

# Wild River State Park Management Plan



**Minnesota Department of Natural Resources  
Division of Parks and Recreation**

**February 2007**

## Minnesota Department of Natural Resources

500 Lafayette Road • St. Paul, MN • 55155-4037



### Department of Natural Resources Approval of Management Plan for Wild River State Park

Minnesota Statutes 86A §09, Subdivision 1, requires that a master plan be prepared for units of Minnesota's outdoor recreation system, including state parks and state recreation areas. The Laws of Minnesota for 1973 established Wild River State Park as part of Minnesota's Outdoor Recreation System (MS 85.013, Subd. 20a).

The Minnesota Department of Natural Resources worked in partnership with Minnesota citizens and an interdisciplinary resource team to develop a management plan for Wild River State Park.

The management plan was approved by the DNR Division of Parks and Recreation management team, and was approved through the DNR Regional Interdisciplinary Review Service (RIRS).

A handwritten signature in black ink that reads "Mark Holsten".

Mark Holsten, Commissioner  
Minnesota Department of Natural Resources

2-5-07

Date

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# Wild River State Park Management Plan



## Department of Natural Resources Division of Parks & Recreation

This management plan has been prepared as required by 2004 Minnesota Laws Chapter 86A.09 Subdivision 1.

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The development of this plan was greatly assisted by the members of the Wild River State Park Citizens Advisory Committee who donated many hours of their time to help analyze and discuss the current park issues, and make management recommendations.

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For more information on this management plan please contact the DNR Division of Parks and Recreation at (651) 259-5600. This document is available in alternative formats to individuals with disabilities upon request.

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# EXECUTIVE SUMMARY

This plan documents the work of a 12-month planning process and sets the general direction for the management of Wild River State Park for the next 20 years. Specific management prescriptions and operational details may change as new information becomes available or as budgets change. It is the responsibility of the park and regional staff, along with Minnesota's citizens, to determine the appropriate priorities and actions needed to implement these recommendations. Specific recommendations and discussions can be found in the individual chapters of the plan. A full listing of the recommended actions can be found in Appendix A.

## General Directions and Recommendations

The recreational use and visitor services section of this plan emphasizes that the park will seek to sustain its existing user experiences by maintaining a natural environment, while slightly expanding facilities to meet the growing needs of citizens who visit it. An important component of this vision is the enhancement of visitor experiences through interpretive materials and programming. With regard to its natural and cultural resources, the park will seek to restore its native plant communities, identify and protect rare species, and control invasive and problem species. This plan also recommends that conservation tools should be used in the areas adjacent to the park so that important native plant communities, species, open space and viewsheds will be protected. The park will strive to:

- Provide a comprehensive network of hiking opportunities that traverse the major landscapes of the park
- Provide for high quality classic ski trails for all skill levels
- Provide support facilities for all trail users to provide orientation, social gathering places, educational opportunities and scenic views
- Provide a variety of access opportunities to the St. Croix River including boat landings, camping sites and opportunities for shore fishing
- Provide opportunities for horseback riding on existing trails that are managed in a sustainable manner
- Provide for educational exhibits, kiosks, and information and orientation materials that provide for visitor safety, trail etiquette, and enhanced recreational experiences
- Provide a natural setting for overnight camping opportunities for all types of campers
- Provide for group camping
- Provide facilities and opportunities that are consistent with and complement those of the St. Croix National Scenic Riverway
- Provide for additional camper cabins to meet the expected demands of future visitors
- Expand marketing efforts to increase mid-week use
- Promote a spur trail from the Gateway or Munger Trail(s) that is consistent with the park's legislative mandates
- Provide for special events and recreational opportunities in partnership with other recreation providers
- Work with partners outside of the park in order to maintain the water quality of the tributaries that run through the park to the St. Croix River
- Work with Metro Conservation Corridors to preserve the integrity of habitat and wildlife migration routes along the St. Croix and Sunrise Rivers
- Continue to make protection of native plant communities, unfragmented habitat, and rare animal and plant populations a priority in managing the park
- Maintain the integrity of all known cultural sites and structures in the park
- Continue to focus on resource management and public involvement in the park through the Prairie Care program
- Maintain the Goose Creek area as a natural area with limited development





# INTRODUCTION

## Park Description

Wild River State Park encompasses 6768.69 acres and is located along 18 miles of the scenic St. Croix River in Chisago County, Minnesota. Despite the fact that the park is within an hour's drive of several communities<sup>1</sup>, it provides relatively intact natural communities and a natural character for its visitors (See Figure 1: Nearby Population Centers & State Parks). Moreover, because the natural and cultural history of the St. Croix River and its valley are uniquely riverine, the park and its resources are set apart from the rest of the region, offering visitors the chance to experience the quiet beauty of a river valley and its associated forests. People who visit the park appreciate the ability to experience relative solitude in a natural setting.

Wild River State Park was authorized in 1973 following the federal initiative that designated the St. Croix River as a National Scenic River. Its purpose is to identify, preserve, manage, and interpret the cultural and natural resources within its boundary while providing park visitors with resource-based recreational and educational opportunities. The legislation establishing the park is more prescriptive than that of most parks with respect to how the park is managed. It states in part,



*Wild River State Park shall be managed to preserve, perpetuate, and interpret natural features of the presettlement park area and other significant natural features that are present.... Park use shall be primarily for aesthetic, cultural, and educational purposes, and shall not be designed to accommodate all forms or unlimited volumes of recreational use. Physical development shall be limited to those facilities necessary to complement the natural features and the values being preserved.*

With this in mind, the park offers recreational opportunities for people who enjoy camping, hiking, horseback riding, canoeing, interpretive programs, and traditional cross-country skiing. The park also offers visitors the opportunity to contribute to its prairie and savanna restoration efforts through its Prairie Care program. In 2003, the park's total attendance was 168,615. The Friends of Wild River State Park play a major role in supporting the park's mission.

## Legislative History

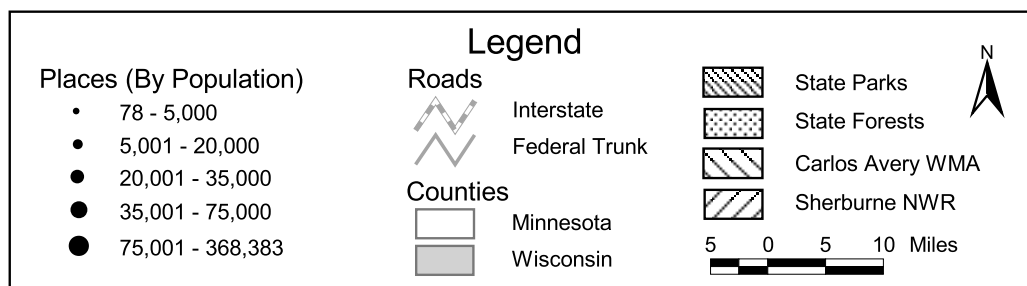
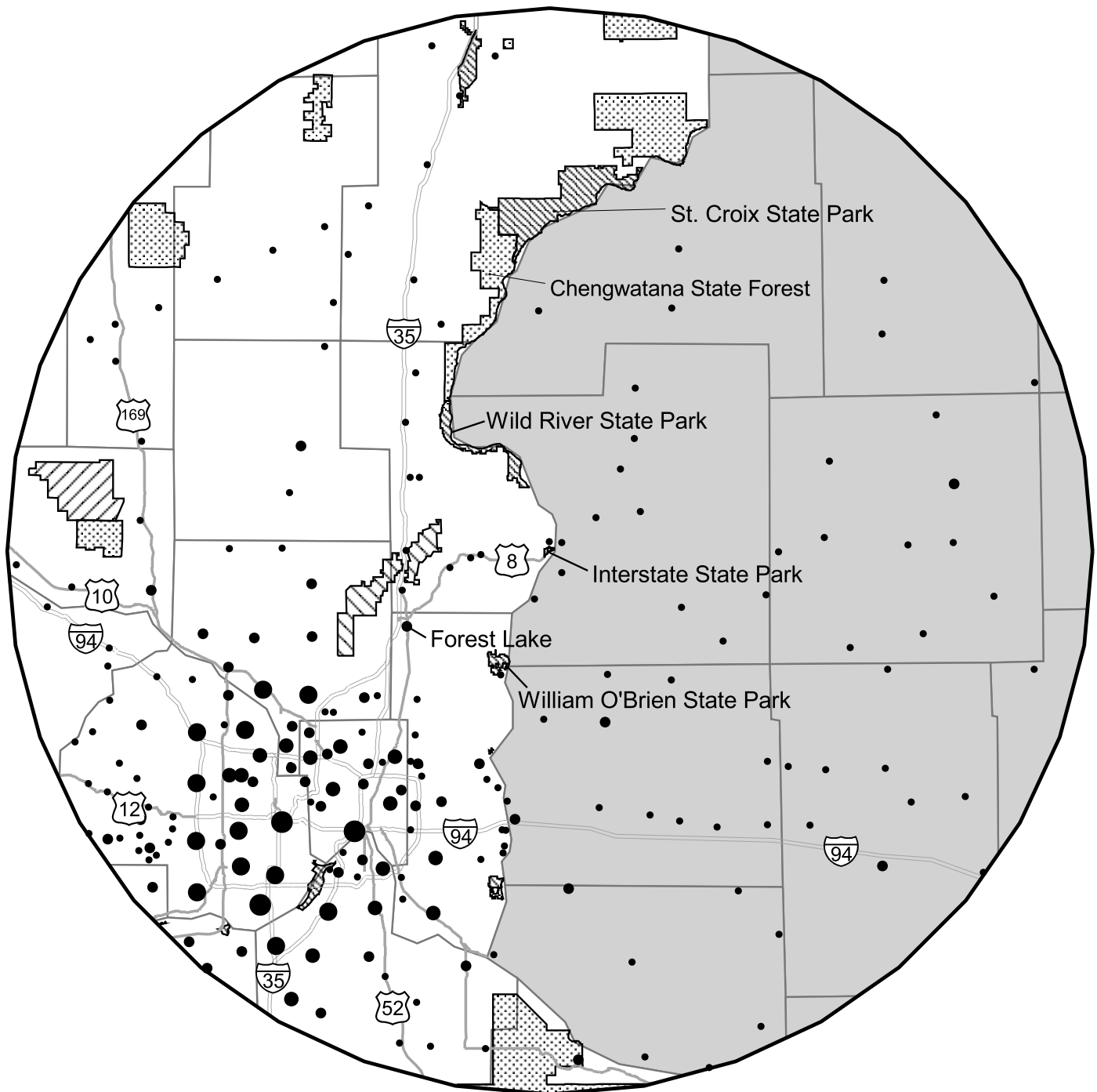
The late Judge C.R. Magney was the first to discuss the possibility of a park in this area. In the early 1930s he initiated discussions with the Northern States Power Company (NSP). The idea next surfaced in the 1950s when he brought the idea to the attention of the Minnesota Department of Conservation (now called the Minnesota Department of Natural Resources). Commissioner Herbst (then a forester) was interested in preserving the St. Croix River Valley. In 1962, NSP officials contacted the Minnesota Department of Conservation about using NSP's land within the St. Croix River Valley for conservation purposes.

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<sup>1</sup> (the park is located approximately 15 miles from Interstate 35/North Branch, 80 miles south of Duluth, and 50 miles north of the Minneapolis-St. Paul metropolitan area)

# Wild River State Park

Figure 1: Nearby Population Centers & State Parks



In 1968, NSP created a task force with representation from the National Park Service, the Minnesota Department of Conservation, and the Wisconsin Department of Natural Resources. Its purpose was to plan for the restoration and preservation of the St. Croix valley. As a result of these discussions, the federal legislation establishing the St. Croix as a Wild and Scenic River included a state park to be part of the complex.

In 1969 and 1971 bills were introduced at the Minnesota State Legislature to establish Sunrise State Park along the St. Croix River. For a variety of reasons these bills failed. In 1973, Senator Jerald C. Anderson and Representative John E. Boland authored companion bills to establish St. Croix Wild River State Park. The bill provided for a "wild river state park which shall be managed to preserve, perpetuate and interpret the natural features of the pre-settlement era and other significant natural features that were present." The park was to be 6,706 acres of which approximately 4,600 acres would be acquired through a gift from NSP. It further provided that the development for use should be limited to recreational activities consistent with the preservation of the unique values inherent to it. The bill passed in 1973 establishing St. Croix Wild River State Park.

The park opened in October, 1978, with 76 semi-modern campsites, a primitive group camp, picnic grounds, 30 miles of trails, canoe campsites, a trail center and an interpretive center.

Legislation specific to Wild River State Park includes:

1973 Chapter 567 Section 4

Established St. Croix Wild River State Park and described the park statutory boundary.

1977 Chapter 109 Section 1

Stated that the park could not exceed in size the acreage contained within the boundary as established by law.

1980 Chapter 489 Section 1 Subd 8

Added land to the park statutory boundary.

1999 Chapter 157 Section 2 Subd 9

Added land to the park statutory boundary.

## Niche

Wild River State Park is one of a handful of state parks in this area of Minnesota and Wisconsin. Other nearby parks include: William O'Brien State Park in Washington County (1,520 acres), Interstate State Park (298 acres) in Chisago County, and St. Croix State Park (34,037 acres) in Pine County. Parks on the Wisconsin side include Interstate State Park (1,330 acres) in Polk County. The National Park Service manages the St. Croix National Scenic Riverway that connects all of these parks.

On the Minnesota side, Wild River State Park and St. Croix State Park contain a variety of large, relatively intact natural communities. This is in contrast to both Interstate and William O'Brien State Parks that are smaller and more heavily used. Most visitors to Wild River State Park state a preference for relative quiet and solitude. Over the years, management has understood this preference and has tried to accommodate visitors by providing low impact recreational experiences so that visitors do not ever feel like the park is over-used.

## **Mission and Vision Statements**

A central part of the planning process for Wild River State Park was the development of mission and vision statements for the park. Both the Citizens Advisory Committee and the Technical Advisory Committee spent time articulating these statements.

The following mission and vision statements provide a look at the role of the MN Department of Natural Resources, the DNR Division of Parks and Recreation, and finally, Wild River State Park.

### **DNR Mission Statement**

"Our mission is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life."

### **DNR Division of Parks and Recreation Mission**

"We will work with people to provide a state park system which preserves and manages Minnesota's natural, scenic and cultural resources for present and future generations while providing appropriate recreational and educational opportunities."

### **Wild River State Park Mission Statement**

"To protect and perpetuate the diverse natural, cultural and scenic resources of the St. Croix River Valley for low impact use, and for enjoyment and education of people today and for those who choose to visit in the future."

### **Wild River State Park Vision Statement**

"In 20 years, we want Wild River State Park to be..."

- A place where people can come for relaxation and rejuvenation derived from nature
- A place that is beautiful and pristine
- A place where families and individuals are welcome to hike, bike, rollerblade, horseback ride, camp and picnic
- A place where the native species and plant communities are restored and maintained for future generations
- A place with dark night skies and natural noises
- A place that serves as a place of retreat and discovery for individuals and families
- A place where community outreach & environmental education programs have been continued and expanded
- A place that provides for year-round trails, linking Wild River State Park to Interstate State Park, and future opportunities for links to the Swedish Immigrant Trail, Sunrise Prairie Trail, and the Gateway/Willard Munger State Trail
- A place that maintains the architectural integrity of the original buildings in the repair & replacement of facilities
- A place where cultural sites are protected and interpreted
- A place where European buckthorn and other invasive species have been controlled so that native species can flourish
- A place where the populations of deer are managed so as not to negatively impact native flora
- A place that protects and enhances water quality in the St. Croix River and its tributaries
- A place where recreational opportunities are provided that minimize conflict between user groups
- A place where natural resources are connected to the larger landscape and natural corridors in the region
- A place where a variety of native species are maintained including insects, reptiles, amphibians, birds and mammals
- A place where visitor use is monitored to prevent resource impacts
- A place where people can witness the rebirth of savanna in the Amador prairie area
- A place that is a learning center, especially for children

- A place that supports new and creative transportation systems such as bikeways and the scenic byway system

## Unit Planning Process

The Wild River State Park planning effort began in the spring of 2004. Two planning teams were established to provide input into the process:

**Wild River Citizens Advisory Committee (CAC):** This group consisted of representatives from academic institutions, county and local governments, area tourism providers, various stakeholder groups, and the general public. This team met monthly during the fall and winter of 2004-2005 to discuss management direction for the park. Team members were self-selected according to their personal and professional interests in the planning effort. Collectively, the team members represented a wide array of perspectives, volunteered their time throughout the planning effort, discussed policy, and helped formulate the management goals, objectives, strategies, and recommendations presented in this plan.

**Technical Team:** In addition to the citizens committee, an Interagency Technical Team met periodically to assist in the development of this management plan. The membership of this committee consisted primarily of the MN DNR Central Region staff plus representatives from the St. Croix National Scenic Riverway.

In order to get facility-specific information from visitors, the planning process developed a “facilities questionnaire” which was distributed to all citizens who attended the public meetings, and to all who were on the park’s mailing lists. Results from that questionnaire are discussed in the recreation section of the plan.

The result of numerous planning team meetings and the facilities questionnaire was a draft plan that was made available for public review during a 30-day review period in March of 2005. Copies of the draft plan were distributed to a mailing list of three hundred individuals who had expressed an interest in the planning effort. Additionally, a public open house was held at Wild River State Park to receive comments on the draft plan during the public review period.

Following public review, the draft plan was revised and submitted for Minnesota Department of Natural Resources staff review. The Wild River State Park Management Plan was approved by the Commissioner of Natural Resources in February 2007.

A copy of the completed park plan and a planning process file which documents the planning effort was placed at the park office as well as at the DNR Division of Parks and Recreation’s regional office in St. Paul and DNR central office in St. Paul after the plan’s approval. Additionally, copies of the completed plan were distributed to individual citizens who requested the document for their personal use.



# REGIONAL ANALYSIS

This section of the plan describes both the ecological and socioeconomic regions in which Wild River State Park resides and the primary relationships between the park and these regions. The ecological region is discussed in terms of the Minnesota Ecological Classification (ECS) system. The socioeconomic region is described in terms of a regional population analysis and a description of regional recreation and tourism opportunities. Because Wild River State Park is located within an hour's drive of the Minneapolis-St. Paul metropolitan area, this section includes discussion of demographic trends in the Twin Cities metro area.

## Ecological Subsection

Minnesota's Ecological Classification System (ECS) is part of a national classification system that separates and describes units of different landscapes. This system was developed as a method to identify, describe and map progressively smaller areas of land of increasingly uniform ecological characteristics. The approach stresses the interrelationships and the results of interactions among components of the ecosystem including climate, geology, geomorphology, parent material, soil, vegetation, hydrology, and land history. The ECS is a management tool that: (1) describes the extent and content of various ecosystems; (2) improves resource managers' abilities to predict how landscapes will change over time; and (3) allows resource managers to communicate more effectively with one another.

Four levels of ECS mapping have been completed for Wild River State Park. In order, from the broadest to the most specific, most of Wild River State Park lies within the Laurentian Mixed Forest Province, the Western Superior Uplands Section, the Mille Lacs Uplands Subsection, and the St. Croix Terraces Land Type Association (See Figure 2: Ecological Subsections). A very small portion of the southeast corner of the park lies within the Southern Superior Uplands Section, which lies mostly in Wisconsin but has a small area in Minnesota. This area is in the St. Croix Moraine Subsection and the Frederic Knolls Land Type Association.

## Regional Population Analysis

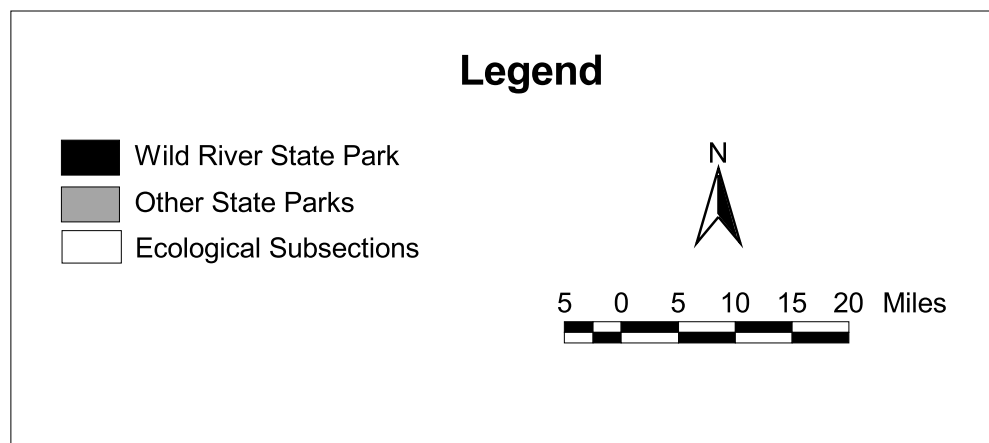
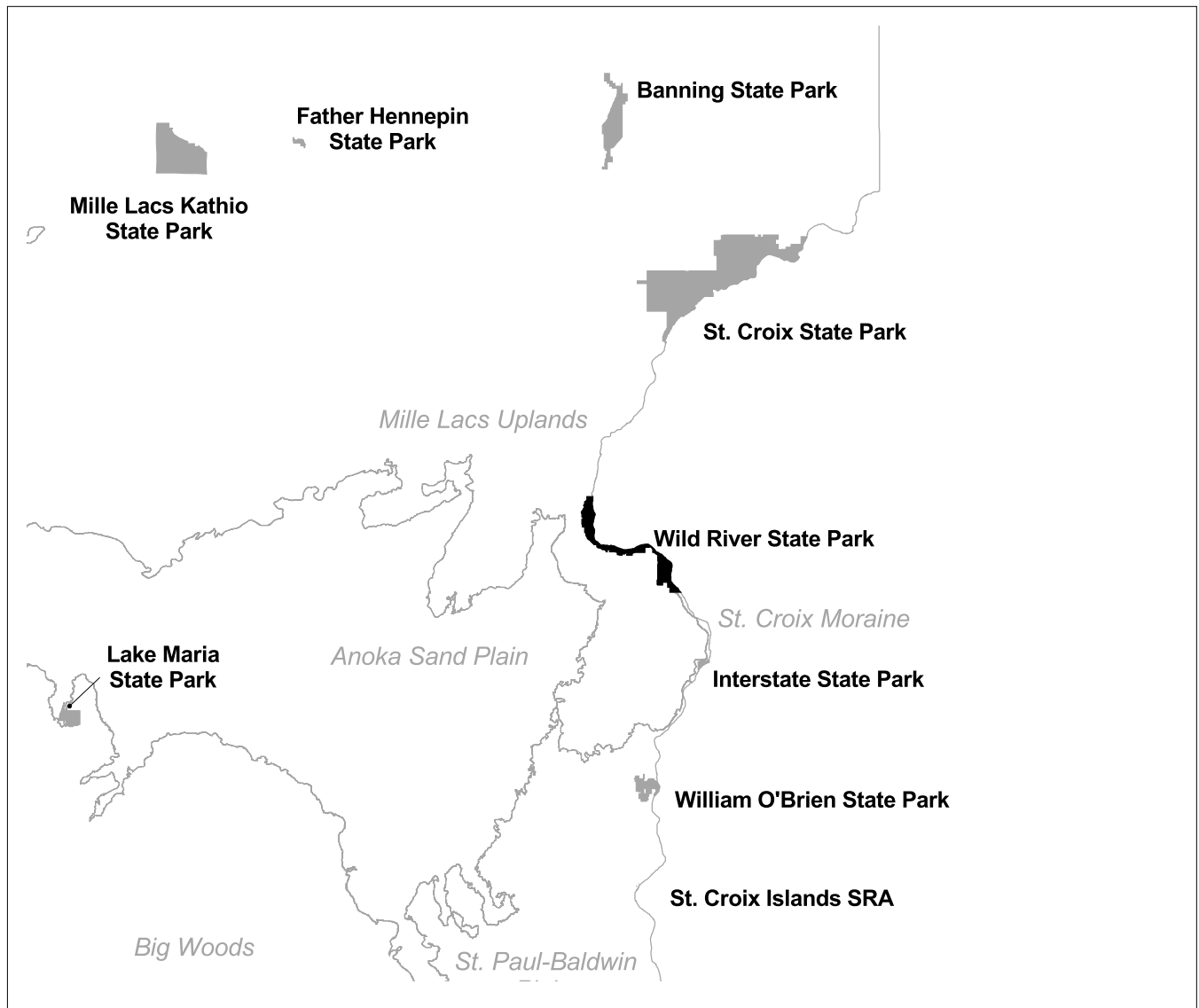
Chisago County, Minnesota: According to the 2000 Census, the total population of Chisago County was approximately 41,101, with most residents living in the cities of Lindstrom, Chisago City, Taylors Falls, Center City, Wyoming, North Branch, Harris, Stacy and Rush City. The population of the county was 97% white Caucasian, with 99% of the citizens being U.S. citizens and 96% speaking English as their only language. Seventy-eight percent of the county's population report being born in Chisago County. The most common ancestries given on the survey were German, Swedish, and Norwegian. Most household incomes range between \$50,000 and \$99,999 with the average earnings being reported as \$58,902.

Chisago County is projected to have a 69% population increase between the years 2000 and 2030. This compares to a projected 27% increase for the state overall. The only Minnesota counties with larger projected increases include Scott and Carver counties in the south metro area (103% and 85% respectively), and Sherburne County (89%). The largest increase in population will be in the next ten years (2000-2010). Development pressure is likely to be most intense along the I-35 corridor and along Highway 8. Because it is within commuting range of the Twin Cities metropolitan area, Chisago County has experienced a significant increase in rural non-farming housing development.

With respect to age categories, Chisago County is projected to have an increase in all age categories from 0 to 85+. However, like most of the state, the largest increases will be in the 45-64 and 60+ age ranges (Minnesota Planning 2003).

# Wild River State Park

Figure 2: Ecological Subsections





Polk County, Wisconsin: Polk County, in nearby Wisconsin, had a population of 37,853 as of 2000. According to the U.S. Census, Polk County experienced an 18.8% population increase between 1990 and 2000. This compares to an overall increase of 9.6% for the state of Wisconsin as a whole. Otherwise, the demographics of Polk County are very similar to those of Chisago County (Minnesota Planning 2003).

Minneapolis-St. Paul: Between 2000 and 2030, about 68% of all population growth in Minnesota will occur in the Minneapolis-St. Paul metropolitan area. In addition, during the 1990s, growth in the minority population in Minnesota accounted for 56.7% of the overall population growth, with most of the growth in the metro area. The number of non-English speakers in public schools tripled from 1994 to 2002, with Russian, Somali, Spanish and Hmong languages increasing significantly (MN Department of Education 2003). Overall, Minnesota's minority population increased from 6.3% in 1990 to 11.8% in 2000. The state is becoming more racially and culturally diverse, although it is still much less diverse than the nation as a whole. The percentage of minorities in the nation as a whole was 30.9% in the year 2000. (Minnesota Planning 2003).

Population impacts to Wild River State Park: To the extent that overall population increases impact the visitation, it is likely that Wild River State Park will see a significant increase in visitation in the future. Furthermore, those new visitors are likely to be similar to those who visit the park today, in terms of race, languages spoken, and household income. Although there will be a significant increase in the minority populations of the Minneapolis-St. Paul metro area, it is unknown at this time whether this will impact Wild River State Park. (See the Recreation and Visitor Services section of this plan for further discussion).

