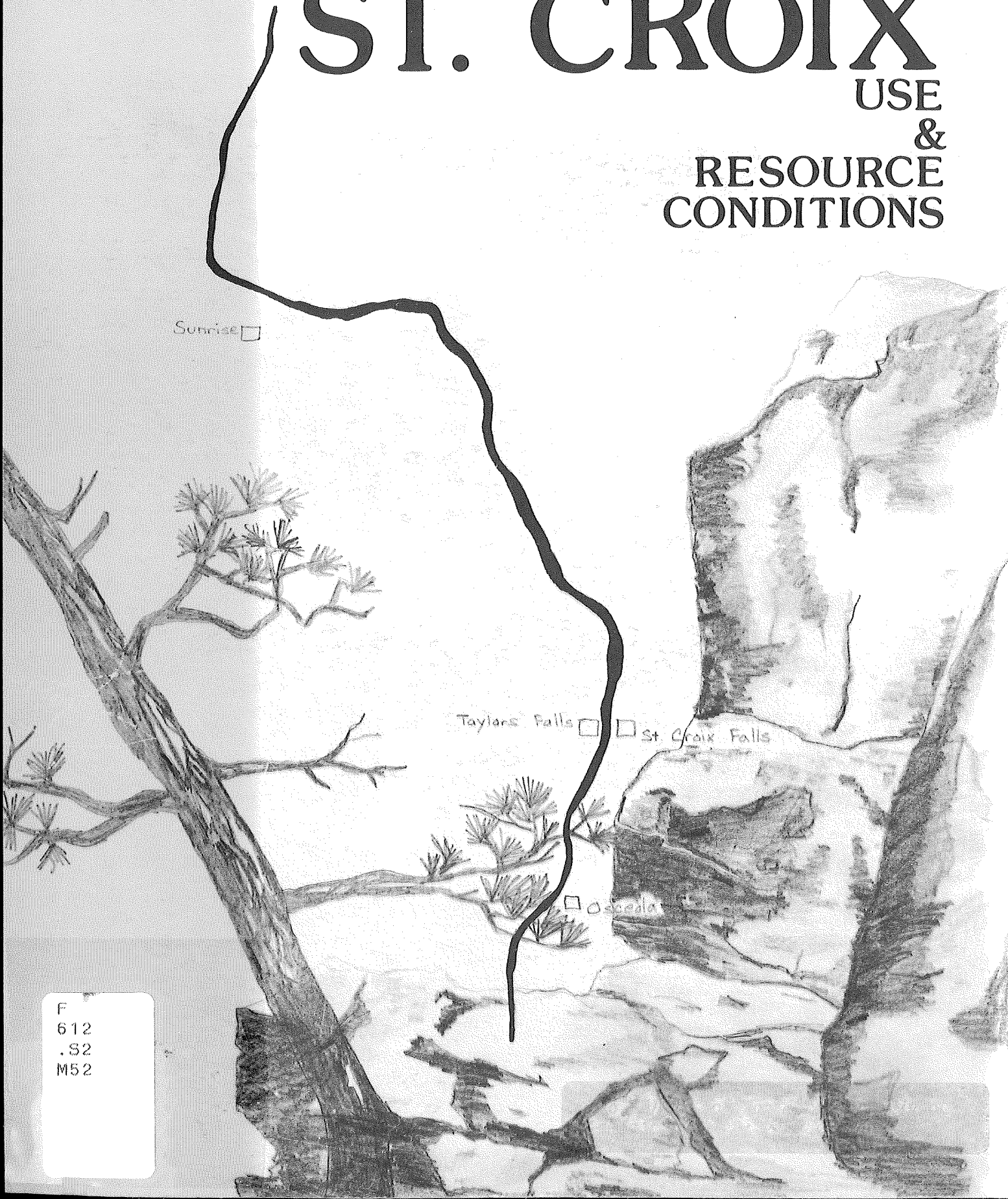


MIDDLE ST. CROIX

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USE & RESOURCE CONDITIONS



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"Where as, the Dalles of the St. Croix River, situated in Chisago County, Minnesota at the head of the navigation of the St. Croix River, and the lands adjacent thereto, comprise the most picturesque and attractive scenery in the state of Minnesota, attracting a great number of the visitors from our own and other states and constituting a happiness and recreation to the public generally, ..."

Preamble to the Interstate Park Act

1895

"It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations."

Wild and Scenic Rivers Act

1968

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STATE OF MINNESOTA

MIDDLE
ST. CROIX:
USE AND RESOURCE CONDITIONS

by

University of Minnesota - Twin Cities

Resource and Community Development Seminar
Recreation and Open Space Group

St. Paul, Minnesota
June, 1979

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SUMMARY

The segment of the St. Croix River Valley between Sunrise in Minnesota and Osceola in Wisconsin has historically been an important commercial and recreational area. In the 1830's convenient transportation afforded by the river attracted logging operations. Subsequently the lumber industry grew and dams and mills were developed along the river. As more and more people entered the area, the needs of industry and people grew. To meet these needs, a railroad was built between the Twin Cities and the St. Croix Falls/Taylors Falls area. With supplies from the Twin Cities came more people, many to enjoy the scenic and recreational opportunities of the St. Croix.

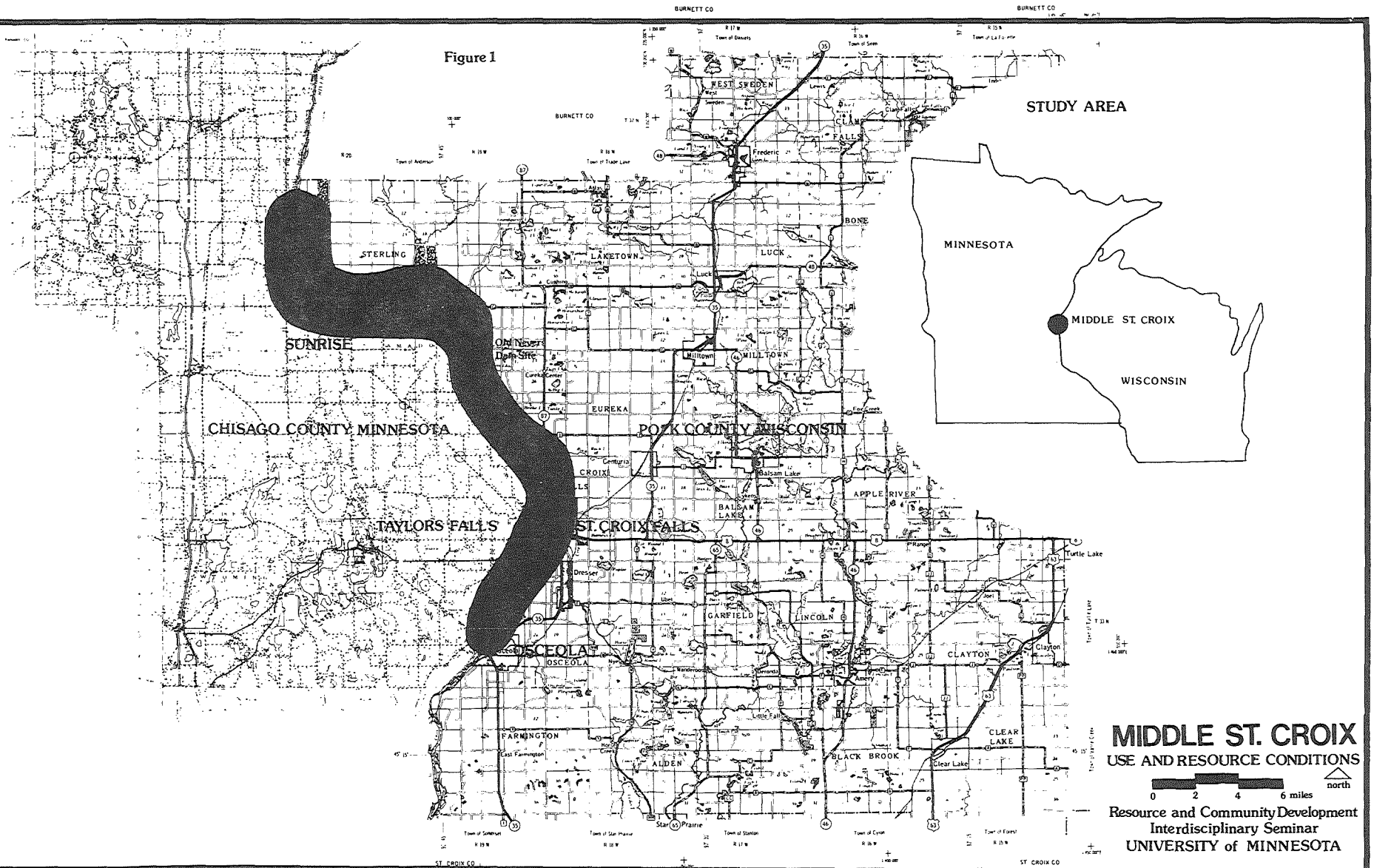
In 1895, to provide for recreational needs and to protect part of the resource, the first interstate park in the United States was developed at St. Croix Falls, Wisconsin, and Taylors Falls, Minnesota. This initiative has continued to the present time and by 1972, to prevent irreversible alteration of this fragile and beautiful resource, the whole of the St. Croix had been designated as part of the National Wild and Scenic River System.

The protection afforded by the National Wild and Scenic Rivers Act does not guarantee preservation of the resource. The Act only offers guidelines within which decisions must be made and enforced. The best management policies must be determined by looking at the condition of the resource, the needs of the people, and the surrounding region. Recognition of the surrounding area is important because management decisions affecting use of the river should complement decisions on use of the surrounding area and vice versa. The St. Croix River Valley is not a discrete, isolated entity but rather part of a larger whole.

With that concept in mind, this study attempted to determine, in the context of the surrounding region, how the St. Croix River Corridor between approximately Sunrise in Minnesota and Osceola in Wisconsin might best meet the recreational demands placed upon it and still maintain recreation and resource quality. To accomplish this end, the study was expanded to include Chisago County in Minnesota and Polk County in Wisconsin. Within this area, physical resources, characteristics, and land uses were inventoried. This information was used to determine the potential of the surrounding region to support the St. Croix corridor's "role" as a recreation resource. To make this analysis, it was necessary to determine the river corridor's "role" as a recreation resource. This was done by gathering and analyzing State Park and National Park Service user data from the corridor.

These data indicate that use of the river is primarily in terms of water oriented day use activities. Use is heaviest in the summer and extremely high on weekends and holidays. The lower portion of the study area, from St. Croix Falls/Taylors Falls to Osceola, is by far the most heavily used, probably because facility development in this area is the greatest. This use pattern suggests that the potential for overuse is greatest in the lower part of the study area and that constraints and limits on use in this area may be advisable. Also, such activities as family and group camping may not be making the most efficient use of a resource so ideally located and popular for day use activities. These overnight activities may be more appropriate in areas less subject to day use pressure from the Twin Cities. Possible new sites for these activities are the Sterling Forest area of northwestern Polk County and the northeastern portion of Polk County.

Figure 1



Within the corridor, reduced activity levels below St. Croix Falls/Taylors Falls could be partially absorbed in the area known as the "pool" between St. Croix Falls/Taylors Falls and the old Nevers Dam site. This could only be accomplished with further facility development and perhaps more land acquisition by the National Park Service adjacent to the "pool" area. Any development should, of course, remain within the guidelines of the Wild and Scenic Rivers Act. It also might best encourage activities that are similar and/or substitutable for lower river activities, specifically canoeing, fishing, swimming, and picnicking. Activities such as waterskiing which are not compatible with more popular activities as fishing and canoeing might best be discouraged in the river and encouraged in suitable alternate locations, such as the Balsam Lake region.

In general, development in the surrounding region of alternate locations for recreation activities popular in the river would be most effective in conjunction with enforcement of limits and constraints on use in the corridor. Potential for development is greatest in Wisconsin which is a problem since the majority of users originate in Minnesota. Perhaps cooperative agreements can be made between managing agencies to help meet increasing demands on the St. Croix and still preserve the river and its capability to provide recreational experiences of high quality.

INTRODUCTION

INTRODUCTION

The segment of the St. Croix River Valley between Sunrise in Minnesota and Osceola in Wisconsin forms a part of the boundary between Wisconsin and Minnesota at the eastern edge of the Twin Cities Metropolitan Area approximately 50 miles from the city center. The river and adjacent shoreline is a popular residential and recreational site. This stretch of the river is an important part of the St. Croix River Valley that has been designated as a wild and scenic river. This particular part of the valley is jointly administered by the Federal Government (National Park Service), the State of Minnesota, the State of Wisconsin, and by regional, county, municipal and township governments.

The significance of the river's scenic quality is signified by its designation under the Wild and Scenic River's Act. Its scenic attractiveness is not based on only one type of physical quality but rather "is a combination of that which is loveliest in many landscapes, ... all the trees known in our northern latitude, rocks of almost every description known to the geologist, water in its various and attractive forms, including rill, cascade, dashing rapids, and placid and mirror like expanses." (Edwards, 1896) In the study area the river's surrounding types of physical qualities vary substantially as it winds its way through the corridor. It ranges from a slow wide pool area at the north end, to a fast moving, deep narrow gorge at the southern portion.

The "corridor" is characterized by vegetative, geologic, and urban patterns along the river. In this study, references to the "corridor" are defined by the boundaries illustrated on Figure 1.

The river's quality variance is recognized by the managing agency, the National Park Service, which has designated some segments as "Recreational" and other as "Scenic" [National Park Service, 1976b, p. 44] In an overview of the study area it can be seen that the corridor of the river goes through four major physical changes. The river on the north end of the study area is a narrow water body. It is a natural area with native vegetation and is relatively undeveloped. Located on this section is the Wild River State Park; a 6,700 acre facility recently established by the State of Minnesota. This segment of the river seems to serve as a buffer zone between the scenic area to the north and the recreational area on its southern boundary, which is known as the pool area.

The pool area is a wide, slow moving water body which is a sharp contrast to the other segments of the St. Croix and also other rivers in the study area, Chisago County in Minnesota, and Polk County in Wisconsin. This portion of the river lacks major development and retains its natural vegetation, which is due in part to its single ownership by the Northern States Power Company. Because of its physical qualities and previous and present activities by man this area has been designated a Recreational Area by the National Park Service.

The Old Nevers Dam is located on this stretch of the river. The wooden dam was built in 1890 during the logging days, but was removed in 1955 when there was no further use for it. [Resource and Community Development Interdisciplinary Seminar, 1973, p. 2] Although the dam itself has been removed, remains of it are still present, i.e. wooden piles in the river, and an open, undeveloped area on the Wisconsin side of the river.

The river's physical qualities change dramatically as it flows past the towns of Taylors Falls, Minnesota and St. Croix Falls, Wisconsin.

Development is present on both sides of the river, and in the river itself, where a hydroelectric dam is maintained by Northern States Power Company.

[Resource and Community Development Seminar, 1973, p. 18]

The next portion of the corridor south of the Highway 8 bridge, is designated Scenic. In this section which is known as the "Dalles" the river's character changes to a more dramatic river as it passes through the high scenic bluff lines formed by glaciation. In this section there is a high degree of recreational use on the river. This may be due in part to the fact that the scenic rock formations can be seen best from the river, and also that both sides of the river are developed as State Park lands. Interstate Parks in Minnesota and Wisconsin protect the river from development for 1.1 miles along its route. [Hoffman, 1977, p. 117]

As the river leaves the gorge area it remains a relatively narrow corridor defined by the high bluff lines along it. The scenic quality along this section remains high because of the bluff lines, low level of development, and natural vegetation. The only major development in this area is the town of Osceola which is located at the top of the bluff, and the Highway 35 bridge which is the southern boundary of the study area.

HISTORY

The concern to protect the St. Croix River is not a new one, it dates well back into the past. A closer look at the area's history, points out some of the main development and preservation trends that have evolved to the present concerns.

The earliest recorded history of the area was of the Indians who were drawn to the area by the St. Croix which served as a route for travel.

The river later served to bring trappers and hunters who followed the Indians. Because of the abundant wildlife and good access for the trappers, trading posts were established along its route.

In the 1830's the logging industry was drawn into the region not by the pine but rather the St. Croix river which was very well suited for transporting the lumber out of the area. During the logging era dams and mills were developed along the river. Nevers Dam was built in 1890 but later dismantled in 1955 except for its wooden supports. Lumber mills were established along the river's banks as the timber industry grew. [Dunn, 1965, p. 50] The industry's growth drew new settlers to the area for employment. Taylors Falls and St. Croix Falls are two of the larger cities in this area that attribute their growth to the mills. As these towns grew, food became a problem because it had to be shipped up river. Small farms were established along the falls area to supply the food needs, but due to their lack of fertile soils and their location (above the bluff line), these farms were unable to meet the demand. The need for importing additional food and other supplies to the area stimulated the initial construction of a railroad from the Twin Cities area. Along with supplies the railroad brought with it people from the cities who came to the falls area for recreation and to view the unique scenery.

In 1895 the recreational and scenic quality of the area prompted the states of Minnesota and Wisconsin to develop the first interstate park in the U.S.. [Upham, 1969, p. 112] Visitors to the new park came from the immediate vicinity as well as by rail from the metropolitan area. As highway access to the area became more available, the use of the state parks increased. Interstate's summer seasonal use has not increased

substantially for many years because the state has been operating it at its maximum capacity for this time period. Besides operating and maintaining Interstate Park jointly with Wisconsin, Minnesota recently opened Wild River State Park. This park is also along the river corridor but lies at the north end of Chisago and Polk Counties.

The states of Wisconsin and Minnesota are not the only agencies to look into developing recreation facilities along the St. Croix. In 1968 the National Park Service studied the feasibility of establishing a National Park in the area. The main reasons they gave for designating this area as having national importance were due to its proximity to the transcontinental transportation routes in the U.S., the unique and scenic quality of the river, and also because of the amount of undeveloped land along the river which is under single ownership. This land ownership pattern is due to the lumber industry that first settled the area. During this lumbering period large quantities of land along the river's corridor were acquired for timber. When the timber industry left the area, the Northern States Power Company acquired these lands and has maintained them under single ownership and in an undeveloped state. [Wild and Scenic Rivers Task Force, 1970, p. 23]

The National Park Service decided the area's qualities were unique enough [National Park Service, 1976b, p. 4] to designate the upper portion of the St. Croix (north of Taylors Falls, Minnesota, St. Croix Falls, Wisconsin) to Wild and Scenic River status and proposed this to Congress. Congress designated the Upper St. Croix a National Wild and Scenic River in 1968 and after further study recommended the lower region (south of Taylors Falls, Minnesota, St. Croix Falls, Wisconsin to the Mississippi River) portion as Wild and Scenic in 1972. [National Park Service, 1976a, p. 7]

The history of the area's land use pattern, combined with its scenic qualities and easy access indicate that this area has exceptional recreational possibilities.

ISSUES AND PROBLEMS

The St. Croix River under the National Wild and Scenic Rivers Act (see Appendix A) is to be preserved for future generations while providing the present generation with an outstanding scenic and recreational resource. Specifically the Wild and Scenic Rivers Act was to "preserve the Upper St. Croix River and its Namekagon tributary as a relatively free-flowing river in a near primitive condition, and to make it accessible for public outdoor recreation use" [National Park Service, 1976b, p. 3] and "to preserve the existing scenic and recreational resources of the Lower St. Croix through controlled development. [National Park Service, 1976a, p. 3]

To accomplish these purposes the National Park Service was empowered to acquire in fee, a strip of land approximately 400 feet on either side of the river to be managed as a "maximum preservation zone". Easements would be acquired on an additional 920 feet (approximate) to create a "limited development zone" adjacent to this first zone. Where such acquisitions could not be made (i.e. within incorporated city, village, or borough boundaries), guidelines for zoning regulations would be issued. [National Park Service 1976b, pp. 35-38]

If the National Wild and Scenic Rivers Act was aimed at preserving the Riverway, what is the problem? Why study the St. Croix again? Has not its recreation and open space potential been duly recognized and its unique attractions protected? Perhaps not. The National Wild and Scenic

Rivers Act is but a tool, and like any tool, its capabilities are limited both by intrinsic limitations and the limitations of those using it.

