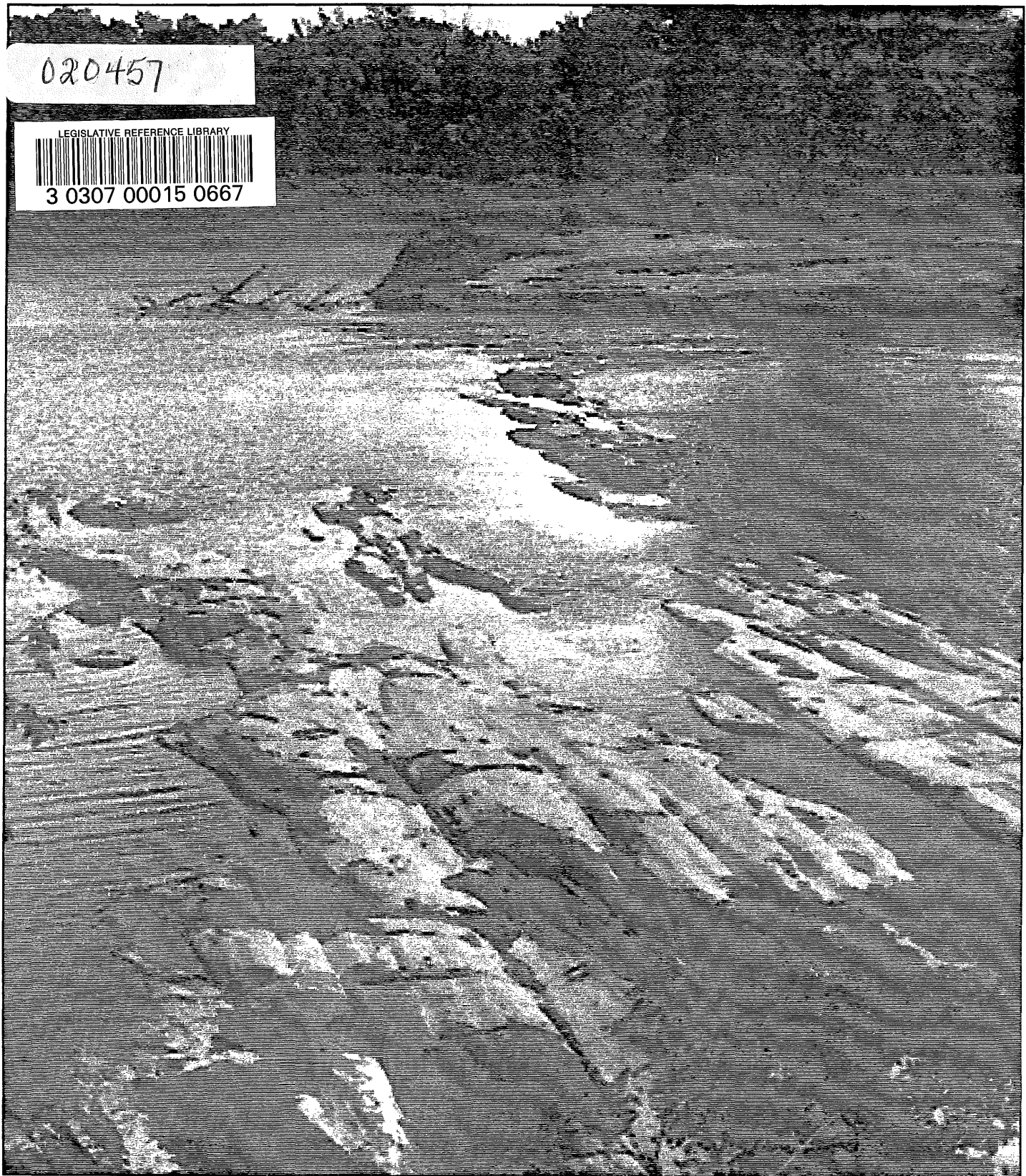


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# of Biological Features in the Minnesota Valley Recreation Area

Minnesota County Biological Survey  
Division of Ecological Services  
Department of Natural Resources  
Box 25, 500 Lafayette Road  
St. Paul, Minnesota 55155

August, 2002

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Minnesota County Biological Survey

Division of Ecological Services

Minnesota Department of Natural Resources

Biological Report No. 72

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**SURVEY OF BIOLOGICAL FEATURES**  
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August, 2002

# CONTENTS

<b>Acknowledgments</b> .....	v
<b>Introduction</b> .....	1
<b>Methods</b>	
Native Plant Communities .....	4
Rare Plants .....	5
Animals .....	6
<b>Results and Management Recommendations</b>	
<b>Gifford Lake Wayside/ Nyssen's Lake Unit</b>	
Native Plant Communities .....	10
Rare Plants .....	10
Animals .....	11
Management Recommendations .....	12
Map of Rare Features, Native Plant Communities, and Survey Sites .....	15
Element Occurrence Records .....	18
<b>Carver Rapids Wayside</b>	
Native Plant Communities .....	26
Rare Plants .....	29
Animals .....	30
Management Recommendations .....	33
Map of Rare Features, Native Plant Communities, and Survey Sites .....	37
Element Occurrence Records .....	40
Relevés and Plant Species Lists .....	48
<b>Sioux Vista Dunes /Thompson Ferry</b>	
Native Plant Communities .....	74
Rare Plants .....	75
Animals .....	75
Management Recommendations .....	76
Map of Rare Features, Native Plant Communities, and Survey Sites .....	79
Element Occurrence Records .....	82
Relevés and Plant Species Lists .....	86

**Lawrence Wayside/ Belle Plaine Wayside**

Native Plant Communities ..... 88  
Rare Plants ..... 90  
Animals ..... 90  
Management Recommendations ..... 92  
Map of Rare Features, Native Plant Communities, and Survey Sites ..... 95  
Element Occurrence Records ..... 98  
Relevés and Plant Species Lists ..... 104

**Blakeley Wayside/ Jessenland 25**

Native Plant Communities ..... 122  
Rare Plants ..... 124  
Animals ..... 124  
Management Recommendations ..... 125  
Map of Rare Features, Native Plant Communities, and Survey Sites ..... 129  
Element Occurrence Records ..... 132  
Relevés and Plant Species Lists ..... 134

**Rush River Wayside**

Native Plant Communities ..... 146  
Rare Plants ..... 147  
Animals ..... 147  
Management Recommendations ..... 149  
Map of Rare Features, Native Plant Communities, and Survey Sites ..... 151  
Element Occurrence Records ..... 154  
Relevés and Plant Species Lists ..... 158

**References** ..... 172

## Figures

1. Areas surveyed in the Minnesota Valley State Recreation Area .....	2
2. Gifford Wayside and Nyssen's Lake Unit: locations of rare features, native plant communities, and survey sites .....	15
3. Carver Rapids Wayside: locations of rare features, native plant communities, and survey sites .....	37
4. Sioux Vista Dunes and Thompson Ferry Units: locations of rare features, native plant communities, and survey sites .....	79
5. Lawrence and Belle Plaine Waysides: locations of rare features, native plant communities, and survey sites .....	95
6. Blakeley Wayside and Jessenland 25: locations of rare features, native plant communities, and survey sites .....	129
7. Rush River Wayside: locations of rare features, native plant communities, and survey sites .....	151

## Appendices

1. Codes for selected fields in relevé printouts .....	176
2. DNR Relevé numbers, plant community types, dates, sizes and locations of relevés in the Minnesota Valley State Recreation Area .....	178
3. Rare animals and animal aggregations associated with habitats represented in the Minnesota Valley State Recreation Area .....	180
4. Locations and associated habitats for MCBS animal surveys in the Minnesota Valley State Recreational Area .....	182
5. Amphibians and reptiles documented in the Minnesota Valley State Recreation Area .	188
6. Breeding birds documented in the Minnesota Valley State Recreation Area .....	190
7. Mammals documented in the Minnesota Valley State Recreation Area .....	194
8. Natural Heritage database printouts: an explanation of selected fields .....	196

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## INTRODUCTION

The Minnesota County Biological Survey (MCBS) began in 1987 in recognition of the need to assess the status of the state's biological diversity and its rare natural resources. It is a systematic survey of Minnesota's rare biological features. MCBS identifies significant natural areas and collects and interprets data on the distribution and ecology of native plant communities, rare plants, and rare animals. The information gathered by MCBS serves as a foundation for the conservation of critical components of Minnesota's biological diversity.

Biological surveys were conducted in Scott, Carver, and Sibley counties primarily during the field seasons of 1995 through 1998, with follow-up surveys in 2000. Through a cooperative agreement between MCBS and the Division of Parks and Recreation, surveys of native plant communities and rare species were intensified within lands designated as part of the Minnesota Valley State Recreation Area (MVSRA; see Figure 1). The vegetation of the MVSRA, including native plant communities and disturbed areas, was mapped and additional vegetation sampling plots were established. To meet the needs of park resource managers, the number of surveys for rare plants and animals was intensified beyond the scope of work generally pursued as part of a county-level survey.

