



# A Management Plan for

# Temperance River

State Park

F 612 •T45 585

1 40 1

asota Department of Natural Resources

This document is made available electronically by the Minnesota Legislative Reference Library as part of an ongoing digital archiving project. <u>http://www.leg.state.mn.us/lrl/lrl.asp</u>

(Funding for document digitization was provided, in part, by a grant from the Minnesota Historical & Cultural Heritage Program.)

This document is a summary of the Temperance River 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

## A Summary of the **Temperance River** State Park

### **Management Plan**

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

TABLE OF CONTENTS	
Title Page	1
Table of Contents	2
Introduction	3
Overview of Temperance River State Park	5
The Planning Process	6
A Summary of Management and Development Proposals	7
Location and Landscape Region Map	8
Classification	9
Park Resources	13
Climate	15
Geology	15
Soils	16
Archaeology/History	16
Surface Water	17
Ground Water	18
Fisheries	18
Vegetation	19
Wildlife	19
Resource Management Objectives	20
Resource Management	20
Physical Development and Recreation Management	21
Recreation Management Objectives	23
Proposed Development	23
Park Boundary	27
Boundary Modification	29
Maps	
Vegetation	33
Existing Development	35
Proposed Development	37
Proposed Trails	39
Boundary Modification	41

### Credits

Planners	Dennis Thompson Grant Scholen
Cartographer	Greg Rosenow
Editor	Linda Magozzi

-2-





#### AN OVERVIEW OF TEMPERANCE RIVER STATE PARK

Temperance River State Park and Cross River State Wayside are situated along Trunk Highway 61 (TH 61) in southern Cook County about 81 miles northeast of Duluth. Temperance River State Park lies about 1.5 miles north of Schroeder and Cross River State Wayside is located adjacent to the village of Schroeder. Both units are about 228 miles from the Twin Cities.

Cross River State Wayside was established in 1961 with a statutory boundary that encompasses 2,520 acres. The U.S. Forest Service (USFS) owns 1,920 acres and the remaining 600 acres are in state trust fund ownership. Recreational development in the wayside is limited to trails. The skiing/hiking trail system is connected to the trail system in Temperance River State Park. A spur of the North Shore State Trail, which provides for snowmobiling and hiking, also passes through the wayside.

Temperance River State Park was established in 1957 and its statutory boundary encompasses 133 acres. All of the acreage within the park is under the custodial control of the DNR, Division of Parks and Recreation. The great majority of the land adjacent to the park is owned by the USFS as part of the Superior National Forest.

Park development includes 31 semi-modern campsites, 20 primitive campsites, a sanitation building with showers, and 6 to 8 miles of cross country skiing and hiking trails (mileage includes Cross River Wayside and trails between). The park also provides a picnic area on the shore of Lake Superior. Natural amenities which make Temperance River State Park a very popular recreational site include camping adjacent to Lake Superior and the spectacular geologic formations along the Temperance River gorge.

------

and a contra

-5-

#### 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 <u>developed</u>. 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 reviewal 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

Revegetate northern gravel pit. Maintain clearing of vegetation in front of signs. Negotiate powerline ROW permit with United Power Association. Maintain maximum abundance of snags.

#### Proposed Development

Develop boat launch on Lake Superior. Establish service court in gravel pit on north side of TH 61. Reconstruct 40-45 site semi-modern campground. Construct primitive group camp. Construct contact station/park office near proposed park entrance.

Provide manager's residence and garage.

Provide temporary toilet facilities and replace stone walls at Temperance River Wayside.

#### Trails

Construct snowmobile/ ski bridge across Cross River. Construct two bridges across Temperance River. Construct trails suitable for heavy pedestrian use along Temperance River.

Negotiate cooperative agreement with USFS on trails in

Temperance area that are on USFS land. Construct day-use trail north of new boat launch. Provide snowmobile access through park. Provide interpretive signs along Temperance River.

#### Long Range Development

#### Alternative A

Connect two campgrounds together with a vehicular bridge.