## **Regional Recreation and Tourism Opportunities**

The Chisago County, Minnesota-Polk County, Wisconsin area is amply supplied with recreation and tourism opportunities. In addition to the St. Croix National Scenic Riverway, the area supports three state parks (Wild River and Interstate State Parks in Minnesota and Interstate State Park in Wisconsin), and several county parks. Other public recreation areas include portions of the Chongwatana State Forest and portions of the nearby Carlos Avery Wildlife Management Area in Minnesota, and Governor Knowles State Forest and Trade River Horse Camp in Wisconsin. Developed recreational trails in these counties include portions of the Ice Age and the Gandy Dancer Trails in Wisconsin, and the Sunrise Prairie Trail in Chisago County. Trails under development include the Swedish Immigrant Bike Trail in Minnesota and the Great Wisconsin Birding Trail. In addition, these counties support hundreds of miles of grant-in-aid snowmobile trails and numerous public water accesses for boaters and canoeists.

## **Overnight Use**

A number of camping opportunities can be found in both Chisago and Polk Counties.

### *Full Service Campgrounds:*

Public full service campgrounds include those at Wild River State Park (96 drive-in sites), Interstate State Park in Minnesota (37 drive-in sites), and Interstate State Park in Wisconsin (85 drive-in sites). In addition, there are 4 to 5 private campgrounds in the area that offer a full range of facilities.

### *Primitive and group campsites:*

Limited primitive campsites may be found on the islands and along the shorelines of the St. Croix National Scenic Riverway. In addition, Wild River State Park offers 8 canoe camping sites, 8 backpacking sites, and 10 group campsites. Interstate State Park in Minnesota and Interstate State Park in Wisconsin both offer 1 group camp. In addition, minimally developed campsites can be found at the Snake River State Forest Campground in Minnesota (26 drive-in sites) and in numerous local and county parks on both sides of the border.

#### *Horse Camps:*

Wild River State Park currently offers one rustic horse camp with 20 sites; the St. Croix State Forest offers the Tamarack River Horse Camp with 55 sites and St. Croix State Park offers 25 sites. The latter two horse camps are located in Pine County. On the Wisconsin side, there is an 8-site horse camp on the Trade River in Governor Knowles State Forest (Polk County).

#### *Lodging:*

Due to the historic nature of the St. Croix Valley, there are numerous lodging facilities available in the private sector. Historic inns and B & B's are common in the cities and countryside of the valley. For those interested in a more modern hotel experience, there are numerous hotel and motels chains as well. Most of these are located along the major highway systems such as I-35 on the Minnesota side. For those interested in a more natural setting, Wild River State Park offers one guest house and two year-round camper cabins for rental. Likewise, St. Croix State Park offers two guesthouses and five seasonal camper cabins. St. Croix State Park also offers the Norway Point and Head of the Rapids group camps. William O'Brien State Park currently offers one seasonal camper cabin.

## **Trail Opportunities**

Designated trail opportunities in the area include:

- Ice Age National Scenic Trail (hiking; Wisconsin)
- Gandy Dancer State Trail (multiuse; Wisconsin)
- Mill Pond Trail (historic/hiking; Wisconsin)
- Paperjack Greenway (historic/hiking; Wisconsin)
- Sunrise Prairie Trail (multiuse; Chisago County, Minnesota)
- Swedish Immigrant Bike Trail (biking & hiking; Chisago County, Minnesota)
- Great Wisconsin Birding Trail (auto trail; Polk County, Wisconsin)
- Willard Munger State Trail (multiuse; Pine County, Minnesota)
- St. Croix National Scenic Riverway (canoeing and boating)
- Governor Knowles State Forest (horse & hiking; Wisconsin)

In addition, the area offers numerous grant-in-aid snowmobile trails and other informal trail systems.

## **Other Day-Use Activities**

As noted, there are many outdoor recreation opportunities in both Chisago and Polk counties. Examples of day-use activities on the St. Croix River and its tributaries include canoe rentals (private or by concessionaire in state parks) riverboat excursions, and tubing. A variety of visitor and tourist centers provide opportunities to learn about the area's resources and recreational opportunities. In addition, there are numerous other sport activities available in the area year-round (downhill and cross-country skiing, swimming, etc.).

Because of its proximity to large natural areas, outdoor activities such as hunting and wildlife watching are within easy reach in these counties.

Moreover, the St. Croix Valley has a rich culture of arts and entertainment and offers art galleries, local theatre companies, music concerts and local festivals. Historical attractions include several buildings on the National Register of Historic Places that are open to the public.

# NATURAL RESOURCES

The DNR Division of Parks and Recreation Resource Management Program has five primary goals for protecting state park resources:

1. To protect and perpetuate natural and cultural resources within the state park system;
2. To minimize damage to the natural and cultural resources of the state park system while providing appropriate recreational and educational activities;
3. To restore natural communities and ecosystems in the state park system;
4. To promote understanding and awareness of the natural and cultural resources within the state park system and their management and protection; and
5. To participate in landscape-level planning activities relative to the protection of the natural and cultural resources of the state park system.

Since its establishment as a state park in 1973, the natural resources in Wild River State Park have been surveyed and managed. Techniques such as prescribed burning, prescribed deer management, and the removal of problem species such as European buckthorn have been used. In addition, the park has hosted several studies to inventory and monitor native species and plant communities. The park has also actively promoted native prairie and savanna restoration through its Prairie Care program.

The following pages present an overview of what is currently understood about the natural features and resources of the Wild River State Park area and the management recommendations for them. The amount of information available for different segments of the park resources varies, with some aspects of the natural communities studied and documented extensively, and others only generally. In the future, these data will be combined into a natural resource management plan for Wild River State Park.

## Climate

Minnesota in general has a continental-type climate and is subject to frequent outbreaks of continental polar air throughout the year, with occasional Arctic outbreaks during the cold season. Occasional periods of prolonged heat occur during summer, particularly in the southern portion when warm air pushes northward from the Gulf of Mexico and the southwestern United States. Pacific Ocean air masses that move across the Western United States produce comparatively mild and dry weather at all seasons.

Although the total precipitation is important, its distribution during the growing season is even more significant. For the most part, native vegetation grows for 7 months (April to October) and row crops grow for 5 months (May through September). During the latter 5-month period, approximately two-thirds of the annual precipitation occurs (Midwest Regional Climate Center 2004).

For the Wild River State Park area, the average annual precipitation is 31.76 inches, based on historical data collected at the Forest Lake station from 1971 to 2000. Average annual snowfall is 47.9 inches with heavy snowfalls of greater than 4 inches common any time from mid-November through mid-April. The average annual temperature for the Forest Lake area is 44.9 degrees Fahrenheit with an average low of 2.7 degrees Fahrenheit in January and an average high of 82.4 degrees Fahrenheit in July reported for the years 1971-2000 (Midwestern Regional Climate Center 2004).

## Topography

Topography is characteristically gently to moderately rolling.

## Geology

**Bedrock geology:** In east-central Minnesota, bedrock geology includes a base of basalt plain formed during ancient lava flows. On top of this, shallow seas deposited layers of sedimentary rocks over the area. For a more detailed discussion of the bedrock geology of the area, readers should consult Ojakangas and Matsch 1982.

**Glacial geology:** Wild River State Park was significantly influenced by the late Wisconsin glaciation, specifically the actions of the Superior lobe and Grantsburg sublobe of the Des Moines lobe. Both of these lobes essentially created the geologic landscape of the region that we see today: The St. Croix moraine complex, the Grantsburg sublobe till plain and the nearby Anoka sandplain. Melting waters from these lobes also carved out the major river valleys including the St. Croix River Valley. Most of the upland areas in the southern two-thirds of the park are sandy river terraces and/or outwash plain. The glacial landforms significantly influenced the types of soils and vegetation that we see on the landscape today. For example, the reddish tinge to the soil reveals the influence of the Superior lobe deposits and makes the park soil distinct from the buff-colored Anoka sandplain soil (Ojakangas and Matsch 1982; Delaney 2005).

## Soils

In general, the Wild River State Park region is characterized by grey loam, which is generally rocky and difficult to farm; sand, which formed the beds of several glacial lakes in the area; silt loam, a shallow semi-fertile agricultural soil on top; and peat, found in lowland marshes. Depth of soil before reaching bedrock exceeds 100 feet and in some places exceeds 200 feet based on well drilling logs. There is no exposed bedrock in Wild River State Park, in contrast with Interstate State Park, just a few miles down the river.

Surface soils of the park uplands are typically a mixture of glacial till and sand, which strongly influences the nature of the plant communities in the area. The steep slopes of the valley walls left by the glacial St. Croix River have given rise to seeps and springs which have their own unique ecological communities; and floodplain communities have developed in response to soils and hydrology resulting from the action of the St. Croix River.

Besides the geologic influences on the plant communities mentioned above, geologic features in the park include numerous small glacial erratic boulders; riverine features such as sandbars, gravel bars and migrating islands; and the valley walls themselves. Interesting park-specific features include:

- the portion of the park from the campground to the Visitor Center can be accurately described as having been a sand/gravel bar in the Glacial St. Croix River. The deposition of sediment on the inside of the bend as the river's course curved from eastward to southward resulted in the deep, well-drained, relatively poor soils of this portion of the park;
- Varved clays representing the bed of Glacial Lake Lind are exposed along the banks of the Sunrise River in the vicinity of the park & possibly in the park as well;
- Terraces representing intermediate levels of the Glacial St. Croix River as its flow declined are found throughout the park;
- Natural levees formed by siltation during spring high water are found at many locations along the banks of the current St. Croix River within the park; and
- The Sunrise River formed in the course of what was once the bed of an earlier (interglacial) route of the St. Croix River. It now flows north along what was once a southward-flowing river route.

## Vegetation

### *Pre-European Settlement Vegetation*

There are several resources that we can use to develop an historic picture of the Wild River State Park area. If available, American Indian stories and traditions give us indications of what the area was like before European settlers arrived. In addition, oral histories from early European settlers provide valuable information. The most detailed information available comes from the General Land Office Survey circa 1850. The bearing trees and vegetation notes recorded by the surveyors who worked for the United States General Land Office Survey were later used by Francis Marschner to interpret the vegetation cover of the 1850s (See Figure 3: Pre-European Settlement Vegetation.)

According to Marschner, the northern five miles of the park were river bottom forest, conifer bogs and swamps, and wet prairie; this area includes the St. Croix River floodplain and a large expanse of peatlands. The remaining part of the park included river bottom forest next to the St. Croix River where the floodplain was relatively wide, grading to a mixture of hardwood forest and oak openings and barrens on the slopes and flat areas above the floodplain. The vegetation in the uplands was dynamic, varying over time from more open savanna-like vegetation on the most well drained soils, during dry climate cycles, and where fire was frequent, to more closed-canopy forests on heavier soils, during wet cycles, and where fire was infrequent.<sup>2</sup>

The following is an interpretation<sup>3</sup> of the General Land Office Survey notes that pertain to the Wild River State Park area (MN DNR 1990):

#### General Description T036N R20W Chisago County

*The surface of this township is level except near the river where in some places it is a little broken. The only land of any value in the township lies along the river. Four-fifths of it is a sandy plain covered with small scrubby pines.*

#### General Description T036N R21W Chisago County

*The surface of this township is undulating and the soil very poor. At least one-half of the ground is occupied by marshes and swamps. There is some good pine on the SE quarter and a narrow strip of good pine in sections 27 and 34. The timber is generally jack and bur oak, very scattering and scrubby. Water is very plentiful but not very good. The meadow marked on the map is called "Sunrise Meadow". It affords the best wild hay of any meadow in this section of the country.*

Henry Maddin  
I. J. E. Whitcher  
April, 1849

J. E. Whitcher surveyed exterior boundaries of the townships in 1847; subdivisions of the townships were surveyed by Henry Maddin or by John Haugh in 1847 and 1848.

The Minnesota portion of Township 35N, Range 19W held gently rolling land with rich soil that was well timbered with white and bur oak, elm, ash, birch, lind (basswood)<sup>4</sup>, maple and sugar with a few ironwood, hickory and butternut trees. The undergrowth consisted of hazel, oak, aspen and prickly ash.<sup>5</sup>

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<sup>2</sup> It is important to note, however, that the area was surveyed several decades after the area was first visited by European explorers and centuries after the original settlers (American Indians) moved into the area. It is likely the activities of people in the area prior to the survey influenced the results of the survey somewhat.

<sup>3</sup> As interpreted by student workers employed by DNR Division of Parks and Recreation in the early 1990s. Students were assigned the task of finding the original survey notebooks and then interpreting them. The notes were often difficult to read because they are still in the original surveyors' handwriting.

<sup>4</sup> As interpreted by N. Albrecht 2004

<sup>5</sup> This general description of T35N R19W doesn't reflect the sandy conditions of sections 8 and 17 in the park and the immediately adjacent portions of section 5 (in the park) and 7 (outside the park). The line notes suggest oak barrens here.

Small swamps and marshes occurred in the SW quarter of the township with one rather large marsh in section 22.

A road ran to the Sunrise River and along the river way of the St. Croix. Any existing settlements were along the St. Croix River.

Township 35N, Range 20W was heavily timbered except for prairie that occupied the land west of the Sunrise River. To the east of the Sunrise, a variety of “second rate” timber types covered the land-oak, elm, sugar, ash, lind, birch and hazel<sup>6</sup>. The St. Croix and Sunrise Rivers were the main water sources. No settlers were present as of 1847.

The southern sections of Township 36N, Range 20W held rolling third rate and wet bottom land with some swamp, aspen and pine barrens. In Section 31, many trees had been cut, blown down or consumed by fire. Tree types to the south were elm, alder, ash, aspen and tamarack.

Satisfactory land with forest occurred on the west boundary. The land was of first and second-rate quality, although large portions held alder and tamarack tree swamp. Trees in the west were oak, elm, ash, maple, lind, pine, alder and tamarack.

Goose Creek, being fifty links wide, flowed south through the sections 19 and 30 into the St. Croix River. In sections 6, 7, 18, 19, and 30, the St. Croix River held a swift running current and rocky banks three feet high. Like Township 35N, Range 20W, there were no existing settlements but a road from the Sunrise River to the Snake River was noted.

In Township 36N, Range 21W, meadow and forested land with oak barrens and thickets alternated between tamarack swamp and marsh. Swamps and marshland occupied nearly one-half of the undulating land that held poor second and third- rate soil.

An excellent hay marsh called “Sunrise Meadow” occurred in sections 14, 15, 22 and 23.

Tree types of the township were pine, oak, hazel, birch, ash, blue beech (American hornbeam)<sup>7</sup> and blackberry.

Goose Creek wound through each quarter of this township. A road traveled from the Sunrise River to the Snake River across the township.

Despite these sources, it is important to note that many questions remain about the specifics of the historic vegetation cover in Wild River State Park. For example, it is not known how much white pine or jack pine occurred at Wild River in the pre-logging/pre-European settlement vegetation cover. Did conifers occur in forests with sugar maple, basswood, red oak and elm or did they occur in woodland or savanna settings? Likewise, it is not known exactly where prairie species dominated the ground layer before the 1830s except for the general location of the Amador prairie and species-rich, present day prairie openings on dry, south-facing slopes. Did prairies also occur in fire-maintained oak savannas on slopes and topland? Were there fire-maintained jack pine savannas? Were prairie species found on lower elevation terraces of the St. Croix River in wooded areas kept open by fire, cutting, grazing, or encampments? These questions could be at least partially addressed by obtaining more vegetation plot data in Minnesota and Wisconsin; by analyzing more sediment, soil and peat samples; and by searching for additional historic records (Delaney 2001).

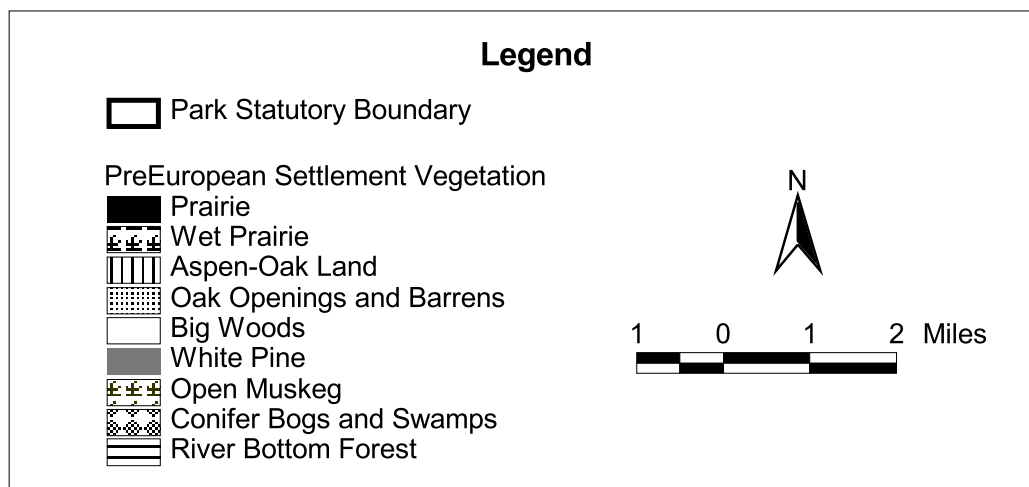
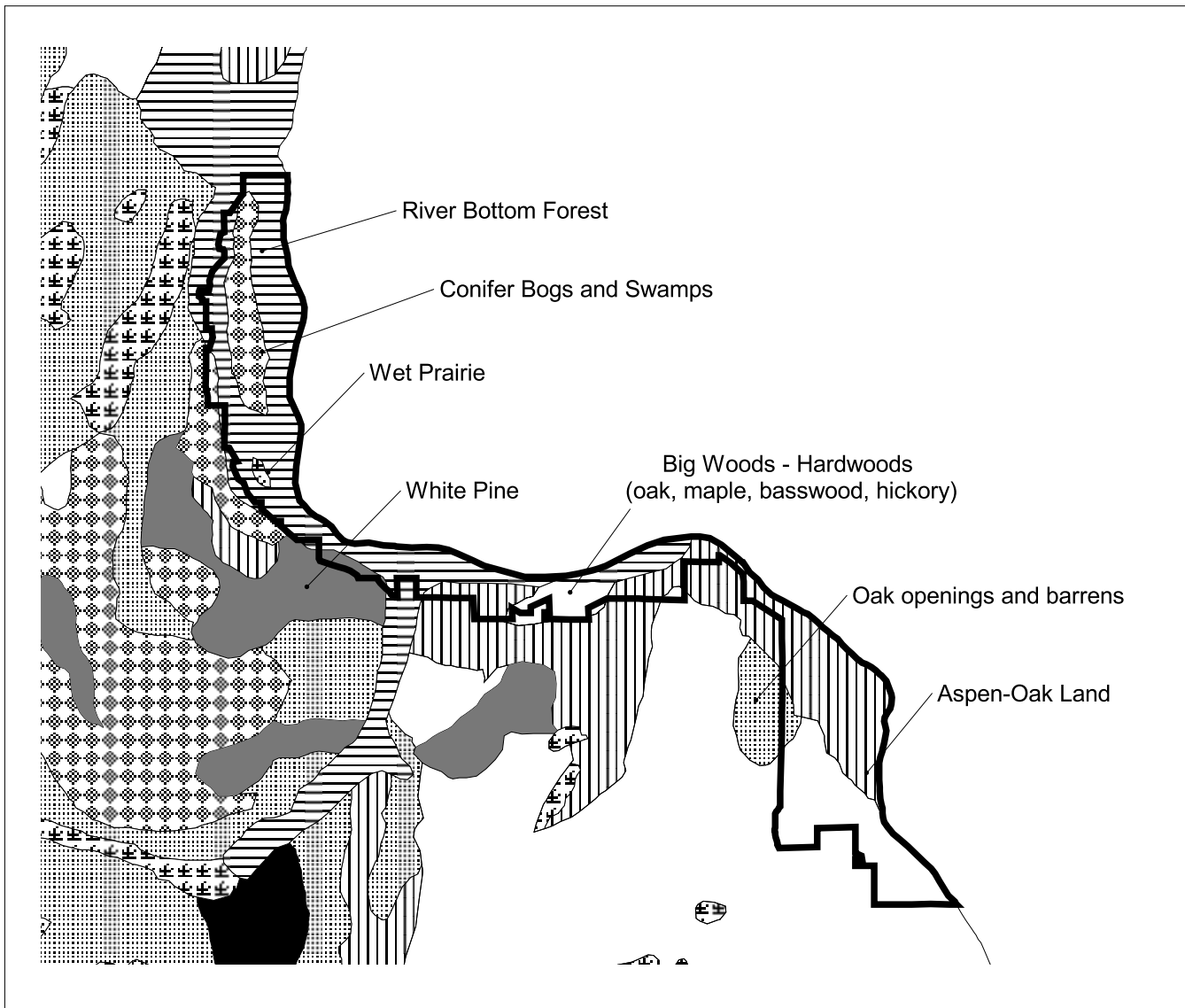
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<sup>6</sup> As noted by the original surveyor; surveyors often added notes about the quality of the trees/forest for economic purposes such as logging or farming

<sup>7</sup> Likely to be Carpinus caroliniana; interpretation by N. Albrecht 2004

# Wild River State Park

Figure 3: PreEuropean Settlement Vegetation



### *Overview of Natural Resource Significance of the Park*

Today, much of the park supports native plant communities similar to the vegetation present on the landscape prior to European settlement although several of the plant communities are rare on today's landscape. In addition, 30 species of plants and animals considered rare and tracked in the MN DNR's Natural Heritage Information System have been documented to occur in the park. Of these, 23 are listed in Minnesota's List of Endangered, Threatened, and Special Concern Species (MN DNR 1996). This combination of natural features led to the ranking of most of the park as sites of high to outstanding biodiversity significance by the MN DNR's Minnesota County Biological Survey.

### *Existing Native Habitats and Native Plant Communities of Wild River State Park*

Important factors determining where the native plant communities in the park occur include topographic position, slope, aspect, hydrology and fire history. For example, the Goose Creek area is located on the broad, low terraces of the St. Croix River where a combination of these factors results in a large, intricate mosaic of several native plant community types. Likewise, in other areas of the park, these factors influence the types of communities and species present. The major human-induced influences on the landscape since European settlement include logging; fire suppression; agriculture including horse and livestock grazing; the introduction of non native plant species; earth-moving activities at boom and dam sites, increases in white-tailed deer populations associated with human activities; ferry crossings, borrow pits and road/railroad grades; and more recently, adjacent residential development in Chisago County. Many areas where these activities occurred are still recognizable as native plant communities, but show numerous signs of disturbance (Delaney 2001).

Recent surveys of the native plant communities and other native habitats of Wild River State Park include those done by the Minnesota County Biological Survey in the late 1980s, those done by Delaney under contract by the Division of Parks and Recreation (Delaney 2001), and those done by Technical Associates in Geographic Analysis (TAIGA) in 1992. Due to the advent of geographical information systems (GIS) technology, the park can now effectively map and analyze these habitats and communities using all of these data sources (See Figure 4: Existing Native Plant Communities – North and Figure 5: Existing Native Plant Communities - South). The following section includes brief descriptions of the native plant communities in the park.

### **Existing native plant communities in Wild River State Park including names, codes and descriptions<sup>8</sup>:**

#### **Dry Sand-Gravel Oak Savanna (Southern) (Ups14b):**

These communities occur rarely on sand-gravel terraces in the park. The tree canopies have less than 25% cover and are dominated by open-grown bur oak and northern pin oak. Prairie grasses, sedges, and wildflowers dominate the ground layer.

Oak savanna is a rare community in the state of Minnesota and in the entire Midwestern United States. Small occurrences of moderately good quality can be found in Wild River State Park. This community is believed to have once encompassed over a thousand acres of what is now Wild River State Park.

#### **Mesic Oak Savanna (Southern) (Ups24a):**

An example of mesic oak savanna is located southwest of the Visitor Center on a low terrace near a lowland hardwood forest. Mesic oak savannas are extremely rare state wide because the natural processes that allowed them to develop (especially fire) are absent and most remnants have been lost either to farming or to succession to other forest types.

#### **Red Oak-Basswood Forest (Non-calcareous Till) (MHc36a):**

High quality mesic forests are rare in Chisago County due to disturbances from logging, grazing and residential development. Fine examples can be found in Wild River State Park, mostly adjacent to other types of native vegetation including scenic slopes. Stands are dominated by sugar maple and

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<sup>8</sup> follows Native Plant Community Classification version 2.0, MN DNR



basswood and occur in moist ravines, on terrace slopes and on slight rises on the bottomlands in the St. Croix River Valley. The Goose Creek area in Wild River State Park provides some characteristic examples.

**Oak-Aspen Woodland (FDc25b):**

This community type occurs extensively on the flat uplands of the park. The canopy cover is generally greater than 25% and less than 75%. Common canopy trees include bur oak, white oak, northern red oak, and red maple. Tall shrubs are often common and relatively dense. Groundlayer species include plants typical of moderately shady conditions on well-drained soils such as large-leaved aster, bracken fern, and Pennsylvania sedge. These forests may have formerly been oak savannas that have become overgrown in the absence of fire. It is also possible that some of these forests had a component of white pine or jack pine in the 1800s that was eliminated by logging. Many of the forests have been impacted by past grazing, the invasion of European buckthorn, and oak wilt.

**Red Oak-Sugar Maple-Basswood – (Large-flowered trillium) Forest (MHc26b):**

Forests dominated by a mix of white pine and mesic hardwood species fall into this category. White pine forests are very rare along the St. Croix River because of widespread logging prior to the 1850s. Fine examples, however, can still be found in Wild River State Park, including a state designated old-growth stand.

**Basswood-Black Ash Forest (MHc47a):**

These lowland hardwood forests are fairly common on alluvial soil on low terraces of the St. Croix River in Wild River State Park. They are wet-mesic forests that flood less frequently and for shorter time periods than floodplain forests. Tree canopies are dominated by basswood, bur oak, green ash, black ash, hackberry, or a mix of several of the above. White pine occurs occasionally in this community type. The ground layers consist of plant species adapted to shady, moist conditions such as lady fern, early meadow rue, and side-flowered aster. Basswood-black ash forest generally occurs in vegetation complexes with the next three types in the park, so accurate mapping of these communities is difficult.

**Tamarack Swamp (Southern) (FPs63a):**

Small examples can be found on low terraces adjacent to the St. Croix River. These forests are on shallow to deep peat that is saturated year-round. Tree canopies are dominated by tamarack; paper birch, red maple, and black ash are common. Common shrubs include speckled alder and winterberry. Ground layer plants are species adapted to wet conditions such as cinnamon fern, northern marsh fern, and bluejoint grass. Some occurrences have thick carpets of sphagnum moss.

**Black Ash – Yellow Birch- Red Maple – Basswood Swamp (East Central) (WFn55b):**

This community type occurs extensively in the park on low terraces adjacent to the St. Croix River, on saturated peat soils. The canopy is typically dominated by black ash, usually with yellow birch, basswood, or red maple as a co-dominant. Ground layer plants are tolerant of wet conditions, including broom sedge (*Carex bromoides*) and hispid buttercup.