Such a tool does not assure that recreation and resource quality will be maintained. Unless the St. Croix can meet all the recreational demands placed upon it, decisions will have to be made regarding what recreation is allowed and in what quantities, or overuse could result. Precise guidelines for making these decisions are not part of the Wild and Scenic Rivers Act, and solutions are not guaranteed. Furthermore, the area protected under the Act may not be of sufficient size to make decisions concerning the corridor realistic. In the context of the surrounding region, the basic problem is how the St. Croix recreational resource might most efficiently be used and preserved.

PURPOSES - OBJECTIVES

Purpose:

The overall purpose of this study is to determine, in the context of the surrounding region, how the St. Croix River corridor between approximately Sunrise, Minnesota, and Osceola, Wisconsin, might best meet the recreational demands placed upon it while still maintaining recreation and resource quality.

Objectives:

- 1) To describe the existing resources in the study area that are relevant to the future needs for recreational services and open space amenities.
- 2) To analyze data on supply and demand of recreational services and open space amenities taking into account carrying capacity and management objectives.

- 3) To make recommendations on land use direction, policies, organization and management, and
- 4) To identify special problems and opportunities.

PROCEDURE

To get a more complete picture of the target area, the area of study was expanded to include Chisago County in Minnesota, and Polk County in Wisconsin (see Figure 1). In at least one section of the report, i.e. projected participation in outdoor recreation, Twin Cities Metropolitan data were also included. This expansion was made to better understand the physical and social setting of the St. Croix between Sunrise and Osceola. It was felt that this expansion of the study's scope would suggest decisions about the target area, the river corridor, that would be more relevant and applicable because the river is not an isolated and discrete entity but instead is part of a larger and rather nebulous whole.

The study took place between September, 1978 and May, 1979. Work during this time was divided into three major areas:

- 1) Inventory of natural resources, land use patterns, socio-economic/institutional data on a two county and Metro Area basis
- 2) Analysis of recreational potential and demands; and
- 3) Synthesis and recommendations.

FINDINGS

RESOURCE INVENTORY

Bedrock Geology:

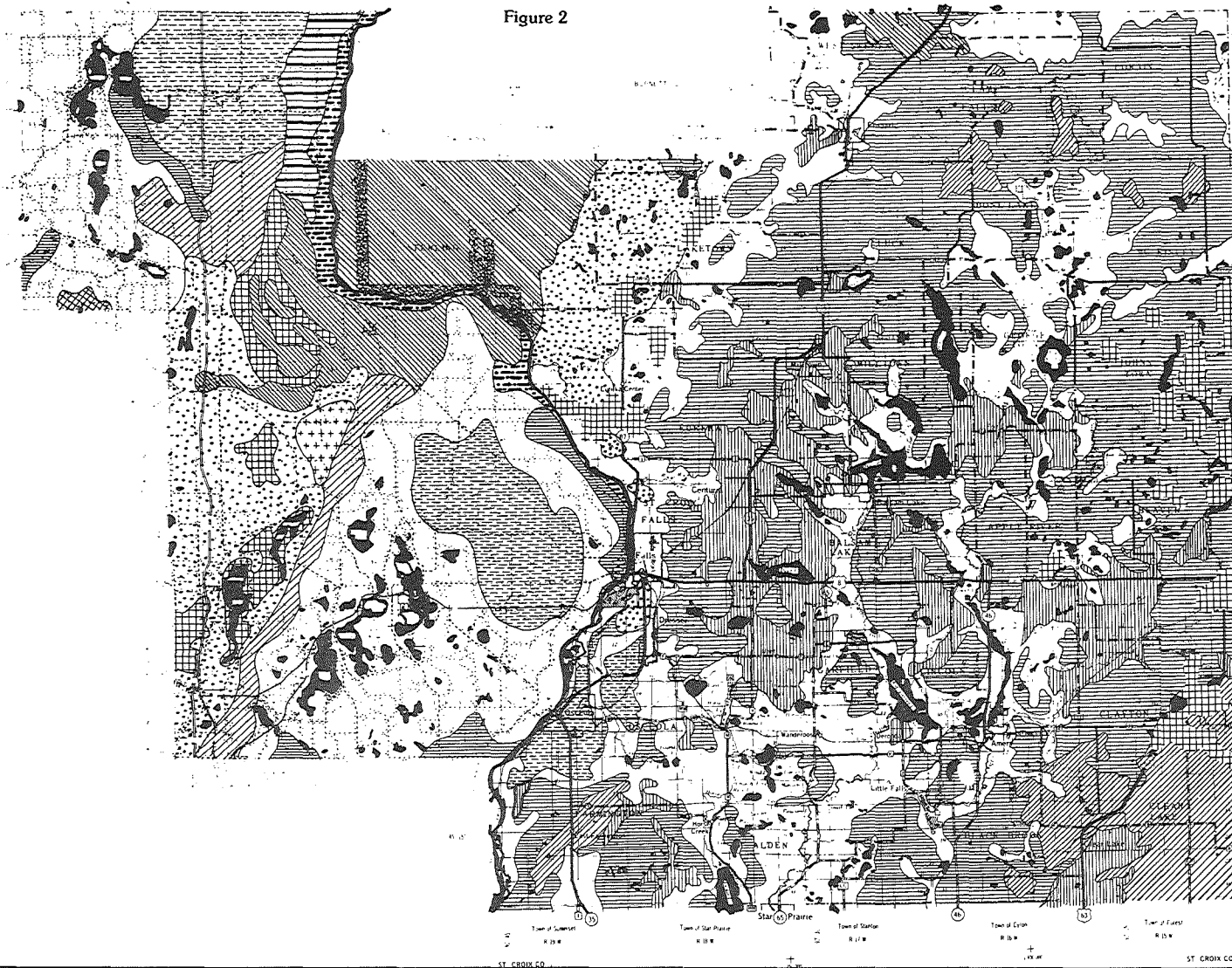
The bedrock geology composing much of Polk and Chisago counties is primarily Cambrian and Precambrian sandstones. There are some outcrops of basalt (traprock), the most notable forming the Dalles at St. Croix Falls. There is another rock outcrop in northwestern Polk County that has potential as a day use and hiking area. The most notable aspect of the bedrock is that it forms the upper lip of a syncline that extends south under the Twin Cities. The metropolitan area derives much of its drinking water from this artesian basin.

Soils:

Chisago and Polk Counties are surficially composed of glacial deposits from the Pleistocene Period. Three stages of glaciation covered much of the area, the Nebraskan, Kansan and the Wisconsin. The Wisconsin glaciation, being the youngest, is the only one exposed and is represented by two subages. The one of most concern is the Gary-Age Superior Lobe known as the Red Drift. The reddish Emmert-Dunnville soils that border much of the St. Croix are from this lobe. They originated in the Superior Basin and were carried by glaciers advancing from the north twelve to fourteen thousand years ago.

In recreation planning, soil types must be analyzed and given priorities as to their best use for a given area. Slope along with soil type play an important role in determining site specific uses. Very good agricultural soil requirements include moderate texture, adequate moisture holding capacity, good structure, a high natural fertility and must be located on rather level slopes. Urban development soils require good

Figure 2



SOIL ASSOCIATIONS

CHISAGO CO. MINNESOTA
 HAYDEN - BLUFFTON
 NESSEL - DUNDAS
 BRAHAM - BLOMFORD
 ZIMMERMAN
 HUBBARD
 PEAT
 OMEGA
 MILAGA-ADOLPH
 EMMERT-DUNNVILLE
 CHETEK-MILACA
 ANOKA

POLK CO. WISCONSIN
 OMEGA
 CUSHING
 MAGNOR-FREEON
 AMERY-SANTIGO
 ANTIGO-ONAMIA
 BURKHARDT-DAKOTA
 ONAMIA-CROMWELL
 -MENAHA
 ALBAN-CAMPIA
 -COMSTOCK

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drainage, low water tables, low shrink-swell potential, high trafficability and good permeability. Recreational areas with high traffic also require similar soil characteristics but must take advantage of visual amenities as well. Recreation areas are often times planned for and located on poor sites. The Emmert-Dunnville soil association along the St. Croix was defined, using slope and soil characteristics, as a poor agricultural area. It would, however, be somewhat suitable, with slight or major limitations for development or recreation.

The crop equivalent rating (CER) is an attempt by soils experts to evaluate the best return from a given soil series. Criteria such as, grain productivity of soil, prevailing crops and their rotation, and production estimates times the market value (a 5 year average for a given crop) yield an expression of dollar equivalence in net return for the most commonly grown crops. (see Appendix B)

The various soil series in Minnesota were given corresponding CER ratings on a scale of 0-100, where the higher numbers can be said to indicate the better soils for crop production (both in terms of yield and net returns). These soil series correspond to soil associations in Chisago County, Minnesota and Polk County Wisconsin. The soil associations can be found on the soils map and their CERs are as follows:

CHISAGO		POLK	
Zimmerman	38	Onamia-Cromwell-Menahga	38.6
Hubbard	37	Omega	34
Omega	34	Cushing	45
Emmert-Dunnville	22	Amery-Sandiego	55
Braham-Blomford	42.5	Antigo-Onamia	47.5
Milaca-Adolph	55	Burkhardt-Dakota	50.5
Chetek-Milaca	44.5	Alban-Campia-Comstock	45
Hayden-Fluffton	63.5	Magnor-Freeon	64
Nessel-Dundas	76.5		
Anoka	57.5		

Soil Associations for Chisago and Polk Counties:

1. Hayden-Bluffton. These soils are developed over calcareous gray till with level to steep relief. The texture may vary from sandy loam with a drainage of well to very poor.
2. Nessel-Dundas. These light colored soils developed from similar calcareous gray till with a relief varying from level to nearly level. Drainage is moderate to poor.
3. Braham-Blomford. These soils overlay light colored loamy fine sand or lacustrine material. Relief ranges from level to moderately steep and it is somewhat excessively to poorly drained.
4. Zimmerman. These soils are developed over fine sandy outwash with a high water table. Drainage varies from excessive to very poor and relief ranges from level to sloping.
5. Hubbard. These dark colored soils are developed in sandy outwash with drainage ranging from good to excessive. Relief is level to sloping and there are problems with wind erosion, low fertility, and droughtiness on upland sites.
6. Peat. These soils are peats underlain in sand and relief is flat with occasional sand islands. Poor to very poor drainage is common.
7. Omega. These are level to sloping soils developed in sandy gravelly outwash of red drift material. Textures range from loamy fine sand to silt loam with excessive to poor drainage.
8. Milaca-Adolph. These silt loam to loamy fine sands are developed on red drift with relief ranging from level to steep. Drainage ranges from well to very poor. Drainage, fragipans, stoniness, and fertility are the major problems of this soil in the area.

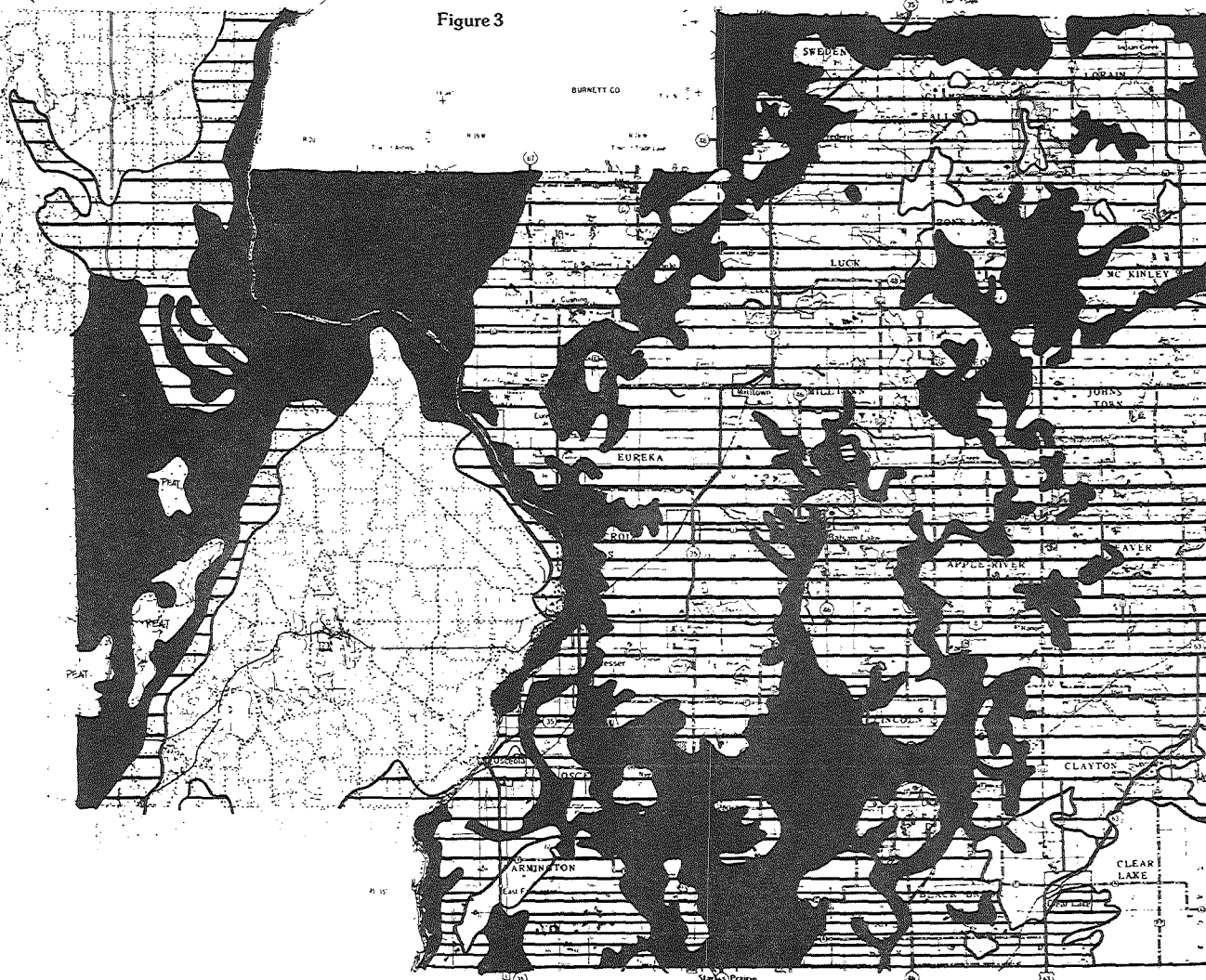
9. Emmert-Dunnville. These level to steep soils are developed from red drift outwash material and recent alluvial soils. Textures vary from loamy fine sand to silt loam with the drainage ranging from excessive to very poor. Drainage, flooding, droughtiness, and erosion are common problems.
10. Chetek-Milaca. Erosion, droughtiness, and fertility are common problems of this soil developed from red drift. Relief ranges from gently sloping to very steep and drainage is excessive to poor.
11. Anoka. Wind erosion, low fertility, and droughtiness are common problems of this soil formed over outwash. Relief ranges from level to sloping with drainage being excessive to poor.

(Resource and Community Development Interdisciplinary Seminar, University of Minnesota, [1973]: Resource Study of Chisago County Minnesota.)
12. Omega. Nearly level to moderately steep, excessively drained sandy soils over sandy glacial outwash.
13. Cushing. Gently sloping to steep, well drained loamy soils over loam glacial till.
14. Magnor-Freeon. Nearly level and gently sloping, somewhat poorly and moderately well drained loamy soils.
15. Amery-Santiago. Gently sloping to steep well drained loamy soils over sandy loam glacial till.
16. Antigo-Onamia. Nearly level to sloping, well drained, silty and loamy soils over glacial outwash sand and gravel.
17. Burkhardt-Dakota. Nearly level to sloping, well and somewhat excessively drained, loamy soils over glacial outwash sand and gravel.

18. Onamia-Cromwell-Menahga. Nearly level to steep, well to excessively drained, loamy and sandy soils over glacial outwash sand and gravel.
19. Alban-Campia-Comstock. Nearly level to sloping, well to somewhat poorly drained, loamy and silty soils over stratified lacustrine silt and fine sand.

(United States Department of Agriculture, Soil Conservation Service,
[January 1976]: General Soils Map Polk County.)

Figure 3



CROP EQUIVALENT RATINGS
BEST AGRICULTURE
 (56-80) LAND □
FAIR AGRICULTURE
 (40-55) LAND ▨
POOR AGRICULTURE
 (20-39) LAND ■

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With these CER ratings in mind a scale can be set up delineating good and poor agricultural soils. A CER between 20-39 would be a rather poor agricultural soil and could justifiably be used for recreation. A CER rating between 40-55 would be marginal and could be used for recreation or agriculture and a CER rating between 56-80 would be the best soil for agriculture and should be left so. These ratings were an attempt to justify the designation of lands for recreation. The soil map, though, becomes an interpretation map indicating areas of possible recreational development near or away from the St. Croix river and indicates which lands should probably be left to agriculture. [Rust and Hanson, 1975]

Topography and Vegetation:

Both counties are somewhat gently rolling with most of the extreme topographies near the river. There are some plains areas in Southwestern Polk and Eastern Chisago. The vegetation covering both counties includes conifers (red and white pine) on the upland areas along the river and hardwoods throughout most of the more level areas. Swamp areas in Chisago are mostly conifers and the hardwoods are located in the south and north central areas of the county. [Resource and Community Development Interdisciplinary Seminar 1973, Figures 5 and 6; Polk County O.E.D.P. 1972, p. 6]

Surface water:

Besides the obvious importance of the St. Croix, there are many lakes and streams in this region of the river basin that provide recreational opportunities.

The St. Croix is a warm water stream and in the study area is generally about three feet deep. However, shallower spots may occur near sandbars

and Interstate Park records pothole depths of 100 feet. [Becker, et. al., 1978, p. 162] Water quality is excellent from the headwaters to Taylors Falls where sewage discharge reduces quality but not significantly and water body contact recreational activities are suitable. [Resource and Community Development Interdisciplinary Seminar, 1973, p. 17] Fluctuating water levels below the St. Croix Falls dam affect types of use that occur. [Becker, et. al., 1978, p. 239]

The Sunrise, Trade, and Apple Rivers, and Wolf Creek are all important tributaries of the St. Croix. The Sunrise is the main interior drainageway of Chisago County and has large water impoundments that provide recreational opportunities and wildlife habitat. [Resource and Community Development Interdisciplinary Seminar, 1973, pp. 15 and 19] All four of the streams are capable of providing a high quality canoeing experience. [West Central Wisconsin Regional Planning Commission, 1978, p. 33]

Smaller streams in the area must not be overlooked. The Clam in Polk County provides sturgeon fishing and 34 others have trout. [West Central Wisconsin Regional Planning Commission, 1978, p. 35]

Finally, there are 316 named lakes found in Polk and Chisago Counties that provide a wealth of recreational opportunities. [West Central Wisconsin Regional Planning Commission, 1978, p. 33; Peterson, 1971, pp. 28-41] Many of these lakes are part of the Chisago and Balsam Lake chains and have swimming beaches, public access, and commercial facilities.

Climate:

The St. Croix River Valley is characterized by warm humid summers and cold winters. Mean temperatures include 10 degrees Fahrenheit in January and 70 degrees Fahrenheit in July. The average growing season for the area is

about 140 days. Annual precipitation is about 30 inches, of which roughly 60 percent falls approximately between the months of May to September.

