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- A Management plan for Rice Lake St



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A Management Plan for

Rice Lake State Park

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Minnesota Department of Natural Resources

This document is a summary of the Rice Lake State Park management plan. All recommendations, both resource management and physical development, are included here. Detailed inventory data and specific instructions for implementing the recommendations 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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 Document #3771E

Introduction

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 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 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 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 an interdepartmental review of the draft plan.
4. The draft plan is revised as necessary after 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 State Planning Agency for a 60-day review period. (This management plan was reviewed in November 1982.)
6. The plan is implemented by the DNR Division of Parks and Recreation.

AN OVERVIEW OF RICE LAKE STATE PARK

Rice Lake State Park was established in 1963. It is located in northeastern Steele County, with a small portion extending into Dodge County. The city of Owatonna is located 7 miles west of the park. The Twin Cities are 70 miles north.

The statutory boundary of the park encloses 1,060 acres of land and 750-acre Rice Lake. The state owns approximately 735 acres; Steele County owns a 7-acre parcel; and the Rice Lake Church owns 5 acres. The remaining 313 acres are privately owned.

Rice Lake is located on the watershed divide between the Cannon River and Zumbro River watersheds. Its topography is fairly level with vegetation types including oak woods, maple-basswood forest, marsh, and open grasslands which were once agricultural fields.

Park facilities include a semi-modern campground with 42 sites, a primitive group camp, a picnic ground, a boat launch, and a total of 6 miles of trail. During the winter, 4 miles of ski touring trails and 2 miles of snowmobile trails are provided. A small interpretive center is operated from June until September.

A SUMMARY OF MANAGEMENT AND DEVELOPMENT PROPOSALS

Resource Management

Maintain open grasslands in old field areas.

Convert old field areas to a mixture of stout grasses.

Burn the large marsh area adjacent to the northeast corner of the lake.

Soften the forest/field edges.

Control buckthorn throughout the park.

Manage the bur oak woods in the southern portion of the park.

Reduce the amount of mowing.

Maintain a maximum number of snags.

Support the DNR Division of Fish & Wildlife in designating Rice Lake as a wildlife management lake.

Modify the existing dam.

Improve the beach.

Improve the boat launch to facilitate use during the major drawdown.

Support the DNR Section of Wildlife in establishing a portion of the lake as a waterfowl refuge.

Support the DNR Section of Wildlife in allowing extended trapping seasons.

Develop a program of vegetation and wildlife management that will complement lake management.

Drain the lake in the fall (major drawdown would be conducted only once).

Restore wetland areas in the park.

Replace wood duck houses.

Improve the general water quality of Rice Lake.

Test well water quality and make necessary improvements.

If necessary, conduct a net survey to determine the fish population of Rice Lake.

Conduct a thorough archaeological investigation of the park.

Make all information regarding prehistoric or historic sites in the park available to the park interpretive staff.

Recreation Management

Modify the entrance road.

Develop a visitor parking lot in the campground.

Construct a shower addition to the campground toilet building.

Develop a remote camping area.

Construct a multi-purpose shelter building.

Develop an access trail to the toilet building.

Maintain the picnic ground toilet building during the winter for trail users.

Provide warming facilities for winter trail users.

Upgrade the lakeshore hiking trail.

Modify the snowmobile and ski trails from the boat launch to the picnic grounds.

Improve the swimming beach.

Make minor modifications to the boat launch parking lot.

Purchase several canoes for use in the interpretive program.

Interpretive Services

Direct the overall effort of the park interpretive program to emphasize the past history and current management of Rice Lake.

Update the interpretive handout.

Develop teaching aids and program suggestions for school group leaders.

