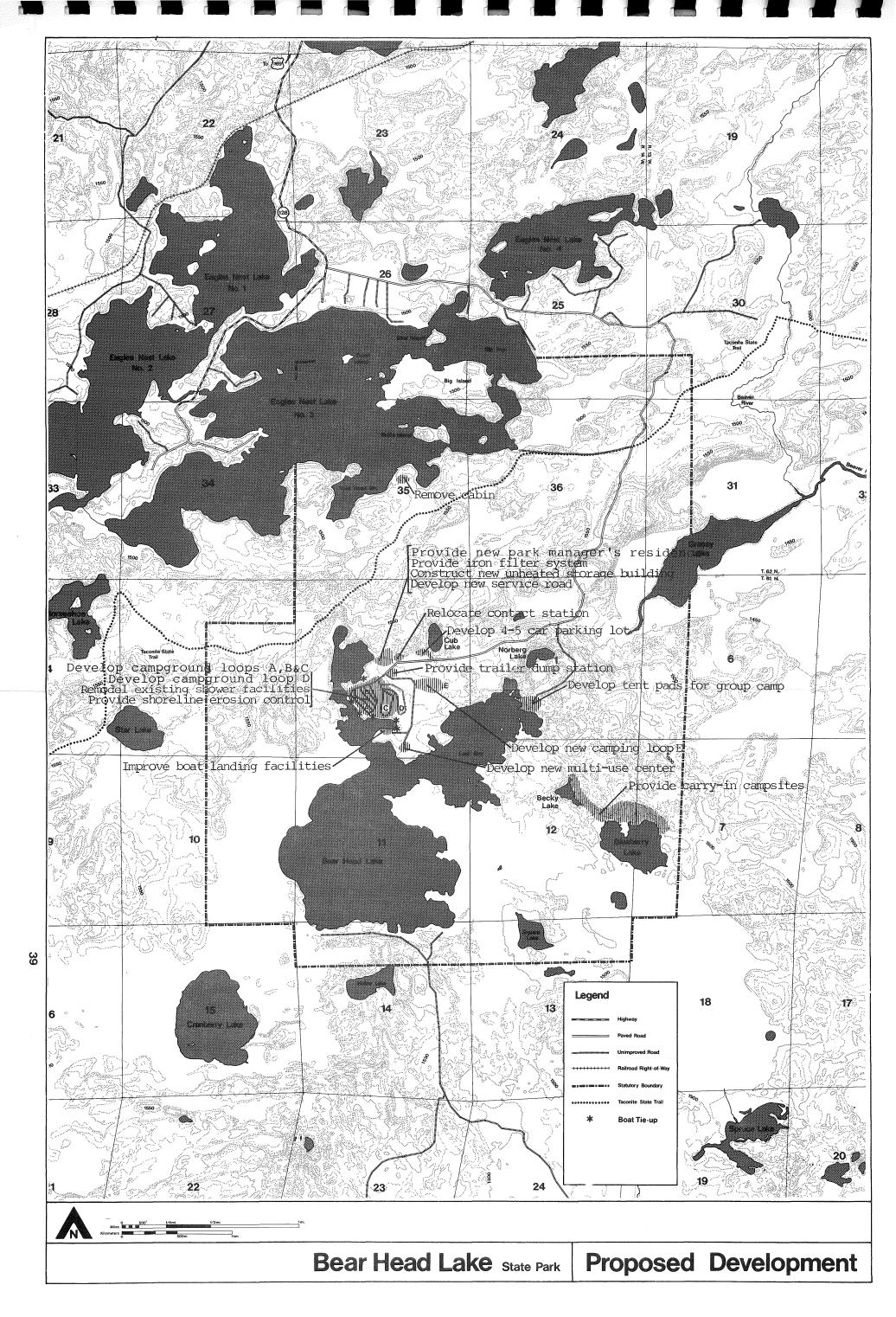
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