This report is a summary of survey efforts and an assessment by the MCBS of the natural features within the MVSRA. It documents the locations of rare biological features and sensitive habitats and provides baseline information useful for natural history interpretation, management, monitoring, and research related to the natural history of the lower Minnesota River Valley.

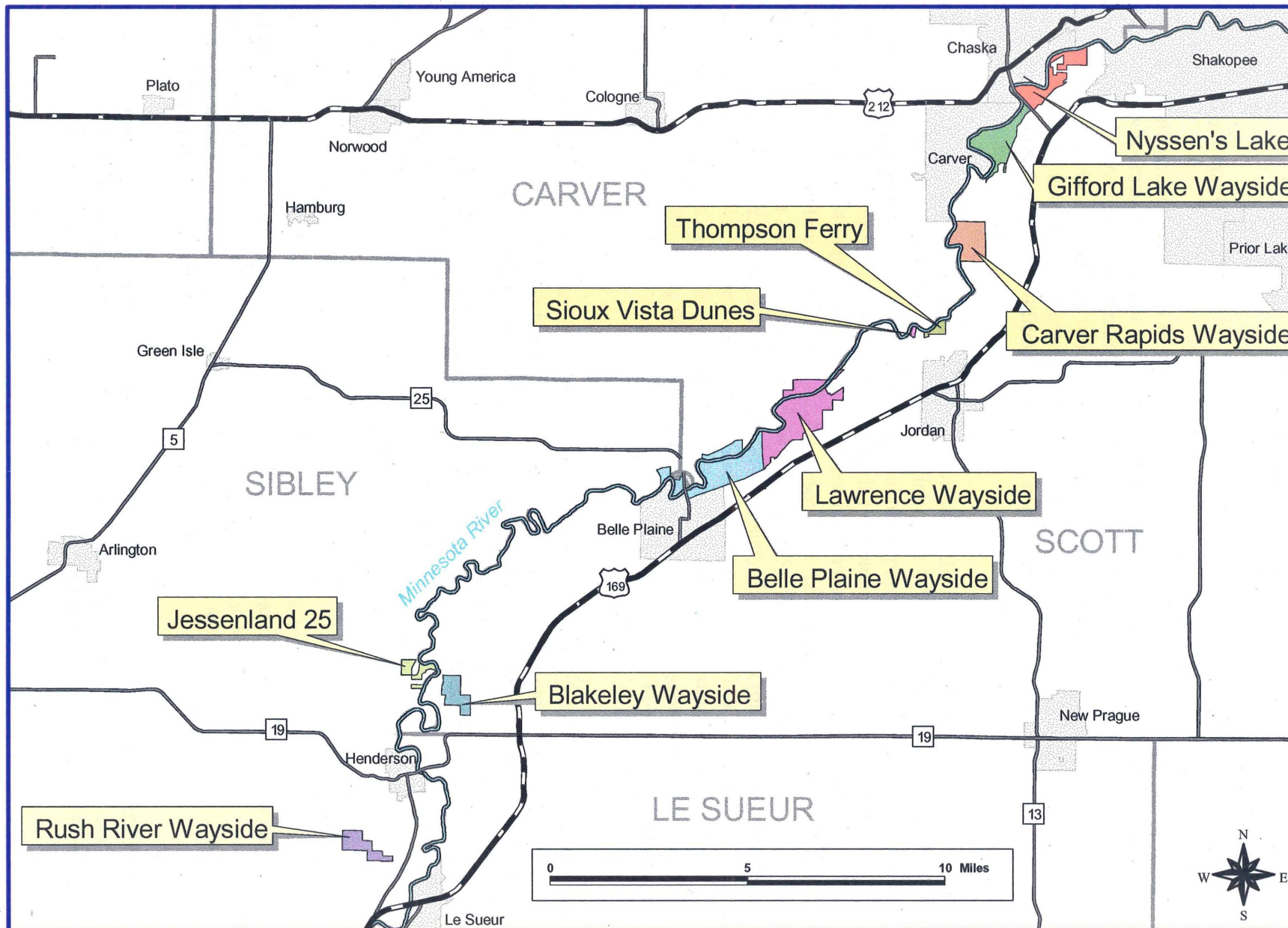
Additional information about many of the rare features described in this report can be found in the book *Minnesota's St. Croix River Valley and Anoka Sandplain: A Guide to Native Habitats* (Wovcha et al. 1995) and in *Minnesota's Endangered Flora and Fauna* (Coffin and Pfannmuller 1988). Maps showing the results of completed surveys of Scott, Carver, and Sibley counties are presently available (MCBS 1998, 2001).

A note about the use of scientific and common names of plants and animals in this report: whereas scientific names are listed in tables, figure legends, or printouts, only common names for animals are used in the text. For the plants and remaining animal species, the scientific name is given the first time the species is mentioned and common names are used thereafter.



# Figure 1: Areas Surveyed in the Minnesota Valley State Recreation Area

Minnesota County Biological Survey - Map Version 22 April, 2002





## METHODS

### Native Plant Communities

Native plant communities are groups of native plants that interact with each other and the surrounding environment in ways not greatly altered by humans or introduced plant or animal species. These groups form recognizable units, such as a mesic prairie or oak forest, that tend to repeat across the landscape and over time. They may be classified and described by considering vegetation, successional status, topography, hydrology, landforms, substrates, soils, and natural disturbance regimes (including wildfires, windstorms, normal flood cycles, and the effects of native pathogens, insects, and microorganisms).

The MCBS conducted surveys of native plant communities in the MVSRA in 1995 and 1996. Native plant communities within the existing boundaries of the MVSRA were initially located using stereo pairs from two sets of color infra-red aerial photography: October 1994 photos from the Minnesota DNR Forestry, 1:15,840 scale; and April 1991 photos from the National Air Photography Program, 1:40,000 scale. Other sources of information consulted to map and describe native plant communities included the Minnesota Soil Atlas - Twin Cities Sheet (University of Minnesota Agricultural Experiment Station 1975), The Original Vegetation of Minnesota (Marschner 1974), the Soil Survey of Carver County (Edwards 1968), the Soil Survey of Scott County (Harms 1959), the Soil Survey of Sibley County (Domeier 1997), and the Natural Heritage Information System (NHIS) Rare Features Database (Division of Ecological Services, Minnesota DNR). Using these sources, initial boundaries of native plant communities and disturbed areas in the MVSRA were identified and transcribed onto 7.5 minute topographic maps.

Field visits to evaluate areas located in air photos were made by the MCBS plant ecologist primarily during the spring through fall of 1995 and 1996. Sarah Vest, Regional Parks Resource Specialist, accompanied MCBS staff on several visits. Native plant communities were identified according to *Minnesota's Native Vegetation: A Key to Natural Communities, version 1.5* (MNDNR - Natural Heritage Program 1993). The quality of the communities was ranked using a scale from A to D, with A being highest quality, or essentially pristine, and D the lowest, or highly disturbed. These evaluations follow draft guidelines for ranking native plant communities (MCBS 1994).

Vegetation plots, using the relevé method, were used to obtain more detailed information on the structure and composition of native plant communities in the MVSRA that were in good to excellent condition. Relevé sampling is a method of describing vegetation in a semi-quantitative manner. The methodology used statewide by MCBS is described by Almendinger (1987). Individual plot data can be compared to data from other areas and the results used to gain further understanding of the vegetation of Minnesota.

Relevé plots used in the MVSRA were 400 square meters (20m.x20m.) for forested communities and 100 square meters (10m.x10m.) for open wetland and prairie communities. Smaller plots were used to sample plant communities on the surfaces of rock outcrops, which are much smaller

than 100 square meters in the MVSRA (Wheeler 2000, Appendix 2). Within each plot, the vegetation was described by estimating the percent cover of each species in distinct height strata. Relevé data were entered into the NHIS Relevé Database (refer to Appendix 1 for an explanation of codes used in relevé printouts). Each plot was situated in a location that well-represented the community type being sampled. The locations of plots taken in 1995 and 1996 on state land were marked in 1996 by P. Bockenstedt, acting DNR Parks Resource Specialist, with 3 foot long segments of rebar painted orange which were pounded into the ground at one corner of each relevé. Plots taken in 1998 to 2000 by G. Wheeler were not marked. NAD 27 latitude and longitude for each relevé plot were recorded from ArcView 3.2, as a GPS unit was not used when the relevé samples were made in the field (Appendix 2).

Plant species lists were constructed for selected native plant community types in some of the MVSRA units. These lists were compiled from several visits to the community in different times of the growing season. These were entered into the NHIS Relevé Database and assigned DNR relevé numbers in the 9000s.

Following site visits by the plant ecologist, native plant community boundaries were corrected on the topo maps. The final boundaries were digitized using the ArcView version 3.2 Geographic Information System (E.S.R.I., Inc.). Locations and descriptions of each native plant community, known as “element occurrences”, were entered into the Rare Features Database of the NHIS. Areas that were not mapped as native plant community polygons primarily represent: 1) land where modern human activities such as farming, overgrazing, wetland drainage, recent logging and residential and commercial development have destroyed or greatly altered the natural vegetation; and 2) native plant community polygons that were below minimal size criteria. Note: some areas that were not mapped are important for conservation. They may include habitat for native plants and animals, corridors for animal movement, buffers surrounding high quality natural areas and open space, and target areas for restoration.