**Black Ash – (Red Maple) Seepage Swamp (WFs57a):**

This community can be found occurring uncommonly about a half mile or more inland from the St. Croix River at the base of steep terrace slopes, where springs are concentrated. In Wild River State Park, most examples of these communities can be found in the Goose Creek area. The tree canopy is dominated by black ash, and species typical of cold groundwater seepage areas occur commonly in the ground layer, including skunk cabbage and marsh marigold.

**Silver Maple - (Sensitive Fern) Floodplain Forest (FFn67a):**

Occurs in generally narrow bands along the St. Croix and Sunrise Rivers in low floodplains that regularly flood in the spring. Tree canopies are dominated by silver maple, with black ash, hackberry, and red elm less common. Shrub and ground layers are sparse, and are composed of species that tolerate flooding conditions as well as dry conditions. Common ground layer species include Virginia knotweed, wood nettle, and white grass. Occurrences in the park are generally of high quality.

**Sedge Meadow (WMn82b):**

This community occurs on mid-level terraces above the St. Croix River. Sedge meadows are open wetlands on mineral or peat soils that are often flooded in the spring and after heavy rains. They are dominated by a dense cover of broad-leaved sedges and grasses, including bluejoint grass and woolly sedge, and often contain a wide variety of forbs. Sedge meadows are uncommon in the park, and most occurrences have been disturbed by past cultivation, grazing, or other disturbances. Highly disturbed sedge meadows are often dominated by invasive exotic strains of reed canary grass.

**Willow – Dogwood Shrub Swamp (WMn82a):**

This community occurs uncommonly in small basins and other low areas throughout the park on saturated or flooded peat or mineral soils. It is often adjacent to sedge meadows, and sometimes grades into alder swamps. Slender willow and other willow species dominate, sometimes with speckled alder and/or red osier dogwood occurring commonly.

**Alder (Red Current-Meadow Rue) Swamp (WFn74a):**

Alder swamps occur commonly in small basins and other low areas throughout the park on saturated or flooded peat. They are dominated by speckled alder.

**Northern Bulrush-Spikerush Marsh (MRn93):**

Emergent marshes occur along portions of Goose Creek and in a few small basins in the park. They are open wetlands, generally with standing water all year round. Bulrushes and broad-leaved arrowhead are common species of these communities. Marshes that have been disturbed by altered hydrology, siltation, or other causes are often dominated by narrow-leaved cattails and have low native species diversity.

**Sand Beach/Sandbar (River) Permanent Stream Subtype (RVx32b2):**

Most beaches along the St. Croix River are composed primarily of sand and occur on exposed sandy shores and sandbars. Vegetation is composed primarily of tree and shrub seedlings, firmly rooted perennial plants, and annual plants. Common species include sand-bar willow, rice cutgrass, and Pennsylvania smartweed. While beaches and banks with good assemblages of native plants are fairly common along the St. Croix River, they are still seriously threatened here and elsewhere by water quality problems, dams, development, invasion of non-native species and other threats from beyond the boundaries of protected areas. In the Wild River State Park area, a specific problem is posed by the Indianhead Flowage formed by the hydroelectric dam at St. Croix Falls. Water levels along the reach bordering the Deer Creek Loop are affected by this operation, with consequent impacts on shoreline plant communities.

**Gravel/Cobble Beach (River) Permanent Stream Subtype (RVx32c2):**

Some portions of the St. Croix River shoreline are composed primarily of exposed gravel and cobble. The confluence of the Sunrise and St. Croix Rivers and the bed of the St. Croix River just above the mouth of the Sunrise are examples of places where this community type occurs.

**Threats to Native Plant Communities:**

Threats to native plant communities include invasive plant species such as European buckthorn (*Rhamnus cathartica*), Tatarian honeysuckle (*Lonicera tatarica*), reed canary grass (*Phalaris arundinacea*), spotted knapweed (*Centaurea spp.*), birdsfoot trefoil (*Lotus corniculatus*), orange hawkweed (*Hieracium aurantiacum*), hairy vetch (*Vicia villosa*) and smooth brome grass (*Bromus inermis*). All of these species need to be mapped and monitored. The buckthorn species is currently being actively controlled in areas where it threatens significant native species or plant communities.

Other threats to native species and communities include:

Road improvement: Future road work along the east bank of the Sunrise River, and future road work along Chisago County 81 south of the park entrance (maple-basswood forest). In addition, the mesic forest at the head of the ravine in a narrow strip between the St. Croix River and River Road may be impacted by road improvements.

Weeds along park trails: Most noticeable is the introduction of weed species along horse trails and other trails (Delaney 2001).

Erosion along park trails: Especially noticeable is the erosion on a sandy horse trail on the slope through white pine by Dry Creek. Weeds from this trail also threaten high quality white pine-hardwood forest. In addition, there are numerous locations on the sandy soils of the Amador Prairie Loop where trail width has increased by 100-200% due to erosion on horse trails.

Trampling: Trampling the riverbank vegetation at the mouth of the Sunrise River threatens emergence habitat for the rare dragonfly *Ophiogomphus susbecha*.

Excessive deer browse: The high deer population in the park area noticeably reduces the number and variety of species in the lily family and likely affects other native forest ground layer plants, shrubs, and tree-seedling survival, especially white pine seedlings.

Habitat fragmentation: The high density of trails in the park and "edge" along the boundaries of the park make the park's native plant communities and species susceptible to the problems associated with the fragmentation of habitats. An example of this is the likely invasion of the brown-headed cowbird into the interior of the park's forests where it can parasitize the nests of forest songbirds.

Lack of natural fire: The reduced amount of fire in oak forests and oak savannas (as compared to what was likely present in the 1800s) is leading to a reduction in savanna communities as they convert to woodlands and forests; and the replacement of oak forest with forests dominated by more shade-tolerant species such as red maple and basswood.

Nonnative mussels: Although currently not present in this area of the St. Croix River, the exotic zebra mussel (*Dreissena polymorpha*) presents a potential threat to all native mussels in the U.S. Once established, zebra mussels can kill all native mussels by attaching to them and effectively suffocating or starving them. In Minnesota, as of 2003, zebra mussels have only reached large numbers in portions of the Mississippi River from Lake Pepin to the Iowa border, in Lake Zumbro in the southeast, and in the St. Louis River-Lake Superior estuary (MN DNR 2003).

## **Management of Native Plant Communities**

Ongoing management of existing native plant communities in the park is essential to the maintenance of the park's biodiversity. For example, the oak-aspen woodlands, mesic oak savannas and dry oak savannas thrive with an active prescribed burning program. The current burning program should be expanded to include all of these communities to help control European buckthorn and other invasive exotics and to encourage sun-loving understory and ground layer plants. In addition, prescribed burning should promote regeneration of oak species by restoring some of the natural burning regime.

Control of invasive exotic terrestrial and aquatic species will be important to maintaining and enhancing native species populations.

Eroded trails, slopes and other disturbed areas need to be restored with native species, preferably from native seed sources. This could be done with an awareness of the movement and habitat needs of native animals sensitive to habitat fragmentation. Habitats that could be expanded include mesic and dry oak savanna, upland forest communities, and sedge meadows, for example.

Control of deer numbers through prescribed management techniques such as special hunts will be advantageous to the park's tree seedlings and wildflowers that are currently being negatively impacted by overbrowsing.

## Wildlife

Wild River State Park forms a link in a chain of high-quality habitat along the St. Croix River and thus is a critical part of a regionally important corridor for wildlife migration. The St. Croix National Scenic Riverway, including lands administered by the Minnesota and Wisconsin Departments of Natural Resources, provides a corridor from the Mississippi Valley northward to large, high-quality habitat areas of northeastern Wisconsin and northeastern Minnesota. Many different types of wildlife species take advantage of this corridor ranging from the Eastern timber wolf to migratory birds.

### Mammals:

Mammals that inhabit the park are largely those that can be commonly found in the surrounding area. No rare mammals are known or suspected to inhabit the park. Fisher and timber wolves have been seen in the park - although not rare state wide, they are uncommon for the area surrounding the park.

### Birds:

As of 2001, 202 species of birds have been recorded in the park - potentially 109 of these breeding in the park (Janssen 2001). Of note, 28 species are neotropical migrants. The park is an excellent location for birding due to its location along the St. Croix corridor and its variety of habitats. The park has been designated an Important Birding Area (IBA) by the DNR Nongame Wildlife Program. See the Rare Species section for information on rare birds in the park. See Appendix D for a list of avian species.

### Amphibians:

Amphibians which are known or likely to occur in Wild River State Park<sup>9</sup>

Common Name	Scientific Name	Comments
Mudpuppy	<i>Necturus maculosus</i>	St. Croix River & tributaries
Blue-spotted Salamander	<i>Ambystoma laterale</i>	
Tiger Salamander	<i>Ambystoma tigrinum</i>	
American Toad	<i>Bufo americanus</i>	
Cope's Gray Treefrog	<i>Hyla chrysoscelis</i>	
Gray Treefrog	<i>Hyla versicolor</i>	
Spring Peeper	<i>Pseudacris crucifer</i>	
Western Chorus Frog	<i>Pseudacris triseriata</i>	
Green Frog	<i>Rana clamitans</i>	
Northern Leopard Frog	<i>Rana pipiens</i>	
Wood Frog	<i>Rana sylvatica</i>	

Amphibians which may occur in Wild River State Park

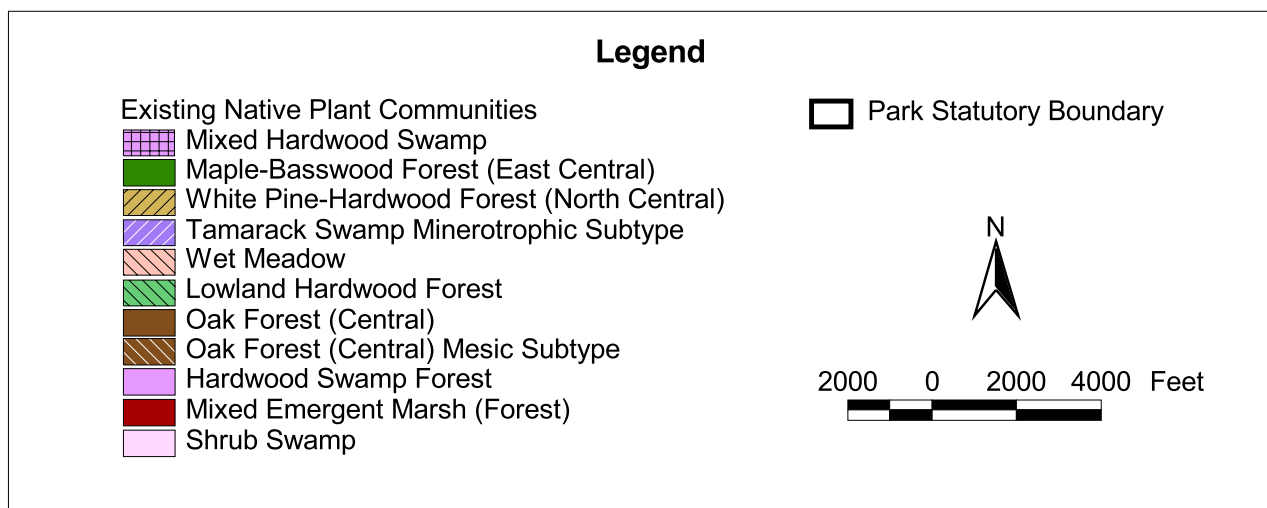
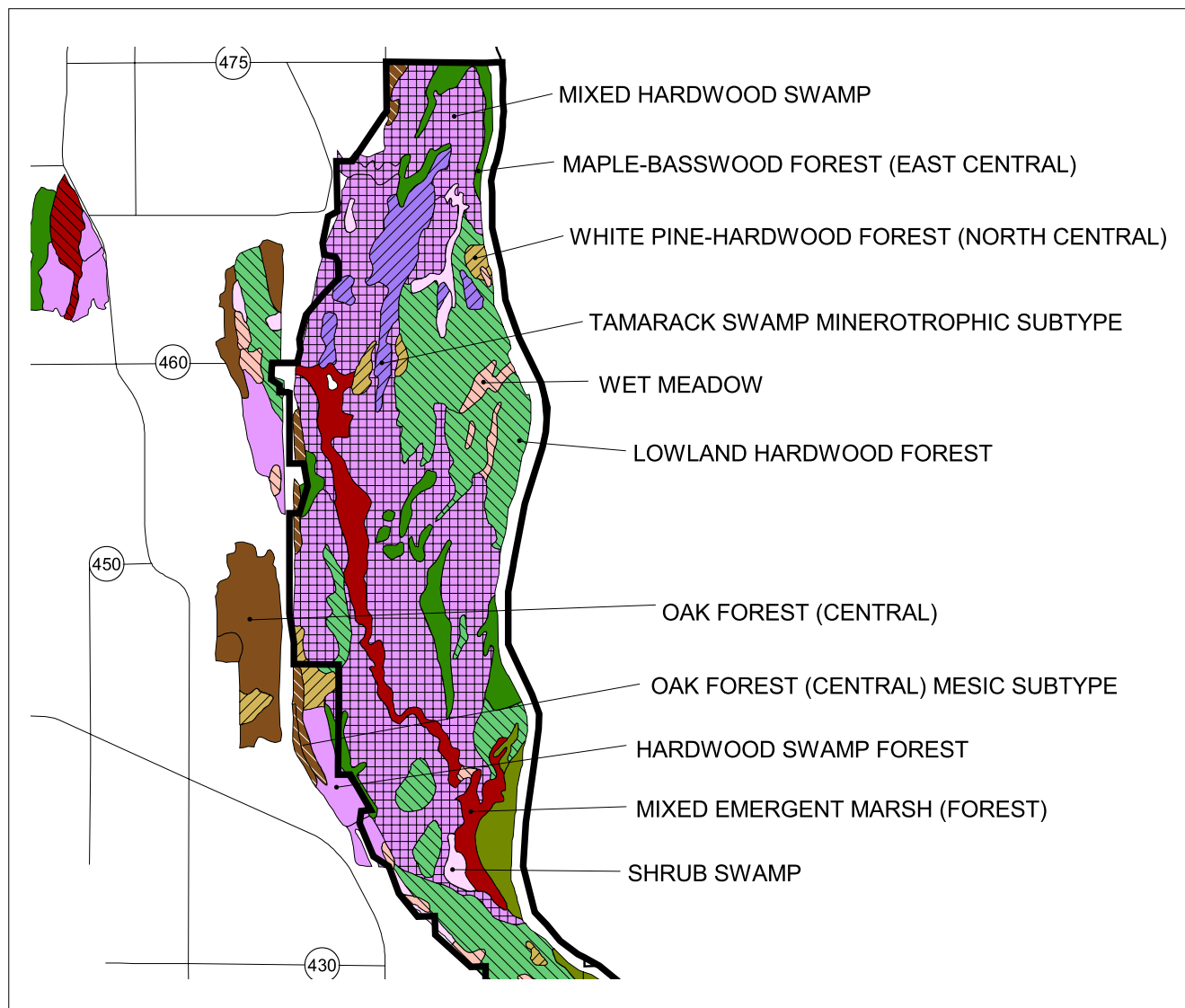
Common Name	Scientific Name	Comments
Redback Salamander	<i>Plethodon cinereus</i>	Possibly
Eastern Newt	<i>Notopthalmus viridescens</i>	Possibly
*Bullfrog	<i>Rana catesbiana</i>	Possibly, record from Chisago.
Mink frog	<i>Rana septentrionalis</i>	Not likely, needs still water for breeding

There is a 1960's record for a cricket frog (*Acris crepitans*) north of the park by several miles. It is likely this species was once established in that area, but the population is probably now extirpated. It is unknown whether it occurred in the park in the past.

<sup>9</sup> Source: Ed Quinn & Carol Dorf 2005

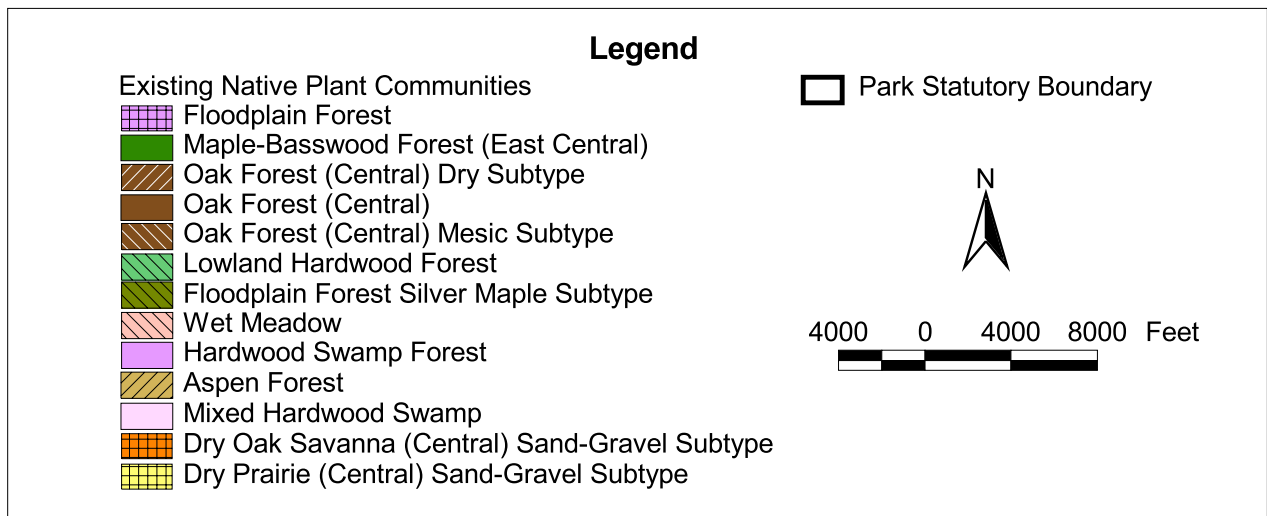
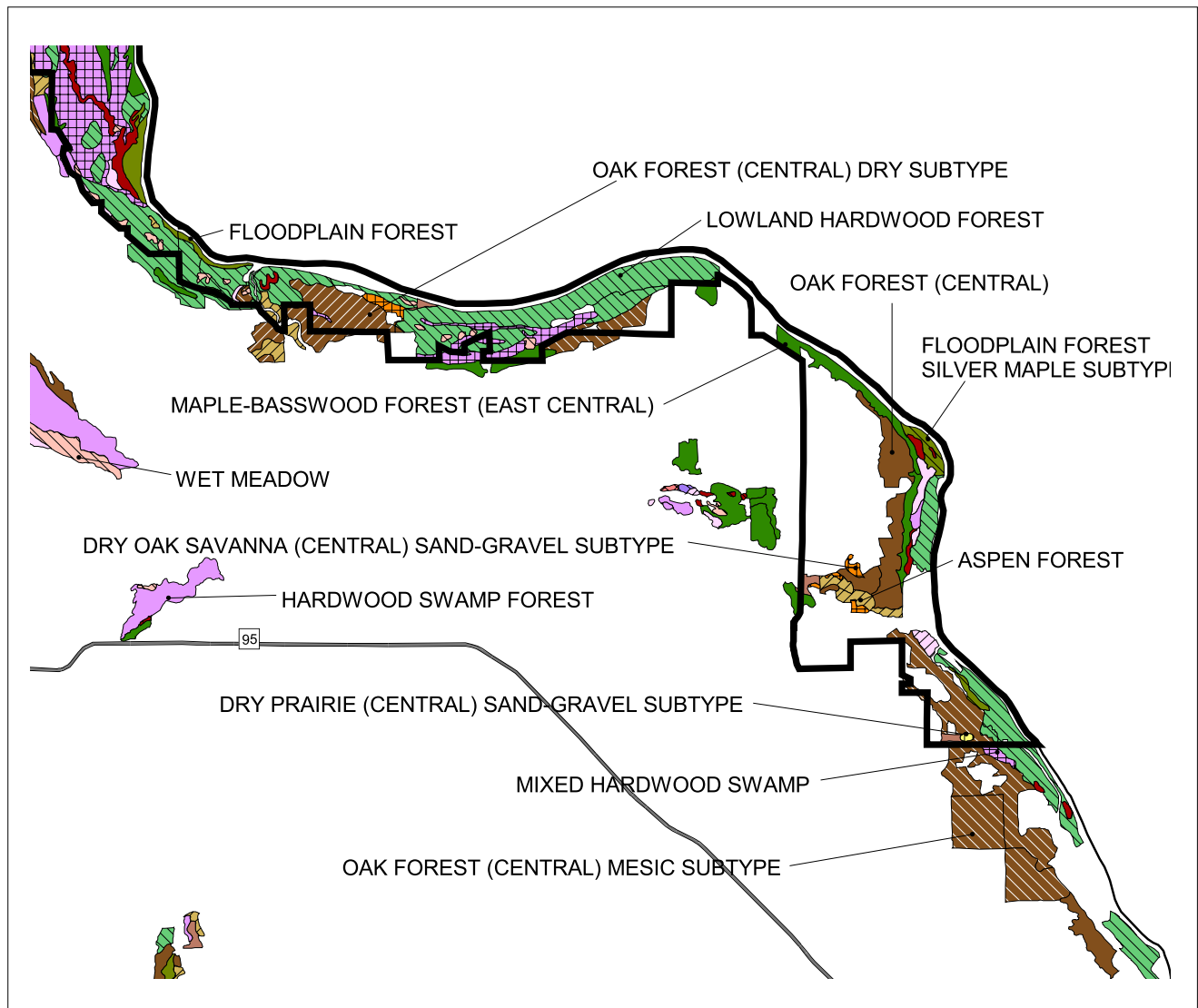
# Wild River State Park

Figure 4: Existing Native Plant Communities - North



# Wild River State Park

Figure 5: Existing Native Plant Communities - South



### General Management Recommendations for Amphibians:

Management to preserve these amphibian species should include the following:

- Identification and preservation of small seasonal fishless wetlands. Most beneficial are those sites that retain water into mid-late summer, at least in some years.
- Allow fallen trees and limbs to remain on the ground to provide cover for these species both as shelter and protection along migration routes.

### Reptiles:

Reptiles which are known or likely to occur in Wild River State Park<sup>10</sup>

Common Name	Scientific Name	Comments
Eastern Hognose Snake	<i>Heterodon platirhinos</i>	
Northern Water Snake	<i>Nerodia sipedon</i>	
Smooth Green Snake	<i>Ohpeodrys vernalis</i>	Chisago record
Bullsnake	<i>Pituophis melanoleucus</i>	
Redbelly Snake	<i>Storeria occipitomaculata</i>	
Common Garter Snake	<i>Thamnophis sirtalis</i>	
Prairie Skink	<i>Eumeces septentrionalis</i>	
Snapping Turtle	<i>Chelydra serpentina</i>	
Blanding's Turtle	<i>Emydoidea blandingii</i>	
Painted Turtle	<i>Chrysemys picta</i>	Common
Wood Turtle	<i>Clemmys insculpta</i>	1 record from northern portion of park
Spiny Softshell	<i>Apalone spinifera</i>	
Common Map turtle	<i>Graptemys geographica</i>	Chisago record, sight record N of park.

Reptiles which may occur in Wild River State Park

Common Name	Scientific Name	Comments
Racer	<i>Coluber constrictor</i>	Possible. Sight record from Pine County. Record from Washington
Ringneck Snake	<i>Diadophis punctatus edwardsii</i>	No Chisago record. Habitat probably not suitable (needs more rocks)
Western Hognose	<i>Heterodon nasicus</i>	Record for park in heritage database has questionable ID.
Plains Garter Snake	<i>Thamnophis radix</i>	Chisago record
Milk Snake	<i>Lampropeltis triangulum</i>	Chisago record
Brown Snake	<i>Storeria dekayi</i>	Possible, No Chisago record
Fox Snake	<i>Elaphe vulpina</i>	Chisago record
5 lined Skink		Unlikely, little in the way of exposed rock.
Smooth Softshell	<i>Apalone mutica</i>	Farthest north record is Washington
False Map Turtle	<i>Graptemys pseudo geographica</i>	Chisago record

### General Management Considerations for Reptiles:

Reptiles, particularly those migrating to/from breeding sites, like turtles, are vulnerable to management actions, like prescribed fire because of their lack of mobility. Prescribed burning, for example, should be done at times when the species are not likely to be using particular habitats. Dry oak savannas, as an example, should not be burned when Blanding's turtles are nesting.

<sup>10</sup> Source: Ed Quinn & Carol Dorf 2005

## Endangered, Threatened, and Special Concern Species

Many of the intact native plant communities and aquatic systems of Wild River State Park harbour rare species. The following is a listing of rare plant and animal species. Those marked with an asterisk are documented in the Natural Heritage rare features database:

### Wildlife Species

Common Name	Scientific Name	Comments
Wood Turtle	* <i>Clemmys insculpta</i>	State threatened
Blanding's Turtle	* <i>Emydoidea blandingii</i>	
Gopher Snake		
Red-shouldered Hawk	* <i>Buteo lineatus</i>	State special concern
Louisiana waterthrush	* <i>Seiurus motacilla</i>	State special concern
Snapping Turtle	<i>Chelydra serpentina</i>	State special concern
Bald Eagle	* <i>Haliaeetus leucocephalus</i>	State special concern; Fed. Thr.
Mussel spp.*	Varies	See Appendix
Cerulean warbler	* <i>Dendroica cerulea</i>	State special concern
Gilt darter	* <i>Percina evides</i>	State special concern
Eastern hognose snake	* <i>Heterodon plathirinos</i>	Non-listed

40 species of mussels are currently known from the St. Croix and Namekagon Rivers; many of these are state or federally listed (see Appendix 3). Of note, two federally endangered species have been found in the Taylors Falls area, directly south of Wild River State Park: the Higgins eye (*Lampsilis higginsii*) and the winged mapleleaf (*Quadrula fragosa*). Other notable aquatic species in the park area include the rare St. Croix snaketail dragonfly (*Ophiogomphus susbehcha*) that was originally discovered and named along this section of the St. Croix River.

### Plant Species

Rare plant species that are known (\*) or likely to occur in Wild River State Park

Common Name	Scientific Name	Comments
American water-pennywort	* <i>Hydrocotyle Americana</i>	State special concern
Bog bluegrass	* <i>Poa paludigena</i>	State threatened
Halberd-leaved tearthumb	* <i>Polygonum arifolium</i>	Non-listed
False mermaid	* <i>Floekia proserpinacoides</i>	State threatened
Virginia bartonia	<i>Bartonia virginica</i>	State endangered
Water-willow	<i>Decodon verticellatus</i>	State special concern
Buttonbush	<i>Cephalanthus occidentalis</i>	Non-listed
Walter's barnyard grass	* <i>Echinochloa walteri</i>	Non-listed
Ginseng	<i>Panax quinquefolia</i>	State special concern
Wood's sedge	<i>Carex woodii</i>	State special concern
Sedge	<i>Carex Formosa</i>	State endangered
Stemless tick-trefoil	<i>Desmodium nudiflorum</i>	State special concern
Goldie's fern	<i>Dryopteris goldiana</i>	State special concern
One-flowered broom-rape	<i>Orobanche uniflora</i>	State special concern
Kitten-tails	* <i>Besseyia bullii</i>	State threatened
Sea-beach needlegrass	* <i>Aristida tuberculosa</i>	State special concern
Rhombic-petaled eve. Primrose	* <i>Oenothera rhombipetala</i>	State special concern
Long-bearded hawkweed	* <i>Hieracium lonipilum</i>	Non-listed
Old field toadflax	* <i>Linaria canadensis</i>	Non-listed
Blunt-lobed grape fern	<i>Botrychium oneidense</i>	State endangered
St. Lawrence grape fern	<i>Botrychium rugulosum</i>	State threatened
Cattail sedge	<i>Carex typhina</i>	State special concern
Whorled loosestrife	<i>Lysimachia quadrifolia</i>	State special concern



### **Management Considerations for Rare Species:**

Management considerations for these species vary. The following is a summary of recent information on these rare species:

#### *Plants*

##### **American water-pennywort** (*Hydrocotyle americana*):

American water-pennywort is an inconspicuous and rare wetland plant that occurs largely in hardwood swamps and hillside seeps with saturated peat soils. The plant can be found in a few scattered locations in the St. Croix River Valley including William O'Brien State Park, Interstate State Park, Wild River State Park and the Kettle River Scientific and Natural Area in Pine County. This plant is often overlooked. Future plant surveys should target this species.