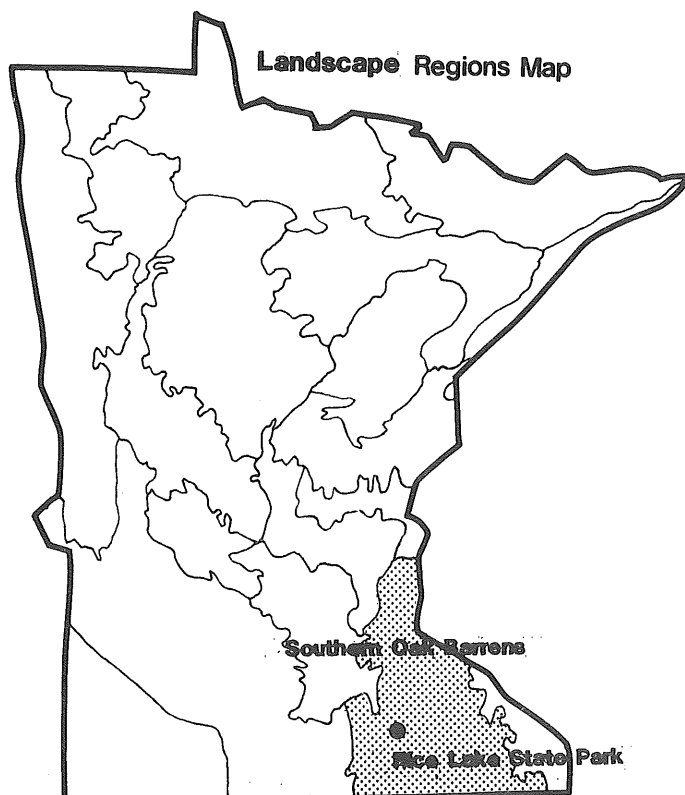
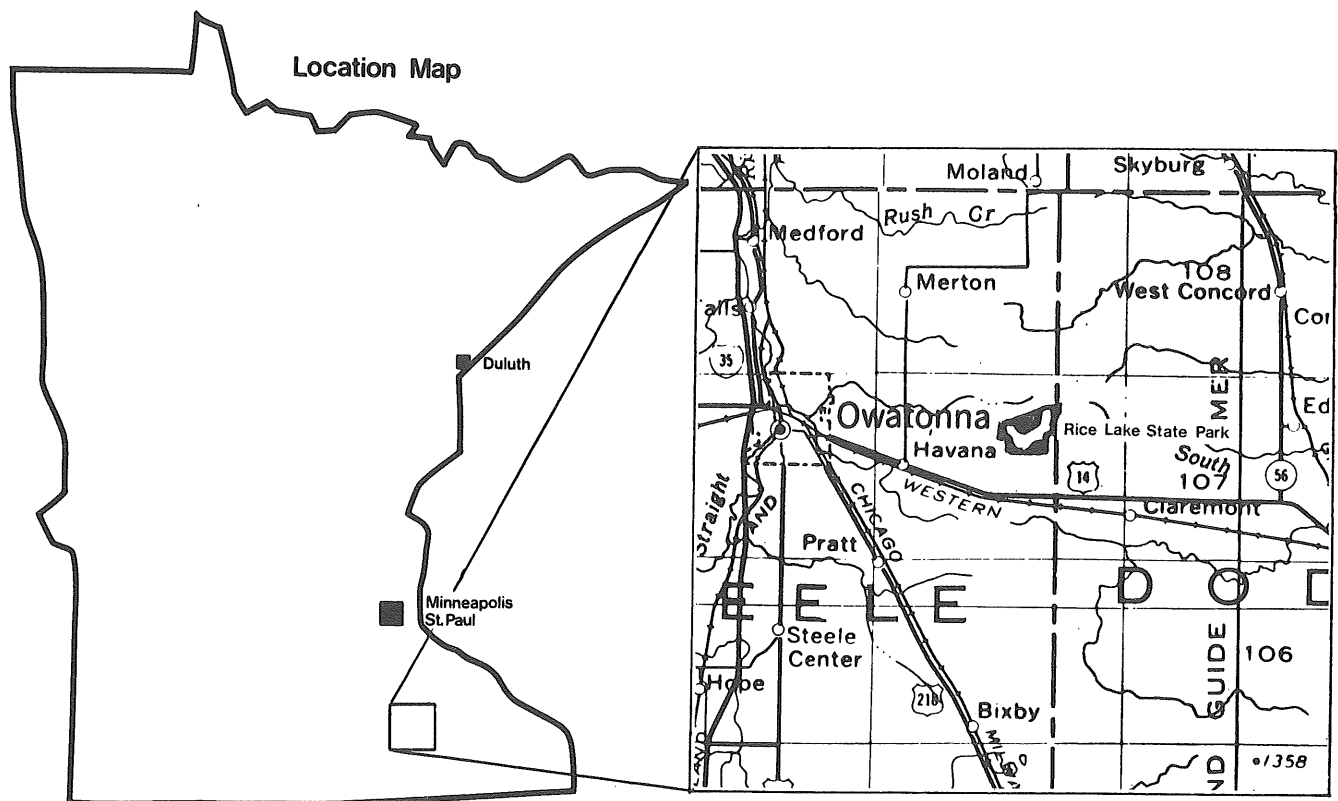
Provide interpretive program facilities.