### **Rare Plants**

Rare plant surveys focused on species officially listed under the Federal Endangered Species Act of 1973, Public Law 93-205, or the Minnesota Endangered Species Act, MN Statute 84.0895. A revised state list was in effect July 1, 1996. Listed species include Federal and State Endangered and Threatened species, as well as State Special Concern species (Coffin and Pfanmuller 1988). Endangered and Threatened species are provided the highest level of legal protection under federal and state laws.

State listed species are defined as follows:

An Endangered species is a plant or animal species that is threatened with extinction throughout all or a significant portion of its range in Minnesota.

A Threatened species is a plant or animal species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range in Minnesota.

A Special Concern species is a plant or animal species that is extremely uncommon in Minnesota, or has a unique or highly specific habitat requirements, and deserves careful monitoring. Species on the periphery of their ranges may be included in this category, as well as species that were once threatened or endangered but now have increasing, or stable and protected, populations.

In addition, the Natural Heritage and Nongame Research Program (NHNRP) tracks selected species that are not legally listed or protected. Some of these are federal candidate species (proposed Endangered, proposed Threatened, and proposed Special Concern). Others are potentially rare species that require further field survey to determine their status and are denoted in this report as non-listed rare species (or NON).

All rare plants encountered during field work in 1995 through 1998 were documented by the MCBS plant ecologist or seasonal botanist. All occurrences were recorded in the NHIS Rare Features Database and digitally recorded using ArcView version 3.2 GIS software (refer to Appendix 8 for an explanation of fields associated with the Rare Features printouts). When populations were of adequate size, plant specimens were collected, labeled, and deposited into the Herbarium of the James Ford Bell Museum of Natural History at the University of Minnesota, St. Paul, MN.

## **Animals**

The Minnesota County Biological Survey (MCBS) conducted surveys for amphibians and reptiles, breeding birds, and small mammals in the Minnesota Valley State Recreational Area (MVSRA) from 1996 through 1998, with follow-up work in 2000. Limited fish and mussel surveys were conducted in 1999. Rare animal species were the focus of survey efforts, with targeted species being determined by historical records and the presence of appropriate habitat within the particular wayside or unit (Appendices 3 - 4). These included species that were federally-listed as endangered or threatened, species that were state-listed as endangered, threatened, or of special concern, rare but unlisted species that were tracked as elements in the Natural Heritage Information System (NHIS), and aggregations of animals, such as colonial waterbird nesting sites or bat hibernacula, that also were tracked in the NHIS Rare Features database.

This report discusses the methods and findings of the MCBS animal surveys, however, other information on animals in the MVSRA exists from other survey and monitoring efforts (refer to Bright et al. 1990 for mussels and specific NHIS databases on colonial waterbird nesting sites and mussel surveys). Although, MCBS surveys focused on rare species, data were collected on common animals, as well. Information on common animals is included in the Results and Management Recommendations for particular waysides or units, as appropriate. Also, checklists of amphibians and reptiles, breeding birds, and mammals documented during surveys are included (Appendices 5 - 7).

Voucher specimens of animals obtained during surveys were prepared for permanent storage at the James Ford Bell Museum of Natural History at the University of Minnesota in St. Paul.

### Amphibians and Reptiles

Herpetofaunal surveys conducted within the MVSRA targeted 2 state-listed amphibians and 12 rare reptiles (Appendix 3). Sites selected for herpetofaunal surveys were based on the species of interest and their preferred habitats. The field survey methods employed are described below.

*Anuran call surveys*, which document breeding frogs and toads, were conducted at night between dusk and 0100 hours from April through July. At selected wetland locations, under suitable weather conditions, all species heard calling during a 3-minute interval were identified and their corresponding call-index value was recorded. Due to the wide range of times over which different anuran species breed, selected sites were visited several times during the field season in order to document all anurans utilizing the wetland.

*Herp searches* involved actively searching a particular terrestrial or aquatic habitat and hand-capturing all herpetofauna found. Logs and ground debris were turned over to check for concealed herpetofauna. Basking surfaces or rock crevices also were examined. This technique was useful for documenting snakes, skinks, and lizards that might not be found using other methods. Other directed searches involved *driving roads* during optimal times. On warm, rainy nights during spring and summer, many amphibians may be found crossing roads adjacent to wetlands. Snakes will use the warm road surfaces to bask during morning and evening, and cross roads during spring and fall as they travel to or from hibernacula. Turtles are also intercepted on roads during the nesting period.

Turtles were surveyed using *visual searches* and *turtle traps* in wetlands having suitable habitat. Using spotting scopes and binoculars, turtles were identified as they basked on emergent structures, such as logs or rocks. Terrestrial searches for turtles also were conducted in open, sandy areas near wetlands in early June for nesting females or predated turtle nests. Hoop nets, baited with smelt, were set in shallow wetlands and checked every other day for three to five days. Captured turtles were identified and age, sex, and reproductive condition were recorded before they were released.

*Incidental records* of herpetofauna were also recorded when encountered.

### Breeding Season Birds

Bird surveys on the MVSRA recorded all breeding species, with special effort to locate state-listed and regionally rare species (refer to Appendix 3). Surveys of breeding birds were conducted from late May through mid-July, 1997. For early breeding species, such as Red-shouldered Hawk and Louisiana Waterthrush, surveys were begun in early April.

*Point counts* were the primary method used by MCBS to survey breeding birds. At each point within a given habitat, all birds heard or seen during a five-minute interval were identified and evidence of breeding behavior or nesting was recorded. The number of individual birds within a

50-meter radius was counted, but birds detected outside the 50-meter radius (but within the habitat being surveyed) were recorded but not enumerated. Birds flying over a point were counted if they were potentially using the habitat (e.g., foraging swallows). Species detected outside of the habitat being surveyed were also recorded for use in generating species lists for a site or area. Points were spaced a minimum of 300 meters apart and at least 150 meters from the edge of the habitat, when possible. Point counts were conducted from approximately 15 minutes before sunrise to about 4 hours after sunrise, during suitable weather conditions (i.e., wind less than 10 mph, precipitation no greater than a light rain). Locations of points were recorded on USGS 7.5-minute quadrangle maps. Supplemental record forms, with space for detailed notes on habitat and behavior, were filled out for all state-listed species and other species of interest when encountered.

*Playback* of taped calls was used in an attempt to elicit responses from Red-shouldered hawks, which are known to react strongly to this technique. Taped Red-shouldered hawk calls were played using a cassette tape player connected to an amplifier speaker. Birds reacting to the call were recorded and their behavior noted.

### Mammals

No rare mammals had been documented from the MVSRA prior to MCBS surveys. Potential rare mammals included bats, small mammals associated with dry prairie habitats, and the Eastern spotted skunk (Appendix 3). These rare species were the focus of MCBS mammal surveys during 1997. Additional foraging bat surveys were conducted in 2000. Survey methods employed in the MVSRA included small mammal trap grids, foraging bat surveys, and incidental observations.

*Small mammal trap grids:* Small mammal trap grids were the main survey technique used by MCBS mammal surveys. The standard trap grid consisted of a 4-by-10 or 2-by-20 station array with one trap per station. In areas of limited habitat, partial grids were set. Traps included 16 Sherman live traps, 16 Museum Special snap traps, 4 cone pitfall traps, and 4 Victor rat traps. All traps, except the pitfall traps, were baited with a mixture of peanut butter and oatmeal. The grids were run for 4 days and checked twice a day for a total of 120 trapnights. During each check, live animals were processed in the field, marked with a permanent marker, and released. Data obtained from each capture included species identification, sex, reproductive condition, age, weight, and molt. Other captures were further processed to collect standard measurements, internal reproductive information, and prepared as voucher specimens.

*Foraging bats -- bat detectors:* Bat detectors, which transform the ultrasonic calls emitted by flying bats into a sound that is audible to humans, were used to locate and identify bats flying at night. Foraging bat surveys were conducted on nights when weather conditions were most optimal for foraging activity (i.e., little-to-no wind or rain, warm temperatures, and when flying insects were abundant).

During the 1997 animal surveys in the MVSRA, Skye ultrasonic bat detectors were used. This model of bat detector allowed the operator to select the particular frequency that was picked up

by the detector at any given moment. By tuning the detector so that incoming calls had the least amount of distortion, the frequency of that call was determined and the bat emitting the call identified. Most bats in the region were identifiable to species, with the exception of the Eastern pipistrelle, Northern myotis, and Little brown myotis, that were difficult to distinguish using this type of detector. After completion of animal surveys in the MVSRA, an ANABAT bat detector was purchased. This system differed from the Skye recorder by producing a visual image of the bat call directly on a computer screen and by saving the image as a retrievable file. Under this system, the Eastern pipistrelle and the two myotis species could be reliably identified. Selected sites were revisited in 2000 to record bat calls using the ANABAT detector.