[Resource and Community Development Interdisciplinary Seminar, 1973, p. 16]

Wildlife:

The Lower St. Croix River Valley, with its mixed conifer-hardwood forests, islands, and swamp and farm borderlands is rich in wildlife including big game, upland game birds, water fowl, upland and aquatic furbearers, reptiles, and amphibians. [National Park Service, 1976b, p. 14]

Common mammals in the area number about 25 species. [Becker, et. al., 1978, pp. 488-89] The most noteworthy is the white-tailed deer which has two large wintering areas north of the study area. [National Park Service, 1976b, p. 14] Close to 16 species of mammals are rare or uncommon along the river and include the moose and black bear. [Becker, et. al., 1978, pp. 488-489] Also, trappers harvest mink, muskrat, otter, and beaver in the region. [National Park Service, 1976b, p. 14]

The area has a good distribution of ruffed grouse, sharptailed grouse, and woodcock. Pheasants are present in lesser numbers. [National Park Service, 1976b, p. 14]

About 216 bird species are known to live in or frequent the region. One-fifth of these species are, like the bald eagle, uncommon or rare and use the Lower St. Croix for migration and/or feeding. [Becker, et. al., 1978, pp. 479-487] Great blue heron, kingfisher, and downy woodpecker are common residents.

The river system does not provide prime waterfowl production. Good habitat does exist in the Crex Meadows area and the Carlos Avery Refuge and Management Area. The region is included in the Mississippi flyway and the

mallard, wood duck, teal, and Canada goose are all common along the riverway during migration.

The streams and lakes of the river basin contain a wide variety of fish including bass, trout, walleye, bluegill, catfish, sturgeon, and rough fish.

Transportation:

The major transportation routes include Interstate Highway I-35 on the western side of Chisago County going north and south and Highways 8 and 95 running east and west. These two highways, 8 and 95 comprise the major east and west travel routes towards the St. Croix River near Taylors Falls and access to Minnesota Interstate State Park. Highways 8 and 98 provide access to the Chisago Lake chain, passing through Chisago City, Lindstrom and Center City. Highway 9 affords access to St. Croix Wild River State Park near Sunrise and part of Highway 16 provides a scenic drive along the St. Croix from Taylors Falls north about 8 miles. [Resource and Community Development Interdisciplinary Seminar, 1973, p. 49 and Figure 28]

Polk county major routes include U.S. Highway 8, SH35 and SH87 and State Trunk highways 40 and 70. Highway 8 is considered a major east-west highway and passes across the state. Like 8 and 95 in Chisago, U.S. Highway 8 in Polk handles much of the traffic to the St. Croix River at St. Croix Falls and provides access to Wisconsin Interstate Park. Highway 87 provides access to the Sterling Forest in northwest Polk and 35 and 48 provide access to forested areas in northeastern Polk County.

Land Use:

Land use can be depicted by Tables 1 and 2.

Table 1. Existing Land Use in Polk County ^{1/} 1973.

<u>LAND USE CATEGORY</u>	<u>ACRES</u>	<u>% of TOTAL</u>
Farm Residential	9,252	1.53
Non-farm Residential	6,639	1.10
Mobile Home	1,818	.30
Seasonal Home	2,383	.39
Residential	20,092	3.32
Commercial	578	.10
Industrial	619	.10
Gov. and Institutional	574	.09
Parks and Recreational	1,064	.18
Transportation, Communication and Utilities	17,279	2.85
Vacant Urban Lands	9,879	1.67
Developed Lands (sub-Total)	50,032	8.26
Agricultural-vacant	292,488	48.29
Forest	205,725	33.97
Forested Wetlands	13,001	2.15
Wetlands	20,053	3.31
Water	24,373	4.02
Open Lands (sub-Total)	555,640	91.74
TOTAL AREA	605,672	100.00

^{1/} West Central Wisconsin Regional Planning Commission, 1978, p. 6.

This data seems to indicate that there is a large percentage of forest and agricultural-vacant lands. Of particular interest to recreation are the vacant lands and forested areas. Depicted on the land-use map are the areas of agricultural-open space, and the forested areas.

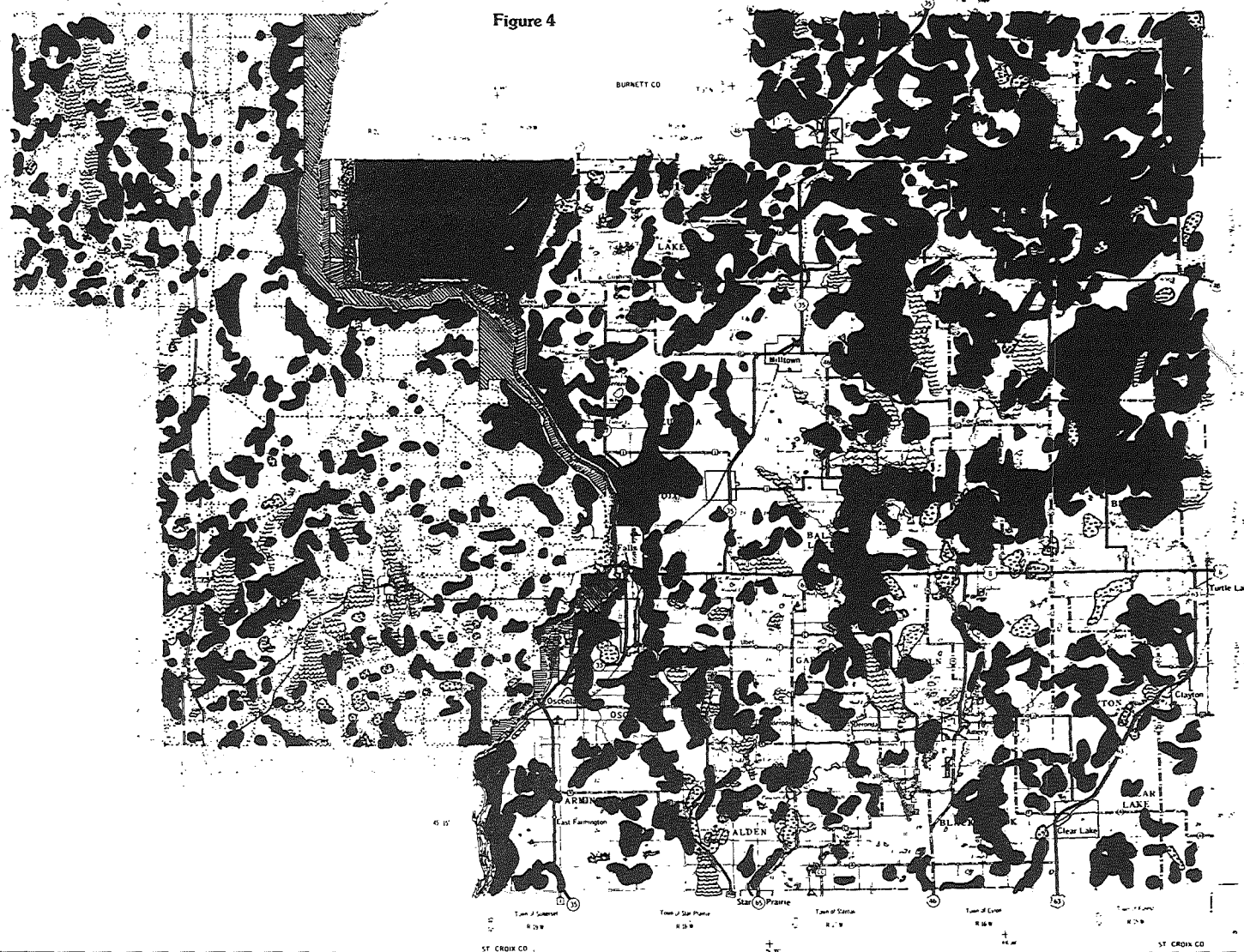
Table 2. Land Use conditions for Chisago County, 1974 ^{1/}

<u>LAND USE</u>	<u>Total Number of 40 Acre Parcels</u>	<u>Land Use % County</u>
Forested	1,840	25.7
Cultivated	2,797	39.0
Pasture and open	1,791	24.7
Water	349	4.9
Marsh	179	2.5
Urban nonresidential or mixed residential	156	2.2
Extractive	1	0
Urban and residential	71	1.0
Transportation	<u>1</u>	<u>0</u>
TOTAL AREA	7,185	100.0




^{1/} Minnesota Department of Natural Resources, 1974a, pp. 7-8.

Most of the urbanization is around the bodies of water and trends are towards urbanization and recreation. Both public and private recreation facilities are expanding in Chisago and will probably become a major land use in the future.

Figure 4



**OWNERSHIP ALONG
ST CROIX RIVER
MINNESOTA AND
WISCONSIN STATE**

FEDERAL 
UTILITIES 
PRIVATE 

GENERAL LAND USE

FOREST 
MARSH 
LAKES 
AGRICULTURE AND
OPEN SPACE 

**MIDDLE ST. CROIX
USE AND RESOURCE CONDITIONS**

0 2 4 6 miles north

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References:

West Central Wisconsin Regional Planning Commission [1973]: Existing Land
Use 1973 Polk County, Wisconsin, The Cartographic Institute, Eau Claire,
Wisconsin.

Minnesota State Planning Agency Land Management Information Center [1977]:

Minnesota Land Management Information System Maps: New Forest Cover
Type Masked by Land Use, Vacant Developable Properties, Land Use 1968-69.

Facility Inventory:

Chisago County has roughly 15 privately owned resorts that provide the visitor with trail use opportunities, swimming beaches, camping, playgrounds, boat rentals and launching facilities. The resorts and campgrounds are usually located near bodies of water, the most notable being the Chisago Lakes chain in south-central Chisago and East and West Rush Lakes, in northern Chisago County. There are a few private campgrounds with recreational facilities near the St. Croix River, but the most obvious and well known are the public Minnesota Interstate Park, the new Wild and Scenic River State Park and Chengwatana State Forest. These public recreation areas provide picnic and campsite facilities as well as the major accesses to the wild and scenic St. Croix. The St. Croix river provides probably the best canoeing in the area. Parts of the Sunrise River near Sunrise are canoeable but the aesthetic experience may not equal that of the St. Croix. The Carlos Avery Wildlife Management Area provides public hunting and fishing acreage in southwestern Chisago. Downhill skiers may use the Wild Mountain Ski area along the river just north of Taylors Falls. Cross-country enthusiasts may use trails in some of the public parks or may use public lands as well. At present there seems to be a lack of designated public horseback riding, cross-country and snowmobile trails. [Resource and Community Development Interdisciplinary Seminar, 1973, Figure 30 ; Minnesot Department of Natural Resources, 1978]

Polk County, Wisconsin provides a number of recreational activities. There are about 30 private and 7 public campgrounds scattered throughout the county. The most extensive concentration seems to be around Balsam and White Ash Lakes and the Apple River area. The counterpart of Minnesota's

Interstate, the Wisconsin Interstate Park is located just south of St. Croix Falls. Similar facilities are provided at each. Access to the St. Croix, as well as many of the lakes, are numerous and boat rentals in the area provide the recreationist with canoeing and other boating opportunities. All of the St. Croix is canoeable and parts of the Trade and Wolf rivers in Sterling Forest and the Apple River in south central Polk are also canoeable. There are approximately 40-50 picnic areas throughout the County, with the majority being found in urban parks. The trail system in both counties provides wilderness experiences and multi-use trails (for example, along St. Croix River in Sterling Forest) provide use year around. [West-Central Regional Planning Commission, 1978, pp. 15-29]

RESOURCE ANALYSIS

Reference was made earlier to the question, does the St. Croix River corridor exist as a recreational oasis, or is it simply one element in a total recreational infrastructure? The analysis indicates that the issue is not one of quantity versus quality, but rather of the resources potential for meeting the growing recreational demands.

In the resource inventory section a picture was presented of a landscape with a diversity of resource patterns that produced a high recreational potential. This potential of the resources in Polk and Cisago Counties can be characterized by analyzing the categories presented in the findings section. The surface water present in the two counties ranges from canoeable streams to large open water lakes (see Figure 4). This diversity supplies the outdoor recreationist with alternative settings in which to participate in water-based activities. These activities may include canoeing, waterskiing, motorboating, fishing, sailing, and others.

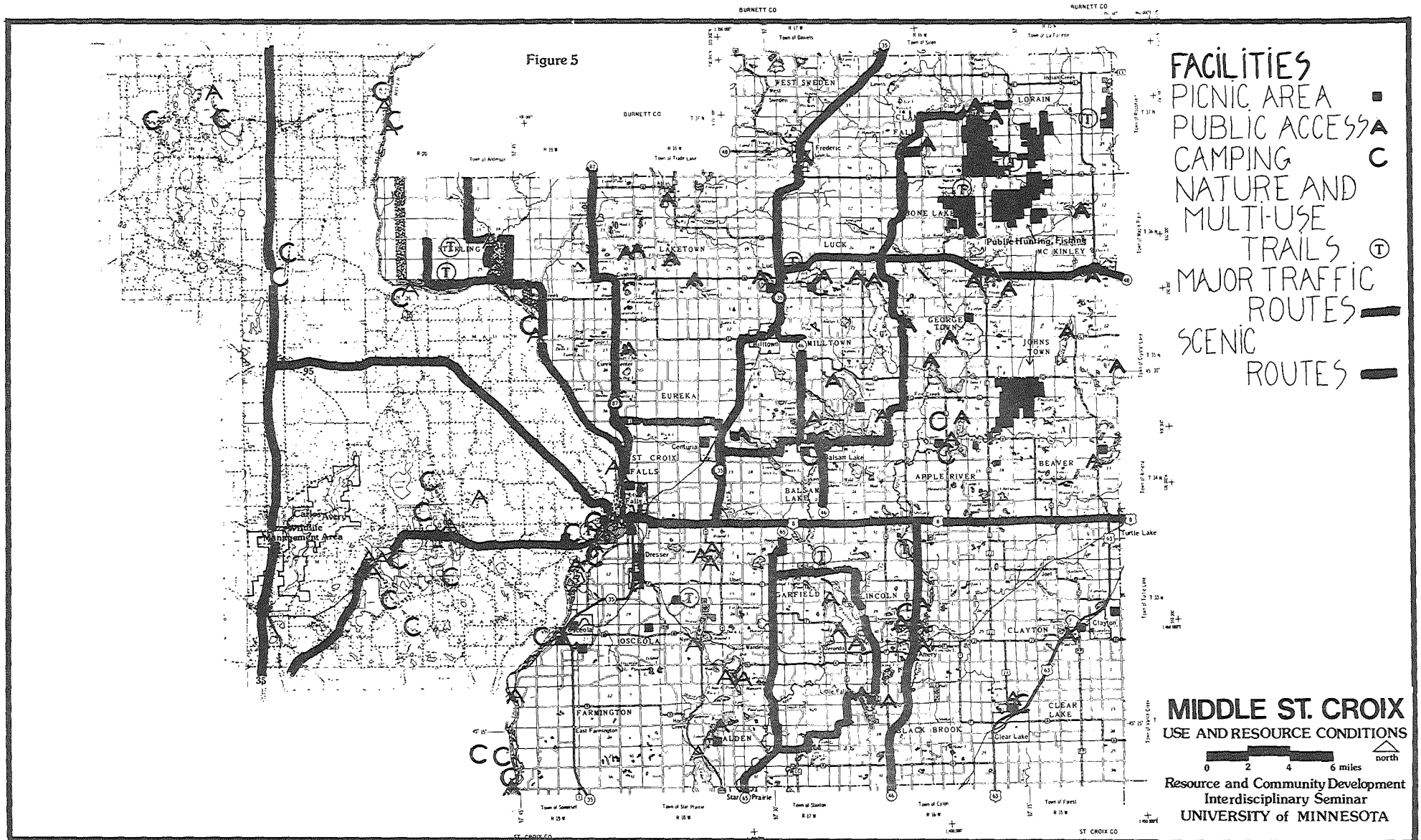
Figure 5

- FACILITIES**
- PICNIC AREA ■
 - PUBLIC ACCESS A
 - CAMPING C
 - NATURE AND MULTI-USE TRAILS T
 - MAJOR TRAFFIC ROUTES —
 - SCENIC ROUTES —

**MIDDLE ST. CROIX
USE AND RESOURCE CONDITIONS**

0 2 4 6 miles
north

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References:

Minnesota Department of Natural Resources [1977] St. Croix River Canoe Route, State Highway 70 to William O'Brien State Park.

Polk County Recreation Committee, Polk County Wisconsin, All Season Vacationland In The Indianhead Country, Balsam Lake, Wisconsin.

Minnesota Department of Natural Resources Office of Planning and Research, Policy Planning Section, John Poate, November [1978]: SCORP Maps: Major Recreation Facilities, Major Recreation Facilities Having Water Access, and Major Recreation Facilities Having Campgrounds.

West Central Wisconsin Regional Planning Commission [1978]: Polk County Recreation Plan.

A great deal of variation also exists among the vegetation types found in the counties (see Figure 4). Here the range runs from large, open pastured areas, the majority of which are found in Chisago County to extensive tracts of forested areas such as the Sterling Forest, located in the northwest section of Polk County. Although these large areas do exist, the general pattern in the two counties is vegetation diversity on a small scale. The landscape is dynamic in nature, providing the visitor with an aesthetically pleasing experience. This dynamic character is enhanced by the variation in topography that is so prevalent. Visitors to the area are exposed to water carved gorges, gentle rolling hills and flat pasture land, with each classification availing itself to a variety of outdoor recreational activities. It is difficult to analyze the general area in terms of topography and soils as they relate to the overall recreation potential. Variation on a small scale can be extreme, making it difficult to generalize.

Following an analysis of the resources found in Polk and Chisago Counties it was found that the St. Croix River Valley is unique both in terms of scenic beauty and the resource's potential for providing an outstanding canoeing experience. Also, at no place in the two county area does the outdoor recreation facility development approach the level found in the corridor itself. However, it was found that the corridor area is not unique in terms of a functional setting for many outdoor recreation activities, and that the surrounding two county area offers a great potential for satisfying these demands. It was recognized that the following areas possess a high potential for recreational facility development.

One of the most prominent areas found in Polk County is the Sterling Forest, located in the northwest corner of the county (see Figure 4). This large area of forested land is currently held in public ownership by the township,

county, and state. It is accessible from the south by a scenic highway and borders the St. Croix River on its west. There is currently limited facility development, including some trails. The general soil pattern would be conducive to further development (see Figure 3). One factor limiting the potential of Sterling Forest is its relative distance from the major population centers. The distance may be too far to meet the present day use demands placed on the lower study area. Thus, the area's greatest potential may be in overnight use activities.

Further east from the Sterling Forest in the northeast corner of Polk County there exists an expanse of area with diverse vegetation and numerous lakes (see Figure 6). Some of the land found here is already in county ownership with a limited amount of recreation facility development. The potential for this area is limited for the same reason as the Sterling Forest, that being, it may be too far removed from the major population centers to relieve the growing day-use pressure on the river. An additional factor limiting its potential is its distance from the river itself. This may have a negative psychological effect on those who wish to be in close proximity to the St. Croix, even though the activities they participate in do not take place on the river itself.

Directly south of the Sterling Forest and across the river from the recently completed Minnesota Wild River State Park, is a block of land owned by the State of Wisconsin (see Figure 6). Potential exists here for the development of an "interstate" park similar to the one found on the lower St. Croix. The land is forested and appears to be suitable for many activity types. It is accessible by a scenic road running along the eastern border of the St. Croix.

Figure 6

PROPOSED
FACILITY
DEVELOPMENT

PRESENT MAJOR
DEVELOPMENTS

MIDDLE ST. CROIX
USE AND RESOURCE CONDITIONS

0 2 4 6 miles north

Resource and Community Development
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The Apple River, running through south central Polk County provides potential for accommodating day-use activities (see Figure 6). It is within close proximity to the major population centers and is highly accessible. The major recreation activity is canoeing. It is recognized that the experience does not approach the quality found on the St. Croix, however it may serve the necessary function of meeting local demands.