##### **Bog bluegrass** (*Poa paludigena*):

Bog bluegrass is another rare and inconspicuous wetland plant that occurs largely in hardwood swamps and seeps in eastern Minnesota. Populations are known to occur in hardwood swamps throughout the Mille Lacs Uplands subsection as well as in seepage swamps along the St. Croix and Mississippi Rivers.

##### **Halberd-leaved tearthumb** (*Polygonum arifolium*):

Halberd-leaved tearthumb reaches the western limit of its range in eastern Minnesota. In Minnesota, it is usually found near marshy lake margins, conifer swamps and floating sedge mats. A number of recent occurrences have been found in shallow wetlands throughout the Anoka Sandplain. Future plant surveys should target this species.

##### **False mermaid** (*Floerkea proserpinacoides*)

False mermaid is an inconspicuous spring ephemeral that has discontinuous ranges in the eastern and western U.S. In Minnesota, it is apparently at the very western edge of its eastern range. As of 2004, twenty-three occurrences have been documented in Minnesota in Aitkin, Chisago, Olmsted, Wabasha and Winona counties. It occurs in the Goose Creek area in Wild River State Park. Its preferred habitat appears to be moist, deciduous forests, especially in wet, springy habitats such as hillside seeps. Not enough is known about this species to be able to say whether it is subject to specific threats (other than habitat destruction), although it is likely that exotic species such as watercress may displace false mermaid populations. This species is common in appropriate habitat in Wisconsin.

##### **Walter's barnyard grass** (*Echinochloa walteri*)

Walter's barnyard grass is an annual grass that is primarily a coastal plain species with an inland distribution along the Mississippi River Valley and the Great Lakes region. As of 2004, this species has been located at one time or another in ten counties: Anoka, Carver, Chisago, Dakota, Freeborn, Houston, Isanti, Ramsey, Wabasha and Washington including Wild River State Park. Preferred habitat includes marshy sloughs and margins of alluvial forests. Future plant surveys should target this species.

##### **Kitten-tails** (*Besseyia bullii*)

Kitten-tails is a Midwestern endemic with Minnesota populations largely restricted to the bluffs and terraces of the St. Croix, Mississippi, and Minnesota River valleys. This species prefers gravelly soil in dry prairies, savannas and open woods. In Wild River State Park, kitten-tails are occasionally found along the edges of former (or restored) dry prairie areas and savanna or open wooded areas.

##### **Sea-beach needlegrass** (*Aristida tuberculosa*)

Sea-beach needlegrass is an unusual grass species that is primarily located along the Gulf Coast, with a secondary range in the Midwest. In Minnesota, this species is almost always limited to sand dunes associated with the Mississippi River and its tributaries. Other potential habitats include dry savannas such as those found in Helen Allison Savanna Scientific and Natural Area (Anoka County).

**Rhombic-petaled evening primrose (*Oenothera rhombipetala*)**

Rhombic-petaled evening primrose is another species that is characteristically found in sandy habitats such as dry savannas; sand dunes; and old fields and roadsides where the topsoil has been lost to erosion. This member of the primrose family is a large, conspicuous biennial that appears to be common in the Great Plains.

**Long-bearded hawkweed (*Hieracium longipilum*)**

Long-bearded hawkweed is an erect perennial forb that is most often found in sand barrens, prairie and savanna-type habitats or in open to semi-open situations on sandy soil such as open woods, fallow fields and along railroad tracks. Although this species is currently not listed as a rare species in Minnesota, it is found infrequently enough to merit monitoring.

**Old field toadflax (*Linaria canadensis*)**

Also known as *Nuttallanthus canadensis*, this species is a native erect annual forb that typically blooms from May to July. Preferred habitat includes dry cliff areas, pine barrens and sand barrens. Although it is currently not listed as a rare species in Minnesota, its distribution is infrequent enough to merit monitoring.

Other rare plant species that may exist in Wild River State Park include Virginia bertonia (*Bartonia virginica*), water-willow (*Decodon verticellatus*), buttonbrush (*Cephalanthus occidentalis*), ginseng (*Panax quinquefolia*), Wood's sedge (*Carex woodii*), another sedge species (*Carex formosa*), Stemless tick-trefoil (*Desmodium nudiflorum*), Goldie's fern (*Dryopteris goldiana*), and one-flowered broom-rape (*Orobanche uniflora*). Future plant surveys should include these species since they are known to exist in habitats outside of the park along the St. Croix River Valley.

### Animals

**Red-shouldered hawk (*Buteo lineatus*):**

The red-shouldered hawk reaches the western edge of its eastern range in Minnesota (it also occurs along the west coast of the U.S.). In Minnesota, it is usually found in large unbroken tracts of moist lowland woods, floodplain forests, and in large tracts of upland deciduous forest with shallow wetland inclusions. Because of its preference for large, contiguous forested areas, this species is sensitive to habitat fragmentation and destruction. In Minnesota, this is a relatively uncommon species that is difficult to observe. Implications for Wild River State Park include the protection of its forested habitats so that they are not fragmented by park development including trails.

**Louisiana waterthrush (*Seiurus motacilla*)**

The Louisiana waterthrush is a relatively rare bird in Minnesota that inhabits wooded ravines with swiftly flowing streams. Occasionally, it is also found in wooded swamps. Its range in Minnesota is limited to the river valleys of the St. Croix, lower Mississippi and lower Minnesota River Valleys and their tributaries. Although this species was described as "common" in the early 1900s, its abundance has declined dramatically for unknown reasons. Documented breeding and nesting evidence is scarce. Habitat protection is important for this species.

**Wood turtle (*Clemmys insculpta*)**

The wood turtle is a semi terrestrial turtle with a range restricted to the northeastern U.S. This species reaches the westernmost edge of its range in Minnesota and is confined to streams that drain into northern rivers such as the St. Croix, the St. Louis, the Cloquet, and the Embarrass; as well as along the Cannon and the Zumbro rivers and their tributaries in the southeastern corner of the state. Concern for this species relates to loss of forested stream habitat and degradation of water quality. This species is also vulnerable to collection for the pet trade. The wood turtle is listed as Threatened in MN and classified as vulnerable on the 2004 IUCN Red List of Threatened Species.

Historic & recent records (Breckenridge 1944, Oldfield & Moriarty 1994) indicate that this species is a part of the park's native herpetofauna even though it appears to be relatively rare today. Efforts should be directed toward determining the current status of this species in the park and management

to insure preservation over the long term. Wood turtles nest in sandy areas adjacent to rivers and streams. These areas should be protected, especially those above high water levels so that spring floods don't destroy nests.

### **Blanding's Turtle**

The Blanding's turtle is listed as threatened in MN<sup>11</sup> but is probably less at risk than the wood turtle in the park. Its primary habitat includes marshes and ponds; shallow slow moving waters with abundant vegetation; and large marshes bordering rivers. There are a number of records for this species from in and adjacent to the park. Nest sites are made in open, sandy areas up to a mile away from the pond or marsh. Adults moving between wetlands, and females seeking nesting sites, are vulnerable to road mortality. Suggested actions include: 1) Working with landowners in the park area to identify migration routes and perhaps install interpretive signs; 2) evaluate mortality; 3) preserve/restore suitable habitat for adults, but also the extremely shallow systems used by the youngest turtles; and 4) protect from poaching – this species is sought after in the pet trade.

### **Gopher Snake**

The gopher snake is listed as special concern in MN. It is ranked S3 (Vulnerable) by NatureServe due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation. Its preferred habitat is open country including prairie and old fields so the native community management currently underway at the park is consistent with preservation of gopher snakes. Because this species is also sought after in the pet trade, it requires protection from poaching in the park.

**Rare mussels:** Freshwater mussels are one of the most imperiled groups of organisms in North America today. Habitat destruction, over harvesting and river pollution are the major reasons for mussel declines nationwide. In the Wild River State Park area, the St. Croix River is home to the largest remaining populations of several mussel species, including several rare species. Since mussels are extremely sensitive to water quality changes, these species are dependent on continued good water quality in the whole St. Croix watershed.

*Lampsilis higginsi* inhabits deeper waters of rivers and large streams with gravel or sand substrates. Protection of habitat and improvements in water quality along with restriction of dredging, impoundments, sand and gravel mining, and navigational improvements would benefit this species. The U.S. Fish and Wildlife Service has developed a recovery plan for the Higgins' eye (WI DNR 2004).

*Quadrula fragosa* occurs in large rivers on a mixed sand and gravel bottom in water two meters or more in depth. Protection of habitat and improvements in water quality along with restriction of dredging, impoundments, sand and gravel mining, and navigational improvements would benefit this species. The development of fish runways to facilitate the movement of host species through or around dams could also help to protect the winged mapleleaf. The U.S. Fish and Wildlife Service has developed a recovery plan for this species (WI DNR 2004).

### **Cerulean warbler (*Dendroica cerulea*)**

The cerulean warbler is a canopy foraging insectivore that breeds in mature and older deciduous forests in the eastern U.S. Formerly one of the most abundant breeding warblers in the Ohio and Mississippi River Valleys, its population plummeted in the 1900s due to habitat destruction (Audubon 2005). Because of its preference for unfragmented riparian forests, management at Wild River State Park should continue to protect and to restore large blocks of older forest.

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<sup>11</sup> **IUCN Red List Category:** LR - Lower risk and state rank S2 **Imperiled**—Imperiled in the state or province because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state or province.

**Gilt darter (*Percina evides*)**

The gilt darter is a stout-bodied darter with unique bright reds and blues on the body and five to eight dark saddles directly above the lateral blotches. This species is at the northern limit of its range in the lower Black River (Wisconsin), the upper Chippewa River (Wisconsin) and the St. Croix-Namekagon system. It prefers moderate to fast, deep riffles and pools of clear, medium-to-large sized streams with clean, silt-free bottoms of gravel, rubble, and small boulders. The gilt darter's habitat is generally limited by impoundments in its upper reaches (WI DNR 2005).

**Eastern hognose snake (*Heterodon plathirinos*)**

The eastern hognose snake is at the western edge of its range in Minnesota and occurs infrequently along sandy plains and dune areas; oak savannas and mesic prairies; and deciduous forests and river valleys. All nearby states have given this species special recognition due to its declining status. Within Wild River State Park, continued efforts should be made to protect and restore native plant communities, especially sandy areas such as oak savannas and prairies. Future animal surveys should include this species.

It is likely that several other rare animal species exist in Wild River State Park including those listed in this plan. Future animal surveys should include these species since they are known to exist in habitats outside of the park along the St. Croix River Valley.

**Native Plant Restoration and Desired Future Conditions:**

In addition to the protection and management of existing native species and natural communities, Wild River State Park is working on restoring those areas that are currently devoid of native species (or relatively disturbed). Overall, there are approximately 1,576 acres of land at Wild River State Park that are in need of native plant community restoration. Many of these acres were old fields when Wild River State Park was established.

The following is a listing of the restoration goals (desired future conditions) in Wild River State Park:

<i>Desired Future Condition</i>	<i>Number of Areas</i>	<i>Acreage</i>
Administrative Area	3	5.34
Brush Prairie	1	22.33
Emergent Marsh	1	13.59
Lowland Hardwood Forest	7	68.97
Maple-Basswood Forest	1	36.94
Mesic Forest	1	39.60
Oak Forest	5	60.34
Oak Savanna	57	872.27
Oak Woodland	2	26.64
Oak Woodland-Brushland	8	76.07
Oak/White Pine Savanna	3	19.96
Prairie	2	23.55
Prairie/Oak Savanna	1	125.98
Public use area	6	109.96
Wet Prairie	3	20.34
Wetland Restoration	2	34.87
White Pine/Hardwood Forest	3	15.22

The primary means of completing these restoration efforts since 1993 has been the Prairie Care program. Coordinated by Wild River State Park Naturalist, the program's goals are to restore the prairie openings in the oak savanna that once existed in the park. This program uses volunteers to collect prairie seed in the

fall from remnant prairie openings and then to plant the seeds in areas of the park that need restoration. Using this system, over 341 acres in the park have been replanted to prairie. Because of this successful program, Wild River State Park provides an important place to provide outreach to private landowners in the surrounding communities. Because Chisago County is projected to have a dramatic increase in its population (and concurrent residential development) in the near future, this outreach is important. In order to meet the described desired future conditions for the park, the scale of restoration will have to increase and the Prairie Care program will be one part of the overall management effort. All efforts should use local seed sources, preferably from the park or adjacent lands.

Figure 6: Desired Future Conditions for Native Communities illustrates those areas where native communities will need to be restored to achieve the state park's desired future conditions. The remaining areas of the park already host native communities, however management activities may still need to be conducted in these areas to maintain these communities or upgrade their quality (prescribed burning, exotic species removal, etc.).

## **Groundwater**

Chisago County has abundant groundwater resources both in surficial and bedrock aquifers throughout the county. The majority of municipal wells utilize bedrock aquifers, while surficial wells provide water for many of the agricultural users and homeowners. Although residents of the county consider the quality of groundwater to be good, testing of private wells by the County Public Health indicates a trend of increasing nitrates (Chisago County 1998). Potential sources of groundwater pollution include leaking fuel tanks, improperly abandoned wells, and improper land uses near aquifer recharge areas and surficial aquifers in the sand plain.

## **Surface Water and Fisheries**

Chisago County has an abundance of lakes, streams, rivers and wetlands. Its lakes, in particular, attract large numbers of anglers, both local and from the Minneapolis-St. Paul metropolitan area. However, it is the St. Croix River and its surrounding valley that primarily draws visitors to Wild River State Park area. Although much of the St. Croix River shoreline is protected in Chisago County as part of the St. Croix National Scenic Riverway, water quality in the St. Croix is dependent on the water quality of its tributaries.

In the Wild River State Park area, three tributaries of the St. Croix drain areas outside of the park and enter the St. Croix River within the park. These include the Sunrise River, Goose Creek, and Dry Creek. The Sunrise River drains the largest area and has the greatest potential exposure to contaminants from adjacent land use. Agriculture<sup>12</sup>, urban development<sup>13</sup> and its associated runoff, ditches, poorly planned lakeshore development, increased recreational pressures<sup>14</sup> and inappropriately maintained industrial sites and landfills are all factors that may negatively impact water quality in the St. Croix River watershed. Although the current water quality of the St. Croix River is generally very good given its proximity to the Twin Cities metropolitan area, this may change as Chisago County develops more rapidly over the next 10-20 years.

Within the park itself, more than half the land area is either a part of the floodplain of the St. Croix or is a part of the slope leading down to the floodplain. Most of this area is wetland. The sharp change in elevation from the upland areas to the floodplain (which makes for steep hills and scenic panoramas) also cuts through the water table in many places, resulting in many acres of springs and seepage areas. These wet areas provide important habitat for many species in the park area, including several of the rare and sensitive plant and animal species.

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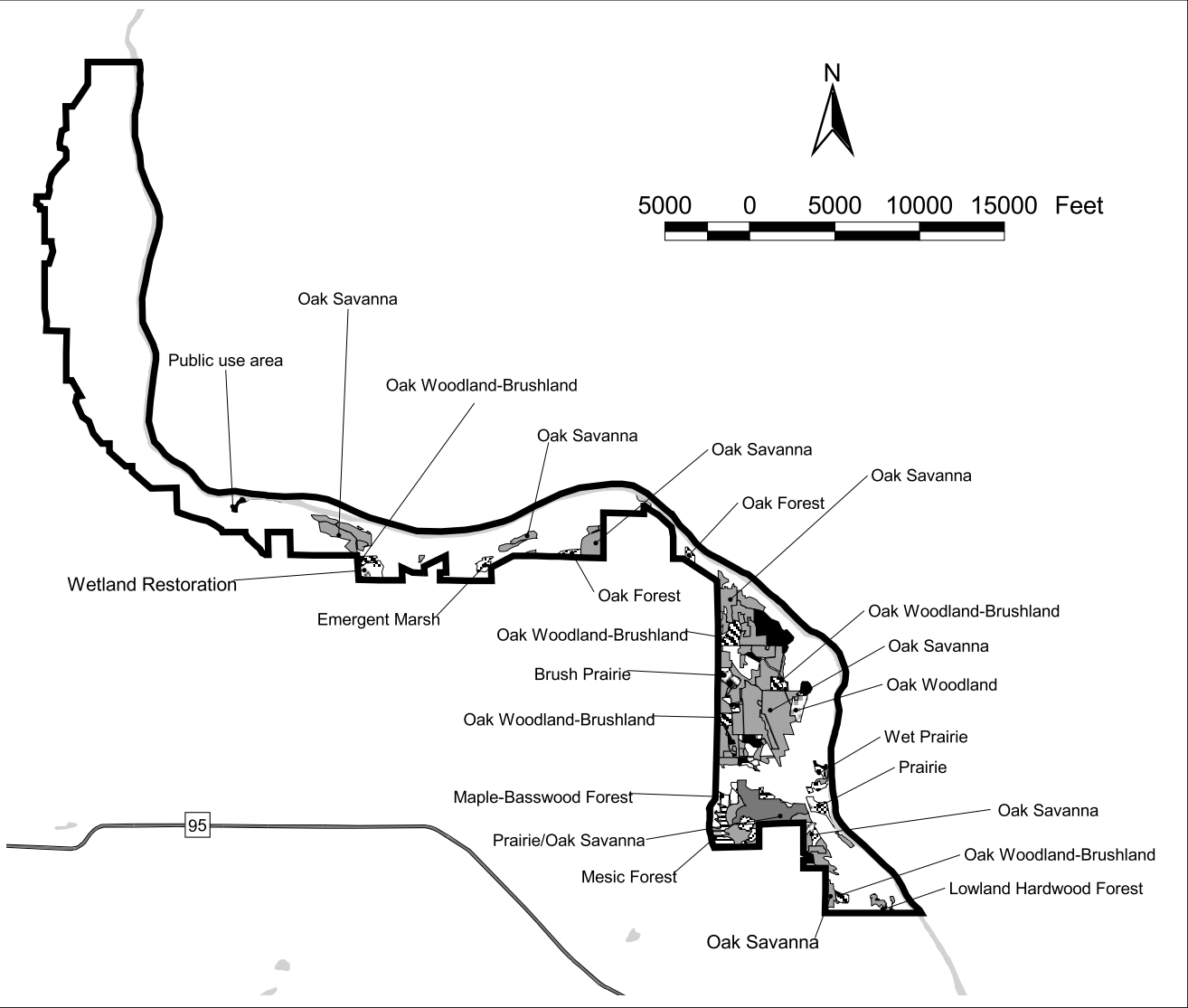
<sup>12</sup> Through irrigation practices, the use of agricultural chemicals and draining of wetlands

<sup>13</sup> Through lawn fertilization, home car care, sewage treatment, pesticide use, & runoff associated with impervious surfaces

<sup>14</sup> Through increased user pressures resulting in erosion, littering & other pollution

# Wild River State Park

Figure 6: Desired Future Conditions for Native Communities



In addition, the St. Croix and its tributaries provide good opportunities for recreational fishing. Fish species listed for the waters in Chisago County include: crappie, largemouth bass, muskellunge, northern pike, sunfish, smallmouth bass, stream trout, walleye and sturgeon. The St. Croix itself provides opportunities for many game fish species found in Minnesota, in particular, smallmouth bass, silver bass, catfish and sturgeon.

## **Natural Resource Management Recommendations**

- Actively manage Wild River State Park's natural resources in order to reach Wild River State Park's restoration goals.
  - Create large, contiguous areas of similar plant communities as opposed to the existing park landscape of sharply delineated wooded areas interspersed with old fields.
  - Ensure that large healthy unfragmented forests that provide important habitat for forest songbirds and migratory birds continue to exist in Wild River State Park.
  - Inventory and monitor rare plant species in Wild River State Park in order to protect and manage them effectively.
  - Inventory, monitor and control invasive plant species to reduce the negative impacts they are having on native plant communities.
  - Inventory and monitor rare animal species in Wild River State Park in order to protect and manage them effectively.
  - Increase white pine in appropriate areas throughout Wild River State Park because of its scenic and recreational value, its importance to a wide variety of wildlife, and its historic value throughout its range along the St. Croix River.
  - Restore altered wetlands throughout Wild River State Park.
  - Explore the possibility of restoring or introducing species of salmonids that are native to the Wild River State Park area (for example, brook trout); small streams within the park could provide suitable habitat for quality catch-and-release angling experiences.
  - Continue and expand the Prairie Care program so that the park's savanna/prairie restoration goals can be met.
  - Use local seed sources in all native plant restorations in the park.
  - Expand the park's prescribed burning program so that burns can be completed on the designated rotation.
  - Work cooperatively with the MN DNR's Division of Fish and Wildlife and local Indian bands to explore creative ways of managing the park area's deer herd.
- Maintain the Goose Creek unit as a natural area with minimal development.
  - Protect old-growth white pine stands along the Dry Creek and Goose Creek watersheds by following the state wide Old-Growth Management Guidelines.
  - Use old-growth forest best management practices in adjacent areas to buffer the old-growth stands.

- Protect potential old-growth ash stands in the Goose Creek area and manage younger stands toward old-growth forest communities.
- Work with adjacent property owners who are interested in restoring or maintaining native plant communities on their own land to extend native plant community contiguity into and/or beyond park boundaries.
  - Restore forest cover to disturbed openings in forests and to disturbed edges adjacent to the edge of the park in collaboration with interested landowners.
  - Work with Chisago County and local townships on the restoration of former gravel pits adjacent to the park.
  - Work with Chisago County and the local Soil and Water Conservation District to reduce soil erosion from surrounding croplands.
  - Work with Chisago County and local townships so that sensitive park resources are not negatively affected by future development.
  - Work with partners outside of Wild River State Park in order to maintain the water quality of the tributaries that run through the park to the St. Croix River.
- Avoid placing any new developed areas such as paved trails or buildings in high quality native plant community habitats or near rare plant and animal occurrences.
  - Correct erosion problems on existing trails and riverbanks in the park.
- Cooperate with the research community on the St. Croix River so that river resources and threats can be identified and monitored as necessary.
- Work with State and private conservation organizations to preserve the integrity of habitat and wildlife migration routes along the St. Croix and Sunrise Rivers.



# CULTURAL RESOURCES

## Archaeological and Historical Setting

### *Prehistoric (Precontact)*

The Precontact period (ca. 10,000 B.P. - A.D. 1650) of the Wild River State Park area is best grasped through information from adjacent regions of western Wisconsin and eastern Minnesota. The Precontact period in these portions of Wisconsin and Minnesota is generally broken up into four main cultural periods: PaleoIndian, Archaic, Woodland, and Mississippian. Of these cultural periods the PaleoIndian (10,000 to 8000 B.P.) and Archaic (8000 to 1000 B.C.) have not been identified at Wild River State Park, but sites on tributary streams of the St. Croix River demonstrate that these peoples were living and utilizing resources available in the broader St. Croix River drainage system. During the PaleoIndian period populations were hunter-gatherers who pursued large game, such as mammoth and giant bison, and gathered available plants for food and other uses. The Archaic peoples were more regionally adapted, but were semi-nomadic within broad areas of the landscape. The Archaic cultures made tools from native copper, a technological change in tool manufacture, and also manufactured ground stone tools, the first appearance of these particular artifacts, which were used to make other tools of wood. As with the earlier PaleoIndian period, there are no identified Archaic period sites in Wild River State Park, but several locations in western Wisconsin and eastern Minnesota tributaries to the St. Croix River contain significant occupations dating to the latter portion of the Archaic.

The Woodland period (1000 B.C. - A.D. 1650) saw the introduction of pottery vessels for cooking and food storage and burial mound cemetery sites. These cultures were semi-sedentary and occupied villages for large portions of the year, but still traveled to specific locations to exploit available food or raw material resources. Because Woodland populations are believed to have been greater in numbers the territorial range of these groups may have been more limited than those of the earlier cultural episodes. The greater number of archaeological sites that are known across the St. Croix River region probably represents this population increase. Within Wild River State Park, two Woodland period cemetery sites have been identified and eight other sites have been determined to contain Middle or Late Woodland cultural components, dating to as early as 400 - 500 A.D. Several of these latter sites also contain historic period occupations that occurred during the 19th century as Euro American settlement expanded into the St. Croix River valley. Artifacts recovered at Woodland period sites include pottery, chipped and ground stone tools, large amounts of animal and fish bone, clam shells, and occasionally copper. Another group of archaeological sites containing only clamshells have been attributed to the Precontact Woodland period, but the lack of any diagnostic artifacts at these locations makes cultural designation impossible at this time.

The final Precontact period cultural manifestation identified in the St. Croix River valley is the Mississippian (900 - 1700 A.D.). This cultural tradition arrived from the south and was reliant on horticulture centered on maize, beans, and squash. In the central regions of Wisconsin and Minnesota a variant of the Mississippian tradition focused on wild rice exploitation. These peoples lived in large villages, some well fortified, and appear to be the ancestors of the Santee Dakota who occupied the region when the first French explorers arrived in the mid-17th century. Artifacts recovered from Mississippian sites include chipped and ground stone tools, fish bone; animal bone, many worked into tools, and pottery that is distinctly different from that produced by the earlier Woodland peoples. Within east central Minnesota the large complex of villages identified at Lake Mille Lacs are related to the Mississippian influence on the earlier Woodland peoples. While none of the archaeological sites in Wild River State Park have produced Mississippian tradition artifacts to date, it is possible that some will appear that demonstrate this last Precontact episode.

### *Historic*

In historic times, the St. Croix River served as a transportation route for the Dakota and Ojibwe, and was the route for the earliest European exploration of this part of the Midwest. Daniel Greysolon, Sieur du Lhut and Henry Schoolcraft are known to have traveled the portion of the St. Croix River adjacent to Wild River State Park. Father Hennepin and Pierre LeSueur may have also traveled it.

The St. Croix River continued its role in transportation throughout the fur trade era from the late 1680s to the mid-1800s. The sites of two fur posts from the mid 1840s are within park boundaries: Tom Connor's post just north of the confluence of Goose Creek with the St. Croix, and Maurice Sammuels' post one-half mile south of the confluence of the Sunrise and St. Croix rivers. It is possible that two earlier fur posts were located within present-day park boundaries, but no evidence of them has been found (Joseph Brown's post, burned by Henry Schoolcraft in 1832 because it was operating in violation of U.S. government license; and La Verendrye's son's post said to have been established on the Sunrise River around 1700).

