

## CHAPTER FOUR MULTI-PURPOSE CORRIDORS

This chapter provides a profile of the multi-purpose corridors of the Buffalo Creek Watershed District. Included in this chapter are sections on wildlife and recreation, as well as priority issues, which focus on canoeing/innertubing, fisheries, rare biological resources and trails.

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### PROFILE OF MULTI-PURPOSE CORRIDORS *Section 4.0*

The Buffalo Creek is the largest and most important multi-purpose corridor within the BCWD. A multi-purpose corridor is defined as a stream and/or contiguous tracts of land that serves multiple functions, including protection of water quality, conservation of habitat and facilitation of recreational opportunities. The unchannelized portion of the Buffalo Creek, from approximately the City of Stewart to the South Fork of the Crow River, provides the most multi-purpose functions. This portion of the Creek and its associated floodplain remains nearly in its natural state. The portion of the Buffalo Creek west of Stewart has been channelized for drainage and has very few associated multi-purpose benefits.

The following section describes the District’s role in promoting the multi-purpose functions of the Buffalo Creek corridor and takes an in depth look at individual functions relating to biological resources and recreation.

## District's Role in Multi-Purpose Corridors

In the past, the District has primarily focused its efforts on the water quality and quantity functions of the Buffalo Creek corridor. Efforts to protect and enhance the biological resources and recreational opportunities of the corridor have been left to cities, counties and State and Federal agencies. While not directly involved in these functions, the District has maintained that improvements in water quality and quantity management will undoubtedly enhance the Creek's many other amenities.

### Biological Resources

Over the past century, the biological resources of the BCWD have been degraded by the combination of a number of factors, including ditching, damming, channelization, polluting, dredging, removal of native vegetation, drainage of wetlands and urbanization. The combination of these factors has led to an overall reduction in the carrying capacity of the land to support certain biological species. The biological resources of present concern to the District are wildlife and vegetation. Each of these components is discussed below.

#### Wildlife

Wildlife consists of game and nongame species of birds, mammals, reptiles, amphibians, fish and insects, not generally regarded as pests. All wildlife has four basic needs: food, water, shelter and space. Even though the combination of these components varies by species, all four are vital for wildlife management. The following provides a profile of each of these basic needs.

**Food** - Every species has its own unique food requirements, which changes seasonally and over an animal's life. Food includes obvious nutritional parts of an animal's diet, as well as supplements, such as salt. Several types of foods can be integrated into conservation efforts by planting the appropriate species. Examples of wildlife foods are fruits and berries, grains and seeds, nectar sources, nuts and acorns, browse plants (twigs and buds), forage plants (grasses and legumes) and aquatic plants.

**Water** - The importance of water for wildlife cannot be overstated. Any permanent or intermittent water or wetland created or restored can be a major attractant for wildlife, especially if shallow.

**Shelter** - Shelter, or cover, is necessary for protection from adverse weather, hiding from predators and resting. Shelter is particularly critical while animals are nesting and raising their young. Wildlife seek shelter in trees, shrubs, grasses, flowers, or in structures like rock piles, brush piles, cutbanks, hollow trees, bird houses and burrows.

**Space** - Every wildlife species has unique needs for space or territory. By understanding the area needed by species, an estimate of the carrying capacity can be obtained for a tract of land.

Because much of the District's original vegetation and wetlands were lost to the expansion of agriculture during the last century, wildlife are generally confined to small areas, such as the Buffalo Creek corridor. Several programs, including the WMA and WPA programs (which are discussed later in this chapter), have been established to preserve existing critical habitat. Preserving and linking these areas will be key focus of future wildlife management in the BCWD.

## **Vegetation**

Map 1D presents the presettlement vegetation of the District. Presettlement vegetation was determined through the Minnesota DNR's Presettlement Vegetation Database, which was created by analyzing the detailed maps and records of early surveyors (circa 1895).



*Prairie vegetation  
(Boon Lake Township)*

Before settlement, the District was predominately covered with upland prairie and wetland prairie vegetation. Upland prairie vegetation occupied a wide variety of landforms, including beach ridges and swales, glacial lakebeds, morainic hills, steep bluffs and rolling till plains. Big bluestem and Indian grass occupied the deep soils of the moist uplands, while little bluestem and side oats grama covered the thin soils of the dry uplands. In general, bluejoint, prairie cordgrass, rushes and sedges dominated the lowland areas and wetlands. Many of these wetlands are known today as "prairie potholes".

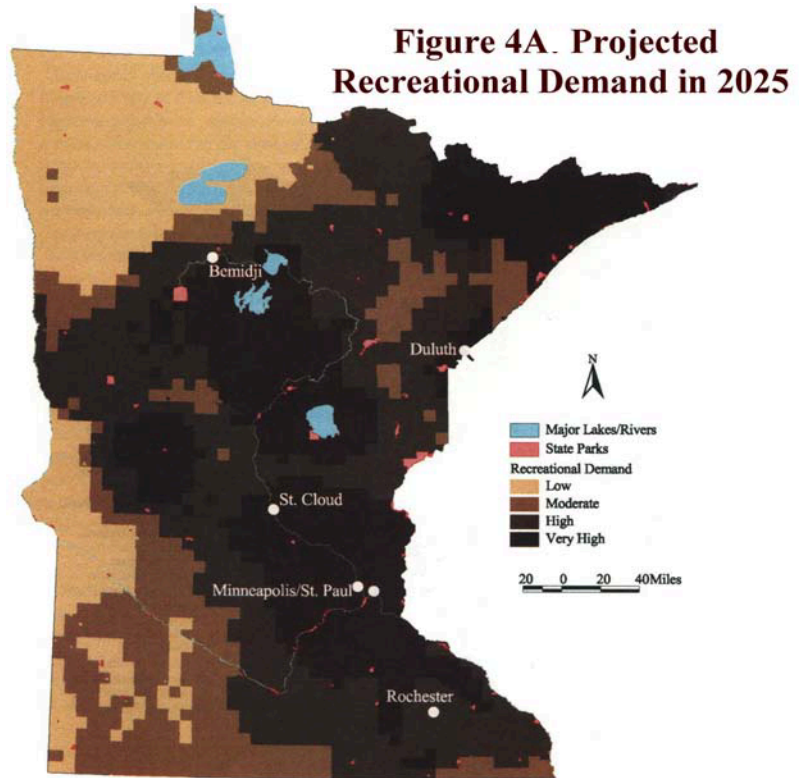
In the far eastern portion of the District, brush prairie and hardwoods served as a transition between the prairie and deciduous forest ecotonal types. The hardwoods and brushland ranged from small groves of trees intermixed with open prairie, to communities of scrub forest and dense scrub thicket. The dominant tree species were aspen, basswood, elm, maple and oak.