There exists in Polk County a couple of large areas of land under private ownership with some recreation potential. The most notable area is a short distance north of St. Croix Falls (see Figure 6). It remains largely undeveloped and is within easy access of the major population centers. These characteristics not only lend it a high recreation potential but also place it under extreme land use pressure, particularly for residential development. For this reason the possibility of acquisition of these areas should be explored.

One major area is Chisago County possessing some potential for development is an area in the center of the county, due west of Sunrise (see Figure 6). The area is defined by three trout streams of known fishing potential. Major access routes to the area include Highway I-35W to the west. Facility development may be restricted due to poor soils, and the aesthetic experience would be low as the area is predominantly open pasture land (see Figure 3).

South of these trout streams is found the Chisago Lakes Chain with its abundance of surface water (see Figure 6). A close correlation in terms of facility development can be drawn between this area and the Balsam Lake area in Polk County (see Figure 6). The potential for recreational development in these areas may have already been met. These portions of the respective counties were not studied in detail as a study is presently underway by the Resource and Community Development Seminar's Lake Study group.

In reviewing the above areas it becomes evident that the majority of areas indicating a high potential for satisfying the demands for selected outdoor recreation activities are found in Polk County. The majority of facility development that has occurred in the area has been in Chisago County. The areas with the greatest potential have already been developed in response to the increasing demands being placed on the area by the Twin Cities Metropolitan Area residents. These pressures are only now beginning to be felt on the resources in Polk County. Therefore in the analysis of the resources of the study area, the focus has been on the Wisconsin side of the St. Croix River.

As was mentioned early in the user analysis, the majority of recreation participants in the St. Croix River Valley originate from the Twin Cities Metropolitan Area. For this reason it is appropriate at this time to discuss the Metropolitan council's development plans for the Seven County Metropolitan Area adjoining our study area. Because these areas are closer to the Twin Cities resident they may have a higher potential for satisfying their recreational needs than areas in Polk and Chisago Counties.

Charlie Smith, park planner for the Metropolitan Council, proposed the following three areas as possessing either present facility development, or having a high potential for future facility development: Linwood-Island Lake (Linwood Township, Anoka County), Big Marine Lake (New Scandia Township, Washington County), and Square Lake (May Township, Washington County). [Smith, 1978] At this time these areas are being proposed as possible sites for regional parks and park reserves. The Linwood-Island Lake site acquisition is being aggressively pursued by Anoka County, and development is anticipated by 1990. The area would be significantly large and would provide access to

water resources. Big Marine Lake development is facing local opposition. Square Lake, the third proposed park, is already receiving heavy use from metropolitan residents and it will continue to draw, despite the fact that no public camping facilities exist.

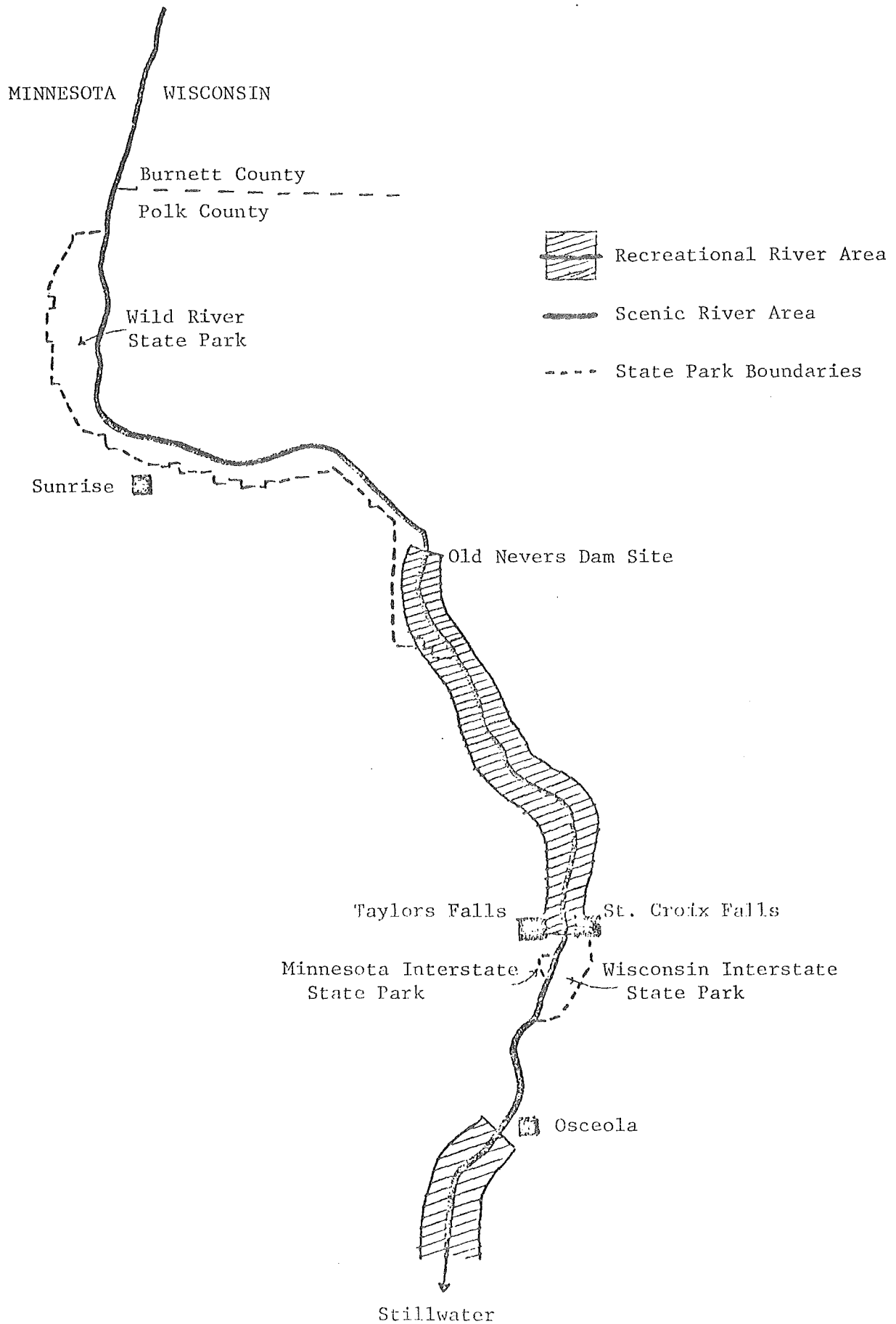
USER INVENTORY

To meet the objectives of this study, it is important to get a grasp of the potential capacity of the St. Croix River valley within the study area to provide a diversity of outdoor recreational opportunities. To accomplish this, it was felt that a study of Minnesota and Wisconsin Interstate State Parks and Minnesota Wild River State Park would indicate the types of activities most prevalent within the river corridor, the present levels of use, when it occurs, and who the users are. This is particularly important in terms of how the state park uses relate to and are defined by the National Park Service management river classification system (see Appendix A). As Figure 7 shows, the river between Nevers Dam and Taylors Falls/St. Croix Falls is classified recreational while the section north of Nevers Dam and the section from Taylors Falls/St. Croix Falls to Osceola are classified scenic.

National Park Service user information was studied to determine the types and levels of use on the islands and those lands immediately adjacent to the river not currently managed by state, county, township, or municipal authorities.

Finally, projected participation data by activity is presented to show the sources of future recreational demand, the amount presumed to occur within the corridor, and the important activities to be considered in the study area.

Figure 7. River Classifications and State Park Boundaries



Minnesota Interstate State Park:

The natural beauty of the Dalles area seems to be an important attraction for users of Minnesota Interstate State Park. [Minnesota Department of Natural Resources, 1974b, p. 5] A 1978 study by the University of Wisconsin showed that persons desiring to be "close to nature" used the accesses at Interstate and Osceola the most and those stopping for a "scenic view" did so in this area. This is important since user perception of the Interstate area is that of "winding river pattern, stable bank condition, inspiring rock cliffs, wooded hillsides, closed view, clean picnic areas, beaches, and no disturbance from signs, noise, marinas, bridges, or private homes." [Becker, et al., 1978, p. 304]

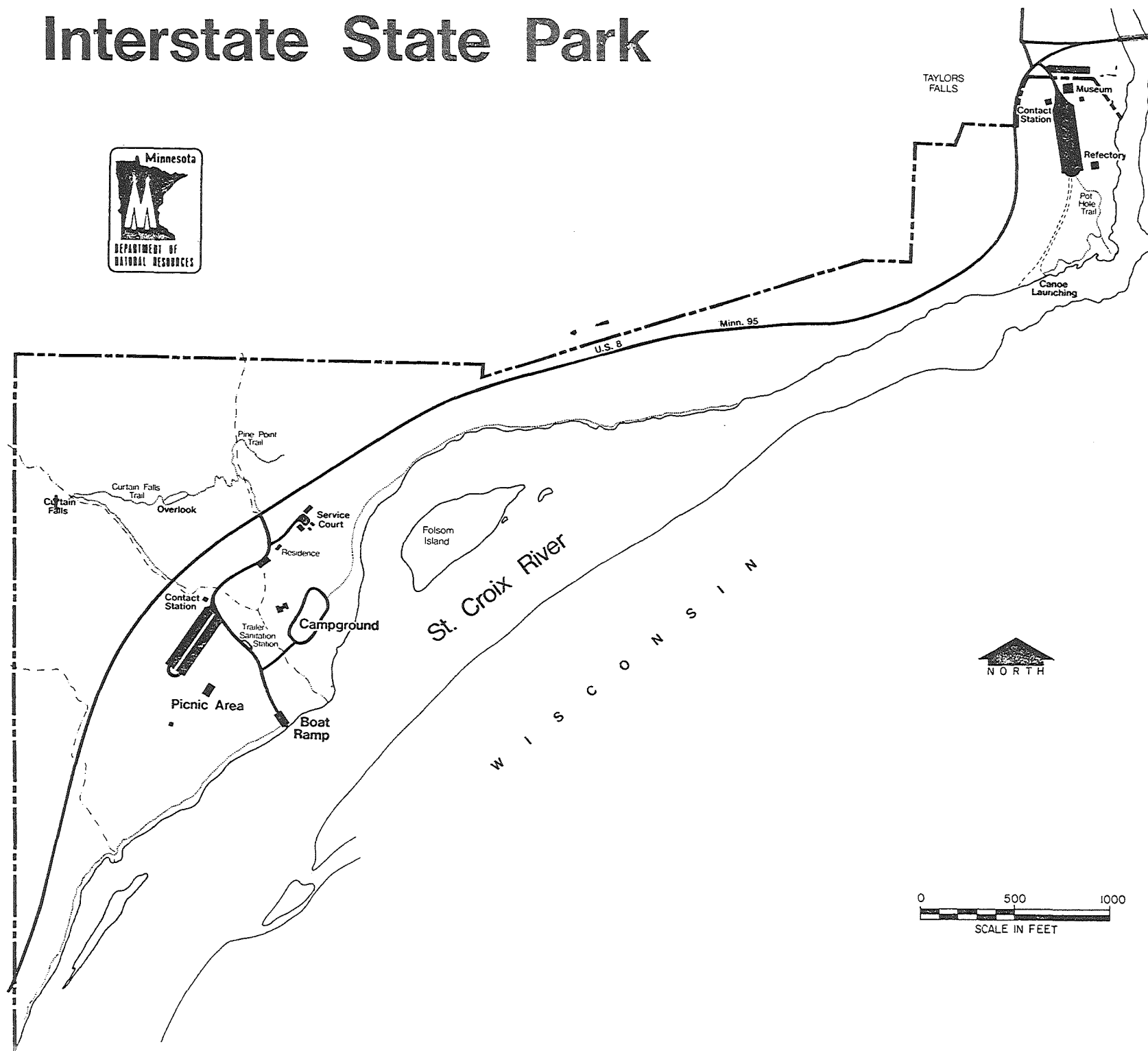
The very nature and design of the park, however, may also attract those who desire and enjoy much interaction with other users. For example, the campsites are for the most part not isolated from each other by vegetation. This enables socialization with neighbors in family campgrounds.

Users of this park can participate in a wide variety of activities, including canoeing, tent, trailer, and group camping, motor boating, swimming, picnicking, fishing, hiking, scenic boat tours, and naturalist programs (see Figure 8). On the river below Taylors Falls/St. Croix Falls, canoeists use Interstate most frequently for access, and canoe use is heaviest between Interstate and Osceola. [Becker, et al., 1978, p. 237] Data from the Minnesota Department of Natural Resources (Table 3) shows that most park use is by day visitors. Information from the University of Wisconsin study [Becker, et al., 1978, p. 237] indicates that many of these users are canoeists although other activities are also important. Fishing seems to be a very active sport and some motorboating occurs between Interstate and Osceola. [Becker, et al., 1978, p. 257] Also, approximately 23 percent of Minnesota

Interstate State Park



Figure 8. Minnesota Interstate State Park Map.



Interstate State Park visitors participate in resident naturalist programs. [Minnesota Department of Natural Resources, 1974b, pp. 20 and 22] Finally, although swimming seems to occur within park boundaries, indications are that due to the dangerously swift waters in the Dalles area, swimming is not encouraged.

Minnesota Interstate State Park has 47 family camp sites and a group camp which holds about 250 persons and is used by senior citizens, family gatherings, and various clubs. From June through August, the campground is filled almost every night and with the exception of the group camp, it is extremely difficult to find a weekend campsite after 5 p.m. on Fridays. [Kendall, 1979]

With the heavy day use that occurs, these findings reveal that this park gets very crowded, especially on weekends. Crowding conditions at Minnesota Interstate State Park are perceived by visitors as one of the five highest in Minnesota. [Minnesota Department of Natural Resources, 1974b, p. 3] Table 4 shows total day visitors for Minnesota state parks along the St. Croix River. It should be noted that use of Minnesota Interstate ranks far above the others even though it is the smallest (167 acres) of the five parks.

The figures in Table 5 verify previous findings of very heavy summertime use. They show that, on the average, 73.5 percent of total annual use of Minnesota Interstate occurs from June through August. Use during May and September contributes another 21 percent to bring the total to 94.5 percent.

Because of its proximity to the Twin Cities, it seems that much of Minnesota Interstate's use is from the metropolitan area. The 1974 Minnesota State Park Users Survey found: 1) 64 percent of all visitors to Interstate were from Minnesota within a 50 mile radius of the park; 2) 24 percent came from other areas in Minnesota; 3) 8 percent came from Wisconsin within a

50 mile radius of the park; and 4) 5 percent came from outside the 50 mile Wisconsin radius. [Minnesota Department of Natural Resources, 1974b, p. 28] It should be noted that in Minnesota, Chisago, Isanti, Kanabec, Anoka, Hennepin, Ramsey, and Washington counties are within a 50 mile radius of this park. The Users Survey also shows that about 42 percent of weekend visitors and 56 percent of weekday visitors to Minnesota Interstate State Park are new. [Minnesota Department of Natural Resources, 1974b, pp. 25-26] The lower weekend percentage may result from the influence of overcrowding.

Wisconsin Interstate State Park:

Like its counterpart across the St. Croix, the natural features of Wisconsin Interstate State Park attract many visitors. However, it is a different kind of park than Minnesota Interstate. It is much larger thereby enabling activities to be spread over a greater area (see Figure 9). This park also has more vegetative cover which may inhibit the degree of socialization that is possible in Minnesota Interstate.

The activities listed for Minnesota Interstate are also possible in Wisconsin. There are some important facility differences, however. First of all, there is no canoe rental service in Wisconsin Interstate so day-use canoeing is not as prevalent. The park has more miles of hiking trails and a swimming beach on Lake O' the Dalles which encourage these activities. Also, there are 90 family camp sites and a group camp which holds 80 persons. Finally, unlike Minnesota Interstate, family camp sites can be reserved in advance although indications are that this is not necessary except on weekends.

User data for this park are sketchy but Table 6 shows that most use is by day visitors. Park personnel indicate that most use occurs from mid-April through mid-October (although there is a moderate amount of cross-country

Figure 9. Wisconsin Interstate State Park Map.

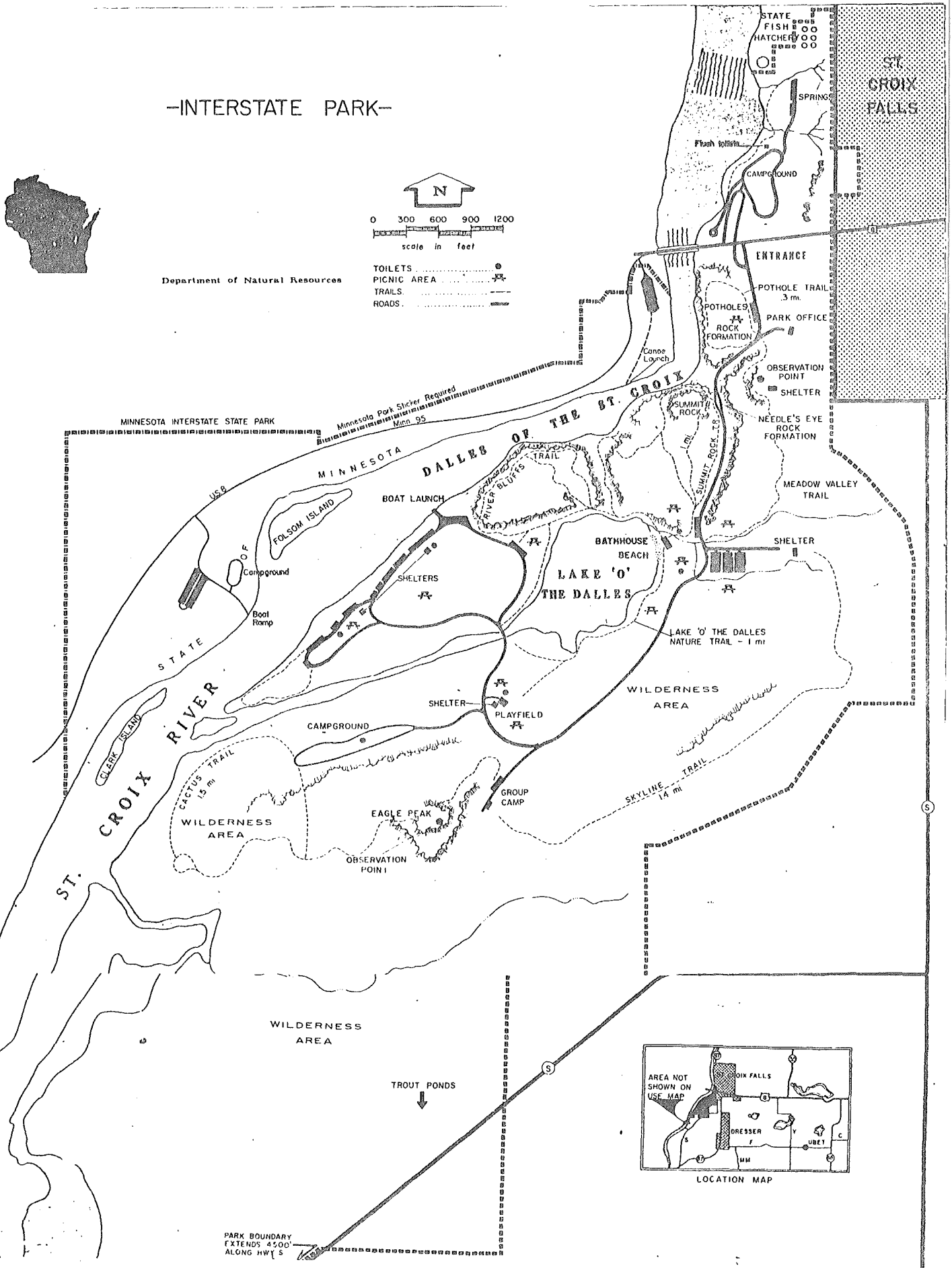


Table 3. Visitors at Minnesota Interstate State Park^{1/}

Year	Day Visitors	Tourist Camp Guests ^{A/}	Organized Camp Guests ^{B/}
1971	427,658	20,994	1,477
1972	378,371	21,584	1,908
1973	403,671	21,339	1,689
1974	386,332	18,871	3,080
1975	432,446	18,156	2,290
1976	393,376	20,139	2,024
1977	434,758	18,981	2,807
1978	421,618	17,625	2,982

^{A/} Data represents number of people who stayed in family campground.