Administrative/Support Facilities

Construct a new contact station/park office.

Develop a new service court.

Construct a new manager's residence.



The landscape region system divides the state into 18 regions. 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 the planning of Minnesota's state parks.

Rice Lake is located in the Southern Oak Barrens Landscape Region. This region totals 5,800 square miles or 6.9% of the state. This region is a transition area between the prairie to the west and the deciduous forest to the north and east. Originally, the dominant vegetation was prairie with occasional groves and scattered individual oak trees.

Classification

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 this recreation/resource balance, the Minnesota State Legislature established, through the Outdoor Recreation Act of 1975 (ORA), a classification process 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 Recreational State Park Designation

DNR policy identifies four criteria based on ORA which a park must substantially meet to qualify for classification as a recreational state park. Rice Lake State Park meets these criteria:

Possess natural resources, or artificial resources in a natural setting, with outstanding outdoor recreation potential.

Provide outstanding outdoor recreational opportunities that will attract visitors from beyond the local area.

Contain resources which permit intensive recreational use by large numbers of people and be of a size sufficient to provide for effective management and protection of the natural and/or artificial outdoor recreational resources, so that they will be available for both present and future generations.

Be located in areas where they appropriately accommodate the outdoor recreational needs of the state populations, provided that they complement but are not in place of recreational service normally offered by local or regional units of government or the private sector.

Recommended Classification

Because Rice Lake State Park substantially fulfills all of the above criteria, it is recommended that the park be classified as a recreational state park.

GOAL FOR THE PARK

The goal for Rice Lake follows the overall goal for recreational state parks as stated in the DNR policy:

It is the goal of the Department of Natural Resources in recreational state parks to:

Provide lands and waters which offer a broad selection of outdoor recreational activities in a natural setting and which may be used by large numbers of people.

Park Resources

CLIMATE

Temperatures for the month of July in the Rice Lake area vary from an average high of 84 degrees F to an average low of 62 degrees F. Temperatures in January for the area surrounding Rice Lake vary from an average high of 22 degrees F to an average low of 2 degrees F. The total annual precipitation (rain and snow) is about 30 inches.

GEOLOGY

The landforms of Rice Lake State Park are the result of glacial activity. Most of the state was covered by the advances of the Wisconsin ice stage, which lasted until about 10,000 years ago. The ice reached eastward about as far as the town of Claremont, 3 miles southeast of the park. When the glacier eventually retreated, a huge ice block, buried in glacial debris, was left behind by the main ice mass. As this ice block melted, it filled the depression in which it rested, forming Rice Lake.

Other evidence of glacial activity in the immediate area includes a glacial meltwater channel, now occupied by Maple Creek, and a moraine which serves as a divide between the Zumbro River and Cannon River watersheds.

The underlying bedrock in the vicinity of Rice Lake is covered by glacial drift averaging from 100 to 200 feet thick. The drift is a fairly reliable source of water and, in some areas, the gravel is of a high enough quality to warrant excavation and use in road construction.

SOILS

A variety of soil types are found within Rice Lake State Park. The limitations for recreational use of these soils vary significantly. All of the recreation development in the park is located on the north side of the lake, where the major soil

types generally have only slight limitations for such recreational facilities as campgrounds and picnic areas. A complete discussion of soil types and their limitations for development is in the comprehensive management plan.

VEGETATION

Before European settlement, Steele and Dodge counties were primarily prairie and oak savanna, both interspersed with marshes. The majority of marshes that existed in presettlement times have been drained and put into crop production.