When using the Skye detector, information was manually recorded and included time of call stop, species (when possible), the clearest frequency of the call, characteristics of the call, and an estimate of the number of individuals present. Using the ANABAT system, time of call, call frequency, and characteristics were recorded automatically by the software. Call files were reviewed later and species identified. Estimates of number of individuals or notes on bat behavior were taken at the time the calls were recorded.

*Incidental observations:* Observations of medium-to-large mammals or mammal sign were recorded when encountered.

#### Fish and Mussels

As part of a cooperative effort with the USFWS, areas of deep water in the Minnesota and Mississippi rivers were surveyed for Paddlefish (*Polyodon spathula*), which is state-listed as Threatened. Weighted gill-nets, 200 feet-by-20 feet, with 4-inch mesh, were stretched across the river channel by boat. Fish captured in the net were identified and released. During 1999 Paddlefish surveys, two sampling locations were adjacent to the MVSRA.

During these Paddlefish surveys, dead mussel shells were collected from adjacent shorelines and landings. The collected shells were later identified by Mike Davis, Project Manager of the Statewide Mussel Survey in the Division of Ecological Services, and submitted to the Bell Museum.



## RESULTS AND MANAGEMENT RECOMMENDATIONS

### Gifford Lake Wayside/ Nyssen's Lake Unit

The Gifford Lake Wayside and the Nyssen's Lake Unit consist nearly entirely of river bottom within the active floodplain of the Minnesota River. The vegetation of these river bottoms at the time of European-American settlement was mostly floodplain forest interrupted by several large marshes and small lakes at Gifford, Strunk's and Nyssen's lakes (Marschner 1974, MCBS 1995). A large terrace composed of gravelly outwash deposits from Glacial River Warren overlies Prairie du Chien dolomite bedrock along the eastern and southern boundaries of these units. In the 1970s, an area of formerly-grazed prairie known as "Louisville Prairie" occupied this terrace in sections 21 and 28, T115N R23W, which was destroyed in the 1990s by expansion of a rock quarry. Presently, most of the site is formerly-cultivated fields, with strips of disturbed floodplain forest along the edges of the river. The site includes a small portion of a large area of intact mixed emergent marsh which occurs around Nyssen's Lake at the far northeast end of the site. Most of this marsh is presently on private land.

#### Native Plant Communities

##### *Mixed Emergent Marsh*

A large area of emergent marsh occurs on the south and east sides of Nyssen's Lake (which is identified on county maps as Strunk's Lake). River bulrush (*Scirpus fluviatile*) uniformly dominates a broad zone around the edges of the lake where there is deep standing water during the growing season. Outside this zone, in shallower water, is a more diverse assemblage of marsh plants dominated by a mosaic of patches of rice cut grass (*Leersia oryzoides*), lake sedge (*Carex lacustris*), hard stem bulrush (*Scirpus acutus*), bur reed (*Sparganium eurycarpum*), sweet flag (*Acorus calamus*), and common reed grass (*Phragmites australis*). A high diversity of typical marsh plants occurs here, including water plantain (*Alisma subcordatum*), broad-leaved arrowhead (*Sagittaria latifolia*), wild mint (*Mentha arvensis*), water parsnip (*Sium suave*), swamp milkweed (*Asclepias incarnata*), American water horehound (*Lycopus americanus*), and giant water dock (*Rumex orbiculatus*).

This marsh is in fine condition and is devoid of exotic species, except for reed canary grass (*Phalaris arundinacea*) growing in a narrow belt on the outermost edges of the marsh where the ground surface was disturbed by past land use or where colluvium from upslope erosion has accumulated. This species should be monitored for possible further invasion into the marsh.

#### Rare Plants

No rare plants have been recorded within this wayside. Historical records of kittentail (*Besseyia bullii*) and Hill's thistle (*Cirsium hillii*) occurred outside the wayside within the former "Louisville Prairie."

## **Animals**

### Amphibians and Reptiles

*Survey results:* Herp surveys at Gifford Lake Wayside and Nyssen's Lake Unit included anuran surveys and terrestrial searches (Figure 2, Appendix 4). Anuran surveys were conducted at three locations on 24 April and 21 May 1997, in floodplain forest and emergent marsh habitats. Four common species were documented during anuran surveys, including one toad and three frogs (Appendix 5). One herp search in grassland habitat, conducted on 26 May 1996, found only an Eastern garter snake.

Three additional herp species were observed during surveys near the Nyssen's and Gifford Lake units. On 23 May 1997, Plains garter snakes were documented on the adjacent USFWS Louisville Swamp Unit and are likely to occur within the Nyssen's and Gifford Lake units. A small map turtle was observed basking near the Carver boat landing on the west side of the Minnesota River on 29 September 1999. Although positive identification was not obtained it appeared to be a Common map turtle. During a herp search on 30 September 1999, a Brown snake was captured and released near the mouth of Sand Creek near the southern edge of the Gifford Lake Unit.

*Rare amphibians and reptiles:* Although no rare amphibian and reptile species were observed at these sites, the Nyssen's Lake Unit lies approximately fifteen river-miles upstream from Minnesota's only known existing population of the Northern cricket frog, a State Endangered species documented in June 1998. This species occupies exposed mudflats and gravel bars along rivers and streams, breeding in backwaters and adjacent wetlands.

### Breeding-season Birds

*Survey results:* Fifteen point counts were conducted on the Gifford Lake and Nyssen's Lake units from 11 - 13 June 1997 (Figure 2, Appendix 4). Nine counts were in disturbed floodplain forest, one in emergent marsh, three in edge habitats (a mix of grass, shrubs, and trees), and two in old fields. Fifty-four bird species were found, most of which are species tolerant of disturbed habitats. Particularly common were species of wet, shrubby areas, such as Willow Flycatcher, Gray Catbird, Yellow Warbler, Common Yellowthroat, Song Sparrow, and Swamp Sparrow. Several forest birds were present on the units, including Yellow-bellied Sapsucker, Pileated Woodpecker, Eastern Wood-Pewee, Yellow-throated Vireo, Blue-gray Gnatcatcher, and American Redstart. Warbling Vireo, House Wren, and Baltimore Oriole are species that are particularly common in disturbed floodplain forests with patchy tree cover interspersed with open or shrubby areas. Two regionally uncommon species, Least Flycatcher and Prothonotary Warbler, were found on these management units. Least Flycatchers, a forest species, are quite common in central and northern Minnesota, but are uncommon to rare south of the Twin Cities metropolitan area. The Prothonotary Warbler, found only on the Gifford Lake Wayside, is a floodplain forest specialist, preferring areas of flooded trees.

*Rare birds:* No rare birds were found on these units. However, potential, but very marginal, forest habitat occurs on or near the units which might harbor species such as Red-shouldered Hawk and Cerulean Warbler. Also present is potential habitat for the Common Moorhen, a species requiring emergent marshes.

## Mammals

*Survey results:* Two small mammal trap grids were set in old field and floodplain forest habitats, July 1997, in the Gifford Lake Wayside (Figure 2, Appendix 4). A single Meadow vole was captured from the old field, compared to 15 captures of 3 species in the floodplain forest (Appendix 7). This is likely the result of the extensive flooding that occurred throughout these units earlier that spring. All three species recorded from the floodplain forest, Eastern chipmunk, Red squirrel, and White-footed mice are at least semi-arboreal and were capable of escaping to vegetation above the floodwaters – an opportunity not available to the small mammals in the old field.

Foraging bat surveys were conducted at two locations near the floodplain grid in 1997, recording Big brown bats and Little brown myotis. Using the ANABAT detector, Gifford Lake was revisited in June 2000. At this time, the same two species recorded earlier were found to be the most common bats foraging. A few passes by Red bats and Hoary bats also were recorded.

*Rare mammals:* Although no rare mammals were found, evidence of a maternity colony of Little brown myotis was recorded near Gifford Lake. The abrupt appearance and, shortly thereafter, disappearance of numerous bats is consistent with the pattern of emergence observed at other maternity colonies. They appeared to be traveling down a wooded corridor that bisects the lake, however, it was not determined if they were emerging from one of the larger trees or from an adjacent building on private property.

## Fish and Mussels

*Survey results:* As part of a larger survey for Paddlefish in the Minnesota River, a gill net was set 29 September 1999, over a deep hole near the mouth of Sand Creek adjacent to Gifford Wayside. No fish were captured.

*Rare fish and mussels:* No rare fish were found, however, the mussels collected included 5 species, of which 3 were state-listed (refer to the Element Occurrence Records for the wayside).

## **Management Recommendations**

The formerly-cultivated bottomlands within the site should be allowed to succeed naturally or be converted back to the floodplain forest that once occupied the area. This has already started naturally by succession in abandoned fields with the invasion of sand-bar willow (*Salix exigua*) and cottonwood seedlings (*Populus deltoides*). These willow thickets will be invaded by silver maple (*Acer saccharinum*), eventually creating a floodplain forest stand dominated by silver maple with a supercanopy of cottonwoods (Noble 1979). Restoration, by planting cottonwoods and silver maple trees, would accelerate this process. Additional tree species also occurring in this forest type include green ash (*Fraxinus pennsylvanica*), peach-leaved willow (*Salix amygdaloides*), hackberry (*Celtis occidentalis*), American elm (*Ulmus americana*) and boxelder (*Acer negundo*). Swamp white oak (*Quercus bicolor*), a species that shows up in some tree planting lists used in the Minnesota Valley, is not native to the Minnesota River Valley and should not be planted.