^{B/} Data represents number of people who stayed in group camp.

^{1/} Minnesota Department of Natural Resources, 1978.

* * * * *

Table 4. Day Visitors in Minnesota State Parks Along the St. Croix

Park	1975 ^{1/}	1976 ^{1/}	1977 ^{2/}
Interstate ^{A/}	432,446	393,276	434,758
William O'Brien	177,625	253,076	288,472
St. Croix ^{A/B/}	182,507	150,711	148,154
Afton	5,018	5,190	5,780
Wild River	NA	NA	NA

^{A/} Closed September 10 thru October 22, 1976 because of fire ban.

^{B/} Closed for repair in July, 1977 due to July 4 storm.

NA Not available for use.

^{2/} Department of Economic Development, 1976, pp. 24-27.

Table 5. Percent of Total Annual Use for Minnesota Interstate State Park^{1/}

Months	1974	1975	1976	1977	Average
June thru August	75	70	77	72	73.5
May and September	22	20	21	21	21.0
Total	97	90	98	93	94.5

^{1/} Minnesota Department of Natural Resources, 1978.

* * * * *

Table 6. Visitors at Wisconsin Interstate State Park^{1/}

Year	Recreational Visitors ^{A/}	Family Camper Days ^{B/}	Group Camper Days ^{C/}
1976	364,155	30,616	3,115
1977	358,050	25,688	3,140
1978	419,650	30,327	2,501 ^{D/}

^{A/} Data represents number of day visitors and campers

^{B/} Data represents number of people who stayed in family campground.

^{C/} Data represents number of people who stayed in group camp.

^{D/} Due to reduction in size of group camp.

^{1/} Wisconsin Interstate State Park, 1979.

skiing in the winter) and that a majority of use is on weekends. Campgrounds and picnic areas seem to be at capacity, if not crowded, on weekends but may not receive maximum use on weekdays. Finally, a majority of park users come from Minnesota and it is assumed that many of these are from the Twin Cities area.

Minnesota Wild River State Park:

Since the park was opened on October 1, 1978, summer use patterns cannot be determined for Wild River at this time. However the park's facilities, available activities, and location are important to note because they may indicate the type of user, the source, and the amount of use in the future.

Like Minnesota Interstate, picnicking, nature interpretation, canoeing, motorboating, hiking, and camping facilities are available at Wild River State Park. However, the park has a more primitive nature than Minnesota Interstate which may mean an emphasis on different activities. For example, with no canoe rental service and with a canoe-camping facility to accommodate overnight canoeists from the Upper St. Croix, day-use canoeing may be less frequent in Wild River. Day-use canoeing may also be affected by the pool area below Nevers Dam where the river widens, the current slows, and motor boat use increases.

Camping in this park will be more primitive than Minnesota Interstate with greater vegetative cover and no electricity available at campsites. The 76 campsites are also open all year. Hiking undoubtedly will be a major activity with 30 miles of trails which can also be used in the winter by cross-country skiers. Finally, the two boat accesses in this park may encourage motor boating in the pool area.

Wild River State Park seems rather remote because of its location with respect to major travel routes. However, because of its proximity to the Twin Cities, we assume that many of its users will come from there.

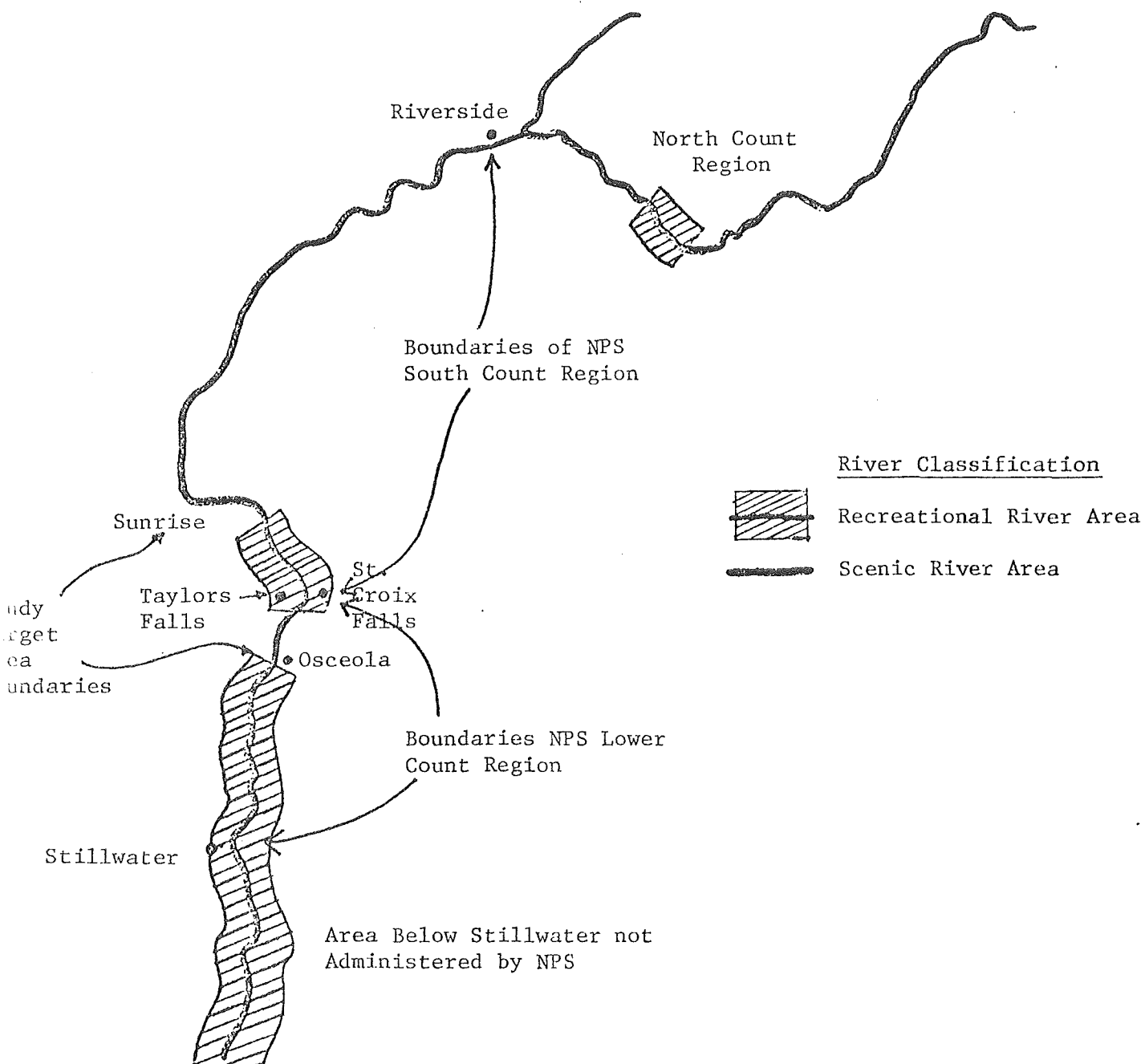
National Park Service:

The National Park Service (NPS) regularly obtains visitor counts. These counts are directed at actual river use and use on NPS lands, they do not include state park visitation. These counts are tallied monthly for 3 river sections: the North (north of Riverside, Wisconsin): South (from Riverside to Taylors Falls, Minnesota); and Lower (from Taylors Falls to, but exclusive of, Stillwater). They are included to get an idea of use on the river itself and at areas not within state park boundaries.

Unfortunately none of these count areas exactly coincides with the study area (see Figure 10). The North region falls completely out of the study area, and only parts of the South and Lower regions cover the study area. Furthermore, since the overall character of the river within the National Park Service count regions is not identical to the character of the river in the study area, it can not be assumed that use in the study area is simply a fraction of total use in the count regions equal to the study area which overlaps the two regions. Also data from the Lower region were quite limited. However, selected data is offered in Tables 7-10 to give a general overview of river use with the understanding that caution must be exercised when applying it to the study area. These data indicate overnight length of stay for canoers has increased while average length of stay for all visitors has remained the same. Furthermore, that boating/canoeing; fishing, and picnicking are the major activity types in both the South and Lower regions. Information on tubing was extremely sketchy but it indicated the activity may be popular on the Lower St. Croix. The data also show use heaviest in the summer and in the Lower region.

Current information on origin of users was not available for this study. The following information was taken from the St. Croix Final Master Plan

Figure 10. National Park Service Use Count Regions ^{1/}



^{1/} National Park Service, 1976b, p. 46; Seidenkranz, 1978, interview.

Table 7. Use: Lower, South and North Regions

	1977 ^{1/}	1978 ^{2/}
Average length of stay		
All visitors	11 hrs.	11 hrs.
Canoers	26 hrs.	50 hrs.
Total river visits first 9 months (i.e., thru Sept.)	198,248	205,182
Total river visits	210,213	215,007

^{1/} National Park Service, 1977 Monthly Public Use Report, September and December.

^{2/} National Park Service, 1978 Monthly Public Use Report, September and December.

Table 8. Use: South Region; May through September^{1/}

Activity	Average visits/month	Total number of visits
Boating/Canoers	4,016	20,078
Picnickers	423	2,115
Fishermen	416	2,078
Hikers	421	212
Tubers ^{A/}	20	100
Total	4,917	24,583

^{A/} Only counted in September

^{1/} National Park Service, 1978 Monthly Public Use Report by Activity, May through September.

Table 9. Use: South Region; February and March 1978 ^{1/}

Activity	Average visits/month	Total number of visits
Snowmobility/skiing	373	746
Hikers	5	10
Picnickers	5	10
Total	383	766

^{1/} National Park Service. 1978 Monthly Public Use Reports by Activity, February and March.

Table 10. Use: South Region; April 1978 ^{1/}

Activity	Number of visits
Boating/canoeing	720
Fishermen	86
Picknickers	72
Hikers	7
Total	885

Note: Data for April was kept separate since this month seems to be transitional between winter and summer. Inclusion with purely summer or winter months would therefore distort the data.

^{1/} National Park Service. 1978 Monthly Public Use Reports by Activity, April.

Table 11. Use Lower Region; May, June and July 1978 ^{1/}

Activity	Average visits/month	Total number of visits
Boating/canoeing	27,272	81,815
Fishermen	2,397	7,190
Picnickers	2,048	6,145
Hikers	<u>167</u>	<u>500</u>
Totals	31,884	95,650

^{1/} National Park Service, 1978 Monthly Public Use Reports by Activity, May, June and July.

[National Park Service, 1976b, p. 20], "...the two urban areas of Minneapolis-St. Paul and Duluth-Superior ... constitute the bulk of users for both day and weekend use. The river section might even be said to constitute a playground for residents of Minneapolis and St. Paul," The Master Plan further states that [National Park Service, 1976b, p. 21] "84% of potential day use visitors in 1960 were classified as urban, and 73% of that 84% lived in the Minneapolis-St. Paul urbanized area." That [National Park Service, 1976b, p. 21] "Minneapolis-St. Paul, and Chicago are expected to contribute more than half of the rivers users." In concluding this section, it should be kept in mind that the above origin of use statements were not specific to our area, but were directed at the entire Upper St. Croix and Namekagon Rivers and may not be accurate for this study area.

Participation Projections:

This section of the study provides an estimate of the future use that can be expected for the activities of interest. These estimates will serve as background information to be used in the development of forthcoming conclusions and recommendations.

Estimates of future participation were determined through the use of national projections published in a study by Cicchetti, Seneca, and Davidson [1969]. Cicchetti et al. utilized survey data on participation in outdoor recreation activities and the supply of outdoor recreation facilities in constructing a method of economic analysis to determine supply-demand relationships and to develop projections of participation. The choice to utilize the figures produced by Cicchetti et al. was made following a review of similar efforts to utilize an economic analysis to develop projections

of participation, including some completed more recently. [Outdoor Recreation Resources Review Commission Study Report 19, 1962; Bureau of Outdoor Recreation, 1973] The Cicchetti study represented the only case where resource inventory data were used in an attempt to incorporate a supply factor into an analysis of future participation. Participation projection models must include this supply factor if they are to produce accurate estimates.

For the purposes of this study the national figures for activity participation were adjusted to represent more accurately the expected use in the North Central region. An assumption has been made that the majority of users in the St. Croix River corridor will originate from this region. Table 12 indicates the percentage of persons 12 years old and up who might be expected to participate, during the year indicated, in the activities listed. The pattern indicated in the table is for all activities to increase in the years 1980 and 2000, with the exception of remote or wilderness camping. This lack of growth is largely offset by the growth in developed camping through the year 2000. Possible explanations for this exceptional overall growth in the percent of participants are the effects of a growing real income plus the projected increases in population. Both of these factors will be discussed later, particularly in reference to the St. Croix River corridor and its users.

In an effort to provide an additional means of assessing the future demands that will be placed on the river corridor we have included in Table 12 projections of annual per capita participation rates of Minnesota residents for selected activities. These figures may more nearly approximate the true demands on the corridor, as it has been established that the majority of the users are Minnesota residents. The figures in Table 13 parallel those of

Table 12. Percent of Persons, 12 years and over, Participating in
Selected Outdoor Recreation Activities, in North Central Region

Activity	June-August 1960 <u>1/</u>	June-August 1972 <u>A/ 2/</u>	Projected 1980 <u>3/</u>	Projected 2000 <u>3/</u>
Swimming	42	34	59	76
Fishing	33	24	34	30
Canoeing	3	3	8	9
Other Boating	27	15	33	46
Hiking	5	5	10	13
Picnicking	58	47	69	97
Camping in remote or wilderness areas	7	5	3	3
Camping in developed campground	7	11	11	20

A/ Data representative of total U.S.

1/ Outdoor Recreation Resources Review Commission Study Report 19,
1962, p. 120.

2/ Bureau of Outdoor Recreation, December 1973, p. 5.

3/ Cicchetti, Seneca and Davidson, 1969, pp. 231-285.

Table 13. Annual Per Capita Participation Rates of Minnesota Residents,
1975, 1980 and 1990 1/

Activity	1975	1980	1990
(percent)			
Swimming	18.2	19.8	22.9
Fishing	7.7	7.9	8.4
Canoeing	.8	.9	1.0
Other Boating	1.3	NA	NA
Picnicking	5.4	5.7	6.3
Camping	4.0	5.0	7.0

NA Not Available

1/ Minnesota Department of Natural Resources, 1974.

Table 12, indicating an expected increase in participation for each activity listed. Thus, a review of both national and state figures indicates that participation in selected outdoor recreation activities is increasing substantially, and that the corresponding facility demands will be high.

Yet the question remains, will the use patterns in the St. Croix River corridor be reflective of these increasing participation rates? The answer is yes, providing the following assumptions and observations can be made. First of all, the scenic beauty and visual quality that gained the St. Croix River its recognition under the National Wild and Scenic Rivers Act is superior to areas providing similar recreation facilities. Secondly, the recreational experiences available in the corridor are of high enough quality to attract more than their share of users seeking the experiences. Third, the population in the immediate area will continue to increase; the 1970 Census of population indicated that approximately 4 million people were living within 150 miles of the corridor region and about 9½ million were living within 250 miles. By the year 2000, population figures are projected to be over 5½ and 12 million respectively. Fourth, the present trend of increasing gasoline prices will raise the real cost of transportation. This assumption could affect participation in the St. Croix River corridor in two ways. The higher energy costs may force participants to seek their recreational experience closer to home. In reference to the St. Croix this would mean the Metropolitan resident would possibly forego longer outings in favor of a lower transportation cost outing to the St. Croix. The second impact that higher gasoline costs would have on future participation would be to limit use in the corridor area. Twin Cities Metropolitan Area residents may restrict their

outing length so severely that the corridor region may lie outside of the desired (economical) distance. The fifth assumption to be made is that the characteristics of leisure time for individuals indicate that more leisure time will be available in the future. Trends have clearly been for more leisure time; work-weeks are becoming shorter, vacation periods more generally available, and retirement periods are increasing. The likelihood is that these trends will each continue in these directions in the future. [Clawson and Knetsch, 1966, p. 96; Neulinger, 1974]. A final assumption is that society's increased mobility will also manifest itself, making it possible for more recreationists to experience their favorite activities in the corridor. Providing then that these assumptions are valid it can be argued that the national and state participation trends may not only be reflected in the corridor, but may possibly be larger than indicated.

As was mentioned earlier, both the potential effect of a growing real income for particular economic activities, and the projected population increases are contributing factors to the changes expected in outdoor recreation participation. Table 14 indicates the percent of the population and the corresponding percent of participants in the selected outdoor recreation activities in various income groups for 1972. It is indicated that the greatest proportion of participants in these activities is accounted for by middle income families. Though they make up only 34 percent of the adult population, they are responsible for more than 41 percent of the participation in the selected activities.

These statistics are particularly important when it is recognized that real incomes during the last decade have increased from 1-5 percent annually. This trend indicates that the percentage of the total population in the middle income group will increase. Accompanying this increase will be a corresponding

Table 14. Percent of Population, and Percent of Participants in Selected Outdoor Recreation Activities in Various Income Groups (June-August 1972) ^{1/}

Family Income	Under \$8,000	\$8,000- \$14,999	\$15,000 and over	Total ^{A/}
	(percent)			
U.S. Population	45	34	21	100
Swimming	27	46	26	99
Fishing	38	44	18	100
Canoeing	27	45	28	100
Other Boating	26	44	29	99
Hiking	28	48	24	99
Picnicking	36	41	21	98
Camping in remote or wilderness areas	32	45	23	100
Camping in developed campgrounds	27	49	24	100

^{A/} Percent may not add to 100 because of rounding errors.

^{1/} Bureau of Outdoor Recreation, December 1973, p. 14.

increase in participation in those activities most sought after by the middle income group. For example, as a person shifts from the low income group to the middle income group, the likelihood that they would become canoeing participants more than doubles. This relationship is true for the majority of activities listed in Table 14, with the notable exceptions of fishing and picnicking. In these two activities the increase in participation would not be as pronounced. Fishing and picnicking are outdoor recreation activities that economically are termed "inferior goods," in a sense that participation declines with higher real incomes. The relevance of the figures in Table 14 to the study area can be easily identified when it is considered that these national figures are reflected in the Twin Cities metropolitan area. As was mentioned earlier, the majority of users in the St. Croix River Corridor originate from the Twin Cities and this situation can be expected to continue. Thus, increased incomes of metropolitan residents may be considered one element contributing to the projected increases in outdoor recreation participation and the corresponding facility demands that are to be placed on the area.

The second factor contributing to the potential increases in outdoor recreation in the corridor area is the projected population increases depicted in Table 15. Population for both the State of Minnesota and the Twin Cities Metropolitan Area appears to be increasing at a rate of approximately one percent per year. Estimates, for Chisago and Polk Counties indicate a substantial growth rate between 1975 and the year 2000 of over 80 percent. This growth, if it continues over time, is of considerable importance to land use planners in the region. The resource demands, both recreational and other, that are likely to be placed on the area to satisfy the needs and wants of this increased population will be very large.

Table 15. Population Projections for Given Areas (in 10,000's).