Today, much of the land within the District is under intensive agricultural production. In fact, according to the 1989 Minnesota Land Use-Agricultural and Transition Areas Inventory an estimated 88.4% of the District's land is managed for intensive agricultural purposes. The inventory also estimated that the cumulative total area of grasslands, deciduous forests, water and wetlands made up only 9% of the District. Many of District's grasslands and deciduous forests are located along the Buffalo Creek corridor, especially east of the City of Stewart. This portion of the Creek's corridor has been virtually undisturbed by agriculture. Programs, such as CRP and RIM offer landowners an opportunity to preserve or restore native vegetation.

## Recreation

There are numerous existing and potential recreational opportunities within the BCWD, including biking, canoeing, fishing, hiking, hunting, snowmobiling and various other forms of active and passive recreation. Demand for these recreational activities is expected to increase in the future. According to Figure 4A, which was derived from the *2000 Minnesota State Park System Land Study*, the District's recreational demand in 2025 is expected to be in the moderate to high range. If this projection holds true, recreational opportunities may need to be enhanced or expanded, especially along the Buffalo Creek, which is virtually untapped for recreational potential.

The Minnesota DNR, along with the cities and counties within the BCWD, are primarily responsible for the management of existing recreational lands within the District. Each city has developed and maintains park land for its residents. Presently there are three county parks within the District, two of which are managed by McLeod County and one that is managed by Renville County. The DNR, which manages many of the State's natural resources, is in charge of managing Wildlife Management Areas (WMAs) and public water accesses within the District. The following provides an overview of recreational lands within the District.



## Wildlife Management Areas

### DNR Wildlife Management Areas

The State Wildlife Management Area (WMA) Program was established as an attempt to preserve wildlife habitat areas, primarily wetlands, that were being destroyed by development and agricultural land uses. WMAs have been incorporated as components of the Minnesota outdoor recreation system, which was established by the Minnesota Outdoor Recreation Act of 1975. The act established an outdoor recreation system that will preserve an accurate representation of Minnesota's natural and historical heritage for public understanding and enjoyment, and provide an adequate supply of scenic, accessible and useable lands and waters to accommodate the outdoor recreation needs of Minnesota's citizens.

WMAs are managed for wildlife production and are open to public hunting and wildlife watching. Hunters contribute \$1 million per year, through a \$4 surcharge on their small game licenses, to help buy and improve WMAs. Conservation clubs also donate money to support habitat projects on these wildlife lands.

According to Table 4A, there are 9 WMAs in the BCWD, totaling 1,835 acres. Map 4E displays the location of the WMAs in the District.

**Table 4A  
Wildlife Management Areas**

WMA Name	Township	Range	Section	Acres
Bob Gehlen	115N	28W	31	54
Daak	116N	31W	25	40
Kohl's	114N	29W	4	87
Pebbles	115N	30W	21,28	110
Prairie Heritage	116N	29W	32	76
Prohels Woods	114N	28W	12	134
Ras-Lynn	115N	30W	3,4,5	1,131
Schmalz	115N	31W	22	123
Sumter	115N	29W	4	80
<b>Total WMA Acreage</b>				<b>1,835</b>

**USFWS Waterfowl Production Areas**

Waterfowl Production Areas (WPAs) are acquired and managed under the direction of the USFWS. WPAs aim to preserve wetlands and grasslands that are critical to waterfowl and other wildlife. These public lands were included in the National Wildlife Refuge System in 1966, through the National Wildlife Refuge Administration Act. Part of the money collected from Duck Stamps in Minnesota goes toward the acquisition and maintenance of these areas.

WPAs provide numerous recreational opportunities to the public, including hunting, fishing, trapping, wildlife observation and photography. The use of motorized vehicles, including snowmobiles and all-terrain vehicles, is generally prohibited in WPAs. For additional rules and regulations regarding WPAs, contact the USFWS.

Table 4B reveals that there are 4 WPAs in the District, totaling 989 acres. The location of these WPAs is shown in Map 4A.

**Table 4B  
Waterfowl Production Areas**

WPA Name	Acres
Barber Lake	228
Brownton	522
Eagle Lake	79
Preston Lake	160
<b>Total WPA Acreage</b>	<b>989</b>

**Public Water Accesses**

The Minnesota DNR, through its Public Water Access Program, manages over 1,500 trailer and carry-in boat accesses on Minnesota's lakes and rivers. The goal of this program is to provide free access to Minnesota's lakes and rivers for all boating activities. Accesses usually remain open 24 hours a day, unless posted, and are patrolled by conservation officers. The program also provides other water access amenities, such as fishing piers and shore fishing sites, for those who may not have a boat. Fishing piers and shoreline enhancements are barrier free and are frequently operated and maintained by local units of government. There is no fee for their use; however, accesses located within a State Park require a daily or annual State Park sticker.