Commercial logging began on the lower St. Croix in the 1830s and 1840s and moved steadily upstream, drastically changing the landscape and its biological components. However, because of the dry soil in the Wild River area, most logging of pine occurred north of Wild River State Park. The Nevers Dam site, a logging control structure built in 1889 & 1890 and dismantled in 1955, is the park's most significant historic resource from that time period.

Settlers from the eastern U.S. began to arrive and establish farms in the 1850s and 1860s. William and Ann Sheldon established a farm at the location now occupied by the park entrance, for example. Attempts to establish two riverbank towns (Nashua and Amador) within present-day park boundaries failed in 1857 due to poor economic conditions. Nashua, near the Sunrise River, left no trace. Amador had streets platted on paper, but only a small handful of buildings were ever actually constructed. These are now known to have been located on the floodplain below the park's Interpretive Center.

A second wave of settlers began in the 1880s, when thousands of Swedish immigrants came to Minnesota. Remains of these early farmstead sites are scattered throughout Wild River State Park. In addition to homesteads, we know that three early schools were built in what is now park. All three schools were located close to a road that was built through the area in 1850. Traces of the road, known as the Point Douglas to Superior Military Road, are still visible and existing park trails take advantage of part of the alignment. The portion of the road in the Deer Creek area is listed as a historic site in the National Register of Historic Places.

In 1907 the Arrow Line railroad was started in the area but was never completed due to financial reasons. A portion of the grade of an unfinished railroad is located near the Sunrise River.

## **Cultural Resource Management Recommendations**

- Complete a comprehensive land-use history for Wild River State Park, both for historical interpretation and for resource management.
- Document the location of all known cultural sites in Wild River State Park using Global Positioning System (GPS) technology and create a cultural resource base layer for Wild River State Park's geographic information system (GIS).
- Maintain the integrity of all known cultural sites and structures in Wild River State Park.
- Provide information and education about the cultural resources in the park as appropriate.

# INTERPRETIVE SERVICES

The DNR Division of Parks and Recreation's Interpretive Mission is:

*To provide accessible interpretive services which create a sense of stewardship for Minnesota's natural and cultural heritage by illuminating the changing relationships between people and landscapes over time.*

As part of its core mission, it seeks to increase public understanding, appreciation and enjoyment of natural and cultural resources in Minnesota. It does this by providing interpretive services that focus on each park's unique story and resources. State park interpretation also focuses on visitor and resource management in order to help protect park resources. By working with other DNR divisions, educational institutions and local communities, interpreters increase their effectiveness in providing outdoor education and recreation. The result of interpretation in a local state park area can increase public awareness of critical environmental issues on a much greater scale. State Park Interpretive Services can thus provide significant recreational and natural resource based educational experiences that influence peoples' understanding and behavior in such a way that they themselves become stewards of Minnesota's cultural and ecological treasures.

The DNR Division of Parks and Recreation's Interpretive Services Plan identifies Wild River State Park as a level 4 park (in a rating of 1- 5) based upon landscape region significance and visitor use. This means that Wild River State Park ranks high in representation of landscape features to interpret. The natural and cultural features are of large size and/or of high quality, and are readily accessible for interpretation. It also ranks high in the analysis of park use based upon the number of visitors and the population base within 25 miles.

Typically, this level of park employs one full-time naturalist with additional help (interns or seasonal staff) in order to provide programming 4 to 7 days a week during heavy use periods. In addition, parks in this category typically merit a full-service interpretive center, usually open year round; audio-visual programming; indoor displays and exhibits; and supporting interpretive facilities such as information stations, self-guiding trails, wayside exhibits, and multiple developed interpretive locations (MN DNR 1995).

With respect to Wild River State Park, the plan proposes that the park should meet the typical staffing for a level 4 park by hiring a seasonal naturalist to supplement the current full-time naturalist position. If an interpretive internship program is re-instated, the plan recommends that an intern position should be assigned to Wild River State Park. Alternatively, a Visitor Center host position would provide the needed support for the interpretive program. The plan also states that the park should generally increase its non-personal efforts (displays, exhibits, self-guiding trails).

## Interpretive Themes for Wild River State Park

The natural and cultural history of the St. Croix River and its valley are uniquely riverine, setting the valley apart from the rest of the region. Wild River State Park's interpretive effort emphasizes the biodiversity and cultural history that were the result of the geologic formation of this valley. General interpretive themes that have been identified for the park include:

### *Geology*

The present landscape is primarily a result of the Ice Age, but was strongly influenced by earlier geologic events as well.

The soils and topography of Wild River State Park are a result of drainage of Glacial Lake Duluth by the Glacial St. Croix River.

Geology is an ongoing process. Today's landscape is still changing.

### *Biology*

Habitats and communities arise from underlying soils, hydrology, and topography.

Wild River State Park was established here because of the natural, cultural and scenic qualities of the St. Croix River Valley.

The St. Croix River is home to a diverse community of aquatic animals and plants.

Wild River State Park contains plant communities typical of all three of the biomes that intersect in Minnesota.

Because of the diversity of plant communities from these three biomes, Wild River State Park has a diversity of wildflowers.

The diversity of habitat in Wild River State Park and its role as a link in a major corridor of intact habitat provides for a diversity of watchable wildlife and uncommon plants.

Wild River State Park's oak savanna, prairie and marsh habitats are good locations for watching butterflies.

Over 200 species of birds are present in Wild River State Park over the course of the year, providing many rewarding opportunities for bird watchers.

The mission of DNR Division of Parks and Recreation includes preservation of or restoration to the original, pre-European settlement vegetation and wildlife of areas within park boundaries.

Humans have imposed considerable changes on the landscape and its life forms. (Agriculture converted a diverse landscape of prairie and savanna into relatively uniform grassland. Early logging altered the character and species composition of woodlands.)

Prescribed burning is one way to re-introduce a disturbance component necessary for healthy functioning ecosystems, primarily prairie, savanna and woodland communities of Wild River State Park.

Wildlife species respond to the changes in plant communities.

Appropriate management can restore plant and animal species that have been lost from an area due to disturbances.

DNR Division of Park and Recreation manages invasive exotic species because they interfere with the health of native communities.

Rare species tend to require habitat types that are themselves in danger of being lost or compromised.

Oak savanna is the rarest natural community in Minnesota today and Wild River State Park is an ideal location for its restoration.

Private property owners can use the restoration efforts at Wild River State Park as a model for restorations on their own property.

The actions of individual participants can make a difference in the outcome of ecological restoration efforts.

The Goose Creek area is managed in an undeveloped state in order to preserve the region's best examples of lowland hardwood forest, floodplain forest, hardwood swamp and black ash swamp.

What happens to the tributaries, in terms of water quality, happens to the St. Croix River.

The water quality of Spring Creek, Deer Creek and the Sunrise River is important to maintaining quality fishing experiences in Wild River State Park area.

The St. Croix River and its tributaries provide important habitat for native fish communities.

People have always relied on plants as sources of food, medicine, building materials, heating and cooling materials, and for aesthetic appreciation. New uses are constantly being researched.

All native species, regardless of their presumed usefulness to humans, are important parts of their ecosystems and deserve our protection.

#### *Prehistoric (Precontact)*

This area has been occupied by humans for at least 5,000 years, but few traces of the early occupants remain visible.

Hunting and gathering was the main use of the St. Croix valley by humans before the time of first European contact.

#### *Historic*

Both the Ojibwe and the Dakota used the St. Croix River Valley for travel during the fur trade era, and occasional conflicts occurred here between the two peoples.

The St. Croix River was an important route for the first European explorers, and was the route used by French voyageurs and other fur traders between the Mississippi River and Lake Superior.

From the early 1700s to the mid-1840s, the fur trade was the major European economic use of the area.

Fur posts operated within what are now park boundaries for a short time at the end of the fur trade era.

Logging became the major industry in the St. Croix Valley in the 1840s and lasted until the early 1900s, with the river serving to move logs from cut areas to sawmills.

Nevers Dam was built during the peak of white pine logging on the St. Croix to reduce log jams downstream.

Permanent settlement by Europeans occurred in two waves: Settlers from the eastern U.S., and a later wave of immigrants from Europe.

Settlers came to the St. Croix Valley from the eastern U.S. and Europe to fulfill dreams of living a better life.

A proposed, partially constructed railway passing through what is now Wild River State Park spawned dreams of opening the St. Croix valley to agricultural and industrial production. The dream died when the railway company failed to complete its construction.

As Minnesota began to be populated enough to become a state, military roads were built by the U.S. government to provide safe and reliable transportation for settlers. One of these roads was built through what is now Wild River State Park.

The St. Croix – Namekagon waterway was one of the first eight Wild and Scenic Rivers set aside by Congress in 1968.

Wild River State Park was established through transfer of land from the Northern States Power Company and the concerted effort of many conservation-minded citizens.

## **Existing Interpretive Services**

Wild River State Park has had a very active interpretive program for many years with a good balance between non-personal and personal programs.

### *Park Office*

The interpretive role of park office is critical because this is the first point of contact for most park users. The information received at the office can have a great impact on how visitors decide to use their time in the park and what type of experience they have while there. This is a good location for distribution of schedules and interpretive publications. Efforts by office staff to direct visitors' attention to interpretive opportunities are very helpful to the interpretive program.

### *McElroy Interpretive Center (Visitor Center)*

The McElroy Interpretive Center is the hub of the park's interpretive program. It includes permanent and seasonal displays, a wildlife viewing area; brochure racks, and is the starting point for two self-guided trails and many conducted activities through all four seasons. The Interpretive Center/Visitor Center is used for meetings and presentations year-round. A considerable number of reference materials are available in the library including photos, maps, and natural history books. Larger seating capacity, library space, workspace and storage are needed. The major interpretive display is now outdated. Currently, the Visitor Center lobby is open 24/7, but the Interpretive Center itself is open only when staffed (the current naturalist is the only remaining interpretive staff member).

### *Amphitheater*

Wild River State Park amphitheater seats 250 people and is readily accessible from the campground. It is used as the primary site for evening programs during the warm season. Due to 26 years of exposure to the weather, the timbers that form the seating are in serious need of replacement. In addition, the area could use a slight expansion of Wild River State Parking area as well as secure storage for display stands and portable lights.

### *Trail Center*

The park's Trail Center functions as a warming center for cross-country skiers in the winter, and as a meeting space year-round. Ski rentals are available from a concessionaire. The building is also available year-round for rental for family events. Across the parking lot, the Vanished Forest exhibit is available for visitors.

### *Canoe landings*

Two landings approximately 10 miles apart lend themselves as starting and ending points for canoe-based activities. Canoe rental and shuttle services are available from a park concessionaire during the summer. Interpretation at the landings should focus on key safety and regulatory messages.

### *Trails*

The trail system in Wild River State Park includes approximately 35 miles of trail, with 20 miles of it accessible to horses as well as to hikers. Trails access all of the habitats in the park except tamarack bogs and hillside seeps. The park offers two self-guided trail routes that originate at the Interpretive Center.

### *Nevers Dam*

The Nevers Dam site includes an interpretive exhibit that tells the history of the dam and its function in the area's early logging history.

### *History Kiosks*

Five new kiosks based on cultural themes have been designed and are near completion:

- Visitor center entry walkway: orientation to kiosk themes and locations including the Vanished Forest and Nevers Dam exhibits
- Main boat/canoe landing: precontact theme
- Sunrise loop one-mile east of Sunrise Landing parking area: Arrow Line theme
- Amik's Pond trail below visitor center: Military Road theme
- Hiking/horse trail west of group camp: Early settler theme

### *Prairie Care Program*

Since 1993, Wild River State Park's interpretive program has been leading the effort to restore the prairie openings in the oak savanna that once existed in the park. This program uses volunteers to collect prairie seed in the fall from remnant prairie openings in the park and then to plant the seeds in areas of the park that need restoration. Using this system, over 341 acres in Wild River State Park have been replanted to prairie. Because of this successful program, the park provides an important place to provide outreach to private landowners in the surrounding communities. Because Chisago County is projected to have a dramatic increase in its population (and concurrent residential development) in the near future, this outreach is important.

### *Staffing*

Wild River State Park currently employs one full-time naturalist who provides a complete range of interpretive activities and programs as available staff time allows. In addition, the interpretive program routinely partners with other regional providers including Audubon, the St. Croix National Scenic Riverway, Wisconsin State Parks and Minnesota's Interstate and William O'Brien State Parks. In previous years, Wild River State Park has employed a number of interns to assist with interpretive programming. If Wild River State Park continues its Prairie Care program and outreach, increased interpretive staffing in Wild River State Park should be considered.

## **Interpretive Services Recommendations**

- Renovate and increase program and work space in the existing Interpretive Center.

Discussion: A major renovation of the current building is more feasible than a new structure, given the current budget scenario. If expanded, the facility should maintain its architectural identity. Priority areas to expand include: seating space for presentations; preparatory and storage space for interpretive and resource management activities; and outside cold storage areas. The current restroom facilities and parking areas should be evaluated with school groups in mind.

- Replace the Interpretive Center's displays with current exhibits focusing on park interpretive themes.

Discussion: The interpretive exhibits are in need of replacement or renovation. The biodiversity exhibit in the center is more than 10 years old and in need of replacement. In addition, the weather instruments are in need of repair. New exhibits need to be planned and developed which focus on the major interpretive themes for Wild River State Park. Visitors appreciate the user friendly feeling of the existing exhibits, however, and the new exhibits should meet this need.

- Increase non-personal interpretive services in the park.

Discussion: There are many areas of the park that would benefit from having non-personal interpretive exhibits. These areas include the Sunrise unit, the Trail Center, and prairie/savanna restoration areas, for example. Other ideas for non-personal interpretation include signs identifying birding locations; and displays at each major facility that explain what the park has to offer. In addition, participants in the planning process believed that strategically placed exhibits on camper and trail etiquette will benefit all park visitors.

- Increase interpretation of cultural resources contained within the park.

Discussion: Historical interpretation is in increasing demand by state park visitors. Wild River State Park has been the scene of events from many chapters of Minnesota's history, and has unique and well-documented stories to tell about past events and people. Recently installed outdoor exhibits will help to meet this demand, but publications and programs are recommended as further enhancements.

- Partner with appropriate Indian communities to provide interpretation on American Indian history of Wild River State Park area.

Discussion: Telling the stories of the area from the Indian perspective will allow park visitors to better understand the variety of ways that people have lived with the land in park area.

- Foster stewardship of the St. Croix watershed with a focus on Goose Creek and the Sunrise River.

Discussion: In Wild River State Park region of the St. Croix watershed, the Sunrise River drains a large area and has the greatest potential for exposure to contaminants from adjacent land use. The park's interpretive program could help to foster stewardship of the Sunrise and other tributaries of the St. Croix by providing a venue for information about water quality, species monitoring and land management practices. For instance, the park could be used as a demonstration area by developing a monitoring strategy with local partners and cooperating agencies.

- Continue to focus on resource management and public involvement in the park through the Prairie Care program.

Discussion: The Prairie Care program at Wild River State Park has proven to be a successful educational program as well as a resource management program because the volunteers learn while doing. It is recommended that this program should continue and serve as a model for other state parks as well as for private landowners in park area. The current volunteers would like to see site-specific signs to interpret the individual restoration areas and species.

- Continue to focus interpretive efforts on native plant community restoration.

Discussion: Park interpretation should focus on native plant community restoration in Wild River State Park and its potential restoration by private landowners on their own lands. For example, oak savanna is the rarest native plant community in Minnesota today. Local master gardeners or other groups could create a demonstration restoration area in or near the park. People need guidance in using native plants for landscaping and controlling exotics. Savanna or prairie



restoration may mean allowing native grasses and forbs to exceed current mowing height limits in Chisago County municipalities and that this is an acceptable practice as long as safety considerations are observed. Burning to maintain prairie and savanna vegetation is not always possible on private land but effective alternatives exist. The ecological effects of fertilizing and spraying for “weeds” needs to be better understood. The need to control invasive non-native species using appropriate methods is an essential component of ecological restoration.

- Interpretive efforts focusing on the Goose Creek area should emphasize that it is a high value natural area with many rare species.

Discussion: Interpretation of the Goose Creek area should be undertaken with care in order to avoid negatively impacting the area by increasing its recreational uses.

- Continue to focus interpretive efforts on the protection of wildlife corridors and watchable wildlife.

Discussion: Because the St. Croix Valley is a regionally important wildlife corridor it provides remarkable opportunities for viewing wildlife.

- Interpret geological sites that are visible including the gravel pits in and near Wild River State Park boundaries.

Discussion: Gravel pits provide opportunities to see the underlying geology of the area in addition to understanding the restoration process after mining ends.

- Provide interpretation of the St. Croix River and its ecosystem including the identification and importance of fish and other wildlife of the river.

Discussion: Increase interpretation of the St. Croix River and river ecology in general. This can be done through exhibits, brochures or more programming on the river itself, possibly in partnership with other agencies or divisions. As river recreation and access points for fishing and wildlife watching increase, interpretation will help to foster stewardship of the watershed and riverine communities.

- Continue to deliver messages and education from other DNR divisions through workshops and programs utilizing DNR staff and experts.

Discussion: State parks are good places to deliver department messages. The interpretive program should continue to use other divisional staff to develop workshops and programs that inform the public of the many programs and opportunities that the DNR has to offer.



# RECREATIONAL USE AND VISITOR SERVICES

Providing a spectrum of recreational opportunities is central to the mission of the DNR Division of Parks and Recreation. A major portion of the park planning process is to define what type of recreational opportunities people want to have and then to evaluate whether these desired opportunities are appropriate for Wild River State Park, given its setting, legislative mandates and what is already available in the surrounding communities.

The enabling legislation for Wild River State Park is more prescriptive than the legislation adopted for most state parks in Minnesota. With respect to recreation, the legislation states that

*Outdoor recreation activities to utilize the natural features of Wild River State Park that can be accommodated without material disturbance of the natural features of Wild River State Park or the introduction of undue artificiality into the natural scene may be permitted. Park use shall be primarily for aesthetic, cultural, and educational purposes, and shall not be designed to accommodate all forms or unlimited volumes of recreational use. Physical development shall be limited to those facilities necessary to complement the natural features and the values being preserved.*

With this in mind, the development of recreational facilities at Wild River State Park has been carefully planned and located so as to minimize disturbance to the natural and cultural features of the park.

## Access

State and local governments may not discriminate on the basis of disability (Americans With Disabilities Act of 1990 and 28 CFR Part 36). Access must be provided to park services, programs, and activities. All services, when viewed in their entirety, must be useable by individuals with disabilities. This includes facilities such as parking, pedestrian access routes, restrooms, drinking water and recreation facilities. Pedestrian access routes are a continuous unobstructed path that connects accessible elements within a picnic area, camping area, or designated trailhead, such as the paths connecting parking spaces to a picnic or camp unit, a picnic unit to a toilet building, or connecting accessible picnic tables to other accessible camping elements.

The Americans with Disabilities Act (ADA) provides guidance for accommodating the natural environment's variable character when providing accessibility. ADA delineates modifications and exceptions that can be applied when necessary to maintain the integrity of an outdoor recreation setting, accommodating such elements as hydrology, terrain, surface characteristics and vegetation. Information regarding accessibility will be available in brochures and on the DNR website to guide visitor expectations.

## Visitor Expectations: The 2001 Minnesota State Park Visitor Survey

What we know about state park visitors in general is that when people visit state parks they want to attain experiences that add value to their lives. The experiences visitors seek are to enjoy nature, to escape the pressures of daily life, to bond with family and friends, to learn and to explore new things and to get some exercise. The activities that appear to be most important to them include hiking, sightseeing, and nature observation. In addition, learning-related activities are an important part of their experiences.

Visitors generally support management actions that support Wild River State Park's core mission including expanding opportunities for wildlife viewing, quiet & solitude, hiking, education and interpretation. At the same time, visitors do not support expanding development in state parks if it degrades the remaining natural and cultural resources.

#### *Who the Visitors Are:*

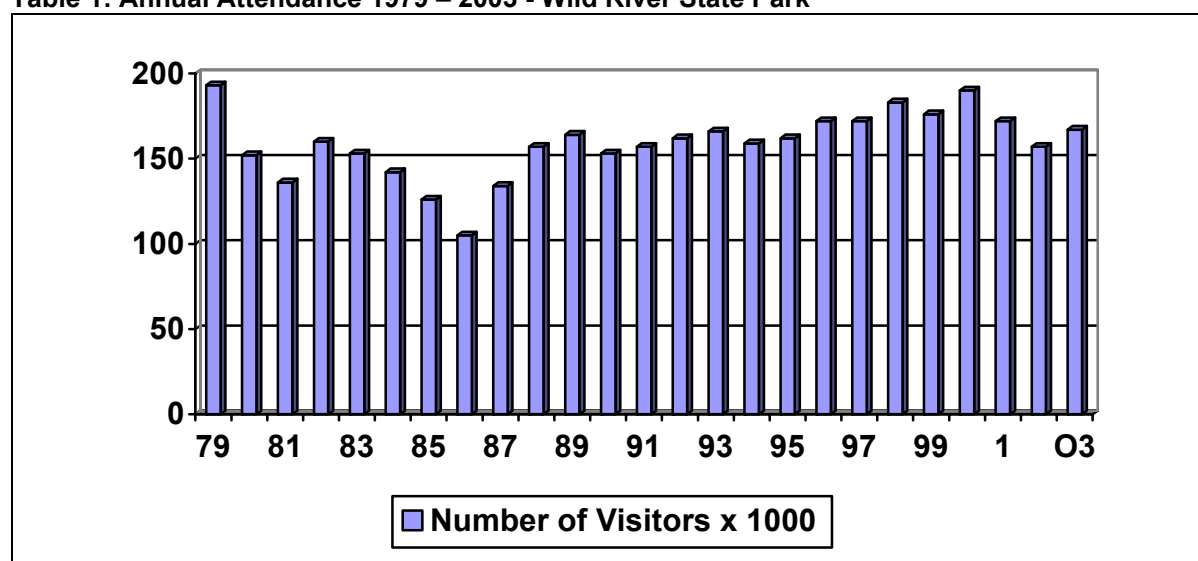
Visitors to Minnesota's state parks come from all parts of the state, from all age classes, genders and socioeconomic levels. However, we also know that state parks are visited less frequently by people of color and are visited more frequently by middle-aged adults and children. The majority of state park visitors are college-educated and are from middle-income economic groups.

#### *Attendance and Visitor Use Patterns:*

Although annual attendance at state parks varies depending on the seasonal availability of camping and the weather, attendance is increasing gradually overall. This trend is likely to continue in the future.

Current visitation in Wild River State Park is approximately 180,000 visitors per year with 16% of those being overnight guests<sup>15, 16</sup>. (See Table 1: Annual Attendance 1979-2003).

**Table 1: Annual Attendance 1979 – 2003 - Wild River State Park**



Due to its proximity to the Minneapolis-St. Paul metropolitan area, there is considerable winter use in the park. On good snow years, for example, the park grooms 35 miles of cross-country ski trails. A private concessionaire rents both skis and snowshoes, and the park rents snowshoes at the Trail Center. Both the camper cabins and the guesthouse have been very popular in the winter. The remote backpack camping sites are also occasionally used by winter campers.

Recreational issues addressed in the planning process include those mentioned by visitors in their comment cards & the facility questionnaire, those brought forth at the Citizen Advisory Committee and Technical Team meetings and those observed by staff while working in the park. Generally, visitor comments about Wild River State Park are very positive. Recreational issues that were noted in the planning process included:

- User impacts and erosion on park trails; trail surface maintenance and restoration
- User conflicts (skiers vs. snowshoers & winter hikers; hikers vs. horseback riders)
- Vandalism at Sunrise Access (plus litter, alcoholic use)

<sup>15</sup> Throughout the Minnesota State Park system, the majority of the use is due to day users (89%). Campers make up just 11% of the overall park use.

<sup>16</sup> Source: MN DNR 2005

- Enforcement issues on the St. Croix River
- Lack of winter shower facilities for park campers
- Lack of summer shower facilities for horse camp and group camp
- High occupancy rate of lodging facilities
- Demand for more electric sites
- Trail connections outside Wild River State Park
- Increased recreational use of the St. Croix River

Perhaps more importantly, citizens who attended the Citizens Advisory Committee meetings stated a strong preference for maintaining a relatively undeveloped and natural setting in this park. For example, day-use visitors typically frequent Wild River State Park for its hiking, birdwatching, skiing and horseback riding opportunities. Obtaining relative solitude on the park's trails was often expressed as a reason for choosing to visit this park.

## Existing Facilities

### *Trails:*

Wild River State Park provides a variety of experiences to park visitors with a total of 35 miles of trail:

- 20 miles of shared hiking and horse trails
- 12.5 miles of hiking trails, of which 2.7 miles are self-guided interpretive trails
- 2.5 miles of paved trail for hiking, biking, and inline skating

During the spring, summer and fall months, a portion of the trails is shared between the hikers and horseback riders. During winter months with good snowfall, up to 35 miles of trail are groomed for classic diagonal skiing and 1.5 miles of trail are packed for winter hiking. Snowshoeing is allowed anywhere in the park except on groomed trails. Horse use of the trails is prohibited from November to May (See Figure 7: Park Facilities and Trails).