The three major vegetative communities at Rice Lake today are the open-water lake and its associated marshlands, the upland wooded areas (predominantly maple-basswood and oaks), and the open field areas. The management of Rice Lake is a primary resource concern. Attempts should be made to make the lake and the wetland/marsh area more productive for wildlife habitat.

WILDLIFE

The predominant land use in both Steele and Dodge counties is agriculture. With less than 5 percent of the land area in forest, many wildlife species are attracted to the cover and food available in the forested areas of the park. Rice Lake is attractive to many species of wildlife, especially migrating waterfowl and shorebirds. Recommended resource management actions would do much to enhance habitat for these species.

During recent years, the park has supported a winter population of 75 to 85 white-tailed deer. Deer browse is medium to medium-heavy in many areas of the park. Although some portions of the park are overbrowsed, the population is not large enough to warrant a deer hunting season for management purposes within the park. Small-game animals in the park include beaver, raccoon, muskrat, and mink.

SURFACE WATERS

Rice Lake is a meandered public lake of about 750 acres with a total shoreline of approximately 6 miles. The lake's average depth is 3 feet. Two inlets and several drainage tiles flow into the lake. The only outlet from the lake is on the eastern shore. This outlet flows into the South Branch Middle Fork of the Zumbro River and eventually into the Mississippi River.

DNR surveys indicate that Rice Lake is a fairly stable, although deteriorated, aquatic environment. Much of the lake bottom is covered with a thick deposit of silt, frequently more than 10 feet deep. When this nutrient-rich silt is stirred up by wave action, the nutrients become more available to algae and cause an increase in lake turbidity, a major problem at Rice Lake. Most Rice Lake surveys indicate that the lake has very high phosphorus and nitrogen counts, which result in frequent and heavy algal blooms. Upland agricultural sources are probably significant contributors of nitrogen, phosphorus and sulfur. Because of turbidity resulting from erosion from the surrounding watershed, rough fish activity, wave action and algae growth, the recreational quality of Rice Lake is often poor. The muddy-green appearance of the lake is not desirable for many water-based activities, and also detracts from the pleasure of viewing a large expanse of water.

GROUNDWATER

The thickness of glacial drift in the vicinity of Rice Lake is commonly 100 to 200 feet. Glacial deposits in this watershed are composed largely of sand and gravel, and high yields of good-quality water are commonly obtainable from them. The water is commonly very hard and frequently contains high amounts of iron.

Six wells are known to exist in the park. Submersible pump wells are located at the park manager's residence, the park office (a line from this well runs downhill under the road to the trailer dump station), the campground and the picnic area (sanitation building). Hand-pump wells are located at the primitive group camp and on an old farmstead just east of the historic Rice Lake Church.

FISHERIES

Because of its shallow depth, it is estimated that Rice Lake freezes out every 3 to 4 years. The lake was stocked with northern pike, crappies, bass, sunfish and perch between 1913 and 1944, but the stocking was discontinued because of the lake's limited fishery potential.

Bullheads are known to tolerate low oxygen levels better than most fish, and several thousand were stocked in Rice Lake during 1958 and 1959. Because bullheads contribute significantly to the deterioration of a lake's water quality, it is now recognized that stocking this lake with bullheads was a poor management decision. No bullheads have been added since 1959. In recent years, the most common fish in Rice Lake have been bullheads, carp and green sunfish. All three of these species are known to be able to tolerate low oxygen levels; both bullheads and carp contribute to the general deterioration of water quality.

The consensus of DNR personnel, as well as other experts in the field, is that Rice Lake has very little fishery potential, and that the most productive management of this resource would be as a wildlife/waterfowl lake.

ARCHAEOLOGY/HISTORY

Since the time of European settlement, people have been finding evidence of earlier human activity in the vicinity of Rice Lake. This evidence includes stone tools and pottery fragments, which have been found in significant numbers near the lakeshore and in the agricultural fields surrounding the lake.