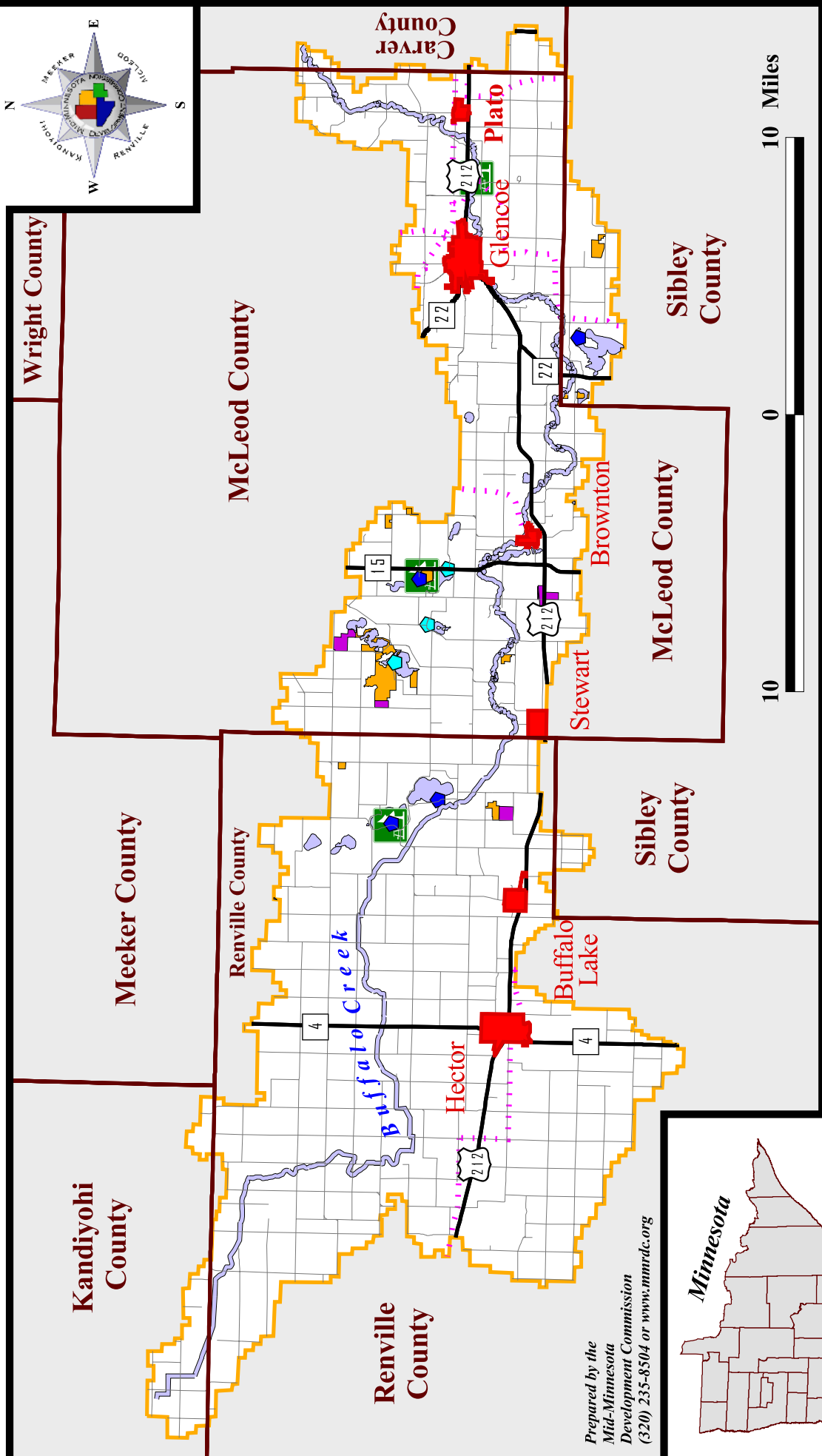
The program works year round on acquisition, development and maintenance of water access sites. Funds are derived through boat license fees and a portion of gas tax revenues attributed to motorboats. In addition, funding is periodically provided through the Legislative Commission on Minnesota Resources (LCMR) and the State Bonding Program.

Table 4C provides information on the 6 public water accesses located in the BCWD. Map 4A displays the location of each of these public water accesses.

**Table 4C  
Public Water Accesses**

Waterbody Name	Ramp Type	Administrator
Eagle Lake	Gravel	DNR
Lake Allie	Concrete	DNR
Lake Marion (east)	Concrete	County
Lake Marion (southeast)	Carry-In	DNR
Lake Whitney	Carry-In	DNR
Preston Lake	Concrete	DNR

# Map 4A Buffalo Creek Watershed District Recreational Lands

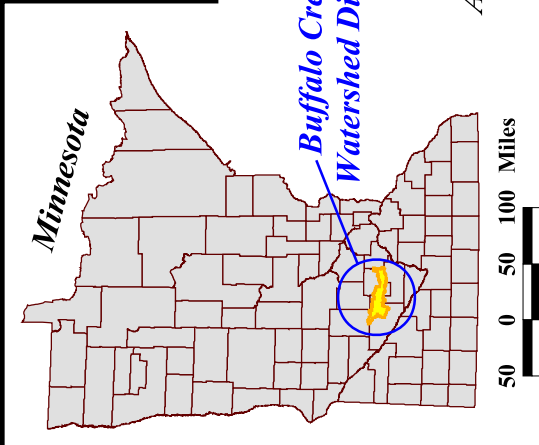


**Recreational Category**

- Boat Trailer
- Carry-in Access
- Fishing Pier
- Snowmobile Trail
- County Park
- Lake
- Waterfowl Production Area
- Wildlife Management Area

- Watershed District
- Municipality
- County
- Major Road
- Minor Road

**District Size**  
 Total Area = 422.1 Square Miles  
 East/West Length = 51 Miles  
 North/South Length = 19 Miles



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## County Parks

As Map 4A displays, there are three County Parks in the BCWD, all of which are tied to water resources. A brief description of each park is provided below. Information on each park was derived from its respective county.

- **Buffalo Creek Park (McLeod County)** - Located on the east side of the City of Glencoe, along Buffalo Creek, this park consists of 45.5 acres. At this time, the area along the river has not been developed. The park has a 10-acre area, which includes three wildlife ponds, a food plot and a tree cover area. Other features include a picnic shelter, playground equipment and open space for activities.
- **Lake Allie Park (Renville County)** - This 4.4 acre park is located on the west side of Lake Allie, along County State Aid Highway 24. Facilities provided include a shelter, restrooms, a temporary dock, picnic tables and playground equipment. The park also offers utilities, including electrical hookups, water spigots and waste disposal.
- **Lake Marion Regional Park (McLeod County)** - Located on the east side of Lake Marion, this 86 acre park offers a fishing pier, public swimming beaches, a boat access and a 50 unit camping area. Additionally, the Lake Marion Regional Park offers three miles of hiking trails, cross country skiing areas and numerous other outdoor recreational opportunities.

## Implications and Assessment

Preserving and expanding wildlife habitat is an important component of this plan. Due to the widespread expansion of agriculture, much of the District's original vegetation and wetlands, which once provided wildlife with food, water and shelter, have been lost. As a result, wildlife habitat within the District is fragmented. The largest tract of contiguous wildlife habitat in the District is the Buffalo Creek corridor. To protect this corridor and other critical habitat areas, the District should support the efforts of the DNR, USFWS and other wildlife habitat related organizations. Options to link wildlife habitat should be encouraged.