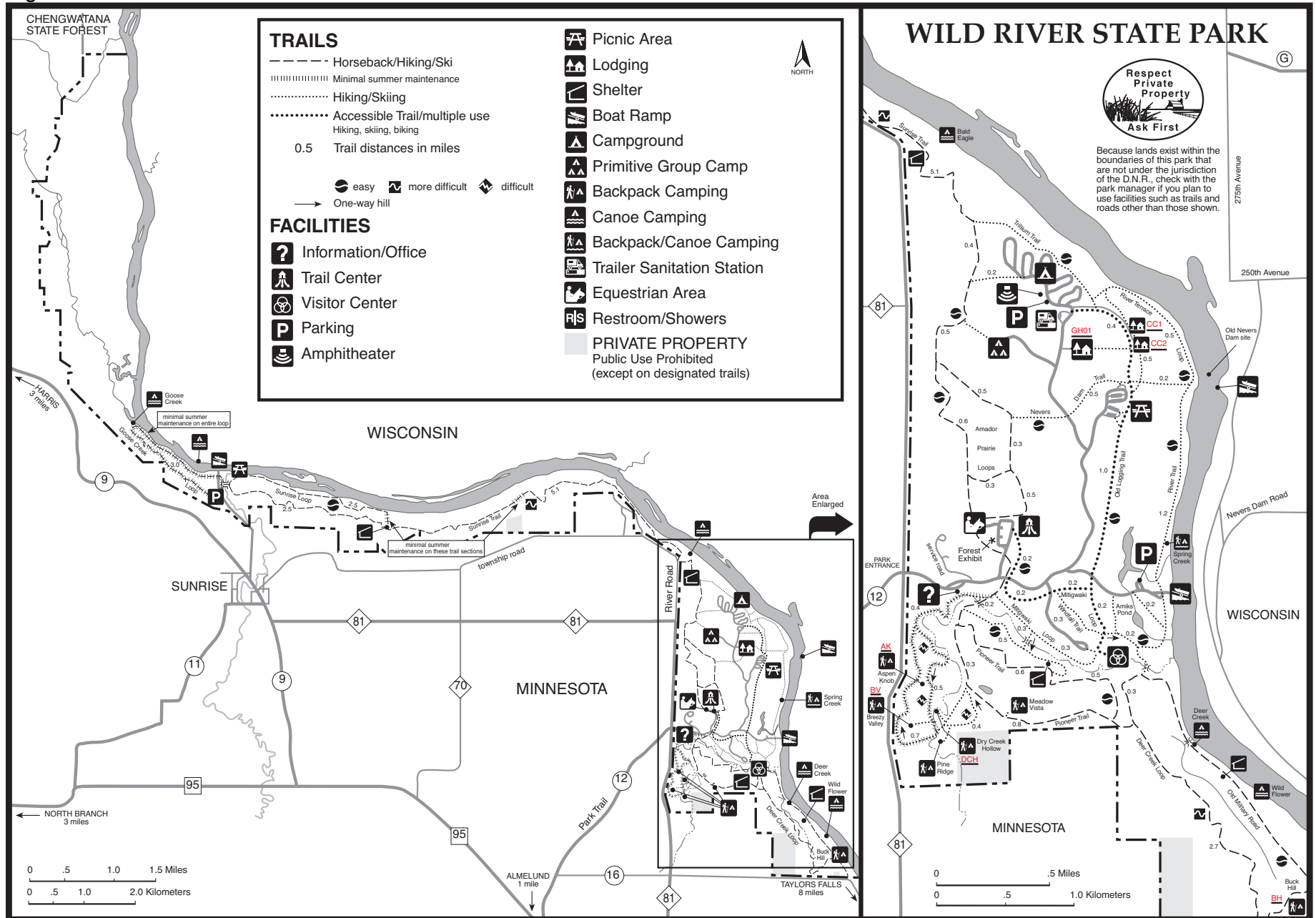
A significant amount of discussion ensued during the planning process regarding the park's current trail system. Categories of discussion included the amount of trail and trail interconnectedness; trail user conflicts; trail maintenance and rehabilitation; natural and cultural resource protection on and along trails; and potential trail connections outside of the existing park boundaries.

### *Trail density & interconnectedness:*

The current trail system in Wild River State Park equals approximately 6 miles of trail (or road) for every square mile of park south of Goose Creek. In other words, approximately 34 acres of the park are currently covered by trail surface, almost all of those being in the southern half of the existing park (Donais 2004). Relative to other state parks, this is a very high density of trails. Citizens who discussed this issue were not supportive of adding more trails to the park—in either the southern section due to the already high density of trails or in the Goose Creek area due to its resource sensitivity. Due to the interconnectedness of the trail system in the southern half of the park, the removal of specific trail alignments (to decrease the trail density) seemed impractical as well.

# Wild River State Park

Figure 7: Park Facilities and Trails



#### *Trail user conflicts:*

Current trail user conflicts (i.e. hikers meeting horses and vice-versa) generated a significant amount of discussion from the participants at the Citizen Advisory Committee meetings. Both hikers and horseback riders were concerned about a lack of proper etiquette and potential safety issues along their shared trails. Both groups felt that trail safety needs to be re-emphasized in the park (hikers sometimes scare horses and horses sometimes scare hikers). Many solutions were discussed including visitor education, strategic trail separation, and measuring how many people are currently using the trails for horseback riding.

#### *Trail maintenance and rehabilitation:*

Because the typical soils in Wild River State Park are highly erodible, there is a significant amount of trail erosion occurring, especially on some of the trails used by horseback riders. The resulting loss of soil negatively impacts the water quality of the St. Croix River and its local tributaries. In addition, it makes the trails relatively impassable for hikers who share the same tread way. All participants agreed that the park's existing trail system needs to be monitored for erosion on an annual basis (or more often if needed). Moreover, the park needs increased funding for trail maintenance and rehabilitation activities. Along with this, the park needs to develop some method for monitoring the number of horseback riders that use its trails. Currently, horseback riders can enter the park from more than one location and do not need to document their visits.

#### *Natural & cultural resource protection along trails:*

Participants expressed support for maintaining the integrity of the natural and cultural resources along trails in Wild River State Park. Trails that are currently impinging on sensitive areas should be rerouted or realigned, if at all possible. For example, trails should be realigned so that they are located on the edge of restored areas (or intact natural communities) to decrease habitat fragmentation. In addition, concern was expressed about the proliferation of exotic invasive species along trails, especially horse trails.

#### *Trail connections:*

Participants in the planning process generally supported the idea of connecting Wild River State Park's trails to the trail systems that are being developed outside of the park, including local efforts such as the Swedish Immigrant Trail and the Munger State Trail. Developing a spur trail connecting the park to these trails should be investigated. However, participants did not support adding additional trails in Wild River State Park as part of this effort. This is especially true for the Goose Creek area. Due to its sensitivity and resource significance, participants did not support developing any trails within this area. Moreover, with cultural resources such as the Military Road alignment in the park, all new trail alignments should be carefully evaluated and then designed appropriately.

#### *Picnic Areas:*

The main picnic area offers picnic tables, fire rings and two barbeque grills. The current shelter contains four fireplaces and is a combination open and enclosed building with a deck that overlooks the Nevers Dam area. Flush toilets are available in the summer; vault toilets are available in winter. This shelter is accessible to persons of all abilities. The shelter can be reserved in advance by calling the park. Suggestions to improve the current picnic area included opening up the area for better air circulation and for better views of the river. The Sunrise Picnic area offers 3 fire rings, 3 tables, 2 benches, a hand pump water well, and a new concrete vault toilet.

#### *Boat Accesses/Launches:*

The St. Croix River can be accessed in the park by 2 boat ramps (at the main landing & at the Sunrise landing). Canoe rental is available in the park through a private concessionaire. Most use in the area is by small fishing boats, canoes & kayaks because the St. Croix River can be shallow and rocky north of Nevers Dam. Approximately 11 different river camping locations are available, each with multiple campsites.

### *Camping and Lodging*

Wild River State Park also provides a variety of camping options for overnight visitors including:

- Main campground with 96 total campsites (17 electric sites, 2 double sites, 2 pull-through sites, and 75 regular sites); 2 shower and bathroom buildings, 5 vault toilets, 10 water faucets, and a sand box and open play area.
- Horse camp with 20 campsites, 1 day use area, 2 manure bins, 2 vault toilets, cable horse ties, and 1 water faucet. The nearby Trail Center also provides some facilities for people in the horse camp.
- Summer backpack sites (7) and winter backpack sites (9); each with a fire ring, forest toilet and a picnic table.
- Several canoe sites: Goose Creek (3 sites), Bald Eagle (1 site), Spring Creek (1 site), Deer Creek (2 sites), Wildflower (1 site); each site with a picnic table, a fire ring, and forest toilet.
- Group camp that offers 10 sites that accommodate up to 30 people per site. The group camp is for tenters only and has vault toilets and a hand-pump water source.

The main campground has a relatively high weekend occupancy rate, especially for the fall and spring seasons. Weekday use drops off considerably for the periods measured

Lodging facilities that can be rented in Wild River State Park include:

- 1 Guesthouse with 2 bedrooms (sleeps up to 8); a kitchen with cooking supplies; a full bath, and a wood fireplace.
- 2 Camper cabins, one of which is accessible and sleeps 5; the other sleeps 6. Each camper cabin includes a gas fireplace, bunk beds and a table with bench. Outside facilities include a picnic table, fire ring, BBQ grill, composting toilet for summer use & vault toilet for winter use, water available at the campground shower facilities in the summer or the office or trail center in the winter.

Wild River State Park's lodging facilities have relatively high occupancy rates year-round, especially if there is good snow during the late fall and winter months. See Table 2.

**Table 2: Lodging: Average Monthly Percent Occupancy Rates for 2003-2005<sup>17</sup>**

	Guest House	Camper Cabins
January	71%	46%
February	74%	49%
March	76%	61%
April	56%	45%
May	55%	54%
June	81%	80%
July	90%	85%
August	87%	92%
September	70%	62%
October	77%	66%
November	68%	44%
December	68%	41%

### *Trail Center:*

The park currently provides one trail center that is fully enclosed and contains modern restrooms, two fireplaces and two wood stoves. It is open year-round. In summer, the trail center can be reserved by individuals and groups for events and picnics. In winter, the center serves as a warming house with

<sup>17</sup> All figures from general attendance reports P:\PRK\Attendance\Annual.



ski rentals and concessions. Suggestions for improving the trail center ranged from adding more comfortable furniture to returning the old wooden tables due to their aesthetic appeal.

*Interpretive Center:*

See the Interpretive Section for facility description and needs.

## **Recreational Use and Visitor Services Recommendations**

### *Park Trails*

- Evaluate existing park trails on an annual basis for current and future impacts to cultural, recreational and natural resources.
- Continue to provide opportunities for horseback riding on existing horse trails while maintaining the ecological integrity of the areas adjacent to the trails.
- Correct erosion problems on existing trails in the park.
- Give careful consideration to all park resources when proposing new paved trails.
- Continue to follow Wild River State Park's enabling legislation which restricts recreational trail use to non-motorized use.
- Evaluate all new trail proposals carefully because the park already has a high density of recreational trails in the southern unit.
- No trails are recommended for the Goose Creek area of the park due to its ecological sensitivity and significance.
- Maintain existing network of hiking opportunities that traverse the major landscapes in the park.
- Develop interpretive materials for the trails that emphasize trail etiquette that involves all user groups.
- Work with a subset of recreation groups to decide how best to educate all trail users.
- Develop a monitoring system for horseback use in Wild River State Park so park staff can accurately estimate numbers of riders and trends.
- Provide high quality classical ski trails for all skill levels that emphasize a natural experience.
- Provide opportunities for snowshoe travel, cross-country and on at least one marked trail.
- Increase winter hiking opportunities.

### *Trail Connections*

- Participate in the planning of the Scenic Byway that will pass on the west side of the park and use existing roads.
- Cooperate with partners to provide a spur trail connection to regional and state trail systems. Likely connections from the south of the park include the use of either Military Road, Selman Avenue into Silver Avenue, or Reed Avenue (Chisago County 81).

- Develop a trail connection for the Goose Creek Loop at the Sunrise Access to move visitors off of the road.
- Recognize and formalize the snowmobile route that exists along the Ferry Road (Sunrise Unit) because it is a major connection between Minnesota and Wisconsin in the winter.

#### *Cultural Resource Protection*

- Protect all existing cultural resources in Wild River State Park when proposing new recreational development.

#### *Camping/Lodging*

- Provide and expand where feasible overnight camping opportunities, maintaining a natural setting, but providing amenities for both RV and tent camping in all seasons of the year.
- Continue to pursue opportunities for adding more camper cabins---maintain spacing or provide screening from other cabins and trails.
- Continue to pursue opportunities to meet the demand for electrical sites.
- Work with the horse groups to improve the horse day use area, horse trails and horse campground.
- Provide year-round showers for all park users.
- Screen lodging facilities from park trails and other use areas.

#### *Other Recreational Facilities & Opportunities*

- Continue to look for an area in the park to provide winter sledding opportunities.
- Maintain open vistas to the river valley in different areas of the park where appropriate (i.e., Picnic area).
- Continue to provide snowshoe and cross country ski rental that helps introduce new visitors to those activities.
- Provide regulatory, informational and directional signs that will orient new visitors to park buildings, facilities and trails.
- Better utilize the trail center as a trailhead and orientation center area for park visitors.
- Continue the successful annual candlelight ski and other special events such as March for Parks.
- Enhance trail user experiences by providing exhibits, kiosks, and information boards regarding the natural landscape, cultural features, and history of Wild River State Park.
- Provide canoes for rent in a quantity that promotes a more solitary experience of the upper St. Croix River in accordance with NPS St. Croix NSR guidelines.
- Provide access to the St. Croix River for shoreline fishing while monitoring impacts to the park's shoreline resources.

- Provide facilities that are consistent with and compliment those of the St. Croix National Scenic Riverway.
- Partner with outdoor businesses and organizations to provide special events and interpretive activities that introduce new or inexperienced visitors to outdoor skills, i.e. minimum impact camping, fire-building, snowshoeing, and canoeing.
- Explore the feasibility of using the trail center during the summer months as a gathering place for conservation enthusiasts.
- Consider using the park as a learning center for teaching outdoor skills and activities to urban youth; partner with other recreation providers in or near the Minneapolis-St. Paul metropolitan area.



# **PARK BOUNDARY & CONSERVATION ISSUES**

## **Statutory Boundaries of Minnesota State Parks: Background Information**

A park statutory boundary is defined by the Minnesota State Legislature and provides staff, citizens and policy makers with a common understanding of which lands are appropriate for inclusion in a given state park. Changes to park statutory boundaries are typically requested from the Legislature when appropriate land outside of the boundary becomes available or as a result of a new planning process which has looked at the long-term recreation and conservation needs of the area. Even after a planning process is completed, the DNR Division of Parks and Recreation only requests changes to park boundaries when the landowners are willing to be included in the new boundary. It is important to note that landowners inside of a park statutory boundary do not give up any rights over the use of their property including the right to sell to whomever they choose.

During the Wild River State Park planning process, it became apparent to participants that in order to maintain views from within the park, as well as to maintain the long-term ecological integrity of the natural resources in and near the park, a more comprehensive program of protecting land will be needed. Hence, this plan includes a combination of recommended actions that range from providing educational materials to adjacent landowners about landscaping with native species to acquisition of appropriate properties from willing sellers.

## **Existing Boundary**

St. Croix Wild River State Park is located in Chisago County in parts of the following townships:

In T35N R19W, Wild River State Park is located in the west half of the township with the St. Croix River bordering it on the east.

In T35N R20W, Wild River State Park is located in sections 2, 3, and 4.

In T36N, R19W, Wild River State Park is located in section 31. The St. Croix River (and state line) runs NW and SE, diagonally dividing the section in half.

In T36N R20W, Wild River State Park follows the river through sections 6, 7, 18, 19, 30, 31, 32, 33, 35 and 36.

In T36N R21W, Wild River State Park is located in sections 1, 12, 13, 24, and 25.

The park statutory boundary encompasses 6,768.69 acres, of which 6,571.83 acres are owned by the State of Minnesota, 42.50 acres by the U.S. Department of Interior-National Park Service, and 15.61 acres by Chisago County. The remaining 139.67 acres are privately owned by six individual owners (see Figure 8 : Land Ownership).

## **Boundary and Adjacent Conservation Issues**

As Chisago County rapidly develops in the next few decades, the land preserved within and near Wild River State Park will become ever more important, both to natural and cultural resource protection and to the visitors who will be seeking quality recreational experiences. Wild River State Park, as part of the whole St. Croix Valley including its tributaries, is considered a very important conservation corridor for the whole region (Drewry 2005). The Metro Conservation Corridors program, along with its various partner organizations, has prioritized several areas adjacent to Wild River State Park for private land

conservation. These voluntary programs are available to private landowners for consideration and include the use of such conservation tools as scenic & conservation easements, fee title sales, and conservation educational materials.

One tool that can help educate landowners about land conservation is the establishment of a private lands registry program. Registry programs honor and encourage private citizens who have served as good stewards of the natural features on their properties. Landowners who wish to participate in these informal, non-binding programs can “register” their property with a conservation organization. While there is currently no private lands registry program on the St. Croix River, the Department is investigating the possibility of establishing such a program.

Because Wild River State Park is an important corridor in the St. Croix Valley, the conservation of its resources and the lands adjacent to it is important. Both the Citizen Advisory Committee and the Technical Team considered in detail Wild River State Park’s current ownership & statutory boundaries as part of an analysis of conservation needs in this area. Participants in the planning discussion were supportive of extending Wild River State Park’s statutory boundaries to protect high quality native plant communities, rare plant and animal habitat, future recreational trail connections and viewsheds. In addition, Wild River State Park could play a role in restoring and protecting areas that are currently being mined for gravel adjacent to Wild River State Park

During the planning process, participants identified a general area for the Department to focus conservation and viewshed protection efforts for Wild River State Park (see Figure 10: Conservation and Viewshed Protection). The goals for Wild River State Park’s work in this area include:

- Buffer the natural communities within the state park, especially the Goose Creek area.
- Preserve the viewsheds and access via trails that are important to state park visitor experiences, especially in the southern half of the state park.
- Develop easily discernable and marked boundaries for the state park to reduce trespass issues.

The Department will use the tools described above, as well as easements and fee title acquisition, in working with neighboring landowners to achieve these goals, while respecting the interests of the private landowners.

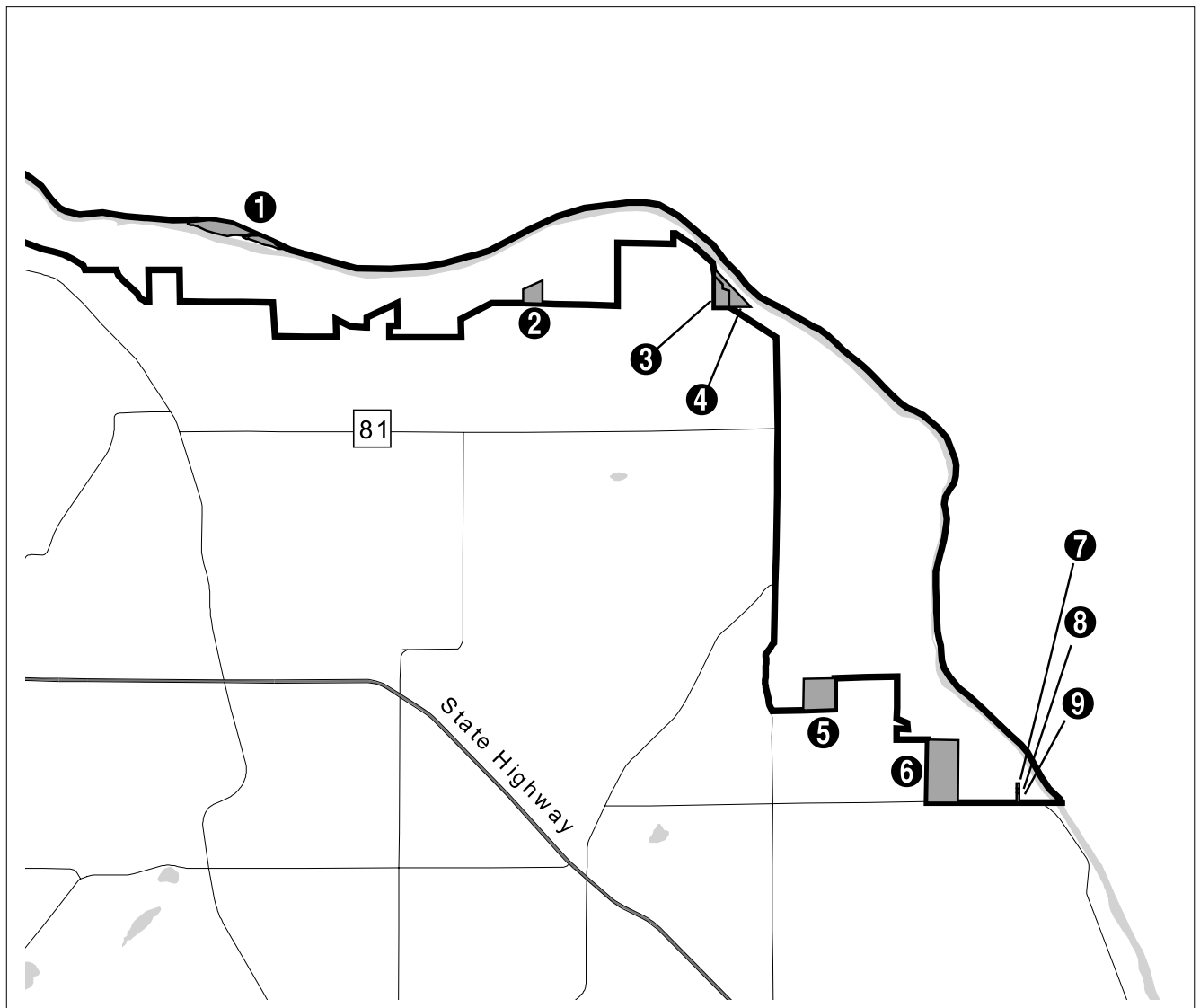
## **General Boundary and Area Conservation Recommendations**

- Short-Term Conservation Efforts
  - Continue to pursue purchase of private lands within the existing park statutory boundary.
  - Pursue adding the former Chisago County gravel pit (T 36N R 19W Section 31) to Wild River State Park and restoring it with native species.
  - Work with private owners within the conservation and viewshed protection area, including private owners of two other adjacent gravel pits (T 35N R20W Sections 3& 4; T36N R20W Section 36) to evaluate the potential for including their land in the park statutory boundary.
- Long-term Conservation Efforts
  - Cooperate with local and regional conservation efforts to protect the water quality and lands of the St. Croix watershed including lands adjacent to the Sunrise River, Dry Creek and Goose Creek.

- Work with partners to notify new landowners in the area about conservation measures that they can implement on their own lands, especially if they have significant natural or cultural resources on their land.
- To help preserve important viewsheds, visitor experiences and ecological integrity, contact all of the landowners along River Road and overlooking the Pioneer Loop regarding potential inclusion in Wild River State Park's statutory boundary and/or conservation tools that are available to them.
- Continue working with Chisago County officials on conservation and development issues; for example, explore the use of zoning setbacks in the county to aid as a buffer to Wild River State Park and for viewshed protection.
- Continue partnerships with the U.S. National Park Service, Wisconsin DNR, and Wisconsin conservation groups so that the land across the St. Croix from Wild River State Park will be protected. Participants were especially concerned with protecting the views from the Minnesota side (i.e., reducing light and sound pollution).
- Long-term Additions
  - When landowners are amenable, pursue the concept of adding land to the west of Wild River State Park to buffer around the Goose Creek area and the Chengwatana State Forest (Wild River State Park abuts the south end of the Chengwatana). This will serve the purpose of providing greater protection for these two areas including a reduction in the fragmented plant communities on their boundaries. It might also serve the purpose of acquiring land that is dry enough to accommodate a trail link between the Chengwatana's existing trail system and Wild River State Park's existing trail system (and thereby avoid the Goose Creek area).
  - When necessary, pursue changing the existing park statutory boundary to improve the existing trail system and views in the Sunrise Loop area.

# Wild River State Park

Figure 8: Land Ownership



## Legend

### Non-State Ownership In Statutory Boundary

- ① National Park Service (27.69 acres)
- ② Private owner (15.30 acres)
- ③ Chisago County (15.61 acres)
- ④ National Park Service (14.81 acres)
- ⑤ Private Owner (40.00 acres)
- ⑥ Private Owner (81.60 acres)
- ⑦ Private Owner (0.50 acres)
- ⑧ Private Owner (0.46 acres)
- ⑨ Private Owner (0.89 acres)

 Park Statutory Boundary



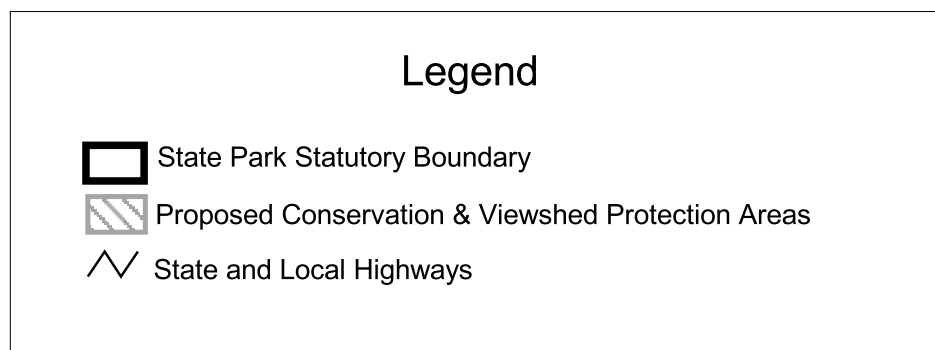
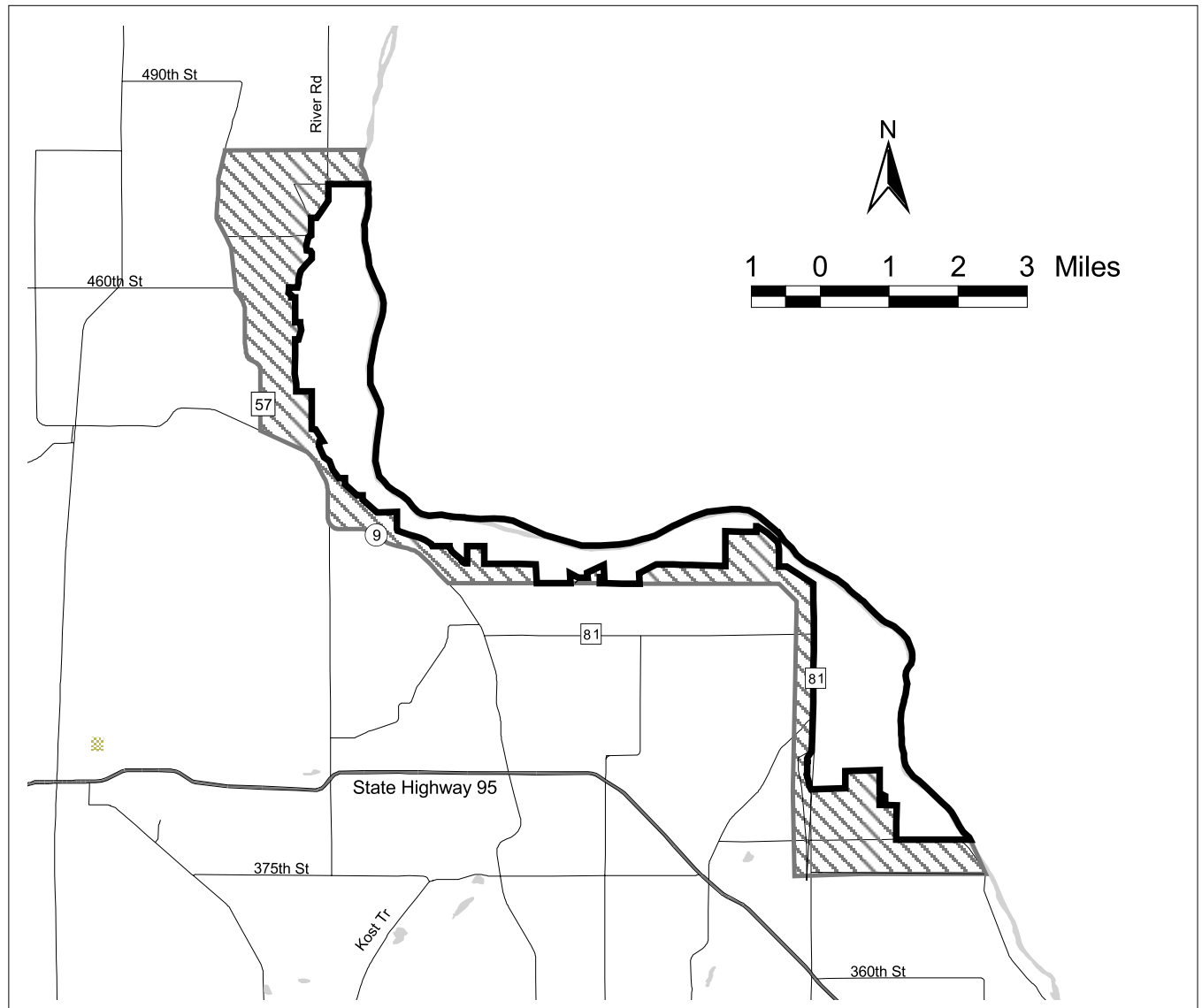
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# Wild River State Park

Figure 9: Proposed Areas for Conservation & Viewshed Protection





# SIGNIFICANT AREAS MAPPING

Significant Areas Mapping (SAM) is an integrated approach by which the natural and cultural resources in a park are first identified in terms of their significance and then assessed in terms of their capability to provide opportunities for visitor experiences.