Little intact and uncut forest remains of the continuous band of floodplain forest that once stretched the length of the Minnesota River. Restoration of unfragmented and closed-canopied forest on the Minnesota River bottoms will greatly increase the potential for the valley to sustain breeding populations of bald eagles, red-shouldered hawks, cerulean warblers and other forest bird species that were once much more abundant in the valley. Mature and dead trees provide important shelters for bats that roost under loose bark or cluster in hollow trunks and limbs. These forests can connect with similar stands on the Minnesota Valley National Wildlife Refuge and greatly increase the total amount of contiguous floodplain forest cover in this part of the valley. Cultivated or formerly-cultivated private lands within the statutory boundaries of the waysides should also be restored to floodplain forest where feasible.

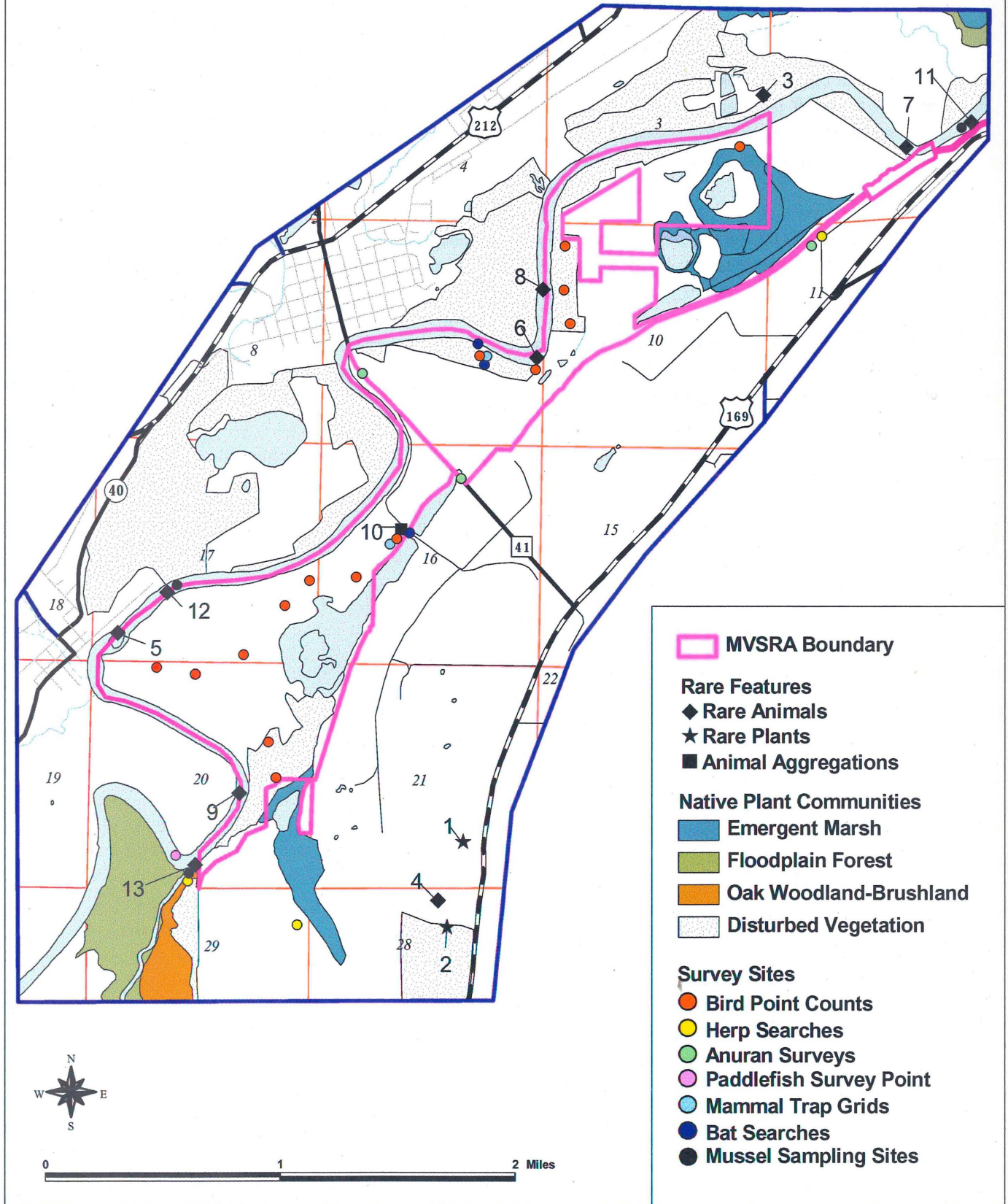
Reed canary grass is an exotic wetland grass that has invaded some parts of the site such as on the edges of the marshes surrounding Nyssen's lake. Some control of this grass may be advisable to curtail potential expansions.

The Nyssen's Lake Unit currently encompasses a small part of the intact emergent marshes that encircle Nyssen's lake. The remaining parts of the marsh should be acquired or protected using other means to allow complete management and control of the wetland.



**Figure 2: Gifford Lake Wayside and Nyssen's Lake Unit:  
locations of rare features, native plant communities, and survey sites.**

Minnesota County Biological Survey - Map Version: 22 April, 2002



Key to Rare Features in Figure 2: Gifford Lake Wayside and Nyssen's Lake Unit

Map No.	MN Status	Occur. No.*	Scientific Name	Common Name
1	THR	3	<i>Besseya bullii</i>	Kitten-tails
2	SPC	13	<i>Cirsium hillii</i>	Hill's thistle
3	SPC	1700	<i>Haliaeetus leucocephalus</i>	Bald Eagle
4	SPC	41	<i>Speyeria idalia</i>	Regal fritillary
5	NON	3	<i>Scaphirhynchus platorhynchus</i>	Shovelnose sturgeon
6	NON	2	<i>Scaphirhynchus platorhynchus</i>	Shovelnose sturgeon
7	NON	1	<i>Scaphirhynchus platorhynchus</i>	Shovelnose sturgeon
8	NON	73	<i>Scaphirhynchus platorhynchus</i>	Shovelnose sturgeon
9	SPC	4	<i>Cycleptus elongatus</i>	Blue Sucker
10		41		Bat concentration
11	END	9	<i>Arcidens confragosus</i>	Rock pocketbook mussel
11	THR	93	<i>Actinonaias ligamentina</i>	Mucket mussel
11	END	9	<i>Quadrula nodulata</i>	Wartyback mussel
11	END	8	<i>Lampsilis teres</i>	Yellow sandshell mussel
12	END	7	<i>Fusconaia ebena</i>	Ebonyshell mussel
12	THR	26	<i>Tritogonia verrucosa</i>	Pistolgrip mussel
12	SPC	93	<i>Ligumia recta</i>	Black sandshell mussel
12	END	8	<i>Arcidens confragosus</i>	Rock pocketbook mussel
12	END	8	<i>Quadrula nodulata</i>	Wartyback mussel
12	THR	25	<i>Quadrula metanevra</i>	Monkeyface mussel
12	SPC	50	<i>Lasmigona costata</i>	Fluted-shell mussel
12	END	9	<i>Lampsilis higginsii</i>	Higgins eye mussel
12	THR	92	<i>Actinonaias ligamentina</i>	Mucket mussel
13	END	18	<i>Arcidens confragosus</i>	Rock pocketbook mussel
13	THR	164	<i>Actinonaias ligamentina</i>	Mucket mussel
13	THR	80	<i>Pleurobema coccineum</i>	Round pigtoe mussel

\* Occurrence number identifies the element record in the Natural Heritage Information System.





## ELEMENT OCCURRENCE RECORDS IN GIFFORD LAKE WAYSIDE AND NYSSSEN'S LAKE UNIT

11:41 Friday, OCTOBER 26, 2001

Minnesota Natural Heritage Database  
Element Occurrence Records

MnDNR, Natural Heritage and Nongame Research Program

Copyright 2001 State of Minnesota DNR

Element: MIXED EMERGENT MARSH (PRAIRIE) #27

S Rank: S2

EO Size: EO Rank: B Current Status:

Site: NYSSSEN LAKE CBS Site #: 7

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. (CO BIOL SURVEY 1995)

LARGE AREA DOM BY SCIRPUS FLUV IN DEEPER WATER AROUND LAKE EDGE. SE OF THIS IS OUTER SHALLOW MARSH ZONE WITH GROUNDWATER SEEPAGE CONSISTING OF MOSAIC OF PATCHES DOM'D BY SPARGANIUM EURY, PHRAGMITES, SCIRPUS CF ACUTUS, ACORUS, LEERSIA ORYZ. RICH SPP DIV IN SHALLOW ZONE INCL'S SAGITTARIA LAT, POTAMOGETON SP, ELEOCHARIS, LYCOPUS AMER, RUMEX ORB, SIUM, & MENTHA. EXCEL CONDIT BUT BAND OF PHALARIS ON EDGES. S OF MINN RIVER IN MINN RIVER FLOODPLAIN.