Area	1975	1980	1990	2000
North Central Region <u>1/</u>	--	4,697.00 (12 and over)	--	6,261.00 (12 and over)
Minnesota <u>2/</u>	392.30	407.77	442.15	442.15
Chisago & Polk Counties <u>2/</u> <u>3/</u>	5.14	5.70	7.47	9.23
Metropolitan Area <u>2/</u>	192.76	202.77	222.25	235.57

1/ Cicchetti, Seneca and Davidson, 1969 p. 229.

2/ Department of Economic Development, 1978 p. 5.

3/ West Central Wisconsin Regional Planning Commission, 1978 p. 14.

USER ANALYSIS

In analyzing the user data we will attempt to answer the following questions: What outdoor recreational activities are now important, or are likely to become important in the future in the corridor study area? What are the present levels of use for these activities? When does the majority of use occur? Who are the users? The answers to these questions will then serve as guidelines in determining the suitability of alternative areas for alleviating the growing recreation use pressures expected to be placed upon the St. Croix River corridor.

Dominant activities in the corridor understandably make use of the outstanding resources found in the area. Water-oriented outdoor recreation activities include canoeing, motorboating, swimming, and fishing. The compatibility of these activities can be measured both in terms of the combination of activity types, and the character of the resource. Within our study area the river can be divided between the pool area, north of Taylors Falls, Minnesota, and the area south to Osceola, Wisconsin. The river in the upper pool area widens considerably and its movement slows, making the area more popular for motor boating and fishing. Conversely, the narrower width and faster currents make the lower area more acceptable for canoeists. The increased current in the lower area also reduces the potential for swimming, due primarily to safety factors. Incompatibility also tends to separate activity types. Canoeists and fisherman have historically been more compatible, and together seek to avoid those areas dominated by motor boats, swimmers, and water skiers.

Land based activities, as opposed to water based activities are much more dependent upon the facilities provided. Most of the current facility development is presently located in the lower study area, south of Taylors Falls.

Major developments include the Interstate Parks in Minnesota and Wisconsin; with the principal activities being camping and hiking.

Data from both state and federal agencies indicate that recreation use within the corridor is of the day use type. [Bureau of Outdoor Recreation, December 1973, p. 209; Minnesota Department of Natural Resources 1974, p. 7-24; Becker, et al., 1978, p. 237] Furthermore, the majority of use is expected to occur on weekends, resulting in capacity conditions at established facilities. [Kendall, 1979] An additional characteristic of recreation use in the river corridor is that it is highly concentrated in the summer months. This is understandable as the nature of the resource is altered considerably in the winter. Ice conditions on the river make it inaccessible for water based recreation activities.

Each of the agencies from which user information was obtained agreed that the majority of recreationists in the St. Croix River corridor originate from the Twin Cities Metropolitan Area. The river and adjacent areas constitute a major, if not the major, day use natural recreation activity area for the Twin Cities metropolitan population. [Minnesota Department of Natural Resources, 1974, p. 7-24] There are numerous explanations for this including the high scenic quality and the excellent recreation experience; but perhaps the primary one is that the study area is within a fifty mile radius of the Twin Cities. This is within the distance that the State of Minnesota's Department of Natural Resources has learned through research that most people will travel to seek day use recreation activities. [Resource and Community Development Interdisciplinary Seminar, 1973, p. 97] National Park Service reports indicate that a large amount of use is also expected from the Chicago metropolitan area. [National Park Service, 1976b, p. 21] However, the majority of this use would be in the form of overnight activities.

An overview of user data collected in the study area indicates that the majority of use can be expected during the day on weekends, and primarily originating from the Twin Cities Metropolitan Area.

The recreation activities most sought by users at the St. Croix River Corridor are river oriented, and take advantage of the excellent natural experience offered in the corridor. Dominant activities include canoeing, swimming, hiking, motorboating, water skiing, fishing, picnicking, and camping. These characteristics will play an important role in the resultant conclusions and recommendations.

CONCLUSIONS
and
RECOMMENDATIONS

INTRODUCTORY STATEMENT

From the analysis of physical resources and user data the following conclusions can be made and some assumptions that have been made can be supported.

The St. Croix River Corridor (see Figure 1) is a regionally unique resource that is to be used and protected as a recreation resource. The corridor is superior in scenic and aesthetic qualities relative to the surrounding region, and is highly valued by the public for these purposes as is indicated by the use patterns. No other area in the adjoining two counties has the same potential, either in quality or quantity.

The St. Croix River Corridor may not, given the current objectives and practices of the managing agencies, be able to meet the recreational demands that are expected to be placed upon it and still maintain its recreational and resource quality. Use is already high on many portions of the St. Croix and information indicates that the trend of dramatic increases in use since 1972 may be expected to continue. [Becker, et al., 1978 p. 10] The social and physical carrying capacity (primarily in the southern portion of the study area, below Taylors Falls) may have been surpassed, and it appears to be only a matter of time before over use conditions such as severe bank erosion, worn out campsites and vegetation destruction are recognized in additional areas. Use projections in the user data section identify an increase in demand through the year 2000. Land use trends in the entire region can be expected to continue to be towards increasing residential development similiar to that of adjacent Washington County. [Resource and Community Development Interdisciplinary Seminar - Land Use Group, 1979] Thus not only is the demand for recreation activities expected to increase, but the open space available for meeting this demand

may be diminished by developmental activities. If these projections do materialize, the future preservation of the recreation resources found in the study region would be in jeopardy.

How then might these resources be preserved for their outstanding recreational values? Two basic approaches to this problem seem appropriate. The first, considers the resources and their management within the corridor itself; the second, the resources and their management in the surrounding region.

WITHIN THE CORRIDOR

Conclusions:

I. One of the most evident problems noted in the use section was the relative disparity between the lightly used upper section north of Taylors Falls, and the heavily used portion south to Osceola. This use pattern can be explained by noting that the majority of facility development is concentrated in the lower study area. This disparity seems to be in conflict with the National Park Service's management classifications. The lower portion is designated as scenic, thus supposedly more restrictive of development, and the upper area is classified as recreational, and as such is less restrictive of development. This classification is understandable when it is recognized that the steep rock walls and rapid current south of Taylors Falls are much less adaptable to development than the relatively moderate terrain and placid waters of the pool area north of Taylors Falls. However, current conditions indicate that facility developments and use do not follow the classifications as they now stand. Therefore it is concluded that facility development, both present and proposed, should possibly more closely represent the National Park Service River classifications to make the most efficient

use of the resources and maintain the scenic and aesthetic qualities of the river. The respective development and use in the two areas appears to be undesirable both from a resource and user perspective.

General Recommendations:

A. The upper pool area, by virtue of it being classified as recreational, has the most lenient prohibitions on facility development of the three National Park Service classifications. Present facility development in this upper pool area is minimal and there exists a potential for increasing development. These additional facilities would remain within the range of travel for Twin Cities Metropolitan Area day-use recreationists. Because day use, as compared to overnight use, is dominant in the lower area, considerable potential exists for relieving the excessive pressures that are presently being felt on the lower area by redistributing use to the upper pool area. The major problem inhibiting facility development in the upper pool area appears to be the high percentage of land that is held in private ownership (see Figure 4). However, the majority of this land is owned by the Northern States Power Company which has a long history of cooperation with public agencies responsible for the preservation of the St. Croix River as a high quality recreation resource.

It is recommended therefore that further recreational facility development in the upper St. Croix pool area be considered. This development, along with the corresponding application of constraints limiting use on the lower area, could relieve much of the disparity in use that currently exists between the upper and lower study area, thus further protecting and increasing the overall efficiency of resources in the corridor study area.

Specific Recommendations:

1. Minnesota Interstate State Park should consider management practices to phase out overnight use of park facilities. If possible the park may wish to expand its boundaries to reduce the resource deterioration that has resulted from the increased use. These recommendations might involve the following:

- a) The removal of the group camping facility to an alternative site to be developed in the upper pool area, or to be provided by a private facility.
- b) Implement progressive restrictions on family camping sites leading to the complete removal of all overnight facilities. Development of camping areas in the upper pool area would compensate for these lost sites.
- c) Expansion of the park west of Highway 8 might be considered to provide additional areas for day use activities.

2. The use of the larger Wisconsin Interstate State Park by Minnesota residents may be encouraged to distribute use more proportionately. It is recognized that numerous institutional problems remain to be worked out before specific policies agreeable to both states could be implemented.

The following two management policies are suggested:

- a) Develop a program whereby park entrance fees to both Interstate Parks would be collected together and distributed proportionally according to the development and maintenance needs of each respective park.

- b) Institute the use of a park entrance sticker that would allow admittance to either Interstate Park, regardless of the user's state of residence.
- c) Increase public awareness of the facilities and activities available at both Interstate Parks, particularly as they compare to one another.

3. Plans might be implemented to limit access to the lower portion of the study area. This limitation may take the form of restricting future development of new access points and possibly the removal of some existing access points.

4. Carrying capacity limits should be established for the upper pool area before use is allowed to be established in accordance with the Wisconsin Department of Natural Resources standards, as stated in the 1978 Wisconsin State Comprehensive Outdoor Recreation Plan. Capacities must consider the erosion potential, effects on vegetation, effects on wildlife, visual quality, and perhaps most importantly, the user experience.

5. The development of recreation facilities in the upper pool area might be encouraged where the resource is capable of accommodating use. A preliminary analysis of the resource indicated the following areas as possessing some potential:

- a) There exists the potential for development of a camping facility at the old Nevers Dam site on the Wisconsin side.
- b) The possibility of developing two controlled access points along the western border of the St. Croix in Chisago County. Should the constraints imposed on the lower area prove to be effective the need for improved access to the pool area will increase. The development of two hardened access points, with picnic facilities, may prevent the resource degradation associated with uncontrolled accesses.

c) The potential of an area of Wisconsin State Forest land south of the Sterling Forest in Polk County should be studied, with a view to the development of a recreational facility. Should the area be suitable there would be the possibility of developing another interstate park with Minnesota's Wild River State Park. The institutional problems mentioned earlier would have to be worked out prior to an interstate park development.

OUTSIDE THE CORRIDOR

Conclusions:

I. In the analysis of the resources in the surrounding region no areas possessing the outstanding scenic qualities of the corridor were identified. There were, however several promising areas located with the potential of alleviating some of the present and future demands on the corridor. By alleviating some of that pressure the unique resources of the St. Croix may better be preserved for future generations.

In terms of the function served for various outdoor recreation activities no comparable areas outside of the corridor were found. However, in terms of the form that the activity is associated with, we found numerous areas that have the potential of serving the needs of the growing number of users. Should these outside areas be developed they would relieve some of the present pressure on the corridor resources, providing the necessary constraints are enacted to "push" users away from the corridor study area. Confidence in the effectiveness of these outside areas for relieving pressure is based on the following characteristics of both the resources and the users. First of all, each of the areas suggested

for development lies within the ten mile circumference which visitors to Minnesota Interstate State Park are willing to go to participate in recreational activities. [Minnesota Department of Natural Resources, 1974b, p. 12] Second, the areas also lie within the fifty mile radius that the Twin Cities Metropolitan Area users are demonstratably willing to travel for day use activities. In addition, the areas possess the resources that provide the setting for many of the recreation activities sought by users of the St. Croix River. We recognize that the similarity is primarily related to the activity form and does not approach the function. Users seeking a river experience of the quality found on the St. Croix may not be satisfied if the proposed areas removed from the corridor proper.

It has been recognized that additional facility development may not only accommodate existing demands, but may also create a "new" demand that would not be present without the facility. However, the alternative to development of facilities in the surrounding region would be the continued deterioration of the St. Croix River resource and the resultant weakening of the recreational experience provided.

Recommendations:

A. Given these characteristics then, it is recommended that the following areas be recognized for their potential of relieving some of the heavy use pressure that is being placed on the St. Croix (see Figure 6, p. 27).

1. The Sterling Forest in northwestern Polk County is a large tract of forested land with the potential for meeting the demands of users for dispersed recreation types. Possible activity types include hiking, canoeing, picnicking, and camping. The present ownership of the area will

require township, county and state agencies to coordinate their management efforts closely in the best interest of both the resource and the user.

2. The lakes area in northeast Polk County has the potential for additional recreational development. Possible activities include: motorboating, fishing, hiking, picnicking and camping.

3. The Chisago Lake Chain located in Chisago County and the Balsam Lake chain in Polk County may possess some limited potential for further development of some recreation facilities. The activities to be provided for include motorboating, water skiing, fishing, picnicking and some developed camping.

4. The status of the private block of land north of St. Croix Falls in Wisconsin should be studied to determine its potential for future public recreation use. Its greatest function may be to serve as a buffer area of undeveloped natural vegetation.

SUMMARY

After viewing the resources of the two county region both from within the corridor and from without it is recognized that the St. Croix River Corridor cannot be managed as a separate entity but rather as one element in a larger recreation package offered by the region. In the best interests both of the resources and of the users, agencies must manage the area without separating the individual parts of the whole. The National Park Service may not have fully considered the surrounding area in its initial management decisions. If they had, they would perhaps not be experiencing many of the problems they are now facing. A well conceived, comprehensive management plan requires a broad overview of both the specific area and

the region in which it lies. The flow of recreationists across political and agency boundaries logically requires recreation planners to work together to formulate recreation decisions that best reflect the needs of the users and the resources.

The St. Croix River between Sunrise, Minnesota and Osceola, Wisconsin can realistically be managed as a National Wild and Scenic River. This is possible provided there is a comprehensive, coordinated management of the area recognizing what the area adjacent to the corridor proper has to offer.

To achieve a comprehensive, coordinated level of decision making it is recommended that a commission be established to oversee recreation management and development in the two county area as it relates to the St. Croix River Corridor study area. This commission would differ from the present Minnesota-Wisconsin Boundary Area Commission in that representatives from County, Township and Municipal recreation agencies would be included along with Federal and State agencies. Inputs from these additional sources are necessary in the formulation of comprehensive management plan of the St. Croix River.

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APPENDIXES



Public Law 90-542
90th Congress, S. 119
October 2, 1968

An Act

To provide for a National Wild and Scenic Rivers System, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That (a) this Act may be cited as the "Wild and Scenic Rivers Act".

Wild and Scenic
Rivers Act.

(b) It is hereby declared to be the policy of the United States that certain selected rivers of the Nation which, with their immediate environments, possess outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values, shall be preserved in free-flowing condition, and that they and their immediate environments shall be protected for the benefit and enjoyment of present and future generations. The Congress declares that the established national policy of dam and other construction at appropriate sections of the rivers of the United States needs to be complemented by a policy that would preserve other selected rivers or sections thereof in their free-flowing condition to protect the water quality of such rivers and to fulfill other vital national conservation purposes.

(c) The purpose of this Act is to implement this policy by instituting a national wild and scenic rivers system, by designating the initial components of that system, and by prescribing the methods by which and standards according to which additional components may be added to the system from time to time.

Sec. 2. (a) The national wild and scenic rivers system shall comprise rivers (i) that are authorized for inclusion therein by Act of Congress, or (ii) that are designated as wild, scenic or recreational rivers by or pursuant to an act of the legislature of the State or States through which they flow, that are to be permanently administered as wild, scenic or recreational rivers by an agency or political subdivision of the State or States concerned without expense to the United States, that are found by the Secretary of the Interior, upon application of the Governor of the State or the Governors of the States concerned, or a person or persons thereunto duly appointed by him or them, to meet the criteria established in this Act and such criteria supplementary thereto as he may prescribe, and that are approved by him for inclusion in the system, including, upon application of the Governor of the State concerned, the Allagash Wilderness Waterway, Maine, and that segment of the Wolf River, Wisconsin, which flows through Langlade County.

National wild
and scenic
rivers system.

82 STAT. 906
82 STAT. 907

(b) A wild, scenic or recreational river area eligible to be included in the system is a free-flowing stream and the related adjacent land area that possesses one or more of the values referred to in section 1, subsection (b) of this Act. Every wild, scenic or recreational river in its free-flowing condition, or upon restoration to this condition, shall be considered eligible for inclusion in the national wild and scenic rivers system and, if included, shall be classified, designated, and administered as one of the following:

Eligibility
for inclusion.

(1) Wild river areas—Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

(2) Scenic river areas—Those rivers or sections of rivers that are free of impoundments, with shorelines or watersheds still largely primitive and shorelines largely undeveloped, but accessible in places by roads.

(3) Recreational river areas—Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some

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National wild
and scenic
rivers.

development along their shorelines, and that may have undergone some impoundment or diversion in the past.

SEC. 3 (a) The following rivers and the land adjacent thereto are hereby designated as components of the national wild and scenic rivers system:

(1) CLEARWATER, MIDDLE FORK, IDAHO.—The Middle Fork from the town of Kooskia upstream to the town of Lowell; the Lochsa River from its junction with the Selway at Lowell forming the Middle Fork, upstream to the Powell Ranger Station; and the Selway River from Lowell upstream to its origin; to be administered by the Secretary of Agriculture.

(2) ELEVEN POINT, MISSOURI.—The segment of the river extending downstream from Thomasville to State Highway 142; to be administered by the Secretary of Agriculture.

(3) FEATHER, CALIFORNIA.—The entire Middle Fork; to be administered by the Secretary of Agriculture.

(4) RIO GRANDE, NEW MEXICO.—The segment extending from the Colorado State line downstream to the State Highway 96 crossing, and the lower four miles of the Red River; to be administered by the Secretary of the Interior.

(5) ROGUE, OREGON.—The segment of the river extending from the mouth of the Applegate River downstream to the Lobster Creek Bridge; to be administered by agencies of the Departments of the Interior or Agriculture as agreed upon by the Secretaries of said Departments or as directed by the President.

(6) SAINT CROIX, MINNESOTA AND WISCONSIN.—The segment between the dam near Taylors Falls, Minnesota, and the dam near Gordon, Wisconsin, and its tributary, the Namekagon, from Lake Namekagon downstream to its confluence with the Saint Croix; to be administered by the Secretary of the Interior: *Provided*, That except as may be required in connection with items (a) and (b) of this paragraph, no funds available to carry out the provisions of this Act may be expended for the acquisition or development of lands in connection with, or for administration under this Act of, that portion of the Saint Croix River between the dam near Taylors Falls, Minnesota, and the upstream end of Big Island in Wisconsin, until sixty days after the date on which the Secretary has transmitted to the President of the Senate and Speaker of the House of Representatives a proposed cooperative agreement between the Northern States Power Company and the United States (a) whereby the company agrees to convey to the United States, without charge, appropriate interests in certain of its lands between the dam near Taylors Falls, Minnesota, and the upstream end of Big Island in Wisconsin, including the company's right, title, and interest to approximately one hundred acres per mile, and (b) providing for the use and development of other lands and interests in land retained by the company between said points adjacent to the river in a manner which shall complement and not be inconsistent with the purposes for which the lands and interests in land donated by the company are administered under this Act. Said agreement may also include provision for State or local governmental participation as authorized under subsection (e) of section 10 of this Act.

(7) SALMON, MIDDLE FORK, IDAHO.—From its origin to its confluence with the main Salmon River; to be administered by the Secretary of Agriculture.

(8) WOLF, WISCONSIN.—From the Langlade-Menominee County line downstream to Keshena Falls; to be administered by the Secretary of the Interior.

(b) The agency charged with the administration of each component of the national wild and scenic rivers system designated by subsection

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(a) of this section shall, within one year from the date of this Act, establish detailed boundaries therefor (which boundaries shall include an average of not more than three hundred and twenty acres per mile on both sides of the river); determine which of the classes outlined in section 2, subsection (b), of this Act best fit the river or its various segments; and prepare a plan for necessary developments in connection with its administration in accordance with such classification. Said boundaries, classification, and development plans shall be published in the Federal Register and shall not become effective until ninety days after they have been forwarded to the President of the Senate and the Speaker of the House of Representatives.

Publication in
Federal Register.