In 1972 an archaeological excavation was conducted in the park by staff and students from the University of Minnesota, Department of Anthropology. The major excavation site was on the east shore of the eastern arm of the lake, a few hundred yards north of the Zumbro River branch outflow. The excavation uncovered a number of stone implements and pottery fragments, as well as some fire pits. Although a detailed analysis of the site has not yet been done, preliminary analysis suggests that the materials represent several different time periods, possibly from as early as the Archaic period (5,000-1,000 B.C.) to early historic times.

With the signing of the treaty of Traverse des Sioux in 1851, the Dakota Indians ceded their land in western and southern Minnesota, including the Rice Lake area, to the United States. The Dakota were restricted to reservation lands bordering the Minnesota River from the Little Rock River near New Ulm to the Minnesota-South Dakota border.

RESOURCE MANAGEMENT OBJECTIVES

To manage vegetation for a diversity of habitats.

To enhance wildlife observation as a recreational experience for park visitors.

To improve wildlife habitat by maintaining and invigorating grasslands in old field areas using native grass species.

To reestablish oak savanna in the southern portion of the park.

To manage Rice Lake for improved wildlife habitat, provided that such management does not unduly restrict recreational activities.

To enhance wildlife observation as a recreational experience for all park visitors.

To improve the water quality of Rice Lake.

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

To protect groundwater from contamination by park development.

To control the rough fish populations.

To preserve and protect all historic and prehistoric sites in the park.

To interpret historic and prehistoric use of the park area for visitors.

To encourage archaeological and historical research that will increase the existing knowledge of prehistoric and historic human activity in Minnesota.

The following cost estimates were generated in March 1982. These cost estimates were based on current prices and available information.

RESOURCE MANAGEMENT

Action	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
<u>Vegetation</u>						
1 Maintain open grasslands in old field areas.	\$ 1,000		\$ 1,000		\$ 1,000	\$ 3,000
2 Convert old field areas to a mixture of stout grasses.		\$ 2,000		\$ 2,000		4,000
3 Burn the large marsh area adjacent to the northeast corner of the lake.	500		500		500	1,500
4 Soften the forest/field edges.	500		500		500	1,500
5 Control buckthorn throughout the park.		1,000	1,000	1,000		3,000
6 Manage the bur oak woods in the southern portion of the park.			1,000	1,000	500	2,500
7 Reduce the amount of mowing.	No development cost.					
8 Maintain a maximum number of snags.	No development cost.					
<u>Wildlife</u>						
1 Support the DNR Division of Fish & Wildlife in designating Rice Lake as a wildlife management lake.	No development cost.					
1a Modify the existing dam.	Cost covered by DNR Section of Wildlife.					
1b Improve the boat launch to facilitate use during the major drawdown.	Minimal cost (less than \$100)					
1c Support the DNR Section of Wildlife in establishing a portion of the lake as a waterfowl refuge.	No development cost.					

Action	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
<u>Wildlife (Contd.)</u>						
1d Support the DNR Section of Wildlife in allowing extended trapping seasons.	No development cost.					
1e Develop a program of vegetation and wildlife management that will complement lake management.	No development cost.					
2 Drain the lake in the fall.	15,000					15,000 (Should be covered by DNR Wildlife Section)
3 Restore wetland areas in the park.	Cost to be determined. May be cost-shared by Minnesota Waterfowl Association, Division of Wildlife, and Division of Parks & Recreation.					
4 Replace wood duck houses.			\$ 500			\$ 500

Water Resources

- | | | |
|------------------------------------------------------------|---------------------------------------------------------------------------------------|--|
| 1 Improve the general water quality of Rice Lake. | Covered by Section of Wildlife. | |
| 2 Test well water quality and make necessary improvements. | Study to be conducted by DNR Bureau of Engineering. Cost dependent on study findings. | |

Fisheries

- | | | |
|-------------------------------------------------------------------------------------|----------------------------------|--|
| 1 If necessary, conduct a net survey to determine the fish population of Rice Lake. | Covered by Section of Fisheries. | |
|-------------------------------------------------------------------------------------|----------------------------------|--|

History/Archaeology

- | | | |
|----------------------------------------------------------------------------------------------------------------------|----------------------|-------|
| 1 Conduct a thorough archaeological investigation of the park. | 2,500 | 2,500 |
| 2 Make all information regarding prehistoric or historic sites in the park available to the park interpretive staff. | No development cost. | |