The BCWD has many recreational amenities, including 9 WMAs, 4 WPAs, 6 public water accesses and 3 county parks. Many of these amenities are associated with water resources. According to Figure 4A, the District's projected recreational demand in 2025 is expected to be moderate to high. If future recreational demand increases, existing opportunities may need to be enhanced or expanded, especially along the Buffalo Creek, which is practically untapped for its recreational potential. The District should actively work in conjunction with key recreational stakeholders to pursue grants and other funding to acquire and maintain recreational lands.

## References

Minnesota Department of Natural Resources - [www.dnr.state.mn.us](http://www.dnr.state.mn.us)

United States Fish and Wildlife Service - [www.fws.gov](http://www.fws.gov)

McLeod County Environmental Services - [www.co.mcleod.mn.us](http://www.co.mcleod.mn.us)

Renville County Environment and Community Development - [www.co.renville.mn.us](http://www.co.renville.mn.us)

### Priority Multi-Purpose Corridors Issues

Through the planning process, the Overall Plan Taskforce designated a number of multi-purpose corridors related issues as high priority for the BCWD. These issues were so designated because they pose serious threats to sensitive resources if they are not addressed, or important opportunities could be lost through inaction. The taskforce recommended that the District individually profile each of these issues in greater detail. Information provided on each issue includes: issue overview, keyplayer(s), the District's role, priority subwatershed(s), implications and assessments, and taskforce recommended initiative(s).

Listed below are the priority multi-purpose corridor related issues of the BCWD.

- ✓ Canoeing/Innertubing
- ✓ Fisheries
- ✓ Rare Biological Resources
- ✓ Trails

## CANOEING/INNERTUBING *Priority Issue 1*

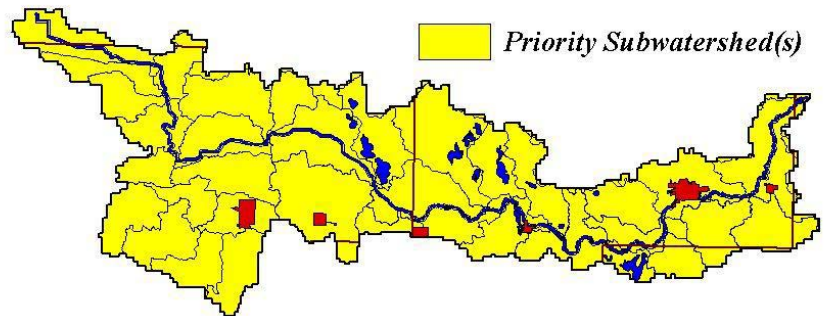
**Issue Overview**      Currently, the Buffalo Creek is used marginally for canoeing and innertubing. As a priority issue, the Overall Plan Taskforce recommended that the District evaluate the Creek’s potential for canoeing and innertubing.

**Key Player**            DNR

**District’s Role**        Nonregulatory – cooperator

**Priority Subwatersheds**

*All subwatersheds*



**Implications and Assessments**

The Buffalo Creek, which is not a designated State Canoe and Boating Route, is only marginally used for canoeing and innertubing. The unaltered portion of the Creek, from Stewart eastward, is most often used for such activities. The Creek is largely navigable during moderate flow conditions; however, during low flow periods, the Buffalo Creek is often impassable by canoe or innertube due to obstructions.

Sustained flow throughout the spring and summer is critical for canoeing and innertubing. Flow data collected by the BCWD, DNR and USGS (Tables 4D and 4E) reveals that the flows of the Buffalo Creek fluctuate greatly during the course of the year. Flows are greatest during the spring, as a result of snowmelt and increased precipitation. Continuous flow monitoring has also indicated that the Buffalo Creek’s flows are often flashy, meaning that both high and low flows are exaggerated. A large contributing factor to this is the Creek’s interconnectedness to the District’s extensive drainage systems, which were designed and are operated to remove large quantities of water in a relatively short duration.

In a publication titled “What Water Levels are Required for the River to be Navigable”, the Clean Up the River Environment (CURE) organization provides a listing of recommended flow levels for streams in the Upper Minnesota River Watershed to be navigable by canoe or innertube. Suggested flows ranged from 300 to 500 cfs. While this publication focuses on a different watershed, it does further the point that the Buffalo Creek’s unstable flows hinder its canoeing and innertubing potential.

**Table 4D  
BCWD Flow Monitoring Summary (1996-2000)**

Site	Years Monitored	Average Monthly Flow (millions of gallons per month)					
		May	June	July	Aug.	Sept.	Oct.
E	1998-2000	580	1,959	704	224	90	73
F	1996, 1998-2000	877	3,205	917	321	289	248
H	1998-2000	1,953	8,534	3,818	868	712	639
N1	1996, 1998-2000	4,414	9,412	5,941	1,509	1,017	637
N4	1999-2000	927	11,437	6,720	2,600	1,589	551

**Table 4E  
USGS Station 05278930 (Buffalo Creek Near Glencoe, MN) Mean Daily Flow Values (ft<sup>3</sup>/s)**

Day of month	Month											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	20.7	14.9	19.9	399	323	140	153	19.6	46.9	22.3	66.0	54.0
2	20.2	14.7	20.9	404	270	137	138	19.3	44.1	20.9	68.3	51.9
3	19.9	14.6	22.6	412	230	137	123	17.6	37.4	22.8	70.2	49.3
4	19.3	14.6	24.1	431	208	133	105	20.7	32.3	22.2	73.6	44.5
5	19.1	14.4	26.5	431	192	121	89.3	19.6	27.5	20.5	82.1	41.6
6	18.7	14.4	29.1	378	172	115	76.6	22.5	25.3	20.1	84.2	40.1
7	18.4	14.4	33.0	359	155	112	77.8	25.9	22.7	21.5	79.5	38.5
8	18.1	14.7	37.6	312	141	106	69.2	26.3	20.4	25.6	71.6	37.4
9	17.7	15.4	42.7	292	131	106	66.7	28.6	19.1	25.2	71.3	35.6
10	17.2	16.3	51.0	279	150	137	63.1	27.3	18.0	25.8	69.0	34.6
11	17.1	17.3	63.4	255	149	166	58.1	28.0	17.4	25.4	64.9	33.2
12	17.1	17.7	71.1	242	164	169	52.1	27.4	48.3	27.7	63.9	32.0
13	17.0	18.0	102	236	256	154	49.2	31.0	66.5	29.5	62.8	30.8
14	17.1	18.3	125	226	235	134	47.0	36.5	54.3	31.6	62.2	29.7
15	17.1	18.5	149	231	195	122	45.5	46.5	47.1	34.0	61.5	29.0
16	17.5	19.0	145	236	165	113	46.1	48.8	45.2	38.2	59.6	28.2
17	17.5	19.6	143	257	148	109	43.2	42.1	41.7	45.0	56.7	27.5
18	17.5	20.0	148	265	131	105	40.7	33.8	40.8	49.4	53.8	26.9
19	17.2	20.4	147	257	117	108	36.2	28.8	38.9	50.8	50.9	26.3
20	16.8	20.6	144	250	107	120	36.6	30.3	34.8	47.3	54.4	26.0
21	16.6	20.6	151	245	99.2	133	33.1	44.8	32.6	45.1	55.6	25.6
22	16.4	20.8	172	257	93.1	149	31.9	41.3	31.0	39.9	53.1	25.2
23	16.3	20.7	205	293	87.4	166	46.0	36.7	27.9	36.6	54.7	24.7
24	16.2	20.5	235	280	90.7	333	66.2	35.4	26.5	34.4	56.7	24.2
25	15.9	20.2	301	271	84.8	342	49.8	36.3	26.7	31.8	58.3	23.8
26	15.8	19.8	247	327	81.6	303	40.4	39.5	25.9	30.1	60.0	23.4
27	15.7	19.2	239	391	107	246	32.8	57.6	24.3	28.9	59.8	23.0
28	15.6	19.5	246	406	144	201	28.9	51.7	21.7	27.6	58.7	22.5
29	15.4	26.3	299	395	140	177	26.5	57.4	20.6	27.5	57.0	22.0
30	15.0		351	379	143	163	25.6	49.5	19.2	29.3	55.7	21.6
31	14.8		377		144		22.5	55.6		48.0		21.3