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SEC. 4. (a) The Secretary of the Interior or, where national forest lands are involved, the Secretary of Agriculture or, in appropriate cases, the two Secretaries jointly shall study and from time to time submit to the President and the Congress proposals for the addition to the national wild and scenic rivers system of rivers which are designated herein or hereafter by the Congress as potential additions to such system; which, in his or their judgment, fall within one or more of the classes set out in section 2, subsection (b), of this Act; and which are proposed to be administered, wholly or partially, by an agency of the United States. Every such study and plan shall be coordinated with any water resources planning involving the same river which is being conducted pursuant to the Water Resources Planning Act (79 Stat. 244; 42 U.S.C. 1962 et seq.).

Each proposal shall be accompanied by a report, including maps and illustrations, showing among other things the area included within the proposal; the characteristics which make the area a worthy addition to the system; the current status of landownership and use in the area; the reasonably foreseeable potential uses of the land and water which would be enhanced, foreclosed, or curtailed if the area were included in the national wild and scenic rivers system; the Federal agency (which in the case of a river which is wholly or substantially within a national forest, shall be the Department of Agriculture) by which it is proposed the area be administered; the extent to which it is proposed that administration, including the costs thereof, be shared by State and local agencies; and the estimated cost to the United States of acquiring necessary lands and interests in land and of administering the area as a component of the system. Each such report shall be printed as a Senate or House document.

Report, maps,
etc.

Printing as
Senate or
House document.

(b) Before submitting any such report to the President and the Congress, copies of the proposed report shall, unless it was prepared jointly by the Secretary of the Interior and the Secretary of Agriculture, be submitted by the Secretary of the Interior to the Secretary of Agriculture or by the Secretary of Agriculture to the Secretary of the Interior, as the case may be, and to the Secretary of the Army, the Chairman of the Federal Power Commission, the head of any other affected Federal department or agency and, unless the lands proposed to be included in the area are already owned by the United States or have already been authorized for acquisition by Act of Congress, the Governor of the State or States in which they are located or an officer designated by the Governor to receive the same. Any recommendations or comments on the proposal which the said officials furnish the Secretary or Secretaries who prepared the report within ninety days of the date on which the report is submitted to them, together with the Secretary's or Secretaries' comments thereon, shall be included with the transmittal to the President and the Congress. No river or portion of any river shall be added to the national wild and scenic rivers system subsequent to enactment of this Act until the close of the next full session of the State legislature, or legislatures in case more than one

State is involved, which begins following the submission of any recommendation to the President with respect to such addition as herein provided.

Publication in
Federal Register.

(c) Before approving or disapproving for inclusion in the national wild and scenic rivers system any river designated as a wild, scenic or recreational river by or pursuant to an act of a State legislature, the Secretary of the Interior shall submit the proposal to the Secretary of Agriculture, the Secretary of the Army, the Chairman of the Federal Power Commission, and the head of any other affected Federal department or agency and shall evaluate and give due weight to any recommendations or comments which the said officials furnish him within ninety days of the date on which it is submitted to them. If he approves the proposed inclusion, he shall publish notice thereof in the Federal Register.

Potential
additions.
Designation.

SEC. 5. (a) The following rivers are hereby designated for potential addition to the national wild and scenic rivers system:

(1) Allegheny, Pennsylvania: The segment from its mouth to the town of East Brady, Pennsylvania.

(2) Bruneau, Idaho: The entire main stem.

(3) Buffalo, Tennessee: The entire river.

(4) Chattooga, North Carolina, South Carolina, and Georgia: The entire river.

(5) Clarion, Pennsylvania: The segment between Ridgway and its confluence with the Allegheny River.

(6) Delaware, Pennsylvania and New York: The segment from Hancock, New York, to Matamoras, Pennsylvania.

(7) Flathead, Montana: The North Fork from the Canadian border downstream to its confluence with the Middle Fork; the Middle Fork from its headwaters to its confluence with the South Fork; and the South Fork from its origin to Hungry Horse Reservoir.

(8) Gasconade, Missouri: The entire river.

(9) Illinois, Oregon: The entire river.

(10) Little Beaver, Ohio: The segment of the North and Middle Forks of the Little Beaver River in Columbiana County from a point in the vicinity of Negly and Elkton, Ohio, downstream to a point in the vicinity of East Liverpool, Ohio.

(11) Little Miami, Ohio: That segment of the main stem of the river, exclusive of its tributaries, from a point at the Warren-Clermont County line at Loveland, Ohio, upstream to the sources of Little Miami including North Fork.

(12) Maumee, Ohio and Indiana: The main stem from Perrysburg, Ohio, to Fort Wayne, Indiana, exclusive of its tributaries in Ohio and inclusive of its tributaries in Indiana.

(13) Missouri, Montana: The segment between Fort Benton and Ryan Island.

(14) Moyle, Idaho: The segment from the Canadian border to its confluence with the Kootenai River.

(15) Obed, Tennessee: The entire river and its tributaries, Clear Creek and Daddys Creek.

(16) Penobscot, Maine: Its east and west branches.

(17) Pere Marquette, Michigan: The entire river.

(18) Pine Creek, Pennsylvania: The segment from Ansonia to Waterville.

(19) Priest, Idaho: The entire main stem.

(20) Rio Grande, Texas: The portion of the river between the west boundary of Hudspeth County and the east boundary of Terrell County on the United States side of the river: *Provided*, That before undertaking any study of this potential scenic river, the Secretary of the Interior shall determine, through the channels of appropriate

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executive agencies, that Mexico has no objection to its being included among the studies authorized by this Act.

(21) Saint Croix, Minnesota and Wisconsin: The segment between the dam near Taylors Falls and its confluence with the Mississippi River.

(22) Saint Joe, Idaho: The entire main stem.

(23) Salmon, Idaho: The segment from the town of North Fork to its confluence with the Snake River.

(24) Skagit, Washington: The segment from the town of Mount Vernon to and including the mouth of Bacon Creek; the Cascade River between its mouth and the junction of its North and South Forks; the South Fork to the boundary of the Glacier Peak Wilderness Area; the Suitttle River from its mouth to the Glacier Peak Wilderness Area boundary at Milk Creek; the Sauk River from its mouth to its junction with Elliott Creek; the North Fork of the Sauk River from its junction with the South Fork of the Sauk to the Glacier Peak Wilderness Area boundary.

(25) Suwannee, Georgia and Florida: The entire river from its source in the Okefenokee Swamp in Georgia to the gulf and the outlying Ichetucknee Springs, Florida.

(26) Upper Iowa, Iowa: The entire river.

(27) Youghiogheny, Maryland and Pennsylvania: The segment from Oakland, Maryland, to the Youghiogheny Reservoir, and from the Youghiogheny Dam downstream to the town of Connellsville, Pennsylvania.

(b) The Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture shall proceed as expeditiously as possible to study each of the rivers named in subsection (a) of this section in order to determine whether it should be included in the national wild and scenic rivers system. Such studies shall be completed and reports made thereon to the President and the Congress, as provided in section 4 of this Act, within ten years from the date of this Act: *Provided, however,* That with respect to the Suwannee River, Georgia and Florida, and the Upper Iowa River, Iowa, such study shall be completed and reports made thereon to the President and the Congress, as provided in section 4 of this Act, within two years from the date of enactment of this Act. In conducting these studies the Secretary of the Interior and the Secretary of Agriculture shall give priority to those rivers with respect to which there is the greatest likelihood of developments which, if undertaken, would render them unsuitable for inclusion in the national wild and scenic rivers system. Studies.

(c) The study of any of said rivers shall be pursued in as close cooperation with appropriate agencies of the affected State and its political subdivisions as possible, shall be carried on jointly with such agencies if request for such joint study is made by the State, and shall include a determination of the degree to which the State or its political subdivisions might participate in the preservation and administration of the river should it be proposed for inclusion in the national wild and scenic rivers system.

(d) In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potentials. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved.

Land acquisition. SEC. 6. (a) The Secretary of the Interior and the Secretary of Agriculture are each authorized to acquire lands and interests in land within the authorized boundaries of any component of the national wild and scenic rivers system designated in section 3 of this Act, or hereafter designated for inclusion in the system by Act of Congress, which is administered by him, but he shall not acquire fee title to an average of more than 100 acres per mile on both sides of the river. Lands owned by a State may be acquired only by donation, and lands owned by an Indian tribe or a political subdivision of a State may not be acquired without the consent of the appropriate governing body thereof as long as the Indian tribe or political subdivision is following a plan for management and protection of the lands which the Secretary finds protects the land and assures its use for purposes consistent with this Act. Money appropriated for Federal purposes from the land and water conservation fund shall, without prejudice to the use of appropriations from other sources, be available to Federal departments and agencies for the acquisition of property for the purposes of this Act.

(b) If 50 per centum or more of the entire acreage within a federally administered wild, scenic or recreational river area is owned by the United States, by the State or States within which it lies, or by political subdivisions of those States, neither Secretary shall acquire fee title to any lands by condemnation under authority of this Act. Nothing contained in this section, however, shall preclude the use of condemnation when necessary to clear title or to acquire scenic easements or such other easements as are reasonably necessary to give the public access to the river and to permit its members to traverse the length of the area or of selected segments thereof.

(c) Neither the Secretary of the Interior nor the Secretary of Agriculture may acquire lands by condemnation, for the purpose of including such lands in any national wild, scenic or recreational river area, if such lands are located within any incorporated city, village, or borough which has in force and applicable to such lands a duly adopted, valid zoning ordinance that conforms with the purposes of this Act. In order to carry out the provisions of this subsection the appropriate Secretary shall issue guidelines, specifying standards for local zoning ordinances, which are consistent with the purposes of this Act. The standards specified in such guidelines shall have the object of (A) prohibiting new commercial or industrial uses other than commercial or industrial uses which are consistent with the purposes of this Act, and (B) the protection of the bank lands by means of acreage, frontage, and setback requirements on development.

(d) The appropriate Secretary is authorized to accept title to non-Federal property within the authorized boundaries of any federally administered component of the national wild and scenic rivers system designated in section 3 of this Act or hereafter designated for inclusion in the system by Act of Congress and, in exchange therefor, convey to the grantor any federally owned property which is under his jurisdiction within the State in which the component lies and which he classifies as suitable for exchange or other disposal. The values of the properties so exchanged either shall be approximately equal or, if they are not approximately equal, shall be equalized by the payment of cash to the grantor or to the Secretary as the circumstances require.

(e) The head of any Federal department or agency having administrative jurisdiction over any lands or interests in land within the authorized boundaries of any federally administered component of the national wild and scenic rivers system designated in section 3 of this Act or hereafter designated for inclusion in the system by Act of Congress is authorized to transfer to the appropriate secretary jurisdic-

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tion over such lands for administration in accordance with the provisions of this Act. Lands acquired by or transferred to the Secretary of Agriculture for the purposes of this Act within or adjacent to a national forest shall upon such acquisition or transfer become national forest lands.

(f) The appropriate Secretary is authorized to accept donations of lands and interests in land, funds, and other property for use in connection with his administration of the national wild and scenic rivers system.

(g) (1) Any owner or owners (hereinafter in this subsection referred to as "owner") of improved property on the date of its acquisition, may retain for themselves and their successors or assigns a right of use and occupancy of the improved property for noncommercial residential purposes for a definite term not to exceed twenty-five years or, in lieu thereof, for a term ending at the death of the owner, or the death of his spouse, or the death of either or both of them. The owner shall elect the term to be reserved. The appropriate Secretary shall pay to the owner the fair market value of the property on the date of such acquisition less the fair market value on such date of the right retained by the owner.

(2) A right of use and occupancy retained pursuant to this subsection shall be subject to termination whenever the appropriate Secretary is given reasonable cause to find that such use and occupancy is being exercised in a manner which conflicts with the purposes of this Act. In the event of such a finding, the Secretary shall tender to the holder of that right an amount equal to the fair market value of that portion of the right which remains unexpired on the date of termination. Such right of use or occupancy shall terminate by operation of law upon tender of the fair market price.

Right of use
and occupancy.

(3) The term "improved property", as used in this Act, means a detached, one-family dwelling (hereinafter referred to as "dwelling"), the construction of which was begun before January 1, 1967, together with so much of the land on which the dwelling is situated, the said land being in the same ownership as the dwelling, as the appropriate Secretary shall designate to be reasonably necessary for the enjoyment of the dwelling for the sole purpose of noncommercial residential use, together with any structures accessory to the dwelling which are situated on the land so designated.

"Improved
property."

Sec. 7. (a) The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act (41 Stat. 1063), as amended (16 U.S.C. 791a et seq.), on or directly affecting any river which is designated in section 3 of this Act as a component of the national wild and scenic rivers system or which is hereafter designated for inclusion in that system, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration. Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or unreasonably diminish the scenic, recreational, and fish and wildlife values present in the area on the date of approval of this Act. No department or agency of the United States shall recommend authorization of any water resources project that would have a direct and adverse effect on the values for which such river was established, as determined by the Secretary charged with its administration, or request appropriations to begin

Water resources
projects.
Restrictions.

construction of any such project, whether heretofore or hereafter authorized, without advising the Secretary of the Interior or the Secretary of Agriculture, as the case may be, in writing of its intention so to do at least sixty days in advance, and without specifically reporting to the Congress in writing at the time it makes its recommendation or request in what respect construction of such project would be in conflict with the purposes of this Act and would affect the component and the values to be protected by it under this Act.

(b) The Federal Power Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line, or other project works under the Federal Power Act, as amended, on or directly affecting any river which is listed in section 5, subsection (a), of this Act, and no department or agency of the United States shall assist by loan, grant, license, or otherwise in the construction of any water resources project that would have a direct and adverse effect on the values for which such river might be designated, as determined by the Secretary responsible for its study or approval—

(i) during the five-year period following enactment of this Act unless, prior to the expiration of said period, the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, on the basis of study, conclude that such river should not be included in the national wild and scenic rivers system and publish notice to that effect in the Federal Register, and

(ii) during such additional period thereafter as, in the case of any river which is recommended to the President and the Congress for inclusion in the national wild and scenic rivers system, is necessary for congressional consideration thereof or, in the case of any river recommended to the Secretary of the Interior for inclusion in the national wild and scenic rivers system under section 2(a) (ii) of this Act, is necessary for the Secretary's consideration thereof, which additional period, however, shall not exceed three years in the first case and one year in the second.

Nothing contained in the foregoing sentence, however, shall preclude licensing of, or assistance to, developments below or above a potential wild, scenic or recreational river area or on any stream tributary thereto which will not invade the area or diminish the scenic, recreational, and fish and wildlife values present in the potential wild, scenic or recreational river area on the date of approval of this Act. No department or agency of the United States shall, during the periods hereinbefore specified, recommend authorization of any water resources project on any such river or request appropriations to begin construction of any such project, whether heretofore or hereafter authorized, without advising the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture in writing of its intention so to do at least sixty days in advance of doing so and without specifically reporting to the Congress in writing at the time it makes its recommendation or request in what respect construction of such project would be in conflict with the purposes of this Act and would affect the component and the values to be protected by it under this Act.

(c) The Federal Power Commission and all other Federal agencies shall, promptly upon enactment of this Act, inform the Secretary of the Interior and, where national forest lands are involved, the Secretary of Agriculture, of any proceedings, studies, or other activities within their jurisdiction which are now in progress and which affect or may affect any of the rivers specified in section 5, subsection (a), of this Act. They shall likewise inform him of any such proceedings, studies, or other activities which are hereafter commenced or resumed before they are commenced or resumed.

49 Stat. 863.
16 USC 791a.

Publication
in Federal
Register.

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(d) Nothing in this section with respect to the making of a loan or grant shall apply to grants made under the Land and Water Conservation Fund Act of 1965 (78 Stat. 897; 16 U.S.C. 4601-5 et seq.).

SEC. 8. (a) All public lands within the authorized boundaries of any component of the national wild and scenic rivers system which is designated in section 3 of this Act or which is hereafter designated for inclusion in that system are hereby withdrawn from entry, sale, or other disposition under the public land laws of the United States.

(b) All public lands which constitute the bed or bank, or are within one-quarter mile of the bank, of any river which is listed in section 5, subsection (a), of this Act are hereby withdrawn from entry, sale, or other disposition under the public land laws of the United States for the periods specified in section 7, subsection (b), of this Act.

SEC. 9. (a) Nothing in this Act shall affect the applicability of the United States mining and mineral leasing laws within components of the national wild and scenic rivers system except that—

Mining and
mineral leasing
laws.

(i) all prospecting, mining operations, and other activities on mining claims which, in the case of a component of the system designated in section 3 of this Act, have not heretofore been perfected or which, in the case of a component hereafter designated pursuant to this Act or any other Act of Congress, are not perfected before its inclusion in the system and all mining operations and other activities under a mineral lease, license, or permit issued or renewed after inclusion of a component in the system shall be subject to such regulations as the Secretary of the Interior or, in the case of national forest lands, the Secretary of Agriculture may prescribe to effectuate the purposes of this Act;

(ii) subject to valid existing rights, the perfection of, or issuance of a patent to, any mining claim affecting lands within the system shall confer or convey a right or title only to the mineral deposits and such rights only to the use of the surface and the surface resources as are reasonably required to carrying on prospecting or mining operations and are consistent with such regulations as may be prescribed by the Secretary of the Interior or, in the case of national forest lands, by the Secretary of Agriculture; and

(iii) subject to valid existing rights, the minerals in Federal lands which are part of the system and constitute the bed or bank or are situated within one-quarter mile of the bank of any river designated a wild river under this Act or any subsequent Act are hereby withdrawn from all forms of appropriation under the mining laws and from operation of the mineral leasing laws including, in both cases, amendments thereto.

Regulations issued pursuant to paragraphs (i) and (ii) of this subsection shall, among other things, provide safeguards against pollution of the river involved and unnecessary impairment of the scenery within the component in question.

(b) The minerals in any Federal lands which constitute the bed or bank or are situated within one-quarter mile of the bank of any river which is listed in section 5, subsection (a) of this Act are hereby withdrawn from all forms of appropriation under the mining laws during the periods specified in section 7, subsection (b) of this Act. Nothing contained in this subsection shall be construed to forbid prospecting or the issuance of leases, licenses, and permits under the mineral leasing laws subject to such conditions as the Secretary of the Interior and, in the case of national forest lands, the Secretary of Agriculture find appropriate to safeguard the area in the event it is subsequently included in the system.

Administration.

SEC. 10. (a) Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.

16 USC 1131
note.

(b) Any portion of a component of the national wild and scenic rivers system that is within the national wilderness preservation system, as established by or pursuant to the Act of September 3, 1964 (78 Stat. 890; 16 U.S.C., ch. 23), shall be subject to the provisions of both the Wilderness Act and this Act with respect to preservation of such river and its immediate environment, and in case of conflict between the provisions of these Acts the more restrictive provisions shall apply.

(c) Any component of the national wild and scenic rivers system that is administered by the Secretary of the Interior through the National Park Service shall become a part of the national park system, and any such component that is administered by the Secretary through the Fish and Wildlife Service shall become a part of the national wildlife refuge system. The lands involved shall be subject to the provisions of this Act and the Acts under which the national park system or national wildlife system, as the case may be, is administered, and in case of conflict between the provisions of these Acts, the more restrictive provisions shall apply. The Secretary of the Interior, in his administration of any component of the national wild and scenic rivers system, may utilize such general statutory authorities relating to areas of the national park system and such general statutory authorities otherwise available to him for recreation and preservation purposes and for the conservation and management of natural resources as he deems appropriate to carry out the purposes of this Act.

(d) The Secretary of Agriculture, in his administration of any component of the national wild and scenic rivers system area, may utilize the general statutory authorities relating to the national forests in such manner as he deems appropriate to carry out the purposes of this Act.

Cooperative
agreements with
State or local
governments.

(e) The Federal agency charged with the administration of any component of the national wild and scenic rivers system may enter into written cooperative agreements with the Governor of a State, the head of any State agency, or the appropriate official of a political subdivision of a State for State or local governmental participation in the administration of the component. The States and their political subdivisions shall be encouraged to cooperate in the planning and administration of components of the system which include or adjoin State- or county-owned lands.