Location: SCOTT COUNTY, MN

DNR Region: 6

Legal : T115N R23W NWNW11SE03

Wildlife Area: 605

Quad Map: SHAKOPEE (S15D)

Forestry District: 613

Latitude: 44 47' 25" Long: 93 33' 45" Last Obs.: 06 July 1995

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Element: MUSSEL SAMPLING SITE #134

EO Size: EO Rank: Current Status:

Site: DNR RIVER MILE 32.5 SITE 50

Ownership: Owner unknown

Managed Area(s): not managed or no record

Source: BRIGHT, B. (MUSSEL SURVEY OF MINNESOTA RIVER)

60-160M UPSTREAM FROM CARVER BOAT ACCESS. LIVE SPP: 3 AMBLEMA PPLICATA, 2 ANODON-TA GRANDIS GRANDIS, 1 LEPTODEA FRAGILIS, 3 TRUNCILLA TRUNCATA; PRESENCE OF LAMP-SILIS VENTRICOSA NOTED IN RANDOM SEARCH. DEAD SPP: A. L C, A. MAR, A. PLI, A. G G, A. IMB, A. CON, F. EBE, F. FLA, L. HIG, L. VEN, L. R L, L. COS, L. FRAG, L. REC, O. REF, O. OLI, P. SIN, P. ALA, Q. MET, Q. NOD, Q. PUS, Q. QUA, S. UND, T. PAR, T. VER, T. DON.

Location: CARVER COUNTY, MN

DNR Region: 6

Legal : T115N R23W SW17

Wildlife Area: 605

Quad Map: SHAKOPEE (S15D)

Forestry District: 613

Latitude: 44 46' 0" Long: 93 36' 58"

Last Obs.: 17 August 1989

Precision: within 0.25 mile, confirmed

Voucher:

Verification:

Element: BAT CONCENTRATION #41

EO Size: EO Rank: B Current Status:

Site: GIFFORD LAKE UNIT

Ownership: MN DNR Parks and Recreation

Managed Area(s): GIFFORD LAKE WAYSIDE

Source: NORDQUIST, G. &amp; BRUNET, A. (CO BIOL SURVEY 2000)

A LARGE NUMBER OF MYOTIS LUCIFUGUS RECORDED EMERGING FROM AN AREA OF LARGE TREES LINING GIFFORD LAKE. LIKELY A MATERNITY COLONY, EXACT LOCATION NOT DETERMINED. OCCASIONAL PASSES BY OTHER BAT SPECIES, INCLUDING EPTESICUS FUSCUS, LASIURUS BOREALIS, AND LASIURUS CINEREUS.

Location: SCOTT COUNTY, MN

DNR Region: 6

Legal : T115N R23W SW17

Wildlife Area: 605

Quad Map: SHAKOPEE (S15D)

Forestry District: 613

Latitude: 44 46' 14" Long: 93 35' 36"

Last Obs.: 08 June 2000

Precision: within 0.25 mile, confirmed

Voucher:

Verified: photo rec.

Element: MUSSEL SAMPLING SITE #135

EO Size: EO Rank: Current Status:

Site: DNR RIVER MILE 25.9 SITE 51

Ownership: Owner unknown

Managed Area(s): not managed or no record

Source: BRIGHT, B. (MUSSEL SURVEY OF MINNESOTA RIVER)

ACCESS GAINED FROM MN VALLEY BIKE TRAIL. LIVE SPP: 1 ANODONTA GRANDIS GRANDIS, 1 LASMIGONA COMPRESSA, 5 LEPTODEA FRAGILIS, 4 POTAMILUS OHIOENSIS, 1 TRUNCILLA DONACIFORMIS, 1 T. TRUNCATA. DEAD SPP: FUSCONAIA FLAVA, LAMP SILIS TERES TERES, L. VENTRICOSA, L. RADIATA LUTEOLA, OBLIQUARIA REFLEXA, QUADRULA NODULATA, Q. QUADRULA, ACTINONAIAS LIGAMENTINA CARINATA, ARCIDENS CONFRAGOSUS, TRUNCILLA DONACIFORMIS, T. TRUNCATA.

Location: CARVER COUNTY, MN

DNR Region: 6

Legal : T115N R23W NESE02

Wildlife Area: 723

Quad Map: SHAKOPEE (S15D)

Forestry District: 613

Latitude: 44 47' 49" Long: 93 32' 35"

Last Obs.: 17 August 1989

Precision: within 0.25 mile, confirmed

Voucher:

Verification:

## ELEMENT OCCURRENCE RECORDS IN GIFFORD LAKE WAYSIDE AND NYSSEN'S LAKE UNIT

11:41 Friday, OCTOBER 26, 2001

Minnesota Natural Heritage Database  
Element Occurrence Records

MnDNR, Natural Heritage and Nongame Research Program

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Element: ACTINONAIAS LIGAMENTINA (MUCKET MUSSEL) #92  
 State Status: THREATENED  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: DNR RIVER MILE 32.5 SITE 50  
 Ownership: Owner unknown  
 Managed Area(s): MINNESOTA VALLEY NWR  
 Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
 DEAD SPECIMENS ONLY FOUND AT SITE (CARVER BOAT ACCESS; SITE BEGINNING 10M UPSTREAM OF ACCESS.)

Location: CARVER COUNTY, MN  
 Legal : T115N R23W SW17  
 Quad Map: SHAKOPEE (S15D)  
 Latitude: 44 46' 0" Long: 93 36' 58"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 17 August 1989

Voucher: Verification: verified

Element: ACTINONAIAS LIGAMENTINA (MUCKET MUSSEL) #93  
 State Status: THREATENED  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: DNR RIVER MILE 25.9 SITE 51  
 Ownership: Owner unknown  
 Managed Area(s): not managed or no record  
 Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
 DEAD SPECIMENS ONLY FOUND AT SITE (ACCESS GAINED FROM MN VALLEY BIKE TRAIL.)

Location: SCOTT COUNTY, MN  
 Legal : T115N R23W NESE02  
 Quad Map: SHAKOPEE (S15D)  
 Latitude: 44 47' 49" Long: 93 32' 35"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 17 August 1989

Voucher: Verification: verified

Element: ACTINONAIAS LIGAMENTINA (MUCKET MUSSEL) #164  
 State Status: THREATENED  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: SAND CREEK MOUTH  
 Ownership: MN DNR Parks and Recreation  
 Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
 Source: HALL,C. & SCHMIDT,K. (CO BIOL SURVEY 1999)  
 VERY OLD SPECIMEN COLLECTED DURING PADDLEFISH SURVEY ON MINNESOTA RIVER. SHELLS OF FOUR OTHER MUSSEL SPECIES FOUND AT SITE; TWO OTHER SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN  
 Legal : T115N R23W SESW20  
 Quad Map: JORDAN EAST (T15A)  
 Latitude: 44 44' 53" Long: 93 36' 50"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.:29 September 1999

Voucher: Verification: verified

Element: ARCIDENS CONFRAGOSUS (ROCK POCKETBOOK MUSSEL) #8  
 State Status: ENDANGERED  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: DNR RIVER MILE 32.5 SITE 50  
 Ownership: Owner unknown  
 Managed Area(s): MINNESOTA VALLEY NWR  
 Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
 DEAD SPECIMENS ONLY FOUND AT SITE (CARVER BOAT ACCESS; SITE BEGINNING 10M UPSTREAM OF ACCESS.)

Location: CARVER COUNTY, MN  
 Legal : T115N R23W SW17  
 Quad Map: SHAKOPEE (S15D)  
 Latitude: 44 46' 0" Long: 93 36' 58"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 17 August 1989

Voucher: Verification: verified

## ELEMENT OCCURRENCE RECORDS IN GIFFORD LAKE WAYSIDE AND NYSSEN'S LAKE UNIT

11:41 Friday, OCTOBER 26, 2001

Minnesota Natural Heritage Database  
Element Occurrence Records

MnDNR, Natural Heritage and Nongame Research Program

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Element: ARCIDENS CONFRAGOSUS (ROCK POCKETBOOK MUSSEL) #9  
 State Status: ENDANGERED  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: DNR RIVER MILE 25.9 SITE 51  
 Ownership: Owner unknown  
 Managed Area(s): not managed or no record  
 Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
 DEAD SPECIMENS ONLY FOUND AT SITE (ACCESS GAINED FROM MN VALLEY BIKE TRAIL.)