Long-term improvements in the Buffalo Creek's canoeing and innertubing potential could be made through improving base flows. This would entail holding more water on the landscape for longer periods. Even if this were accomplished, given the size of the watershed and the extent of the drainage systems, the Buffalo Creek will likely continue to be a marginal resource for canoeing and innertubing.

## References

Clean Up the River Environment - [www.curemnriver.org](http://www.curemnriver.org)

Minnesota Department of Natural Resources - [www.dnr.state.mn.us](http://www.dnr.state.mn.us)

United States Geological Survey - [www.usgs.gov](http://www.usgs.gov)

## Taskforce Recommended Initiatives

- ✓ **Policy Guideline:** Encourage the DNR and other applicable governmental units and organizations, to provide the public open and unimpeded access and use of all navigable public waters within the District.
- ✓ **Policy Guideline:** The District should provide technical and financial support, as available, to entities applying for grants and other available aid to fund recreational opportunities.
- ✓ **Action Item:** Establish a joint planning committee with McLeod County to examine options to establish a canoe access to the Buffalo Creek at the Buffalo Creek County Park.

## FISHERIES

### *Priority Issue 2*

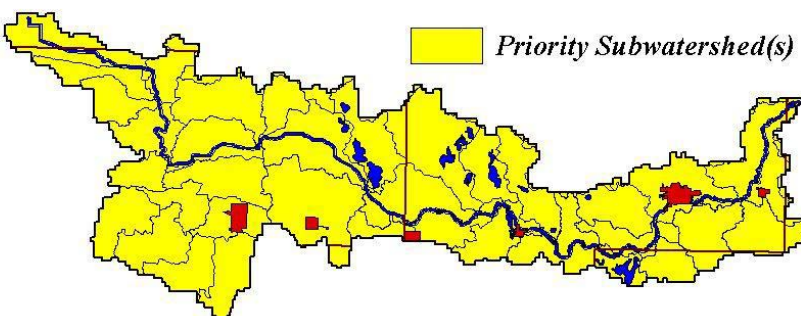
**Issue Overview**      The Buffalo Creek is not intensively managed or utilized as a fishery; however, some anglers do have some success in particular segments. As a priority issue, the Overall Plan Taskforce recommended that the District evaluate the fishing potential of the Buffalo Creek.

**Key Players**            DNR

**District’s Role**        Nonregulatory – cooperator

**Priority Subwatersheds**

*All subwatersheds*



### Implications and Assessments

The Minnesota DNR, Division of Fisheries, routinely surveys and assesses fish populations in lakes and streams it manages. Definitions of the various surveys and assessments conducted by the DNR are given below. Table 4F lists those that have been conducted on the Buffalo Creek.

- **Reconnaissance Survey** – A cursory sampling of physical and biological parameters to obtain a qualitative overview. Typically this survey is the initial work conducted, but it may be done anytime for planning and evaluation.
- **Initial Survey** – A detailed sampling of physical and biological parameters to determine the status of a waterbody and guide management decisions.
- **Population Assessment** – A sampling of fish populations to determine the status and short-term fishery potential of a waterbody.

**Table 4F**  
**DNR Fisheries Surveys and**  
**Assessments Conducted on the Buffalo Creek**

Survey Type	Year	Survey Type	Year
Reconnaissance	1980	Other Assessment	1985
Initial Survey	1981	Population Assessment	1991

During surveys and assessments, the DNR identifies opportunities to improve fish and wildlife habitat, as well as water quality. Examples of such opportunities are presented below.

- Providing areas for northern pike spawning and waterfowl production by restoring wetlands and creating urban stormwater ponds and siltation basins.
- Protecting, preserving and establishing native emergent vegetation (i.e., cattails, bullrushes, etc.) improves water quality, while providing fish and wildlife habitat.
- Stabilizing shorelines with buffer strips, riprap and other measures, enhances natural spawning shoals by reducing turbidity.
- Managing exotic aquatic plants, such as Eurasian watermilfoil, purple loosestrife and curled pondweed, primarily through prevention, allows the growth of native species. .
- Filtering nutrients and pollutants from water by diverting storm sewers, drainage tiles and sewage treatment effluent through properly designed treatment ponds or vegetated waterways and wetlands to improve water quality.

In the 1991 population assessment, carp, black bullhead, green sunfish and white sucker were sampled by electrofishing. These species in large numbers are indicative of a degraded system. The assessment concluded that frequent flooding, silt loading, low base flows in the winter and summer and lack of fish habitat were collectively limiting the fisheries potential of the Creek. Comprehensive watershed management was recommended in order to produce a more desirable fishery.