#### Alternative B

Construct vehicular underpass to connect land on both sides of TH 61.



-8-



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.

"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."

#### CLASSIFICATION RECOMMENDATION

Temperance River State Park is recommended for classification as a recreational state park because it best fulfills the criteria for this designation. This plan also recommends that Cross River State Wayside be consolidated into Temperance River State Park (see Boundary Modification, p 29).

#### GOAL FOR THE PARK

The goal for Temperance River 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

Ľ

ļ

ļ

IJ

ļ

#### CLIMATE

The park receives warming breezes off Lake Superior in the winter and cooling breezes in the summer. Generally. temperatures in the Temperance River area are 10 degrees warmer in the winter and cooler in the summer than inland areas of The following temperatures are from northeastern Minnesota. information collected at Two Harbors, Minnesota and should reflect the temperature variations in the park. The inland portion of the park is somewhat cooler and is more accurately reflected in temperatures documented at the Duluth Airport.

#### **Temperature Variations**

	<u>Two Harbors</u>		Duluth	Airport
Mean January Maximum	220F		18ºF	
Mean January Minimum	20F		-1°F	
Mean July Maximum	76°F		76 <sup>0</sup> F	
Mean July Minimum	530F		530F	
Mean Average Extremes,	Frequency Le	ess t	han OOF 5	5 days/year
	Mo	ore t	han 90°F:	0 days/year
Precipitation Annual	Total 28 in.			
Annual	Snow 65-70 ii	n.		

Prevailing Winds Northeast - exceedes 30 mph an ave. of 30 days May through September.

The climate of Temperance River area is ideal for recreation year-round. The moderating effect of Lake Superior tends to extend the normal summer recreation season well into the fall and winter is long, mild, and has a suitable snowcover for winter sports from the beginning of December until mid-April.

#### GEOLOGY

a - Sulandara

-----

and the strength

All press

One of the most interesting geologic features in the park is the narrow Temperance River gorge with its many waterfalls. The rapidly falling river cut deep potholes in the soft lava of the river bed. Potholes are formed by swirling water carrying sand and gravel which wears away the soft lava. Over thousands of years these potholes were dug deeper and wider, eventually connecting and creating the deep narrow gorge of today. Some dry potholes can be seen adjacent to the river. These were formed under the river and then left dry when the river moved to a different course, or became smaller.

#### SOILS

In general, the soils along the North Shore are poor for development. Most are shallow and often there are springs and seepages. When compared to other soils along the North Shore, the soils in Temperance are quite good, but they still pose some limitations for development.

#### ARCHAEOLOGY/HISTORY

#### Prehistory

Prehistoric settlement along the North Shore is not well documented because the rocky country and thin soils have not preserved many archaeological remains. Very few remains were discovered during the construction of TH 61.

#### History

Pierre Esprit Radisson and Medard Chouart, Sieur des Groselliers were probably the first white visitors to the North Shore when they travelled up the shore of Lake Superior during 1660. Along with the Ojibwa Indian tribe, the French controlled the North Shore area until 1763. The first white residents to Lake and Cook County were probably clerks at American Fur Company posts located along the shore in the 1830's.

The Ojibwa called the Cross River the "Tchibaiatigo zibi" or "Wood of the Soul (or Spirit) River." In 1843, Father Baraga, a missionary priest, crossed Lake Superior from the Wisconsin shore and landed safely at the mouth of the river despite a storm. In gratitude, Father Baraga erected a cross at the river, hence the name Cross River. The Ojibwa name for the Temperance River was "Kawimbash" or "Deep Hollow River." In an 1864 report, Thomas Clark called the stream the Temperance River because unlike other North Shore streams, this river had no bar at its mouth. Commercial fishing along the shore produced millions of pounds of whitefish and lake trout between 1880 and the 1920s. After this time, the fishing industry turned to the Superior herring (or cisco), which is still the mainstay of the industry.