Location: SCOTT COUNTY, MN  
 Legal : T115N R23W NESE02  
 Quad Map: SHAKOPEE (S15D)  
 Latitude: 44 47' 49" Long: 93 32' 35"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 17 August 1989

Voucher: Verification: verified

Element: ARCIDENS CONFRAGOSUS (ROCK POCKETBOOK MUSSEL) #18  
 State Status: ENDANGERED  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: SAND CREEK MOUTH  
 Ownership: MN DNR Parks and Recreation  
 Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
 Source: HALL,C. & SCHMIDT,K. (CO BIOL SURVEY 1999)  
 VERY OLD SPECIMEN COLLECTED DURING PADDLEFISH SURVEY ON MINNESOTA RIVER. SHELLS OF FOUR OTHER MUSSEL SPECIES FOUND AT SITE; TWO OTHER SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN  
 Legal : T115N R23W SESW20  
 Quad Map: JORDAN EAST (T15A)  
 Latitude: 44 44' 53" Long: 93 36' 50"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 29 September 1999

Voucher: Verification: verified

Element: CYCLEPTUS ELONGATUS (BLUE SUCKER) #4  
 State Status: SPECIAL CONCERN  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: LOUISVILLE 20  
 Ownership: Owner unknown  
 Managed Area(s): not managed or no record  
 Source:  
 1 SPECIMEN COLLECTED IN THE MINNESOTA RIVER AT CARVER RAPIDS.

Location: CARVER COUNTY, MN  
 Legal : T115N R23W 20  
 Quad Map: SHAKOPEE (S15D)  
 Latitude: 44 45' 13" Long: 93 36' 33"  
 Precision: within 0.50 mile

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 25 July 1989

Voucher: 24441 JFBM Verification: verified

Element: FUSCONAIA EBENA (EBONYSHELL MUSSEL) #7  
 State Status: ENDANGERED  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: DNR RIVER MILE 32.5 SITE 50  
 Ownership: Owner unknown  
 Managed Area(s): MINNESOTA VALLEY NWR  
 Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
 DEAD SPECIMENS ONLY FOUND AT SITE (CARVER BOAT ACCESS; SITE BEGINNING 10M UPSTREAM OF ACCESS.)

Location: CARVER COUNTY, MN  
 Legal : T115N R23W SW17  
 Quad Map: SHAKOPEE (S15D)  
 Latitude: 44 46' 0" Long: 93 36' 58"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 17 August 1989

Voucher: Verification: verified

Minnesota Natural Heritage Database  
Element Occurrence Records

ELEMENT OCCURRENCE RECORDS IN GIFFORD LAKE WAYSIDE AND NYSSEN'S LAKE UNIT  
11:41 Friday, OCTOBER 26, 2001  
MnDNR, Natural Heritage and Nongame Research Program

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Element: HALIAEETUS LEUCOCEPHALUS (BALD EAGLE) #1700  
State Status: SPECIAL CONCERN Federal Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CHASKA 3  
Ownership: Private  
Managed Area(s): not managed or no record  
Source: GALLI, J. (DNR)  
NESTING AREA. SHAKOPEE/ CHASKA TRAIL. NEST GONE.

Location: CARVER COUNTY, MN DNR Region: 6  
Legal : T115N R23W SENE03 Wildlife Area: 723  
Quad Map: SHAKOPEE (S15D) Forestry District: 613  
Latitude: 44 47' 57" Long: 93 33' 41" Last Obs.: 1998  
Precision: MNHP could not relocate  
Voucher: CV -003 Verification: verified

Element: LAMPSILIS HIGGINSI (HIGGINS EYE MUSSEL) #9  
State Status: ENDANGERED Federal Status: ENDANGERED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: DNR RIVER MILE 32.5 SITE 50  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: BRIGHT, B. (MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMEN COLLECTED FROM RIVER NEAR CARVER BOAT ACCESS. ONLY HIGGINS EYE SPECIMEN COLLECTED DURING EXTENSIVE MUSSEL SURVEY ON THE MINNESOTA RIVER.

Location: CARVER COUNTY, MN DNR Region: 6  
Legal : T115N R23W SW17 Wildlife Area: 605  
Quad Map: SHAKOPEE (S15D) Forestry District: 613  
Latitude: 44 45' 59" Long: 93 36' 58" Last Obs.: 16 August 1989  
Precision: within 0.25 mile, confirmed  
Voucher: 6396-JFBM Verification: verified

Element: LAMPSILIS TERES (YELLOW SANDSHELL MUSSEL) #8  
State Status: ENDANGERED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: DNR RIVER MILE 25.9 SITE 51  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: BRIGHT, R. (1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMENS ONLY FOUND AT SITE (ACCESS GAINED FROM MN VALLEY BIKE TRAIL.)

Location: SCOTT COUNTY, MN DNR Region: 6  
Legal : T115N R23W NESE02 Wildlife Area: 605  
Quad Map: SHAKOPEE (S15D) Forestry District: 613  
Latitude: 44 47' 49" Long: 93 32' 35" Last Obs.: 17 August 1989  
Precision: within 0.25 mile, confirmed  
Voucher: Verification: verified

Element: LASMIGONA COSTATA (FLUTED-SHELL MUSSEL) #50  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: DNR RIVER MILE 32.5 SITE 50  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY NWR  
Source: BRIGHT, R. (1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMENS ONLY FOUND AT SITE (CARVER BOAT ACCESS; SITE BEGINNING 10M UPSTREAM OF ACCESS.)

Location: CARVER COUNTY, MN DNR Region: 6  
Legal : T115N R23W SW17 Wildlife Area: 605  
Quad Map: SHAKOPEE (S15D) Forestry District: 613  
Latitude: 44 46' 0" Long: 93 36' 58" Last Obs.: 17 August 1989  
Precision: within 0.25 mile, confirmed  
Voucher: Verification: verified

Minnesota Natural Heritage Database  
Element Occurrence Records

ELEMENT OCCURRENCE RECORDS IN GIFFORD LAKE WAYSIDE AND NYSSEN'S LAKE UNIT  
11:41 Friday, OCTOBER 26, 2001  
MnDNR, Natural Heritage and Nongame Research Program Copyright 2001 State of Minnesota DNR

Element: LIGUMIA RECTA (BLACK SANDSHELL MUSSEL) #93  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: DNR RIVER MILE 32.5 SITE 50  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY NWR  
Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMENS ONLY FOUND AT SITE (CARVER BOAT ACCESS; SITE BEGINNING 10M UPSTREAM OF ACCESS.)

Location: CARVER COUNTY, MN  
Legal : T115N R23W SW17  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 46' 0" Long: 93 36' 58"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 17 August 1989

Voucher: Verification: verified

Element: PLEUROBEMA COCCINEUM (ROUND PIGTOE MUSSEL) #80  
State Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: SAND CREEK MOUTH  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HALL,C. & SCHMIDT,K. (CO BIOL SURVEY 1999)  
VERY OLD SPECIMEN COLLECTED DURING PADDLEFISH SURVEY ON MINNESOTA RIVER. 5 MUSSEL SPECIES FOUND AT SITE; 3 SPECIES WERE STATE-LISTED.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W SESW20  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 44' 53" Long: 93 36' 50"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999

Voucher: Verification: verified

Element: QUADRULA METANEVRA (MONKEYFACE MUSSEL) #25  
State Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: DNR RIVER MILE 32.5 SITE 50  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY NWR  
Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMENS FOUND ONLY AT SITE (CARVER BOAT ACCESS; SITE 60-160M UPSTREAM OF BOAT ACCESS.)

Location: CARVER COUNTY, MN  
Legal : T115N R23W SW17  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 46' 0" Long: 93 36' 58"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 17 August 1989

Voucher: Verification: verified

Element: QUADRULA NODULATA (WARTYBACK MUSSEL) #8  
State Status: ENDANGERED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: DNR RIVER MILE 32.5 SITE 50  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY NWR  
Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMENS ONLY FOUND AT SITE (CARVER BOAT ACCESS; SITE BEGINNING 10M UPSTREAM OF ACCESS.)

Location: CARVER COUNTY, MN  
Legal : T115N R23W SW17  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 46' 0" Long: 93 36' 58"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 17 August 1989

Voucher: Verification: verified

Element: QUADRULA NODULATA (WARTYBACK MUSSEL) #9  
State Status: ENDANGERED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: DNR RIVER MILE 25.9 SITE 51  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMENS ONLY FOUND AT SITE (ACCESS GAINED FROM MN VALLEY BIKE TRAIL.)

Location: SCOTT COUNTY, MN  
Legal : T115N R23W NESE02  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 47' 49" Long: 93 32' 35"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 17 August 1989

Voucher: Verification: verified

Element: SCAPHIRHYNCHUS PLATORYNCHUS (SHOVELNOSE STURGEON) #1  
State Status: No Legal Status  
EO Size: EO Rank: Current Status: Intended Status:  
Site: JACKSON 2  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: MDNR ECO SERVICES  
5 SPECIMENS SAMPLED DURING STREAM SURVEY OF THE MINNESOTA RIVER AT RIVER MILE 25.8 THROUGH 26.5 (RUN 13R). RIVER MILES DETERMINED BY MAP WHEEL.

Location: CARVER COUNTY, MN  
Legal : T115N R23W 02  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 47' 45" Long: 93 32' 54"  
Precision: within 0.50 mile  
DNR Region: 6  
Wildlife Area: 723  
Forestry District: 613  
Last Obs.: 26 August 1982

Voucher: Verification: sight or sound rec.