Physical Development and Recreation Management

EXISTING DEVELOPMENT

Campground

- 42 campsites
- toilet building (vault system)

Primitive Group Camp

- pit toilets
- well with hand pump

Picnic grounds

- picnic tables and fire rings
- toilet building (vault system)
- gravel-surfaced parking lot (2 separate areas)

Boat launch

- gravel-surfaced parking lot
- steel grate launch mat

Administrative/support facilities

- contact station
- park office/interpretive center
- manager's residence
- service court (formerly farmstead buildings)

Trails

- 6 miles hiking
- 3 miles ski touring
- 2.5 miles snowmobiling

RECREATION MANAGEMENT OBJECTIVES

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

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

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

To ensure physical accessibility and program useability of new developments by special populations (i.e. persons with physical disabilities, the elderly, and the very young).

To recognize and make efforts to comply with appropriate state, county, and municipal regulations as they relate to park development and management.

The following cost estimates were generated in March, 1982. These cost estimates were based on current prices and available information.

PROPOSED DEVELOPMENT

Action	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
<u>Access & Visitor Contact</u>						
1 Modify the entrance road.			1,000			1,000
2 Develop a visitor parking lot in the campground.	See Camping, Action #3.					
<u>Camping</u>						
1 Construct a shower addition to the campground toilet building.			\$25,000			25,000
2 Develop a remote camping area.			5,000			5,000
3 Develop a visitor parking lot.	\$ 1,000					1,000
<u>Picnicking</u>						
1 Construct a multi-purpose shelter building	35,000					35,000
2 Develop an access trail to the toilet building.	2,500					2,500
3 Maintain the picnic ground toilet building during the winter for trail users.	No development cost.					
<u>Trails</u>						
1 Provide warming facilities for winter trail users.	See Picnicking, Action #1.					
2 Upgrade the lakeshore hiking trail.	7,500					7,500
3 Modify the snowmobile and ski trails from the boat launch to the picnic grounds.	No development cost.					
<u>Interpretive Services</u>						
1 Direct the overall effort of the park interpretive program to emphasize the past history and current management of Rice Lake.	(observation blind \$4,000-canoes \$2,000) \$ 6,000					6,000

Action	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
2 Update the interpretive handout.			\$ 1,000			1,000
3 Develop teaching aids and program suggestions for school group leaders.		2,000				2,000
4 Provide interpretive program facilities.	See Picnicking, Action #1.					
<u>Water Activities</u>						
1 Improve the swimming beach.	\$ 1,000		\$ 500		\$ 500	2,000
2 Make minor modifications to the boat launch parking lot.			3,000			3,000
3 Purchase several canoes for use in the interpretive program.	See Interpretive Services, Action #1.					
<u>Administrative/Support Facilities</u>						
1 Construct a new contact station/park office.			\$70,000			70,000
2 Develop a new service court.				\$150,000		150,000
3 Construct a new manager's residence.	Cannot be determined at this time.					