Most of the logging on the North Shore took place between 1890 and 1910. John Schroeder established the Schroeder Lumber Company at the mouth of the Cross River in 1896. The population of this logging camp reached 1,000 between 1904 and 1906. In the early 1900s a logging dam was located just above the present day TH 61 bridge over the Cross River.

With the decline of the fishing and logging industry, the economy of the North Shore corridor turned to tourism. In 1925, TH 61 was completed and the automobile began to replace the trains, steamboats, and dog teams which were previously the main forms of transportation to this isolated area. Along with taconite and forest products, tourism is still a leading factor in the economy of the North Shore.

#### SURFACE WATER

Temperance River State Park is bisected by the Temperance River. It is 98 miles long and drains a 164 sq mile area. Of all the rivers along the North Shore, only the Brule River drains a larger area. Both the Brule and Temperance rivers have Brule Lake as their source. Brule Lake is approximately 1,850 ft above sea level and Lake Superior is about 600 ft above sea level. About half of Temperance River's total 1,250 ft drop occurs in the last 4 miles of the river. The river drops about 140 ft within Temperance River State Park, a distance of about 1 mile.

The Cross River drains a total area of approximately 91 sq miles. The river drops an average of 60 ft per mile in its 55 mile length.

Lake Superior has a major influence on the park. It provides a very scenic and dynamic setting, and has a major impact on the weather in the park.

#### GROUND WATER

Ground water in the Lake Superior watershed is highly variable, ranging from good to saline. In places, the water moves through the aquifer so slowly that large amounts of dissolved minerals become concentrated in it. This is the situation in the vicinity of Temperance River State Park. Wells drilled in the park provide water that becomes more and more salty the longer the well is used. The park wells are therefore being abandoned and water from Lake Superior will be pumped, filtered, and treated for park use.

#### FISHERIES

Temperance River is a designated trout stream. In the upper portions of the river, north of the park, brook trout were stocked in 1910 and brown trout in 1926. They have established populations in these areas, and stocking has been discontinued.

Rainbow trout were stocked in the Temperance River between 1928 and 1975. Angler reports during the past few decades have indicated poor to fair rainbow trout fishing. In 1980, large numbers of steelhead fry were introduced annually into the Temperance River just north of the park. Chinook salmon were also introduced in the same vicinity during 1980 and 1981.

Cross River is also a designated trout stream. The mouth of the river and the first barrier falls are located outside of the wayside boundary and the majority of the fishing takes place in the first river sector (between Lake Superior and the first barrier). The Cross River has not been intensively managed or stocked in recent years.

Lake Superior provides excellent cold water sport fishing. Some of the more popular species include lake trout, steelheads, coho salmon, and chinook salmon. Unfortunately, public access to the lake is limited by a lack of an adequate number of boat launches (see Proposed Development, Action #1, p 23.)

#### VEGETATION

A description of the vegetation prior to European settlement is the General Land Office survev available in records. Frequently mentioned species include white and yellow birch, white pine, spruce, fir, cedar. Occassionally mentioned species include white pine and sugar maple. Details on presettlement vegetation are included in the comprehensive management plan.

Before logging and settlement, natural fires were the major composition, environmental factor controlling the age, structure, and general appearance of northern Minnesota Later fires were set by Indians, explorers, vegetation. settlers, prospectors, and logging crews. Logging was usually followed by repeated large scale slash fires to clear debris. Slash fires are different than natural fires in that generally no mature trees remain to provide a new seed source. As a result, aspen and birch were increased after the logging era.

Although significant disturbance factors (such as fires and logging) have occurred in the Temperance River area, surveys indicate that the existing vegetation is similar to the presettlement survey records. Much of the park is considered a northern mesic forest. The cover types represent a wide range of topographic sites, from wet lowland areas to dry upland sites and soils vary from rock outcrop areas to moderately deep loams and clays. Eight vegetation types are shown on the Vegetation Map, p 33.