The SAM process has two parts - assessing present conditions and assessing future conditions. In each part there are three steps - identifying significant natural and cultural resources, identifying levels of visitor use and experience, and overlaying the first two steps to assess opportunities and conflicts related to park resources and park visitors. Future conditions are those anticipated at the end of the twenty-year lifetime of the management plan. Visitor use and experience is defined on a park-specific scale of low, medium, and high use based on the number and density of visitors using the area.

The purpose of the SAM process is to help identify areas for improvement in the way the DNR Division of Parks and Recreation manages how resources and people interact in the parks. It will aid the Division in addressing existing problems as well as in planning to avoid new ones. It also can help point out how the Division can take better advantage of the places where the interaction between people and the resources are positive - through interpretation and education.

With input from the public, the SAM process can lead to a discussion of how to resolve conflicts between resource protection and visitor use - possibly by relocating (or modifying) visitor use, or by monitoring resource impact and defining impact management strategies. Appropriate strategies for managing impacts can be determined using the SAM analysis along with Wild River State Park's mission as guides. Specific management strategies may include:

- *site management* (facility design, site hardening, site closure, vegetation barriers, etc.)
- *rationing and allocation* (reservations, queuing, pricing)
- *regulation* (the number of people, the location or timing of visitors, visitor behavior)
- *deterrence and enforcement* (signs, sanctions)
- *visitor education* (interpretation that promotes appropriate behavior or provides information regarding use conditions)

## Existing Conditions and Experiences

### *Significant Natural and Cultural Resources*

Today, although all areas of Wild River State Park have been disturbed by human activities in some way, much of the park's land base supports native plant communities similar to the vegetation present on the landscape prior to European settlement. As a result, there are numerous significant communities and species located in the park. Most of Wild River State Park has been designated as parts of sites of high to outstanding biodiversity significance by the Minnesota County Biological Survey program. Looking at the park as a whole, however, the Goose Creek area stands out as a very significant natural resource that merits special attention and protection (See Figure 9: Significant Areas).

Moreover, the park contains numerous cultural sites including pre-contact and historic sites (as described in the Cultural Resources section of this plan). Examples visible to the public include Nevers Dam and the Point Douglas to Superior Military Road.

### *Current Visitor Use Levels and Experience*

As of 2005, visitor use levels of the Goose Creek area are relatively low for a variety of reasons. Most importantly, the area is typically wet spring through fall, so visitors are not likely to enter the area except in winter. Secondly, Wild River State Park typically does not provide access into the area via managed trails. Visitors who recreate in the Goose Creek area are likely to do so on snowshoes or

cross-country skis. Those participating in the planning process indicated that the area is appreciated for its wild nature and relative inaccessibility. Visitor who do choose to enter it, do so because they want a wilderness-like experience in the Chisago County area.

Cultural sites within Wild River State Park are typically not pointed out to park visitors in order to protect them from vandals. However, in the examples of Nevers Dam and the Military Road, many people visit these sites to appreciate and to learn about them.

## **Future Conditions and Experiences**

Given the significance and sensitivity of the Goose Creek area, planning participants recommended that the area should be managed as an undeveloped area without the intrusion of human-made facilities such as trails and their associated amenities (See Figure 10: Significant Areas). The enabling legislation for Wild River State Park allows for the designation of both “Scientific Natural Areas” and for “Wilderness Areas” within the park:

### *Session Laws 1973, Ch. 567, Subd. 3 SCIENTIFIC NATURAL AREAS*

*Areas of Wild River State Park containing geological, plant, or animal features of exceptional scientific and educational value, including but not limited to value as (a) a living museum; (b) a site for scientific study; (c) an area for teaching natural history and conservation; and (d) a habitat for rare and endangered species of plants and animals, shall be designated as scientific natural areas.*

*Scientific natural areas shall be managed to preserve, perpetuate and protect from unnatural influences the scientific and educational resources within them. Interpretive studies may be provided for the general public. Physical development shall be limited to the facilities absolutely necessary for protection, research, and educational projects, and, where appropriate, for interpretive services. An area designated as a “scientific natural area” shall not be altered in designation or use without holding a public hearing on the matter at a time and place designated in the notice of the hearing, which shall be published once in a legal newspaper in each county in which the lands are situated at least seven days in advance of the hearing. At the hearing the commissioner shall provide an opportunity for any person to be heard.*

### *Session Laws 1973, Ch. 567, Subd. 4 WILDERNESS AREAS*

*Areas within Wild River State Park consisting of natural, wild, undeveloped lands remote from the sights, sounds, and smells of civilization, undisturbed by commercial utilization and free of mechanical transportation, embracing a sufficiently comprehensive unit to give the user the feeling of a “wilderness experience”, minimize contact with other visitors, and avoid the detrimental effects of overuse of certain areas shall be designated as wilderness areas.*

*Wilderness areas shall be managed only to the extent necessary to control fire, insects and disease, and to re-establish wilderness conditions. There shall be no development of public roads, permanent dwellings, or recreational facilities except trails for nonmotorized traffic. Facilities existing at the time of establishment shall be removed.*

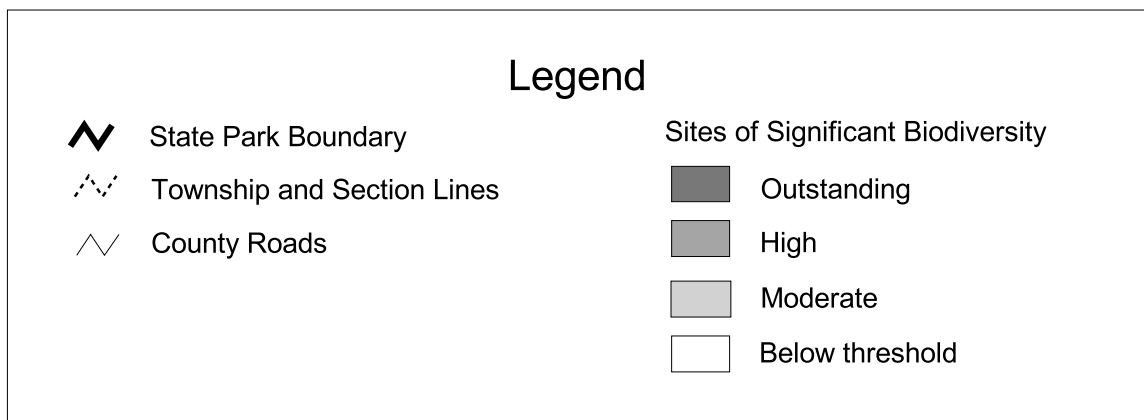
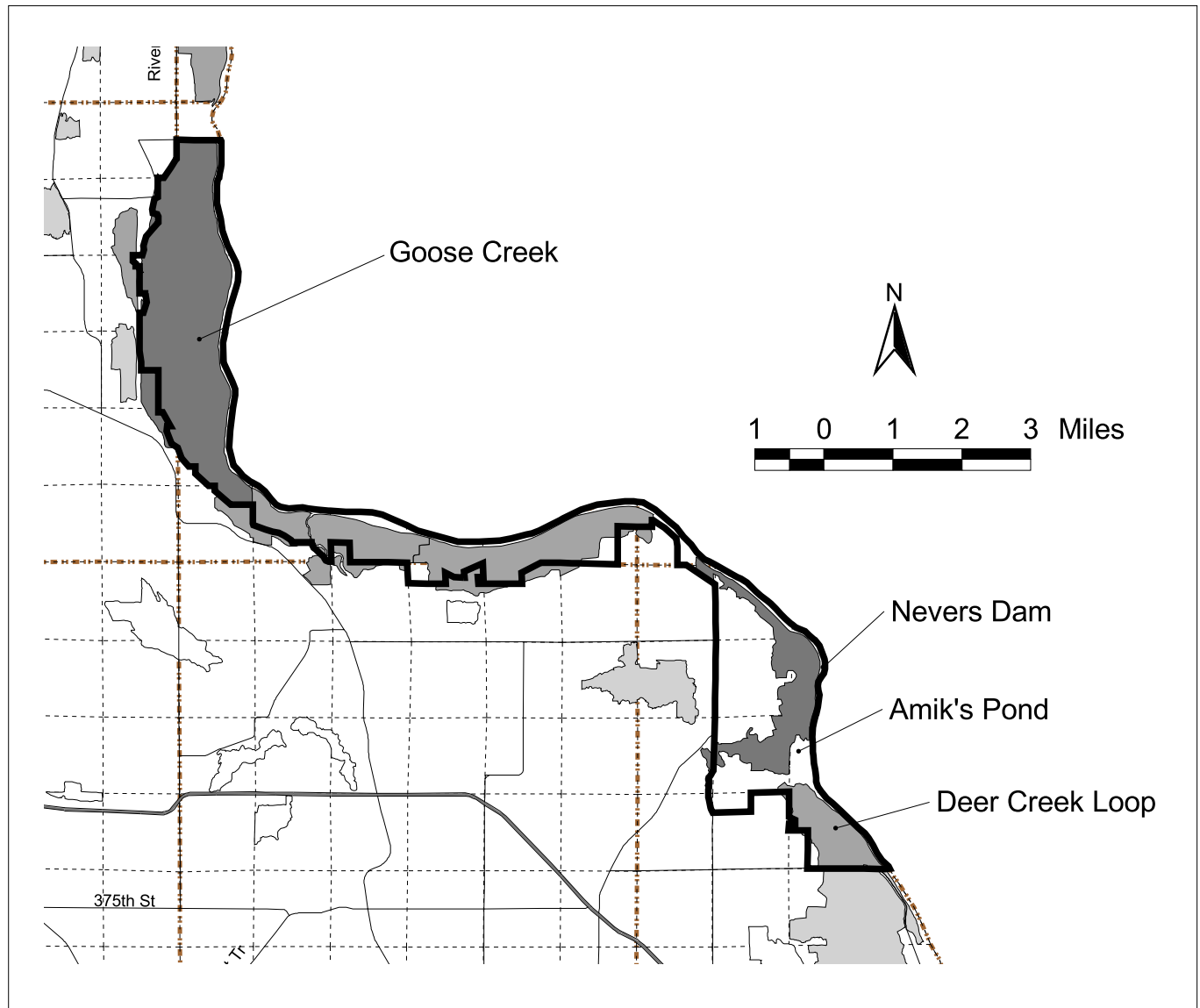
## **Significant Areas Mapping Recommendations**

- Maintain the Goose Creek area as a natural area with limited development, as specified by Wild River State Park’s enabling legislation. Allow for limited scientific and educational uses while protecting its exceptional features.

- Provide for a natural experience in the Deer Creek area. Participants in the planning process requested that the park should continue to manage these areas so that visitors can experience a relatively undeveloped and natural area including views.

# Wild River State Park

Figure 10: Significant Areas



# PARK OPERATIONS

## Operations Costs and Staffing Issues

In general, Wild River State Park has relatively few operational and staffing issues. Those that were raised during the planning process included:

- a general decrease in interpretive standards hours to staff the park's Interpretive Center
- a need to increase revenue in the park and system-wide
- a need to review the current relationship between the adjacent privately owned businesses and their potential use of park trails
- staffing for winter public contact

Suggestions to solve the issues with the Interpretive Center included the increased use of volunteer hours to staff the Interpretive Center and reducing the hours that the building is open to the public overall. Both of these measures have already been implemented.

A possible source of increased revenue within Wild River State Park is the addition of several more camper cabins. This issue is currently being addressed by a MN DNR Division of Parks and Recreation camper cabin committee that is charged with determining where to locate these cabins statewide.

Due to concerns about erosion on the park's horse trails, it was suggested that the park should start monitoring how many horseback riders are using park trails and where they are coming from. It is likely that the majority of the horses on the trails are transported into the park by park visitors, but it is also likely that a significant number of horses on the trails enter the park from the adjacent private properties. Comparable providers of in-park services (i.e., canoe and cross-country ski rentals) are licensed as park concessionaires. At a minimum, the riders should be possibly buying a daily use permit, as are all other park visitors.

## Snake River State Forest Campground

The Snake River State Forest Campground is managed by Wild River State Park. It is a 26 site drive-in campground with a hand pump well and vault toilets. Overseeing the campground creates several operational issues for Wild River State Park – the campground is located in another county and another DNR region than the state park. This means park staff works with another County Sheriff Department as well as another Department Conservation Officer in managing the site. The driving distance to the campground also impacts the state park's staff hours available for tasks at the state park and forest campground. Lack of staff time to oversee the site has resulted in some enforcement issues at the campground (see the Enforcement discussion below). At this time, there are no development plans or projects for the campground.

## Enforcement

Recognized enforcement issues in or adjacent to Wild River State Park include alcohol use and littering along the Sunrise River by those who use it for tubing; vandalism at the Sunrise access and at the Snake River Campground, horseback riders riding off trail or on trails not designated for their use; and the difficulty of enforcing rules and regulations that govern lodging in MN State Parks.

Because Wild River State Park is located along the St. Croix River NSR, there is some ambiguity about the respective responsibilities in the park area (or logistics are complicated, like on the islands in the St. Croix River). Various agencies have regulatory authority along the river including the National Park

Service, Chisago County and the Wisconsin and Minnesota Departments of Natural Resources, for example. The technical team suggested that the Department consider a more formal cooperative enforcement agreement for the Wild River State Park area such as that being developed between the authorities for the Interstate State Park area.

### **Park Operations Actions & Recommendations**

- Develop a cooperative enforcement agreement between all agencies that have enforcement authority in this section of the St. Croix Riverway.
- Horse use numbers should be monitored in Wild River State Park, especially those coming in from adjacent properties.
- The relationship between private businesses and their use of park trails for profit should be re-evaluated as possible concession arrangements.



# PLAN MODIFICATION PROCESS

DNR Division of Parks and Recreation's management plans document a partnership-based planning process, and the recommended actions resulting from that process. These comprehensive plans recognize that all aspects of park management are interrelated, and that management recommendations should also be interrelated.

Over time, however, conditions change that effect some of the plan recommendations or even an entire plan. Plans need to acknowledge changing conditions, and be flexible enough to allow for modifications as needed.

There are two scales or types of plan modifications: plan revisions and plan amendments. Minor plan revisions concern less controversial issues and can generally be made within the DNR Division of Parks and Recreation as plan modifications. Larger issues that represent changes in management direction or involve other portions of the Department or other state agencies are addressed as plan amendments. The DNR Division of Parks and Recreation Planning Manager will make the decision of whether a plan amendment or plan revision is appropriate

To maintain consistency between plans and processes, all revisions and amendments will be coordinated through the DNR Division of Parks and Recreation planning section. Requests for planning assistance should be directed to the DNR Division of Parks and Recreation Planning Manager in the Central Office, St. Paul.

## Plan Amendments

### *Plan Amendment Criteria*

The criteria outlined below will be used to determine whether the proposed change warrants a plan amendment:

The proposed change:

- Alters Wild River State Park mission, vision, goals, specific management objectives, or proposed development plans outlined in the plan;
- Is controversial between elected officials and boards, park user groups, the public, adjacent landowners, other DNR divisions or state agencies; or
- Directly affects other state agencies (e.g., Minnesota Historical Society).

### *Plan Amendment Process*

The plan amendment process has a series of steps.

1. Review the proposed change at the state park and regional level. Determine which stakeholders potentially have a major concern and how those concerns should be addressed. If the major concerns are within the DNR Division of Parks and Recreation, the issue should be resolved within the Division, with input from the public. The proposed change is then reviewed with the DNR Division of Parks and Recreation Management Team
2. If the proposed change involves other DNR Divisions, the issue should be resolved by staff and approved by the affected Division Directors. This may require one or two area/regional integrated resource management team meetings. The proposed change will be reviewed through the DNR Regional Interdisciplinary Review Service (RIRS).
3. If the proposed change issue involves other state agencies, the issue should be resolved by staff and approved by the DNR Division of Parks and Recreation Management Team - with input from the public - and reviewed by RIRS.

4. If the proposed change is potentially controversial among elected boards, park user groups, adjacent landowners or the public, an open house will be held that is advertised in the local and regional area.
5. All plan amendments should be coordinated, documented, and distributed by the DNR Division of Parks and Recreation planning staff.

## **Plan Revisions**

If a plan change is recommended that does not meet the amendment criteria above, and generally follows the intent of Wild River State Park management plan (through mission, vision, goals, and objectives), the Department has the discretion to modify the plan without a major planning process.

### *Revisions related to Physical Development Constraints and Resource Protection*

Detailed engineering and design work may not allow the development to be completed exactly as it is outlined in the plan. A relatively minor modification, such as moving a proposed building site to accommodate various physical concerns, is common. Plans should outline a general direction and document the general “areas” for development rather than specific locations. For the most part, plans are conceptual, not detail-oriented. Prior to development, proposed development sites are examined for the presence of protected Minnesota Natural Heritage Program elements and historical/archeological artifacts. If any are found, the planned project may have to be revised to accommodate the protection of these resources.

### *Program Revisions*

The resource management and interpretive services plan sections should be updated periodically as needed. The DNR Division of Parks and Recreation’s Resource Management and Interpretive staff will determine when an update is needed, and coordinate the revision with Wild River State Park planning section. Program sections should be rewritten in a format consistent with the plan as originally approved by the Department. To retain consistency, DNR Division of Parks and Recreation planning staff will be involved in the revision review, editing and distribution.

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# Appendix A – Management Plan Recommendations

## Natural Resource Management Recommendations

- Actively manage Wild River State Park's natural resources in order to reach Wild River State Park's restoration goals.
  - Create large, contiguous areas of similar plant communities as opposed to the existing park landscape of sharply delineated wooded areas interspersed with old fields.
  - Ensure that large healthy unfragmented forests that provide important habitat for forest songbirds and migratory birds continue to exist in Wild River State Park.
  - Inventory and monitor rare plant species in Wild River State Park in order to protect and manage them effectively.
  - Inventory, monitor and control invasive plant species to reduce the negative impacts they are having on native plant communities.
  - Inventory and monitor rare animal species in Wild River State Park in order to protect and manage them effectively.
  - Increase white pine in appropriate areas throughout Wild River State Park because of its scenic and recreational value, its importance to a wide variety of wildlife, and its historic value throughout its range along the St. Croix River.
  - Restore altered wetlands throughout Wild River State Park.
  - Explore the possibility of restoring or introducing species of salmonids that are native to the Wild River State Park area (for example, brook trout); small streams within the park could provide suitable habitat for quality catch-and-release angling experiences.
  - Continue and expand the Prairie Care program so that the park's savanna/prairie restoration goals can be met.
  - Use local seed sources in all native plant restorations in the park.
  - Expand the park's prescribed burning program so that burns can be completed on the designated rotation.
  - Work cooperatively with the MN DNR's Division of Fish and Wildlife and local Indian bands to explore creative ways of managing the park area's deer herd.
- Maintain the Goose Creek unit as a natural area with minimal development.
  - Protect old-growth white pine stands along the Dry Creek and Goose Creek watersheds by following the state wide Old-Growth Management Guidelines.
  - Use old-growth forest best management practices in adjacent areas to buffer the old-growth stands.
  - Protect potential old-growth ash stands in the Goose Creek area and manage younger stands toward old-growth forest communities.

- Work with adjacent property owners who are interested in restoring or maintaining native plant communities on their own land to extend native plant community contiguity into and/or beyond park boundaries.
  - Restore forest cover to disturbed openings in forests and to disturbed edges adjacent to the edge of the park in collaboration with interested landowners.
  - Work with Chisago County and local townships on the restoration of former gravel pits adjacent to the park.
  - Work with Chisago County and the local Soil and Water Conservation District to reduce soil erosion from surrounding croplands.
  - Work with Chisago County and local townships so that sensitive park resources are not negatively affected by future development.
  - Work with partners outside of Wild River State Park in order to maintain the water quality of the tributaries that run through the park to the St. Croix River.
- Avoid placing any new developed areas such as paved trails or buildings in high quality native plant community habitats or near rare plant and animal occurrences.
  - Correct erosion problems on existing trails and riverbanks in the park.
- Cooperate with the research community on the St. Croix River so that river resources and threats can be identified and monitored as necessary.
- Work with State and private conservation organizations to preserve the integrity of habitat and wildlife migration routes along the St. Croix and Sunrise Rivers

## **Cultural Resource Management Recommendations**

- Complete a comprehensive land-use history for Wild River State Park, both for historical interpretation and for resource management.
- Document the location of all known cultural sites in the park using Global Positioning System (GPS) technology and create a cultural resource base layer for the park's geographic information system (GIS).
- Maintain the integrity of all known cultural sites and structures in Wild River State Park.
- Provide information and education about the cultural resources in the park as appropriate.

## **Interpretive Services Recommendations**

- Renovate and increase program and work space in the existing Interpretive Center.

Discussion: A major renovation of the current building is more feasible than a new structure, given the current budget scenario. If expanded, the facility should maintain its architectural identity. Priority areas to expand include: seating space for presentations; preparatory and storage space for interpretive and resource management activities; and outside cold storage

areas. The current restroom facilities and parking areas should be evaluated with school groups in mind.

- Replace the Interpretive Center's displays with current exhibits focusing on park interpretive themes.

Discussion: The interpretive exhibits are in need of replacement or renovation. The biodiversity exhibit in the center is more than 10 years old and in need of replacement. In addition, the weather instruments are in need of repair. New exhibits need to be planned and developed which focus on the major interpretive themes for Wild River State Park. Visitors appreciate the user friendly feeling of the existing exhibits, however, and the new exhibits should meet this need.

- Increase non-personal interpretive services in the park.

Discussion: There are many areas of the park that would benefit from having non-personal interpretive exhibits. These areas include the Sunrise unit, the Trail Center, and prairie/savanna restoration areas, for example. Other ideas for non-personal interpretation include signs identifying birding locations; and displays at each major facility that explain what the park has to offer. In addition, participants in the planning process believed that strategically placed exhibits on camper and trail etiquette will benefit all park visitors.

- Increase interpretation of cultural resources contained within the park.

Discussion: Historical interpretation is in increasing demand by visitors to Minnesota State Parks. Wild River State Park has been the scene of events from many chapters of Minnesota's history, and has unique and well-documented stories to tell about past events and people. Recently installed outdoor exhibits will help to meet this demand, but publications and programs are recommended as further enhancements.

- Partner with appropriate Indian communities to provide interpretation on American Indian history of Wild River State Park area.

Discussion: Telling the stories of the area from the Indian perspective will allow park visitors to better understand the variety of ways that people have lived with the land in park area.

- Foster stewardship of the St. Croix watershed with a focus on Goose Creek and the Sunrise River.

Discussion: In Wild River State Park region of the St. Croix watershed, the Sunrise River drains a large area and has the greatest potential for exposure to contaminants from adjacent land use. The park's interpretive program could help to foster stewardship of the Sunrise and other tributaries of the St. Croix by providing a venue for information about water quality, species monitoring and land management practices. For instance, the park could be used as a demonstration area by developing a monitoring strategy with local partners and cooperating agencies.

- Continue to focus on resource management and public involvement in the park through the Prairie Care program.

Discussion: The Prairie Care program at Wild River State Park has proven to be a successful educational program as well as a resource management program because the volunteers learn while doing. It is recommended that this program should continue and serve as a model for other state parks as well as for private landowners in park area. The current volunteers would like to see site-specific signs to interpret the individual restoration areas and species.

- Continue to focus interpretive efforts on native plant community restoration.

Discussion: Park interpretation should focus on native plant community restoration in Wild River State Park and its potential restoration by private landowners on their own lands. For example, oak savanna is the rarest native plant community in Minnesota today. Local master gardeners or other groups could create a demonstration restoration area in or near the park. People need guidance in using native plants for landscaping and controlling exotics. Savanna or prairie restoration may mean allowing native grasses and forbs to exceed current mowing height limits in Chisago County municipalities and that this is an acceptable practice as long as safety considerations are observed. Burning to maintain prairie and savanna vegetation is not always possible on private land but effective alternatives exist. The ecological effects of fertilizing and spraying for “weeds” needs to be better understood. The need to control invasive non-native species using appropriate methods is an essential component of ecological restoration.

- Interpretive efforts focusing on the Goose Creek area should emphasize that it is a high value natural area with many rare species.

Discussion: Interpretation of the Goose Creek area should be undertaken with care in order to avoid negatively impacting the area by increasing its recreational uses.

- Continue to focus interpretive efforts on the protection of wildlife corridors and watchable wildlife.

Discussion: Because the St. Croix Valley is a regionally important wildlife corridor it provides remarkable opportunities for viewing wildlife.

- Interpret geological sites that are visible including the gravel pits in and near Wild River State Park boundaries.

Discussion: Gravel pits provide opportunities to see the underlying geology of the area in addition to understanding the restoration process after mining ends.

- Provide interpretation of the St. Croix River and its ecosystem including the identification and importance of fish and other wildlife of the river.

Discussion: Increase interpretation of the St. Croix River and river ecology in general. This can be done through exhibits, brochures or more programming on the river itself, possibly in partnership with other agencies or divisions. As river recreation and access points for fishing and wildlife watching increase, interpretation will help to foster stewardship of the watershed and riverine communities.

- Continue to deliver messages and education from other DNR divisions through workshops and programs utilizing DNR staff and experts.

Discussion: Parks are good places to deliver agency messages. The interpretive program should continue to use other divisional staff to develop workshops and programs that inform the public of the many programs and opportunities that the DNR has to offer.

## **Recreational Use and Visitor Services Recommendations**

### *Park Trails*

- Evaluate existing park trails on an annual basis for current and future impacts to cultural, recreational and natural resources.



- Continue to provide opportunities for horseback riding on existing horse trails while maintaining the ecological integrity of the areas adjacent to the trails.
- Correct erosion problems on existing trails in the park.
- Give careful consideration to all park resources when proposing new paved trails.
- Continue to follow Wild River State Park's enabling legislation which restricts recreational trail use to non-motorized use.
- Evaluate all new trail proposals carefully because the park already has a high density of recreational trails in the southern unit.
- No trails are recommended for the Goose Creek area of the park due to its ecological sensitivity and significance.
- Maintain existing network of hiking opportunities that traverse the major landscapes in the park.
- Develop interpretive materials for the trails that emphasize trail etiquette that involves all user groups.
- Work with a subset of recreation groups to decide how best to educate all trail users.
- Develop a monitoring system for horseback use in Wild River State Park so park staff can accurately estimate numbers of riders and trends.
- Provide high quality classical ski trails for all skill levels that emphasize a natural experience.
- Provide opportunities for snowshoe travel, cross-country and on at least one marked trail.
- Increase winter hiking opportunities.