### **DNR Fisheries Lake and Stream Management Plans**

DNR Fisheries personnel use surveys and assessments to develop and revise Lake and Stream Management Plans (LMP/SMP). Plans include long-range goals, operational plans, mid-range objectives, potential plans, primary and secondary species management and a narrative section. Plans are revised as new data is collected or information from other sources becomes available. According to DNR, Division of Fisheries, Hutchinson Area Office, plans have been written for Buffalo Creek (1982), Lake Allie (2001), Lake Marion (2001) and Lake Preston (2001) within the BCWD.

In the 1982 Buffalo Creek SMP, the following stream management recommendations were made:

- ✓ Stocking is not recommended; fish move freely into the Buffalo Creek from the South Fork of the Crow River.
- ✓ Stream habitat restoration and enhancement is not currently feasible. Local NRCS should first work with farmers to reduce erosion and stabilize banks.

## Reference

Minnesota Department of Natural Resources, Division of Fisheries, Hutchinson Area Office

## Taskforce Recommended Initiatives

- ✓ ***Policy Guideline:*** District residents should be educated on the relationship between fish and wildlife habitat and water quality, as well as opportunities to enhance and protect habitat through voluntary conservation programs.
- ✓ ***Policy Guideline:*** The District should assist the DNR in the development of management plans for lakes and streams within its boundary.
- ✓ ***Action Item:*** Make a formal request to the DNR, Division of Fisheries, to conduct additional surveys and assessments on the Buffalo Creek and update the SMP, as necessary.

## RARE BIOLOGICAL RESOURCES

### *Priority Issue 3*

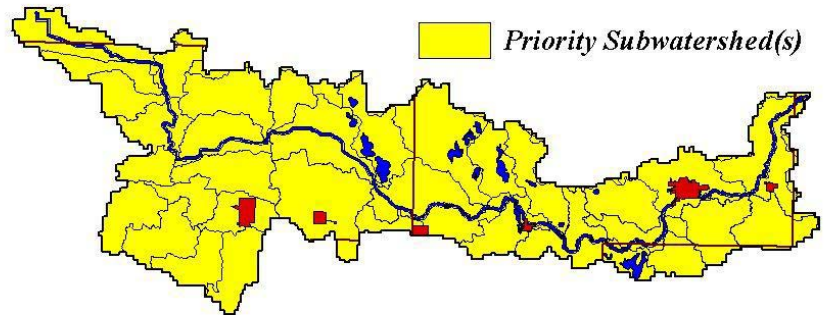
**Issue Overview** The Minnesota DNR, Division of Ecological Services, recently completed County Biological Surveys for each of the counties within the District. To date, the District has yet to receive information on the completed surveys. As a priority issue, the Overall Plan Taskforce recommended that the District utilize the County Biological Surveys to map rare biological resources, as well as examine State and Federal regulations related to these resources.

**Key Player** DNR

**District's Role** Nonregulatory – cooperator

**Priority Subwatersheds**

*All subwatersheds*



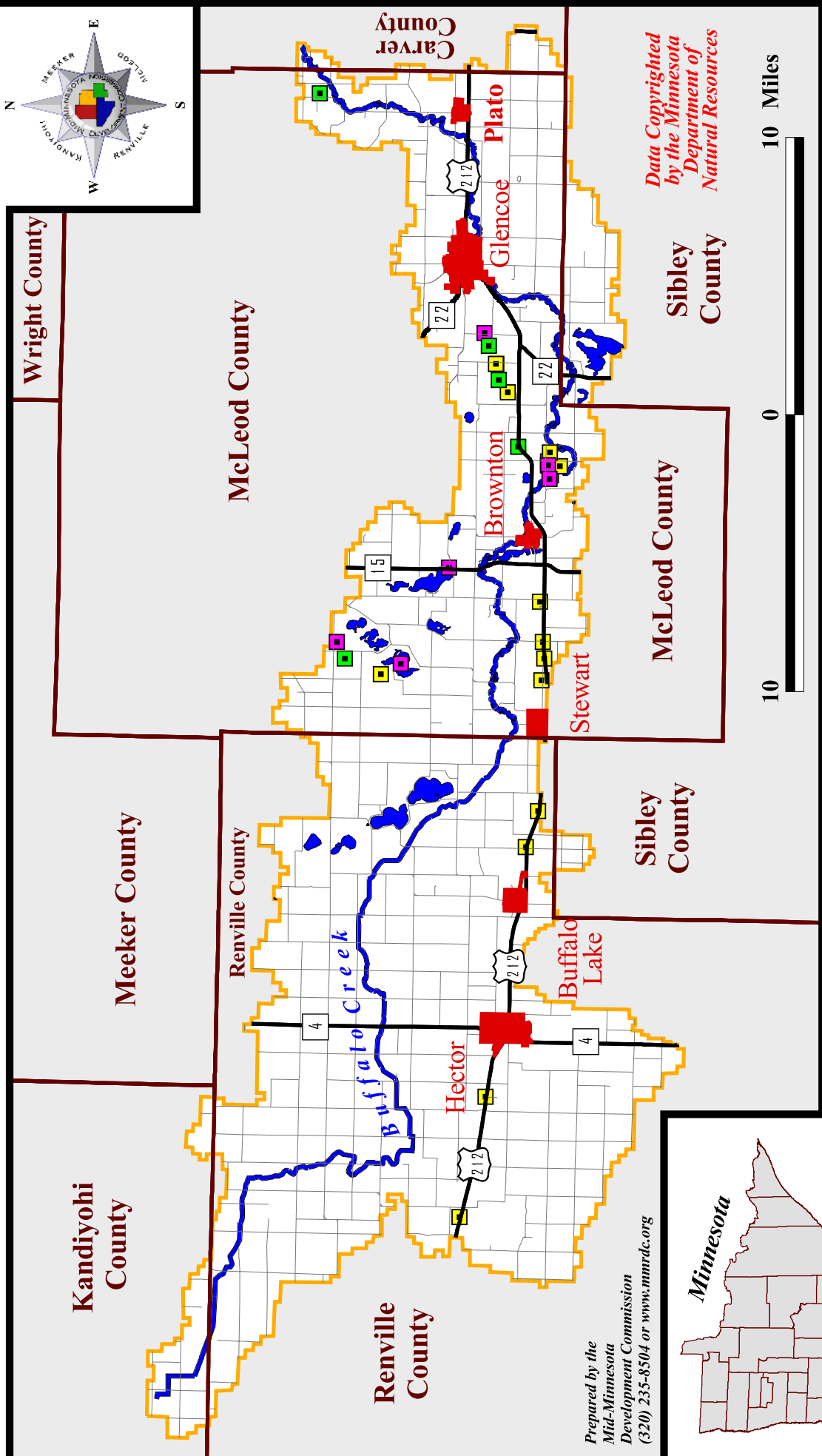
**Implications and Assessments**

The Minnesota DNR began the County Biological Survey (MCBS) in 1987 as a systematic survey of rare biological features. The goal of the MCBS is to identify significant natural areas and to collect and interpret data on the distribution and ecology of rare plants, animals and native plant communities. Native habitats surveyed by the MCBS contribute to a sustainable economy and society because of the reasons listed below.