#### WILDLIFE

The variety of plant communities in the park vegetation study area provides habitat for a diversity of wildlife species, but no formal records of wildlife abundance or occurrence have been kept for the park. The management plan details (MPD) contain comprehensive 1981 wildlife species lists that were compiled for the Superior National Forest (includes birds, mammals, amphibians, and reptiles).

#### **RESOURCE MANAGEMENT**

Act	tion	Pha	se	Phase 2	Phase 3	Phase 4	Phase 5	Тс	tal
Veg	etation Management								
1	Revegetate the northern gravel pit.	\$3,	000					\$	3,000
2	Maintain a clearing of vegetation in front of signs.	No De	evelo	pment Cos	t				
3	Negotiate a powerline ROW permit with the UPA.	No De	evelo	pment Cos	st				
<u>Wil</u> 4	dlife Management Maintain a maximum abundance of snags.	No De	evelo	pment Cos	t				



. .

#### RECREATION MANAGEMENT OBJECTIVES

These recreation management objectives are intended to guide the development of recreational facilities in all recreational state parks.

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, archaeological 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 usability 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 muncipal regulations as they apply to park development and management

PROPOSED DEVELOPMENT

an - Crithing

Action	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
* 1Develop a boat launch on Lake Superior			\$10,000		ag-nggangki Pilinakak ananihaka g <sup>a</sup> Tino Kana	\$ 10,000
2 Establish service court in gravel pit on north side of TH 61.	\$ 25,000	)				25,000
* 3 Reconstruct a 40-45 site semi-modern campground.		\$70,000	)			70,000
4 Construct a primitive group camp.	500				\$ 4,000	4,500
* 5 Construct a contact station/park office near the proposed park entrance.		80,000	I			80,000
* 6 Provide a manager's residence and garage.	Cost cor	ntingent	on option	selected	1	
7 Provide temporary toilet facilities and replace stone walls at the Temperance River Wayside.	25,000					25,000

\* Actions contingent on land exchanges with the USFS and statutory boundary modification.

		Phase	Phase	Phase	Phase	Phase	_
Act	ion	1	2	3	4	5	Total
Tra	ils						
1	Construct snow- mobile/ski bridge across Cross River.	To be co	nstructed	by Trail	s & Water	rways Unit	
2	Construct two bridges across the Temperance						
	River.			\$40,000			\$ 40,000
3	Construct trails suitable for heavy pedestrian use along the Temperance River.	\$30,000	\$10,000		\$20,000		60,000
4	Negotiate a cooperative agreement with the USFS on all trails in the Temperance area that are situated on USFS land.		No Devel	opment Cc	ost		
* 5	Construct a day-use trail north from the new boat launch.			4,000			4,000
6	Provide snowmobile access through the park.				3,000		3,000
7	Provide Interpretive signs along the Temperance River.				3,000		3,000
Pha	se I Totals	83,500	160,000	54,000	26,000	4,000	327,500

Long Range Development

Two long range development alternatives were selected as having the most potential. Most of the development is the same for both alternatives. They differ only in developments which would probably not be implemented for many years.

<u>Alternative A</u> - Connect the two campgrounds together with a vehicular bridge. The following actions would be implemented if this alternative were selected.

- Construct 3 lane TH 61 bridge over Temperance River.
- Move contact station to new park entrance.
- Reduce number of campsites in lower campground area from 21 sites to 10-12 sites.

 $\star$  Actions contingent on land exchanges with the USFS and statutory boundary modification.

- Construct 60 car parking lot.
- Remove pull-off parking areas adjacent to TH 61.
- Construct small trail/picnic shelter near parking lot.
- Develop 5-10 walk-in campsites near Lake Superior, north of the boat launch.

This alternative would be considered only if the TH 61 bridge across the Temperance River had to be replaced by MN/DOT.

<u>Alternative B</u> - Construct a vehicular underpass to connect the land on both sides of TH 61. The following actions would be implemented if this alternative were selected.