#### *Trail Connections*

- Participate in the planning of the Scenic Byway that will pass on the west side of the park and use existing roads.
- Cooperate with partners to provide a spur trail connection to regional and state trail systems. Likely connections from the south of the park include the use of either Military Road, Selman Avenue into Silver Avenue, or Reed Avenue (Chisago County 81).
- Develop a trail connection for the Goose Creek Loop at the Sunrise Access to move visitors off of the road.
- Recognize and formalize the snowmobile route that exists along the Ferry Road (Sunrise Unit) because it is a major connection between Minnesota and Wisconsin in the winter.

#### *Cultural Resource Protection*

- Protect all existing cultural resources in Wild River State Park when proposing new recreational development.

### *Camping/Lodging*

- Provide and expand where feasible overnight camping opportunities, maintaining a natural setting, but providing amenities for both RV and tent camping in all seasons of the year.
- Continue to pursue opportunities for adding more camper cabins---maintain spacing or provide screening from other cabins and trails.
- Continue to pursue opportunities to meet the demand for electrical sites.
- Work with the horse groups to improve the horse day use area, horse trails and horse campground.
- Provide year-round showers for all park users.
- Screen lodging facilities from park trails and other use areas.

### *Other Recreational Facilities & Opportunities*

- Continue to look for an area in the park to provide winter sledding opportunities.
- Maintain open vistas to the river valley in different areas of the park where appropriate (i.e., Picnic area).
- Continue to provide snowshoe and cross country ski rental that helps introduce new visitors to those activities.
- Provide regulatory, informational and directional signs that will orient new visitors to park buildings, facilities and trails.
- Better utilize the trail center as a trailhead and orientation center area for park visitors.
- Continue the successful annual candlelight ski and other special events such as March for Parks.
- Enhance trail user experiences by providing exhibits, kiosks, and information boards regarding the natural landscape, cultural features, and history of Wild River State Park.
- Provide canoes for rent in a quantity that promotes a more solitary experience of the upper St. Croix River in accordance with NPS St. Croix NSR guidelines.
- Provide access to the St. Croix River for shoreline fishing while monitoring impacts to the park's shoreline resources.
- Provide facilities that are consistent with and compliment those of the St. Croix National Scenic Riverway.
- Partner with outdoor businesses and organizations to provide special events and interpretive activities that introduce new or inexperienced visitors to outdoor skills, i.e. minimum impact camping, fire-building, snowshoeing, and canoeing.
- Explore the feasibility of using the trail center during the summer months as a gathering place for conservation enthusiasts.

- Consider using the park as a learning center for teaching outdoor skills and activities to urban youth; partner with other recreation providers in or near the Minneapolis-St. Paul metropolitan area.

## **General Boundary and Area Conservation Recommendations**

- Short-Term Conservation Efforts
  - Continue to pursue purchase of private lands within the existing park statutory boundary.
  - Pursue adding the former Chisago County gravel pit (T 36N R 19W Section 31) to Wild River State Park and restoring it with native species.
  - Work with private owners within the conservation and watershed protection area, including private owners of two other adjacent gravel pits (T 35N R20W Sections 3& 4; T36N R20W Section 36) to evaluate the potential for including their land in the park statutory boundary.
- Long-term Conservation Efforts
  - Cooperate with local and regional conservation efforts to protect the water quality and lands of the St. Croix watershed including lands adjacent to the Sunrise River, Dry Creek and Goose Creek.
  - Work with partners to notify new landowners in the area about conservation measures that they can implement on their own lands, especially if they have significant natural or cultural resources on their land.
  - To help preserve important viewsheds, visitor experiences and ecological integrity, contact all of the landowners along River Road and overlooking the Pioneer Loop regarding potential inclusion in Wild River State Park's statutory boundary and/or conservation tools that are available to them.
  - Continue working with Chisago County officials on conservation and development issues; for example, explore the use of zoning setbacks in the county to aid as a buffer to Wild River State Park and for watershed protection.
  - Continue partnerships with the U.S. National Park Service, Wisconsin DNR, and Wisconsin conservation groups so that the land across the St. Croix from Wild River State Park will be protected. Participants were especially concerned with protecting the views from the Minnesota side (i.e., reducing light and sound pollution).
- Long-term Additions
  - When landowners are amenable, pursue the concept of adding land to the west of Wild River State Park to buffer around the Goose Creek area and the Chengwatana State Forest (Wild River State Park abuts the south end of the Chengwatana). This will serve the purpose of providing greater protection for these two areas including a reduction in the fragmented plant communities on their boundaries. It might also serve the purpose of acquiring land that is dry enough to accommodate a trail link between the Chengwatana's existing trail system and Wild River State Park's existing trail system (and thereby avoid the Goose Creek area).
  - When necessary, pursue changing the existing park statutory boundary to improve the existing trail system and views in the Sunrise Loop area.

## **Significant Areas Mapping Recommendations**

- Maintain the Goose Creek area as a natural area with limited development, as specified by Wild River State Park's enabling legislation. Allow for limited scientific and educational uses while protecting its exceptional features.
- Provide for a natural experience in the Deer Creek area. Participants in the planning process requested that Wild River State Park should continue to manage these areas so that visitors can experience a relatively undeveloped and natural area including views.

## **Park Operations Actions & Recommendations**

- Develop a cooperative enforcement agreement between all agencies that have enforcement authority in this section of the St. Croix Riverway.
- Horse use numbers should be monitored in park, especially those coming in from adjacent properties.
- The relationship between private businesses and their use of park trails for profit should be re-evaluated as possible concession arrangements.

## Appendix B – Current Trails at Wild River State Park

The following is a summary of Wild River State Park's trail opportunities:

### Easy Trails

**Mitigwaki Loop:** The Mitigwaki loop begins at the Interpretive Center. This loop is just over one mile in length and goes through an oak woods on the ridge above Dry Creek. A spur trail connects the Interpretive Center with the Trail Center.

**Amador Prairie Loops:** The Amador Prairie loops begin at the Trail Center. These loops go through a level open grassland being restored to native prairie with scattered oak openings. Both a 1-mile loop and a 2-mile loop runs north of the trail center.

**Universal Trail:** This fully accessible asphalt-surfaced trail includes the Old Logging Trail and part of the Mitigwaki Loop. It provides access for all non-motorized uses other than horseback riding and links the Trail Center, the Interpretive Center, the picnic area and the campground. This mostly wooded trail is just under 3 miles in length. The Hiking Club route follows part of this trail.

**River Trail:** This wooded trail provides access to the walk-in camping site at Spring Creek and links the picnic area with the river access. The River Trail is 1.5 miles long. A highlight on this trail is the Nevers Dam overlook and history display.

**River Terrace Loop:** This scenic wooded loop begins in the picnic area and is 1.5 miles in length. The trail provides access to the campground on the north end of the loop by climbing 164 winding steps.

**Dry Creek:** This secluded trail along a north-facing hillside lies on the south side of Dry Creek. A historic cement structure is located adjacent to this trail which is a scenic route off the Pioneer loop.

**Pioneer Loop:** The Pioneer loop itself is just over two miles in length but is reached via a  $\frac{3}{4}$  mile access trail beginning at the Trail Center and running through oak woods, savanna, and a small prairie. The Pioneer loop runs along the edge of an open grassland area. This is a popular horse trail. The Meadow Vista backpack campsite is adjacent to this loop.

### Moderate Trails

**Deer Creek Loop:** This three-mile loop trail is reached via a  $\frac{1}{2}$  mile access from either the Interpretive Center or the River Access. The trail crosses the scenic Deer Creek Bridge and part of the trail is located along the historic Point Douglas to Superior Military Road. The trail also provides access to Deer Creek and Buck Hill campsites.

**Sunrise Trail:** This trail extends north ten miles from the Trail Center to the Sunrise River. The trail crosses Amador prairie and passes through pine plantations, floodplain forest, and upland hardwood forests. Two Adirondack trail shelters are located along this trail.

**Sunrise Loop:** The Sunrise Loop can be accessed from the Sunrise picnic area and river access parking lot. This rugged five-mile loop crosses a large beaver dam area through lowland hardwood forest and can be seasonally wet.

Goose Creek Loop: This three-mile loop provides access to the Goose Creek campsites. It goes through lowland hardwood forest along the river and receives minimal summer trail maintenance due to difficult access and seasonal wetness.

### **Most Challenging Trails**

Aspen Knob Loop: This two-mile trail begins at the Trail Center with access through an oak woods and scattered white pines adjacent to Wild River State Park office. Steep hills and rugged terrain make this an expert ski loop. The trail provides access for Aspen Knob and Breezy Valley backpack campsites.

White Pine Ridge Loop: This very scenic ½ mile loop trail is just south of the Pioneer Loop. A spectacular view of the river valley can be seen from the trail bench located at the top of the hill.

### **Self-Guided Trails**

The Amik's Pond and Windfall trails begin at the Interpretive Center. Brochures can be picked up at the entrances to these trails. Each is about one mile long.

# Appendix C – Native Mussels of the St. Croix and Namekagon Rivers

## Native Mussels of the St. Croix and Namekagon Rivers, MN & WI

#	Scientific Name	Common Name	Status **			Where Found	REF/DATE
			FED	MN	WI		
1	<i>Actinonaias ligamentina</i>	mucket		TH		Throughout Riverway (various)	Doolittle 88
2	<i>Alasmodonta marginata</i>	elktoe		TH	SC	Throughout Riverway (various)	Doolittle 88
3	<i>Amblema plicata plicata</i>	threeridge				Throughout Riverway (various)	Hornbach 95
4	<i>Anodontoides ferussacianus</i>	cylindrical papershell				Namekagon (Miller, Doolittle) and Hwy. 70	Doolittle 88
5	<i>Arcidens confragosus</i> ☞	rockshell (rock pocketbook)		EN	TH	South of Stillwater	Heath 90
6	<i>Corbicula fluminea</i>	Asian clam	Invasive Exotic			Osceola south (Miller per. observ.)	Heath 90
7	<i>Cumberlandia monodonta</i>	spectaclecase	Candidate	TH	EN	Hwy 48/77 south (Heath 90) to Hudson	Havlik 93
8	<i>Cyclonaias tuberculata</i>	purple wartyback		TH	EN	Throughout Riverway (various)	Heath 90
9	<i>Dreissena polymorpha</i>	zebra mussel	Invasive Exotic			Stillwater south	Karns 00
10	<i>Ellipsaria lineolata</i>	butterfly		TH	EN	Taylor's Falls south (various)	Hornbach 95
11	<i>Elliptio crassidens crassidens</i>	elephant-ear		EN	EN	Taylor's Falls south (various)	Heath 89
12	<i>Elliptio dilatata</i>	spike		SC		Throughout Riverway (various)	Hove 02
13	<i>Epioblasma triquetra</i>	snuffbox		TH	EN	Taylor's Falls - Marine (various)	Baker 94
14	<i>Fusconaia ebena</i>	ebonyshell		EN	EN	Taylor's Falls south (various)	Hornbach 95
15	<i>Fusconaia flava</i>	Wabash pigtoe				Throughout Riverway (various)	Hornbach 95
16	<i>Lampsilis cardium</i>	plain pocketbook				Throughout Riverway (various)	Doolittle 90
17	<i>Lampsilis higginsii</i>	Higgins eye	EN	EN	EN	Taylor's Falls south (various)	Hornbach 95
18	<i>Lampsilis siligoidea</i>	fat mucket				Throughout Riverway (various)	Baker 94
19	<i>Lasmigona complanata</i>	white heelsplitter				Nelson's south (Berg 2003))	Hove & Hornbach 02
20	<i>Lasmigona compressa</i>	creek heelsplitter		SC		St. Croix Falls Flowage north (various)	Miller 94
21	<i>Lasmigona costata</i>	fluted-shell		SC		Hudson, Marine - north (various)	Hove & Hornbach 02
22	<i>Leptodea fragilis</i>	fragil papershell				Throughout Riverway (various)	Hove & Hornbach 02
23	<i>Ligumia recta</i>	black sandshell		SC		Throughout Riverway (various)	Hove & Hornbach 02
24	<i>Megalanaia nervosa</i>	washboard		TH	SC	Stillwater south (various)	Baker 94
25	<i>Oblinaria reflexa</i>	threehorn wartyback				County O south (Havlik 93)	Hove & Hornbach 02
26	<i>Obovaria olivaria</i>	hickorynut		SC		Namekagon confluence south (various)	Hove & Hornbach 02
27	<i>Plethobasus cyphus</i>	sheepnose (bullhead)	Candidate	EN	EN	Prescott (various)	Heath 89
28	<i>Pleurobema sintoxia</i>	round pigtoe		TH	SC	Throughout Riverway (various)	Hove & Hornbach 02
29	<i>Potamilus alatus</i>	pink heelsplitter				Namekagon confluence south (various)	Hove & Hornbach 02
30	<i>Potamilus ohioensis</i>	pink papershell				St. Croix Falls Flowage south (WDNR 97)	Hove & Hornbach 02
31	<i>Pyganodon grandis</i>	giant (large river) floater				Throughout Riverway (various)	Hove & Hornbach 02
32	<i>Quadrula fragosa</i>	winged mapleleaf	EN	EN	EN	Taylor's Falls to Copas (various)	Hove & Hornbach 02
33	<i>Quadrula metanevra</i>	monkeyface		TH	TH	Taylor's Falls south (various)	Hove & Hornbach 02
34	<i>Quadrula pustulosa pustulosa</i>	pimpleback				Pansey Landing south (various)	Hove & Hornbach 02
35	<i>Quadrula quadrula</i>	mapleleaf				Taylor's Falls south (various)	Hove & Hornbach 02
36	<i>Simpsonia ambigua</i>	salamander mussel		TH	TH	Hwy 48/77 south (Doolittle 88)	Hove & Hornbach 02
37	<i>Strophitus undulatus</i>	creeper				Throughout Riverway (various)	Doolittle 87
38	<i>Toxolasma parvus</i>	lilliput				Hwy 48/77 south (various)	Baker 94
39	<i>Tritogonia verrucosa</i>	pistolgrip		TH	TH	Taylor's Falls south (various)	Hove & Hornbach 02
40	<i>Truncilla donaciformis</i>	fawnsfoot				Taylor's Falls south (various)	Hove & Hornbach 02
41	<i>Truncilla truncata</i>	deertoe				Danbury south (various)	Hove & Hornbach 02
42	<i>Utterbackia imbecillis</i> ☞	paper pondshell				Danbury south (Heath)	Hove & Hornbach 02

Nomenclature follows: Turgeon, D. D., J. F. Quinn, Jr., A. E. Bogan, E. V. Coan, F. G. Hochberg, W. G. Lyons, P. M. Mikkelsen, R. J. Neves, C. F. E. Roper, G. Rosenberg, B. Roth, A. Scheltema, F. G. Thompson, M. Vecchione, and J. D. Williams. 1998. Common and scientific names of aquatic invertebrates from the United States and Canada: mollusks, 2nd edition. American Fisheries Society, Special Publication 26, Bethesda, Maryland. 509 pp.

\*\*In part from Havlik & Sauer 2000

☞ Not in St. Croix Riverway Species Database

Names in red verified found at Wild River S.P. 6/1992 by Marian Havlik

## Appendix D: Birds of Wild River State Park

Common Name	Scientific Name
Snow Goose	( <i>Chen caerulescens</i> )
Canada Goose	( <i>Branta canadensis</i> )
Trumpeter Swan	( <i>Cygnus buccinator</i> )
Tundra Swan	( <i>Cygnus columbianus</i> )
Wood Duck	( <i>Aix sponsa</i> )
American Wigeon	( <i>Anas americana</i> )
Mallard	( <i>Anas platyrhynchos</i> )
Blue-winged Teal	( <i>Anas discors</i> )
Northern Shoveler	( <i>Anas clypeata</i> )
Green-winged Teal	( <i>Anas crecca</i> )
Ring-necked Duck	( <i>Aythya collaris</i> )
Lesser Scaup	( <i>Aythya affinis</i> )
Bufflehead	( <i>Bucephala albeola</i> )
Common Goldeneye	( <i>Bucephala clangula</i> )
Hooded Merganser	( <i>Lophodytes cucullatus</i> )
Common Merganser	( <i>Mergus merganser</i> )
Red-breasted Merganser	( <i>Mergus serrator</i> )
Ring-necked Pheasant	( <i>Phasianus colchicus</i> )
Ruffed Grouse	( <i>Bonasa umbellus</i> )
Wild Turkey	( <i>Meleagris gallopavo</i> )
Common Loon	( <i>Gavia immer</i> )
Pied-billed Grebe	( <i>Podilymbus podiceps</i> )
American White Pelican	( <i>Pelecanus erythrorhynchos</i> )
Double-crested Cormorant	( <i>Phalacrocorax auritus</i> )
American Bittern	( <i>Botaurus lentiginosus</i> )
Great Blue Heron	( <i>Ardea herodias</i> )
Great Egret	( <i>Ardea alba</i> )
Snowy Egret	( <i>Egretta thula</i> )
Green Heron	( <i>Butorides virescens</i> )
Black-crowned Night-Heron	( <i>Nycticorax nycticorax</i> )
Turkey Vulture	( <i>Cathartes aura</i> )
Osprey	( <i>Pandion haliaetus</i> )
Bald Eagle	( <i>Haliaeetus leucocephalus</i> )
Northern Harrier	( <i>Circus cyaneus</i> )
Sharp-shinned Hawk	( <i>Accipiter striatus</i> )
Cooper's Hawk	( <i>Accipiter cooperii</i> )
Northern Goshawk	( <i>Accipiter gentilis</i> )
Red-shouldered Hawk	( <i>Buteo lineatus</i> )
Broad-winged Hawk	( <i>Buteo platypterus</i> )
Swainson's Hawk	( <i>Buteo swainsoni</i> )
Red-tailed Hawk	( <i>Buteo jamaicensis</i> )
Rough-legged Hawk	( <i>Buteo lagopus</i> )
American Kestrel	( <i>Falco sparverius</i> )
Merlin	( <i>Falco columbarius</i> )



**Common Name**

Sora  
American Coot  
Sandhill Crane  
Killdeer  
Greater Yellowlegs  
Lesser Yellowlegs  
Solitary Sandpiper  
Spotted Sandpiper  
Semipalmated Sandpiper  
Least Sandpiper  
Wilson's Snipe  
American Woodcock  
Ring-billed Gull  
Herring Gull  
Common Tern  
Black Tern  
Rock Pigeon  
Mourning Dove  
Black-billed Cuckoo  
Yellow-billed Cuckoo  
Eastern Screech-Owl  
Great Horned Owl  
Snowy Owl  
Barred Owl  
Great Gray Owl  
Long-eared Owl  
Northern Saw-whet Owl  
Common Nighthawk  
Whip-poor-will  
Chimney Swift  
Ruby-throated Hummingbird  
Belted Kingfisher  
Red-headed Woodpecker  
Red-bellied Woodpecker  
Yellow-bellied Sapsucker  
Downy Woodpecker  
Hairy Woodpecker  
Northern Flicker  
Pileated Woodpecker  
Olive-sided Flycatcher  
Eastern Wood-Pewee  
Alder Flycatcher  
Willow Flycatcher  
Least Flycatcher  
Eastern Phoebe  
Great Crested Flycatcher  
Western Kingbird

**Scientific Name**

(Porzana carolina)  
(Fulica americana)  
(Grus canadensis)  
(Charadrius vociferus)  
(Tringa melanoleuca)  
(Tringa flavipes)  
(Tringa solitaria)  
(Actitis macularia)  
(Calidris pusilla)  
(Calidris minutilla)  
(Gallinago delicata)  
(Scolopax minor)  
(Larus delawarensis)  
(Larus argentatus)  
(Sterna hirundo)  
(Chlidonias niger)  
(Columba livia)  
(Zenaida macroura)  
(Coccyzus erythrophthalmus)  
(Coccyzus americanus)  
(Otus asio)  
(Bubo virginianus)  
(Nyctea scandiaca)  
(Strix varia)  
(Strix nebulosa)  
(Asio otus)  
(Aegolius acadicus)  
(Chordeiles minor)  
(Caprimulgus vociferus)  
(Chaetura pelagica)  
(Archilochus colubris)  
(Ceryle alcyon)  
(Melanerpes erythrocephalus)  
(Melanerpes carolinus)  
(Sphyrapicus varius)  
(Picoides pubescens)  
(Picoides villosus)  
(Colaptes auratus)  
(Dryocopus pileatus)  
(Contopus cooperi)  
(Contopus virens)  
(Empidonax alnorum)  
(Empidonax traillii)  
(Empidonax minimus)  
(Sayornis phoebe)  
(Myiarchus crinitus)  
(Tyrannus verticalis)

<b>Common Name</b>	<b>Scientific Name</b>
Eastern Kingbird	(Tyrannus tyrannus)
Northern Shrike	(Lanius excubitor)
Yellow-throated Vireo	(Vireo flavifrons)
Blue-headed Vireo	(Vireo solitarius)
Warbling Vireo	(Vireo gilvus)
Philadelphia Vireo	(Vireo philadelphicus)
Red-eyed Vireo	(Vireo olivaceus)
Blue Jay	(Cyanocitta cristata)
American Crow	(Corvus brachyrhynchos)
Common Raven	(Corvus corax)
Horned Lark	(Eremophila alpestris)
Purple Martin	(Progne subis)
Tree Swallow	(Tachycineta bicolor)
Northern Rough-winged Swallow	(Stelgidopteryx serripennis)
Bank Swallow	(Riparia riparia)
Cliff Swallow	(Petrochelidon pyrrhonota)
Barn Swallow	(Hirundo rustica)
Black-capped Chickadee	(Poecile atricapilla)
Tufted Titmouse	(Baeolophus bicolor)
Red-breasted Nuthatch	(Sitta canadensis)
White-breasted Nuthatch	(Sitta carolinensis)
Brown Creeper	(Certhia americana)
House Wren	(Troglodytes aedon)
Winter Wren	(Troglodytes troglodytes)
Sedge Wren	(Cistothorus platensis)
Marsh Wren	(Cistothorus palustris)
Golden-crowned Kinglet	(Regulus satrapa)
Ruby-crowned Kinglet	(Regulus calendula)
Blue-gray Gnatcatcher	(Polioptila caerulea)
Eastern Bluebird	(Sialia sialis)
Veery	(Catharus fuscescens)
Gray-cheeked Thrush	(Catharus minimus)
Swainson's Thrush	(Catharus ustulatus)
Hermit Thrush	(Catharus guttatus)
Wood Thrush	(Hylocichla mustelina)
American Robin	(Turdus migratorius)
Gray Catbird	(Dumetella carolinensis)
Brown Thrasher	(Toxostoma rufum)
European Starling	(Sturnus vulgaris)
Bohemian Waxwing	(Bombycilla garrulus)
Cedar Waxwing	(Bombycilla cedrorum)
Blue-winged Warbler	(Vermivora pinus)
Golden-winged Warbler	(Vermivora chrysoptera)
Tennessee Warbler	(Vermivora peregrina)
Orange-crowned Warbler	(Vermivora celata)
Nashville Warbler	(Vermivora ruficapilla)
Northern Parula	(Parula americana)

**Common Name**

Yellow Warbler  
Chestnut-sided Warbler  
Magnolia Warbler  
Black-throated Blue Warbler  
Yellow-rumped Warbler  
Black-throated Green Warbler  
Blackburnian Warbler  
Pine Warbler  
Palm Warbler  
Bay-breasted Warbler  
Blackpoll Warbler  
Black-and-white Warbler  
American Redstart  
Prothonotary Warbler  
Ovenbird  
Northern Waterthrush  
Louisiana Waterthrush  
Connecticut Warbler  
Mourning Warbler  
Common Yellowthroat  
Wilson's Warbler  
Canada Warbler  
Scarlet Tanager  
Eastern Towhee  
American Tree Sparrow  
Chipping Sparrow  
Clay-colored Sparrow  
Field Sparrow  
Vesper Sparrow  
Savannah Sparrow  
Grasshopper Sparrow  
Henslow's Sparrow  
Fox Sparrow  
Song Sparrow  
Swamp Sparrow  
White-throated Sparrow  
Harris's Sparrow  
White-crowned Sparrow  
Dark-eyed Junco  
Snow Bunting  
Northern Cardinal  
Rose-breasted Grosbeak  
Indigo Bunting  
Dickcissel  
Bobolink  
Red-winged Blackbird  
Eastern Meadowlark

**Scientific Name**

(*Dendroica petechia*)  
(*Dendroica pensylvanica*)  
(*Dendroica magnolia*)  
(*Dendroica caerulescens*)  
(*Dendroica coronata*)  
(*Dendroica virens*)  
(*Dendroica fusca*)  
(*Dendroica pinus*)  
(*Dendroica palmarum*)  
(*Dendroica castanea*)  
(*Dendroica striata*)  
(*Mniotilta varia*)  
(*Setophaga ruticilla*)  
(*Protonotaria citrea*)  
(*Seiurus aurocapillus*)  
(*Seiurus noveboracensis*)  
(*Seiurus motacilla*)  
(*Oporornis agilis*)  
(*Oporornis philadelphia*)  
(*Geothlypis trichas*)  
(*Wilsonia pusilla*)  
(*Wilsonia canadensis*)  
(*Piranga olivacea*)  
(*Pipilo erythrophthalmus*)  
(*Spizella arborea*)  
(*Spizella passerina*)  
(*Spizella pallida*)  
(*Spizella pusilla*)  
(*Poocetes gramineus*)  
(*Passerculus sandwichensis*)  
(*Ammodramus savannarum*)  
(*Ammodramus henslowii*)  
(*Passerella iliaca*)  
(*Melospiza melodia*)  
(*Melospiza georgiana*)  
(*Zonotrichia albicollis*)  
(*Zonotrichia querula*)  
(*Zonotrichia leucophrys*)  
(*Junco hyemalis*)  
(*Plectrophenax nivalis*)  
(*Cardinalis cardinalis*)  
(*Pheucticus ludovicianus*)  
(*Passerina cyanea*)  
(*Spiza americana*)  
(*Dolichonyx oryzivorus*)  
(*Agelaius phoeniceus*)  
(*Sturnella magna*)

**Common Name**

Western Meadowlark  
Yellow-headed Blackbird  
Brewer's Blackbird  
Common Grackle  
Brown-headed Cowbird  
Baltimore Oriole  
Pine Grosbeak  
Purple Finch  
House Finch  
Red Crossbill  
Common Redpoll  
Hoary Redpoll  
Pine Siskin  
American Goldfinch  
Evening Grosbeak  
House Sparrow

**Scientific Name**

(*Sturnella neglecta*)  
(*Xanthocephalus xanthocephalus*)  
(*Euphagus cyanocephalus*)  
(*Quiscalus quiscula*)  
(*Molothrus ater*)  
(*Icterus galbula*)  
(*Pinicola enucleator*)  
(*Carpodacus purpureus*)  
(*Carpodacus mexicanus*)  
(*Loxia curvirostra*)  
(*Carduelis flammea*)  
(*Carduelis hornemanni*)  
(*Carduelis pinus*)  
(*Carduelis tristis*)  
(*Coccothraustes vespertinus*)  
(*Passer domesticus*)