Assistance in
financing State
and local proj-
ects.

16 USC 4601-4
note.

16 USC 4601-
4601-3.

SEC. 11. (a) The Secretary of the Interior shall encourage and assist the States to consider, in formulating and carrying out their comprehensive statewide outdoor recreation plans and proposals for financing assistance for State and local projects submitted pursuant to the Land and Water Conservation Fund Act of 1965 (78 Stat. 897), needs and opportunities for establishing State and local wild, scenic and recreational river areas. He shall also, in accordance with the authority contained in the Act of May 28, 1963 (77 Stat. 49), provide technical assistance and advice to, and cooperate with, States, political subdivisions, and private interests, including nonprofit organizations, with respect to establishing such wild, scenic and recreational river areas.

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(b) The Secretaries of Agriculture and of Health, Education, and Welfare shall likewise, in accordance with the authority vested in them, assist, advise, and cooperate with State and local agencies and private interests with respect to establishing such wild, scenic and recreational river areas.

SEC. 12. (a) The Secretary of the Interior, the Secretary of Agriculture, and heads of other Federal agencies shall review administrative and management policies, regulations, contracts, and plans affecting lands under their respective jurisdictions which include, border upon, or are adjacent to the rivers listed in subsection (a) of section 5 of this Act in order to determine what actions should be taken to protect such rivers during the period they are being considered for potential addition to the national wild and scenic rivers system. Particular attention shall be given to scheduled timber harvesting, road construction, and similar activities which might be contrary to the purposes of this Act.

Administration
and management
policies.
Review.

(b) Nothing in this section shall be construed to abrogate any existing rights, privileges, or contracts affecting Federal lands held by any private party without the consent of said party.

(c) The head of any agency administering a component of the national wild and scenic rivers system shall cooperate with the Secretary of the Interior and with the appropriate State water pollution control agencies for the purpose of eliminating or diminishing the pollution of waters of the river.

SEC. 13. (a) Nothing in this Act shall affect the jurisdiction or responsibilities of the States with respect to fish and wildlife. Hunting and fishing shall be permitted on lands and waters administered as parts of the system under applicable State and Federal laws and regulations unless, in the case of hunting, those lands or waters are within a national park or monument. The administering Secretary may, however, designate zones where, and establish periods when, no hunting is permitted for reasons of public safety, administration, or public use and enjoyment and shall issue appropriate regulations after consultation with the wildlife agency of the State or States affected.

Fish and wild-
life.
Jurisdiction
under State
and Federal
laws.

(b) The jurisdiction of the States and the United States over waters of any stream included in a national wild, scenic or recreational river area shall be determined by established principles of law. Under the provisions of this Act, any taking by the United States of a water right which is vested under either State or Federal law at the time such river is included in the national wild and scenic rivers system shall entitle the owner thereof to just compensation. Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.

Compensation
for water
rights.

(c) Designation of any stream or portion thereof as a national wild, scenic or recreational river area shall not be construed as a reservation of the waters of such streams for purposes other than those specified in this Act, or in quantities greater than necessary to accomplish these purposes.

(d) The jurisdiction of the States over waters of any stream included in a national wild, scenic or recreational river area shall be unaffected by this Act to the extent that such jurisdiction may be exercised without impairing the purposes of this Act or its administration.

82 STAT. 917

(e) Nothing contained in this Act shall be construed to alter, amend, repeal, interpret, modify, or be in conflict with any interstate compact made by any States which contain any portion of the national wild and scenic rivers system.

82 STAT. 918

(f) Nothing in this Act shall affect existing rights of any State, including the right of access, with respect to the beds of navigable streams, tributaries, or rivers (or segments thereof) located in a national wild, scenic or recreational river area.

Pub. Law 90-542

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October 2, 1968

82 STAT. 918.

Easements and
rights-of-way.

(g) The Secretary of the Interior or the Secretary of Agriculture, as the case may be, may grant easements and rights-of-way upon, over, under, across, or through any component of the national wild and scenic rivers system in accordance with the laws applicable to the national park system and the national forest system, respectively: *Provided*, That any conditions precedent to granting such easements and rights-of-way shall be related to the policy and purpose of this Act.

Claim and allow-
ance as chari-
table contri-
bution or gift.
76 Stat. 1034.
68A Stat. 410.

SEC. 14. The claim and allowance of the value of an easement as a charitable contribution under section 170 of title 26, United States Code, or as a gift under section 2522 of said title shall constitute an agreement by the donor on behalf of himself, his heirs, and assigns that, if the terms of the instrument creating the easement are violated, the donee or the United States may acquire the servient estate at its fair market value as of the time the easement was donated minus the value of the easement claimed and allowed as a charitable contribution or gift.

Definitions.

SEC. 15. As used in this Act, the term—

(a) "River" means a flowing body of water or estuary or a section, portion, or tributary thereof, including rivers, streams, creeks, runs, kills, rills, and small lakes.

(b) "Free-flowing", as applied to any river or section of a river, means existing or flowing in natural condition without impoundment, diversion, straightening, rip-rapping, or other modification of the waterway. The existence, however, of low dams, diversion works, and other minor structures at the time any river is proposed for inclusion in the national wild and scenic rivers system shall not automatically bar its consideration for such inclusion: *Provided*, That this shall not be construed to authorize, intend, or encourage future construction of such structures within components of the national wild and scenic rivers system.

(c) "Scenic easement" means the right to control the use of land (including the air space above such land) for the purpose of protecting the scenic view from the river, but such control shall not affect, without the owner's consent, any regular use exercised prior to the acquisition of the easement.

Appropriations.

SEC. 16. There are hereby authorized to be appropriated such sums as may be necessary, but not more than \$17,000,000, for the acquisition of lands and interests in land under the provisions of this Act.

Approved October 2, 1968.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 1623 accompanying H. R. 18260 (Comm. on Interior & Insular Affairs) and No. 1917 (Comm. of Conference).

C: PUBLIC LAW 92-560



Public Law 92-560
92nd Congress, S. 1928
October 25, 1972

An Act

86 STAT. 1174

To amend the Wild and Scenic Rivers Act by designating a segment of the Saint Croix River, Minnesota and Wisconsin, as a component of the national wild and scenic rivers system.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Lower Saint Croix River Act of 1972".

Lower Saint
Croix River
Act of 1972.

SEC. 2. Section 3(a) of the Wild and Scenic Rivers Act (82 Stat. 907; 16 U.S.C. 1274(a)) is amended by adding at the end thereof the following:

"(9) LOWER SAINT CROIX, MINNESOTA AND WISCONSIN.—The segment between the dam near Taylors Falls and its confluence with the Mississippi River: *Provided*, (1) That the upper twenty-seven miles of this river segment shall be administered by the Secretary of the Interior; and (2) That the lower twenty-five miles shall be designated by the Secretary upon his approval of an application for such designation made by the Governors of the States of Minnesota and Wisconsin."

SEC. 3. The Secretary of the Interior shall, within one year following the date of enactment of this Act, take, with respect to the Lower Saint Croix River segment, such action as is provided for under section 3(b) of the Wild and Scenic Rivers Act: *Provided*, That (a) the action required by such section shall be undertaken jointly by the Secretary and the appropriate agencies of the affected States; (b) the development plan required by such section shall be construed to be a comprehensive master plan which shall include, but not be limited to, a determination of the lands, waters, and interests therein to be acquired, developed, and administered by the agencies or political subdivisions of the affected States; and (c) such development plan shall provide for State administration of the lower twenty-five miles of the Lower Saint Croix River segment and for continued administration by the States of Minnesota and Wisconsin of such State parks and fish hatcheries as now lie within the twenty-seven-mile segment to be administered by the Secretary of the Interior.

Development
plan.

SEC. 4. Notwithstanding any provision of the Wild and Scenic Rivers Act which limits acquisition authority within a river segment to be administered by a Federal agency, the States of Minnesota and Wisconsin may acquire within the twenty-seven-mile segment of the Lower Saint Croix River segment to be administered by the Secretary of the Interior such lands as may be proposed for their acquisition, development, operation, and maintenance pursuant to the development plan required by section 3 of this Act.

Land acquisition.

SEC. 5. Nothing in this Act shall be deemed to impair or otherwise affect such statutory authority as may be vested in the Secretary of the Department in which the Coast Guard is operating or the Secretary of the Army for the maintenance of navigation aids and navigation improvements.

Navigation
aids.

SEC. 6. (a) There are authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act, but not to exceed \$7,275,000 for the acquisition and development of lands and interests therein within the boundaries of the twenty-seven-mile segment of the Lower Saint Croix River segment to be administered by the Secretary of the Interior.

Appropriation.

Limitation.

(b) No funds otherwise authorized to be appropriated by this section shall be expended by the Secretary of the Interior until he has determined that the States of Minnesota and Wisconsin have initiated such land acquisition and development as may be proposed pursuant to the development plan required by section 3 of this Act, and in no event shall the Secretary of the Interior expend more than \$2,550,000 of the funds authorized to be appropriated by this section in the first fiscal year following completion of the development plan required by section 3 of this Act. The balance of funds authorized to be appropriated by this section shall be expended by the Secretary of the Interior at such times as he finds that the States of Minnesota and Wisconsin have made satisfactory progress in their implementation of the development plan required by section 3 of this Act.

Approved October 25, 1972.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 92-1579 (Comm. on Interior and Insular Affairs).

SENATE REPORT No. 92-1279 (Comm. on Interior and Insular Affairs).

CONGRESSIONAL RECORD, Vol. 118 (1972):

Oct. 9, considered and passed Senate.

Oct. 13, considered and passed House.

WEEKLY COMPILATION OF PRESIDENTIAL DOCUMENTS, Vol. 8, No. 44:

Oct. 28, Presidential statement.



Public Law 93-621
93rd Congress, S. 3022
January 3, 1975

An Act

88 STAT. 2094

To amend the Wild and Scenic Rivers Act (82 Stat. 906), as amended, to designate segments of certain rivers for possible inclusion in the national wild and scenic rivers system; to amend the Lower Saint Croix River Act of 1972 (86 Stat. 1174), and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Wild and Scenic Rivers Act (82 Stat. 906), as amended, is further amended as follows:

Wild and
Scenic Rivers
Act, amend-
ments.
16 USC 1276.

(a) In subsection (a) of section 5 after paragraph (27) insert the following new paragraphs:

"(28) American, California: The North Fork from the Cedars to the Auburn Reservoir.

"(29) Au Sable, Michigan: The segment downstream from Foot Dam to Oscoda and upstream from Loud Reservoir to its source, including its principal tributaries and excluding Mio and Bamfield Reservoirs.

"(30) Big Thompson, Colorado: The segment from its source to the boundary of Rocky Mountain National Park.

"(31) Cache la Poudre, Colorado: Both forks from their sources to their confluence, thence the Cache la Poudre to the eastern boundary of Roosevelt National Forest.

"(32) Cahaba, Alabama: The segment from its junction with United States Highway 31 south of Birmingham downstream to its junction with United States Highway 80 west of Selma.

"(33) Clarks Fork, Wyoming: The segment from the Clark's Fork Canyon to the Crandall Creek Bridge.

"(34) Colorado, Colorado and Utah: The segment from its confluence with the Dolores River, Utah, upstream to a point 19.5 miles from the Utah-Colorado border in Colorado.

"(35) Conejos, Colorado: The three forks from their sources to their confluence, thence the Conejos to its first junction with State Highway 17, excluding Platoro Reservoir.

"(36) Elk, Colorado: The segment from its source to Clark.

"(37) Encampment, Colorado: The Main Fork and West Fork to their confluence, thence the Encampment to the Colorado-Wyoming border, including the tributaries and headwaters.

"(38) Green, Colorado: The entire segment within the State of Colorado.

"(39) Gunnison, Colorado: The segment from the upstream (southern) boundary of the Black Canyon of the Gunnison National Monument to its confluence with the North Fork.

"(40) Illinois, Oklahoma: The segment from Tenkiller Ferry Reservoir upstream to the Arkansas-Oklahoma border, including the Flint and Barren Fork Creeks.

"(41) John Day, Oregon: The main stem from Service Creek Bridge (at river mile 157) downstream to Tumwater Falls (at river mile 10).

"(42) Kettle, Minnesota: The entire segment within the State of Minnesota.

"(43) Los Pinos, Colorado: The segment from its source, including the tributaries and headwaters within the San Juan Primitive Area, to the northern boundary of the Granite Peak Ranch.

88 STAT. 2095

Pub. Law 93-621

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January 3, 1975

"(44) Manistee, Michigan: The entire river from its source to Manistee Lake, including its principal tributaries and excluding Tippy and Hadenpyl Reservoirs.

"(45) Nolichucky, Tennessee and North Carolina: The entire main stem.

"(46) Owyhee, South Fork, Oregon: The main stem from the Oregon-Idaho border downstream to the Owyhee Reservoir.

"(47) Piedra, Colorado: The Middle Fork and East Fork from their sources to their confluence, thence the Piedra to its junction with Colorado Highway 160, including the tributaries and headwaters on national forest lands.

"(48) Shepaug, Connecticut: The entire river.

"(49) Sipsey Fork, West Fork, Alabama: The segment, including its tributaries, from the impoundment formed by the Lewis M. Smith Dam upstream to its source in the William B. Bankhead National Forest.

"(50) Snake, Wyoming: The segment from the southern boundaries of Teton National Park to the entrance to Palisades Reservoir.

"(51) Sweetwater, Wyoming: The segment from Wilson Bar downstream to Spring Creek.

"(52) Tuolumne, California: The main river from its source on Mount Dana and Mount Lyell in Yosemite National Park to Don Pedro Reservoir.

"(53) Upper Mississippi, Minnesota: The segment from its source at the outlet of Itasca Lake to its junction with the northwestern boundary of the city of Anoka.

"(54) Wisconsin, Wisconsin: The segment from Prairie du Sac to its confluence with the Mississippi River at Prairie du Chien.

"(55) Yampa, Colorado: The segment within the boundaries of the Dinosaur National Monument.

"(56) Dolores, Colorado: The segment of the main stem from Rico upstream to its source, including its headwaters; the West Dolores from its source, including its headwaters, downstream to its confluence with the main stem; and the segment from the west boundary, section 2, township 38 north, range 16 west, NMPM, below the proposed McPhee Dam, downstream to the Colorado-Utah border, excluding the segment from one mile above Highway 90 to the confluence of the San Miguel River."

16 USC 1276.

Studies and reports.

(b) In section 5 reletter subsections (b) and (c) as (c) and (d), respectively, and insert a new subsection (b), as follows:

"(b)(1) The studies of rivers named in subparagraphs (28) through (55) of subsection (a) of this section shall be completed and reports thereon submitted by not later than October 2, 1979: *Provided*, That with respect to the rivers named in subparagraphs (33), (50), and (51), the Secretaries shall not commence any studies until (i) the State legislature has acted with respect to such rivers or (ii) one year from the date of enactment of this Act, whichever is earlier.

"(2) The study of the river named in subparagraph (56) of subsection (a) of this section shall be completed and the report thereon submitted by not later than January 3, 1976.

Appropriations.

"(3) There are authorized to be appropriated for the purpose of conducting the studies of the rivers named in subparagraphs (28) through (56) such sums as may be necessary, but not more than \$2,175,000."

January 3, 1975

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Pub. Law 93-621

88 STAT. 2096

(c) In clause (i) of subsection (b) of section 7 strike the final comma and the following word "and" and insert in lieu thereof a colon and the following proviso: "Provided, That if any Act designating any river or rivers for potential addition to the national wild and scenic rivers system provides a period for the study or studies which exceeds such three complete fiscal year period the period provided for in such Act shall be substituted for the three complete fiscal year period in the provisions of this clause (i); and".

16 USC 1278.

(d) In the fourth sentence of subsection (a) of section 4:

16 USC 1275.

(1) between "rivers" and "with" insert "(i)", and

(2) strike "system." and insert in lieu thereof "system, and (ii) which possess the greatest proportion of private lands within their areas."

SEC. 2. Subsection (a) of section 6 of the Lower Saint Croix River Act of 1972 (86 Stat. 1174) is amended by deleting "\$7,275,000" and inserting in lieu thereof "\$19,000,000".

16 USC 1274
note.

Approved January 3, 1975.

LEGISLATIVE HISTORY:

HOUSE REPORTS: No. 93-1359 accompanying H.R. 14791 (Comm. on Interior and Insular Affairs) and No. 93-1645 (Comm. on Conference).

SENATE REPORT No. 93-1207 (Comm. on Interior and Insular Affairs).

CONGRESSIONAL RECORD, Vol. 120 (1974):

Oct. 3, considered and passed Senate.

Nov. 18, considered and passed House, amended, in lieu of H.R. 14791.

Dec. 20, House and Senate agreed to conference report.

Crop Equivalent Ratings Calculation Examples

(1) Nicollet: Slope 2-6%, Less than 25% erosion $\frac{1}{1}$

	Corn	Soybean	Oats	Alf-Mix Hay	Other
% land use	50	20	10	5	15
Yield	120 bu	40 bu	85 bu	4.5T	
Unit price (dollars)	1.22	3.33	.68	22.00	
Gross value	146.40	133.20	57.80	99.00	
Per distrib. (A)	73.20	26.64	5.78	4.95	
Fixed costs	42.00	18.00	18.00	18.00	
Variable costs	42.00	23.00	18.00	22.00	
Total costs	60.00	41.00	36.00	40.00	
Per distrib. (B)	30.00	8.20	3.60	2.00	
Net (A-B)	43.20	18.44	2.18	2.95	

Total/net acre = 66.77

Let \$66.77 be equivalent to CER of 100

(2) Barbert: Slope 0-2%, Less than 25% eroision $\frac{1}{1}$

	Corn	Soybean	Oats	Alf-Mix Hay	Other
% land use	60	20	5	5	10
Yield	100 bu	35 bu	75 bu	4.0T	
Unit price (dollars)	1.22	3.33	.68	22.00	
Gross value	122.00	116.66	51.00	88.00	
Per distrib. (A)	73.20	23.30	2.55	4.40	
Fixed costs	18.00	18.00	18.00	18.00	
Variable costs	47.00	28.00	23.00	27.00	
Total costs	65.00	46.00	41.00	45.00	
Per distrib. (B)	39.00	9.20	2.05	2.25	
Net (A-B)	34.20	14.10	.50	2.15	

Total net/acre = 50.95

If 66.77 = 100 (CER)

Then $\frac{50.95}{66.77} \times 100 = 76$ (for CER)

(3) Bearden: Slope 0-2%, Less than 25% erosion.^{1/}

	Sugar Beets	Soybeans	Wheat	Oats	Barley	Alf-Hay	Pasture	Other
% land use	10	5	25	15	15	15	5	10
Yield	15T	20 bu	40 bu	70 bu	45 bu	3.6T	90 animal unit days	
Unit price (dollars)	15.00	3.33	2.15	.68	1.10	22.00	.20	
Gross value	225.00	66.60	86.00	47.60	49.50	79.20	18.00	
Per distrib. (A)	22.50	3.33	21.50	7.14	7.42	11.88	.90	
Fixed cost	10.00	8.00	8.00	8.00	8.00	8.00	8.00	
Variable cost	80.00	20.00	22.00	17.00	18.00	20.00	0	
Total cost	90.00	28.00	30.00	25.00	26.00	28.00	8.00	
Per distrib. (B)	9.00	1.40	7.50	3.75	3.90	4.20	.40	
Net (A-B)	13.50	1.93	14.00	3.39	3.52	7.68	.50	

B2

Total net acre = 44.52

If 66.77 = 100 (CER)

Then $\frac{44.52}{66.77} \times 100 = 67$ (for CER)

^{1/} [Rust and Hanson, 1975 p. 7].