- Construct vehicular highway underpass under TH 61.
- Construct entrance road on northwest side of TH 61.
- Move contact station to new park entrance.
- Construct 60 car parking lot on northwest side of TH 61.
- Remove pull-off parking areas adjacent to TH 61.
- Remove roads and spurs in lower campground and redesign for walk-in camping.
- Construct small trail/picnic shelter near day use parking lot.
- Develop 5-10 walk-in campsites near Lake Superior north of boat launch.





,

, ,

#### BOUNDARY MODIFICATION

Temperance River State Park is one of the smallest parks in the system, but it is one of the most intensely used. The amount of existing development within this park is at or exceeds the maximum development the limited land base can withstand without impairing the resource.

There are 2,520 acres within the statutory boundary of Cross River State Wayside. Three sections (1,920 acres) are owned by the USFS. Slightly less than one section (600 acres) is state trust fund land under the custodial control of the Division of Parks and Recreation. Development within the entire wayside is limited to a trail system, 2 three-sided trail shelters, and a rustic grass parking area on the section of trust fund land.

#### Management

Action #1. Introduce legislation to consolidate the Cross River and Temperance River units into one state park.

The boundary adjustment would delete approximately two sections of USFS land (most of sections 26 and 35, T59N; R5W) and add land in sections 30, 31, and 32 (T59N, R4W). (See Boundary Modification Map, p 39.) Through the consolidation, there would be a net decrease of about 275 acres within the existing statutory boundaries of the two units. There are no private land parcels within the proposed boundary.

Map Code, p 39.

Name of Stream

<u>lst Priority Land</u> - This land (about 75 acres) is the key to the proposed development outlined in this plan. (See Proposed Development Actions designated with an \*, p 23 and 24.) The acquistion of this parcel is a very high priority and should be pursued as soon as possible. <u>2nd Priority Land</u> - The 2nd priority lands are bounded by a National Forest Development (NFD) road and the existing western boundary of the park. There is a small amount of Lake Superior shoreline and about 1/2 mile of the upper Temperance River within this 140 acre parcel. The area situated between the NFD road and the Temperance River has good potential as an additional campground site in the distant future.

<u>3rd Priority Land</u> - This 240 acre parcel contains about one mile of the upper Temperance River. The western side of the parcel is bounded by the NFD road and the area has good trail potential.

<u>4th Priority Land</u> - This parcel of about 1,190 acres contains a large hill that has excellent trail potential. The Cross River passes through the western portion of this parcel. A statutory boundary which includes this land will ensure the preservation of the Cross River corridor for public use. The acquisition of this parcel is low priority and long range.









ļ

Į

Į

.

.





	55~	r-1000-		R	27
X.	EV)		1 A		71
	600			15 4	335
2	L.	<u>JS</u> I]	25-1 J		$\langle \downarrow \downarrow$
1	992	ر بر	South		
j¢		Ŋ			
			SAN	900	(- 1) Ter
1	T.	050	E MAN		
		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	AN N		
		$\lambda_{-}$			5.55
إم	، ارکر ا سر سریم		LA F	TUS SIL SIL TH	
	er en er	SVY		29	
$\leq$	えん	$\sum ($	3 (1)	To To	tte 1
	A	300- <	-1/6/	1 June	
X		2 0	SUN D	THE	
Ŋ			) and the second	0	
		M		62	
Z	758	Innit			
Br	dge	In the second second			
	minister		State I	Park	
	31)	BA i	1		
K			See Trails, Ac	zion5.	
≫	5 /2				
		Г Г			-
Ś			Legend		
ſ			Legena		
				Existing	
		9. 	arm orea inter inter	Ski Touring &	
			*********	amuy Hiking	
			******	Snowmobile	
per	lor			Proposed	
				Ski Touring & Hiking	
			ABURDAURRESS	Snowmobile	
		a. a. (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997)		•	10000720000000
			<b>V</b>	Overlook	
			N,	Overlook	
			Υ.	Overlook	
	1/4mi.	1/	<b>V</b> 2mi.	Overlook	100
	1/4mi.	1/	2mi.	Overlook	1mi.