Park
Boundary

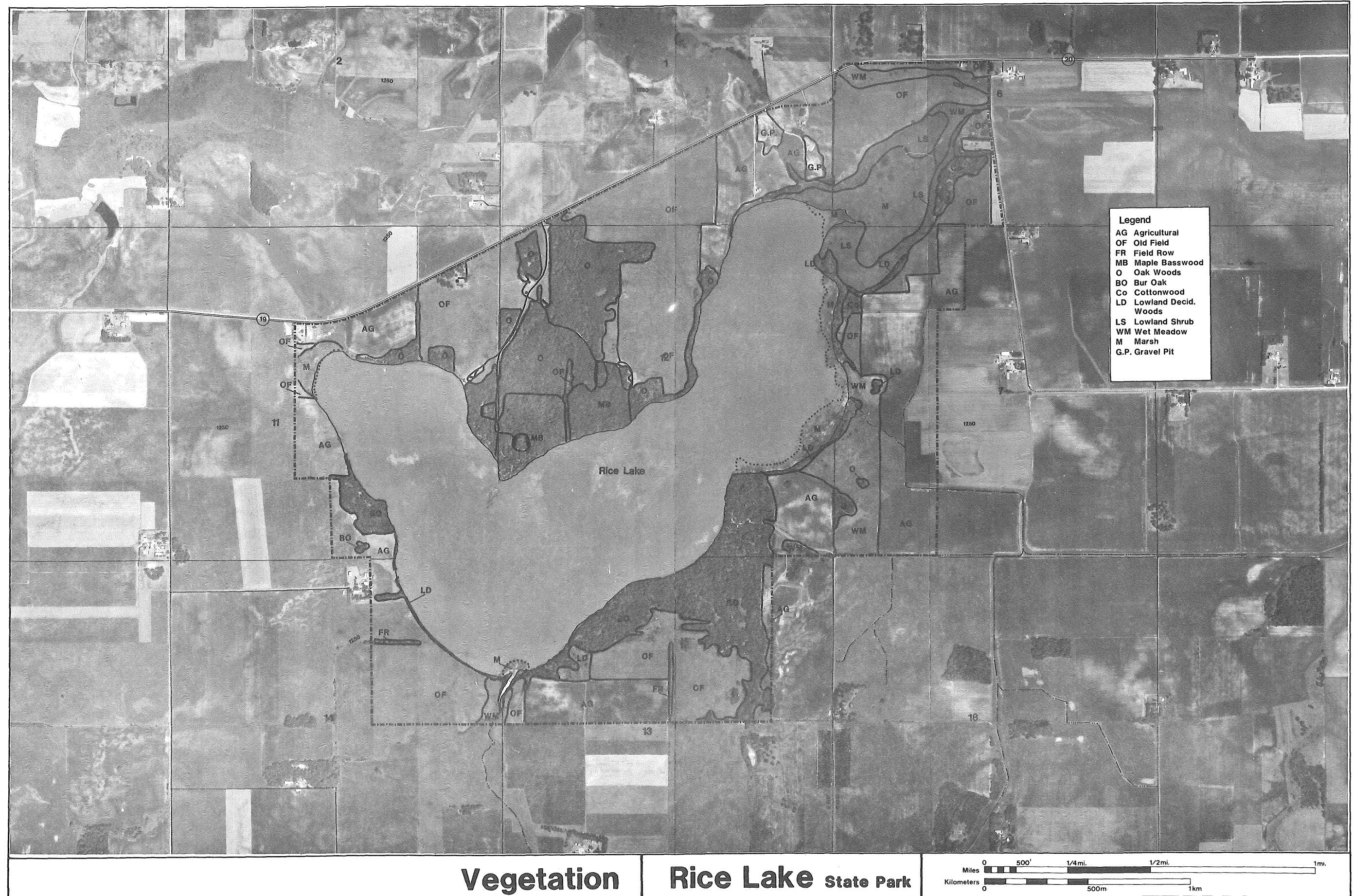
PARK BOUNDARY

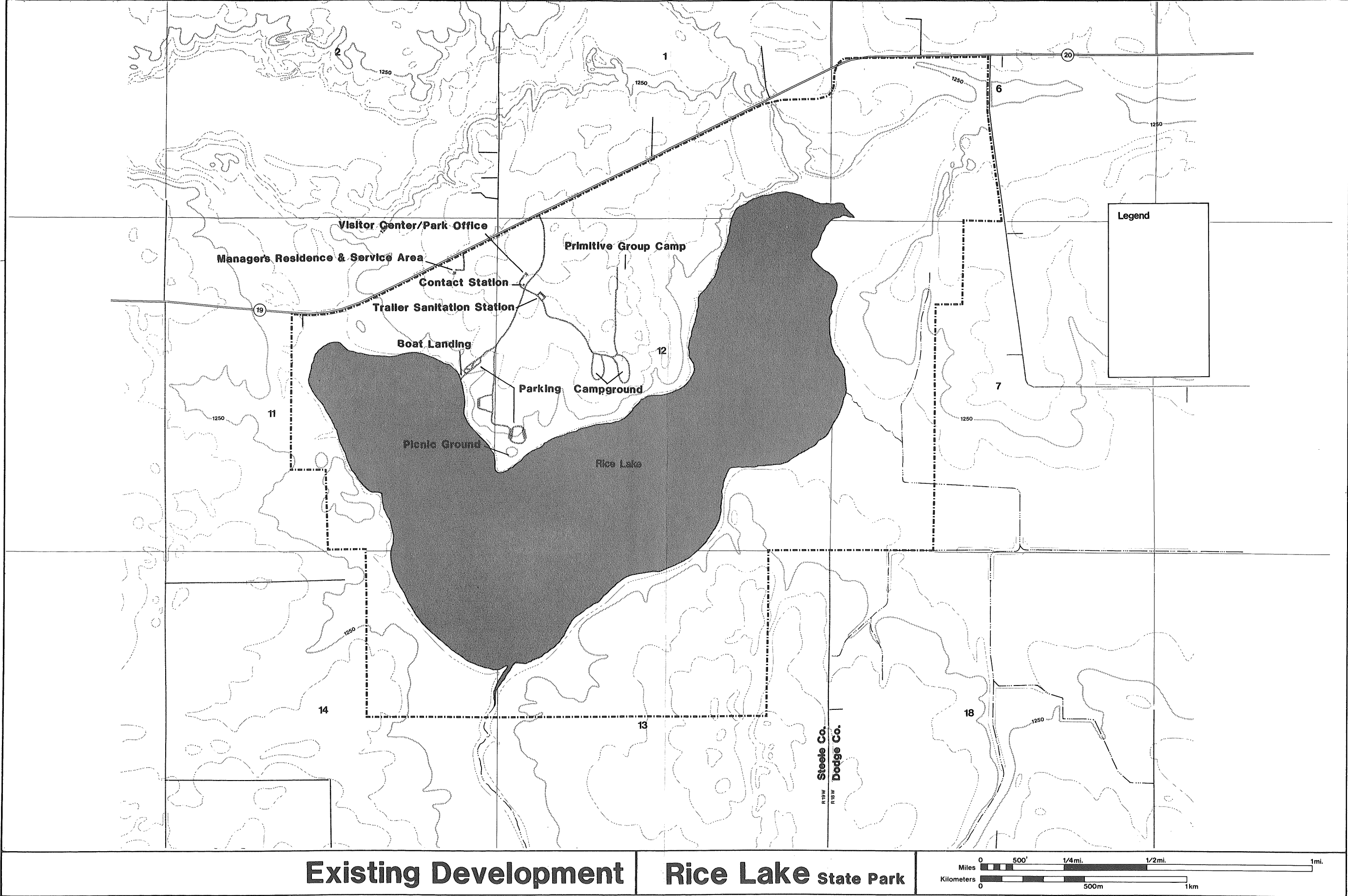
Rice Lake State Park was established in 1963. The park statutory boundary encompasses approximately 1,060 acres of land and 750-acre Rice Lake. Included in the park are nearly all of Section 12, all of the E 1/2 of Section 11 south of CSAH 19, all of Section 19 south of CSAH 19, most of the N 1/2 of Section 3 and most of the NE 1/4 of Section 14, T 107N, R 19W in Steele County. The park extends eastward into Dodge County and includes the SW 1/4 of Section 6, and the W 1/4 of Section 7, T 107N, R 18W. The state owns approximately 735 acres of land within the statutory boundary. Steele County owns a 7-acre parcel and the Rice Lake Church owns 5 acres. The remaining 313 acres are privately owned by eight different landowners.

The DNR Division of Parks and Recreation can only purchase land or easements only within a park's statutory boundary, which is set by the state legislature. The status of land within this statutory boundary does not change. It simply permits the DNR to talk to an individual landowner and negotiate for the purchase of that portion of land in which the DNR is interested.

At present, the majority of the private land within the statutory boundary is used for cropland. Exceptions to this include a permanent residence on the north end of the east arm of Rice Lake, a few seasonal residences on the south end of the east arm, a few farmstead buildings and a residence on the north end of the west arm, and the Rice Lake Church and cemetery in the northeast corner of the park. The original intent in establishing the statutory boundary was to include sufficient land around the entire lake to provide for a variety of recreational opportunities and to protect the lake resource. For the foreseeable future, enough land is in park ownership to do these things.

Maps





Existing Development

Rice Lake state Park