- They provide reservoirs of genetic materials potentially useful in agriculture and medicine.
- They provide ecological services that contribute to the quality of air, soil and water.
- They provide opportunities for research and monitoring on landscapes, plant communities, animals and their relationships within the range of natural variation.
- They serve as benchmarks for comparing the effects of resource management activities.
- They are part of natural ecosystems that represent Minnesota's natural heritage and are sources of recreation, beauty and inspiration.

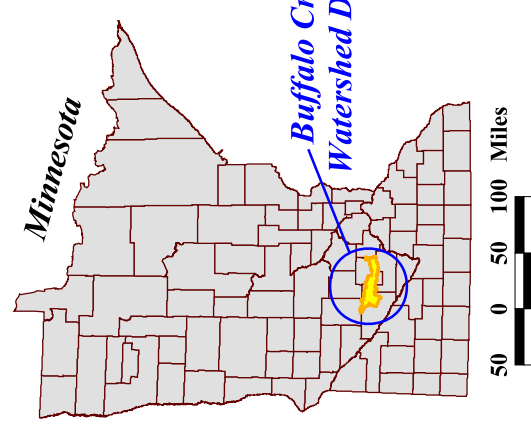
To date, surveys have been completed in 57 counties statewide, including Carver, Kandiyohi, McLeod, Renville and Sibley Counties. Through the surveys, a total of 12,800 new records of rare plants and animals have been added to the Rare Features Database, Natural Heritage

# Map 4B Buffalo Creek Watershed District Rare & Threatened Species



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- Watershed District
  - Municipality
  - County
  - Lake
  - Buffalo Creek
  - Major Road
  - Minor Road
- Rare Category**
- Rare Animal
  - Rare Plant
  - Rare Feature
- Major Roads**
- U.S. Highway 212
  - State Highway 4
  - State Highway 15
  - State Highway 22
- District Size**
- Total Area = 422.1 Square Miles
  - Approximate East/West Length = 51 Miles
  - North/South Length = 19 Miles



Prepared by the  
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Information System (NHIS). Table 4G lists the rare biological resources found in the BCWD, including natural communities, plants and animals, as derived from the NHIS on April 25, 2003. Map 4B displays the general location of these rare biological resources. Notices that many of the resources are tied to the Buffalo Creek corridor. It should also be noted that the lack of data for any geographic area should not be construed to mean that no significant features are present.

**Table 4G  
Rare Biological Resources**

Feature Type	Common Name	Legal Status	Last Observed	# of Occurrences
Natural Communities	Mesic Prairie (Central)	NA	NA	4
	Mesic Prairie (Southwest)	NA	NA	1
Plants	Maple Basswood Forest	NA	NA	1
	Buffalo Grass	Special Concern	1992	1
	Eared False Foxglove	Endangered Species	2000	3
	Hill's Thistle	Special Concern	1989	1
	Small White Lady's Slipper	Special Concern	2000	5
	Sullivant's Milkweed	Threatened Species	1998	5
Animals	King Rail	Endangered Species	NA	1
	Marbled Godwit	Special Concern	1953	1
	Powesheik Skipper	Special Concern	1993	1
	Regal Fritillary	Special Concern	2002	4

### **Federal Endangered Species Act**

The Federal Endangered Species Act of 1973 requires the U.S. Department of the Interior to identify species as endangered or threatened, which imposes restrictions pertaining to those species. Definitions for endangered, threatened and species of special concern are provided below.

- **Endangered Species** - A species is considered endangered if the species is threatened with extinction throughout all or a significant portion of its range within Minnesota.
- **Threatened Species** - A species is considered threatened if the species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range within Minnesota.
- **Species of Special Concern** - A species is considered a species of special concern if, although the species is not endangered or threatened, it is extremely uncommon in Minnesota, or has unique or highly specific habitat requirements and deserves careful monitoring of its status. Species on the periphery of their range that are not listed as threatened may be included in this category, along with those species that were once threatened or endangered but now have increasing or protected, stable populations.

Minnesota's Endangered Species Statute (Minnesota Statutes, Section 84.0895) requires the Minnesota DNR to adopt rules that designate species meeting the statutory definitions of endangered, threatened, or species of special concern (Minnesota Rules, Chapter 6134). The Endangered Species Statute also authorizes the DNR to adopt rules that regulate treatment of species designated as endangered and threatened. Under State regulations, a person may not take, import, transport, or sell any portion of an endangered or threatened species, except by issuance of a DNR permit. In addition, certain exemptions exist for agricultural lands and for the accidental, unknowing destruction of designated plants. Minnesota's Endangered Species Statute or associated Rules does not protect species of special concern.

## References

Minnesota Department of Natural Resources - [www.dnr.state.mn.us](http://www.dnr.state.mn.us)

## Taskforce Recommended Initiatives

- ✓ **Policy Guideline:** Exceptional or unique resources identified by the County Biological Survey should be protected.
- ✓ **Policy Guideline:** The District should support State and Federal agencies and organizations in identifying important conservation corridors before they are irreversibly fragmented by development.
- ✓ **Policy Guideline:** Concepts of biotic diversity should be incorporated into projects when feasible (e.g. use of native grasses for buffer strips).
- ✓ **Policy Guideline:** Fish and wildlife habitat should be protected and enhanced through partnerships between local, State and Federal agencies, sportsman groups and other organizations.

## TRAILS

### *Priority Issue 4*

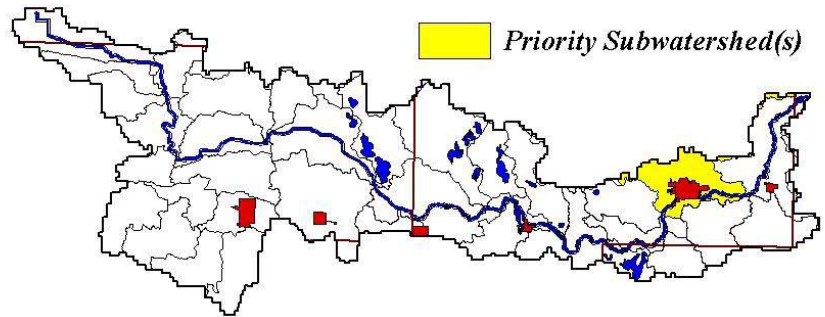
**Issue Overview**      The City of Glencoe recently completed a Trail Feasibility Study, which included a trail segment along the Buffalo Creek corridor. As a priority issue, the Overall Plan Taskforce recommended that the District profile the City of Glencoe’s Trail Feasibility Study, inventory funding sources to support trail development and identify factors that should be taken into account in the design and construction of a trail.

**Key Players**            City of Glencoe, DNR, Mn/DOT

**District’s Role**        Nonregulatory – cooperator, facilitator

**Priority Subwatersheds**

*Buffalo Creek (19043)*



**Implications and Assessments**

In 2002, the City of Glencoe completed a trail feasibility study (*A map from this study is provided in Appendix D*). The study examined various trail development options, as well as opportunities to expand and connect to existing trails. One component of this study involved negotiating a trail along the Buffalo Creek corridor. The proposed trail would meander along the Creek, from the western edge of the City to the eastern edge of the City. Once completed, the trail would be used for primarily nonmotorized uses, such as walking and bicycling. Presently, the City of Glencoe does not have any fixed plans in place for the development of the trail. Future trail development efforts will be largely dictated by the availability of funding.

**Trail Funding Sources**

There are several funding sources for the development of trails in Minnesota. These funds are primarily administered through the Minnesota DNR and Mn/DOT. Prominent sources of funds include the TEA-21 Act Program (Mn/DOT), the Local Trail Connections Grant Program (DNR), the Regional Trail Grant Program (DNR) and the Federal Recreational Trail Program (DNR). Fact sheets for these programs are included in Appendix E. These programs require a local match of at least 20 percent and program funds can be combined, but this requires extensive coordination. For example, TEA-21 funds need to be applied for at a minimum of four years in advance.

## Trail Development Considerations

The following text outlines the seven-step process to developing a trail that was outlined in the 2003 University of Minnesota Extension Service publication “Recreational Trail Design and Construction”.

***Step 1. Decide the Trail's Purpose.*** Different recreational activities require different trail designs. The extent to which trail uses can be mixed depends on user objectives, the number of users and the type of activity. Some activities, such as snowmobiling and cross-country skiing, require separate trails. Other activities are compatible on the same trail or occur in different seasons.

***Step 2. Inventory the Property.*** Examine the project area for natural and constructed features that will enhance or detract from the trail user's experience. They can be used to identify key places that the trail should connect (e.g., vistas, hunting and fishing areas, meadows, forest management projects) and fragile areas that should be avoided or that will require extra care (e.g., steep slopes, gullies, waterways, wetlands, erodible soils, rock outcrops, historic places). Also note the location of existing roads and trails that might be incorporated into the trail design. Gather this information on a map of the property drawn approximately to scale.

***Step 3. Design the Trail.*** Develop design specifications for the trail based on its intended use. Determine the trail pattern and approximate length, maximum grade and curve radius, and minimum overhead clearance and width standards. Carefully examine the area for routes between points of interest. Identify potential trail-use hazards or construction problems, including lakes and streams, motorized roadway intersections and soils that are erodible or poorly drained.

***Step 4. Scout the Trail Corridor.*** Walk the proposed trail corridor in both directions using a compass and map. Identify potential problems (e.g., steep slopes, water and motorized road crossings, wet soils, rock outcrops) and develop solutions. In late spring, when the leaves are off the trees and the ground is free of snow, examine trail drainage and vegetative screening between trails. A trail that follows natural contours, gently curving and bending around obstacles and that disturbs the site as little as possible, is aesthetically pleasing and more enjoyable to travel. It may be necessary to adjust the route several times. Once the final location has been determined, mark the route with brightly colored plastic flagging tape tied to trees and shrubs.

***Step 5. Clear the Trail.*** Begin construction by removing trees, brush and rocks from the tread. Establish a trail clearance width and height according to the intended use. Site characteristics and trail length will determine what tools are needed. Hand tools, such as axes, loppers, bow saws, weed whips and chain saws, will be sufficient in most cases. A small bulldozer, brushmower pulled by a tractor, or a log-skidder with a blade, is appropriate for clearing long, wide trails on stable soils. The trail can be cleared much faster with motorized equipment, but extreme care must be used to protect the trail bed and surrounding vegetation.

**Step 6. Construct the Trail Tread.** For most trails, the ideal surface is natural soil free of stones, stumps and protruding roots. Natural trails often become easily distinguishable and comfortable to walk after a month of regular traffic. Always avoid unnecessary disruptions of the ground surface. If leveling is required, use a shovel or small caterpillar (D-2 or equivalent) to shear off a thin layer of topsoil, level humps and fill holes. Gravel or other fill materials may be used to elevate the trail in wet areas.

Use hard surfaces only for heavily used trails, wheelchair-accessible trails and touring bicycle trails. Commonly used surfaces include soil cement (a mixture of cement and sandy soil), granular stone (crushed limestone or sandstone), asphalt and concrete. These materials can be extremely expensive to purchase and install. Professional assistance is recommended.

**Step 7. Mark the Trail.** Once constructed, a trail should be marked so that its route is clear in any season of the year. Trail markers may be paint blazes, plastic, or metal markers fastened to trees, wooden posts with directional arrows, rock cairns, or reflective tape for night use. As a rule, trail users should not travel more than 600 feet without being able to see a trail marker or sign. On poorly cleared trails, users should be able to sight from one trail marker to the next. If a trail has two-way traffic, travel it in one direction placing markers at appropriate locations, then travel it in the opposite direction and place additional markers as needed.

## References

City of Glencoe - [www.cityofglencoe.com](http://www.cityofglencoe.com)

Minnesota Department of Natural Resources - [www.dnr.state.mn.us](http://www.dnr.state.mn.us)

University of Minnesota Extension Service - [www.extension.umn.edu](http://www.extension.umn.edu)

## Taskforce Recommended Initiatives

- ✓ **Policy Guideline:** The District should provide technical and financial support, as available, to entities applying for grants and other available aid to fund recreational opportunities.
- ✓ **Action Item:** Establish a joint planning committee with the City of Glencoe to examine opportunities for the development of a trail along the Buffalo Creek corridor.