Element: SCAPHIRHYNCHUS PLATORYNCHUS (SHOVELNOSE STURGEON) #2  
State Status: No Legal Status  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CHASKA 9  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: SCHMIDT,K.  
1 SPECIMEN CAUGHT WHILE NIGHT FISHING AT THE ABANDONED RAIL ROAD BRIDGE (NOW STATE TRAIL).

Location: CARVER COUNTY, MN  
Legal : T115N R23W SE09  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 46' 55" Long: 93 34' 55"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 05 June 1987

Voucher: Verification: sight or sound rec.

Element: SCAPHIRHYNCHUS PLATORYNCHUS (SHOVELNOSE STURGEON) #3  
State Status: No Legal Status  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CHASKA 17  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: MDNR FISHERIES  
4 SPECIMENS SAMPLED DURING STREAM SURVEY OF MINNESOTA RIVER AT RIVER MILE 31.3 THROUGH 31.7 (RUN 13Q). RIVER MILES DETERMINED BY MAP WHEEL.

Location: CARVER COUNTY, MN  
Legal : T115N R23W NW20SW17  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 45' 50" Long: 93 37' 12"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 19 August 1982

Voucher: Verification: sight or sound rec.

Element: SCAPHIRHYNCHUS PLATORYNCHUS (SHOVELNOSE STURGEON) #73  
State Status: No Legal Status  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CHASKA 9  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: MCBS  
1 YOUNG OF THE YEAR SHOVELNOSE STURGEON COLLECTED IN THE MINN RIVER WITH A SEINE OVER A SAND SUBSTRATE.

Location: CARVER COUNTY, MN  
Legal : T115N R23W SENE09  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 47' 11" Long: 93 34' 53"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 30 September 1999

Voucher: JFBM Verification: verified

Element: SPEYERIA IDALIA (REGAL FRITTLARY) #41  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: SHAKOPEE PRAIRIE  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: DANA, R.D. (R.HUBER, DATA LOG)  
1 SPECIMEN COLLECTED AT SHAKOPEE PRAIRIE. HABITAT WAS DRY TO MESIC PRAIRIE ON SANDSTONE OUTCROPS. SPECIMEN IN R. DANA'S PRIVATE COLLECTION. (PREV COLL: JOHNSON.W., 1973; LISTED IN R. HUBER'S DATA LOG AS COLLECTED AT RYAN RED ROCK)

Location: SCOTT COUNTY, MN  
Legal : T115N R23W NWNE28  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 44' 48" Long: 93 35' 26"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 06 July 1975

Voucher: Verification: verified

Element: TRITOGONIA VERRUCOSA (PISTOLGRIP MUSSEL) #26  
State Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: DNR RIVER MILE 32.5 SITE 50  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY NWR  
Source: BRIGHT, R. (1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMENS ONLY FOUND AT SITE (CARVER BOAT ACCESS; SITE 60-160M UPSTREAM OF BOAT ACCESS.)

Location: CARVER COUNTY, MN  
Legal : T115N R23W SW17  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 46' 0" Long: 93 36' 58"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 17 August 1989

Voucher: Verification: verified

Element: BESSEYA BULLII (KITTEN-TAILS) #3  
State Status: THREATENED  
EO Size: EO Rank: Current Status: 0 Intended Status: 8?  
Site: LOUISVILLE PRAIRIE CBS Site #: 56  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: WHEELER, G.A. (3419)  
SHAKOPEE PRAIRIE. PLANT GROWING ON THIN, ROCKY SOIL CA 4.5 MILES SW OF SHAKOPEE ON HWY 169.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W SWSE21  
Quad Map: SHAKOPEE (S15D)  
Latitude: 44 45' 2" Long: 93 35' 18"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: May 1979

Voucher: 708466 MIN Verification: verified

ELEMENT OCCURRENCE RECORDS IN GIFFORD LAKE WAYSIDE AND NYSSEN'S LAKE UNIT  
11:41 Friday, OCTOBER 26, 2001

Minnesota Natural Heritage Database  
Element Occurrence Records

MnDNR, Natural Heritage and Nongame Research Program

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\*\*\* REPORTED DESTROYED \*\*\*

Element: CIRSIUM HILLII (HILL'S THISTLE) #13

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: 0

Intended Status: 2

Site: LOUISVILLE PRAIRIE CBS Site #: 56

Ownership: Private

Managed Area(s): not managed or no record

Source: OWNBEY, G.B. (4584)

SHAKOPEE PRAIRIE, CA. 4 MILES SOUTH OF SHAKOPEE, WEST SIDE OF RTE 169. LOW PRAIRIE, COMMON. 1 DUP NW1/4 NE1/4 SEC 28, T115N, R23W.

Location: SCOTT COUNTY, MN

Legal : T115N R23W NWNE28

Quad Map: JORDAN EAST (T15A)

Latitude: 44 44' 42" Long: 93 35' 23"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: July 1972

Voucher: 628186 MIN Verification: verified



## Carver Rapids Wayside

The Carver Rapids Wayside consists mostly of an "island" of Glacial River Warren terrace capped by Jordan Sandstone and isolated from the nearby uplands by the Sand Creek valley, containing the Louisville Swamp, and the Minnesota River valley. The site also includes adjacent portions of the Minnesota River bottomlands near rapids that form in the Minnesota River during periods of low water. On top of the bedrock plateau, the soils are predominantly excessively-drained and formed in deep, nearly pure sand deposits (Umbanhowar 1996). Small areas on the uplands contain less well-drained, loamy soils. Adjacent bottomlands consist predominantly of poorly-drained, silty soils formed in alluvium. The bottomland vegetation of the wayside at the time of European-American settlement consisted of floodplain forest on the Minnesota River bottomlands, separated from the rock-capped plateau by emergent marshes in Johnson Slough (Marschner 1974). The uplands consisted mostly of open dry prairie or savanna with scattered, open-grown bur oak (*Quercus macrocarpa*). In the mid 19<sup>th</sup> century, these uplands were the site of a Wahpeton Dakota (Sioux) summer encampment with some crop cultivation (Spector 1993). Later, as late as approximately the 1950s, the wayside was occupied by a European-American farm family who cultivated several small fields and kept livestock (F. Knoke, MVSRA Manager, pers. comm.). Heavy grazing by sheep occurred on the uplands north and east of Louisville Swamp in the early 1970s (Cushing 1971) and may have also occurred within the wayside.

### Native Plant Communities

#### *Dry Oak Savanna (southeast section) sand-gravel subtype*

Dry oak savanna degraded by heavy past grazing occurs on top of the terrace in open areas among patches of oak woodland, primarily within the savanna restoration area. The savanna is dominated by scattered bur oak and northern pin oak (*Quercus ellipsoidalis*), with occasional thickets of oak grubs formed by resprouting following fire. Smooth sumac (*Rhus glabra*) cover is moderate to extremely high in large parts of the savanna. Dominant graminoids are Indian grass (*Sorghastrum nutans*), little bluestem (*Schizachyrium scoparium*) and side-oats grama grass (*Bouteloua curtipendula*). Other associated graminoids include prairie dropseed (*Sporobolus heterolepis*), Wilcox's panic grass (*Panicum wilcoxianum*), porcupine grass (*Stipa spartea*), and June grass (*Koeleria macrantha*). Hairy grama grass (*Bouteloua hirsuta*), threeawn (*Aristida basiramea*), and little bluestem dominate loose, sandy areas. The overall plant species diversity throughout the savanna is moderately low and consists mostly of grazing tolerant species. The most abundant forbs are species that tolerate grazing, such as hoary vervain (*Verbena stricta*), heath aster (*Aster ericoides*), western ragweed (*Ambrosia coronopifolia*), and several goldenrods (*Solidago* spp.). For extensive plant lists from this community and others in Carver Rapids Wayside in addition to those in this report, see Cushing (1986).

Exotic species common on dry uplands in the wayside include several grasses such as smooth brome (*Bromus inermis*), quack grass (*Agropyron repens*), Canada bluegrass (*Poa compressa*), yellow foxtail (*Setaria glauca*), and Kentucky bluegrass (*Poa pratensis*). These grasses co-dominate with native grasses in parts of the restoration project area, whereas outside this area they exclusively dominate the open areas between woodland patches. One relevé plot was taken in one of the more diverse portions of the site. A species list was also established for plants recorded from several different visits to this community.

Today, oak savanna is one of Minnesota's rarest native plant communities. Savannas were once common throughout the prairie portion of the state but have been nearly eliminated since European settlement due to cultivation of the land and succession to oak woodlands caused by fire suppression. This remnant of oak savanna at Carver Rapids and adjacent USFWS lands is among the highest quality of few oak savanna remnants left in the Glacial River Warren Valley.

#### *Oak Woodland/ Brushland*

Dry-mesic oak woodland occurs in scattered patches throughout uplands within the site, particularly in one large patch south of the savanna restoration area. This community is dominated by widely scattered, large, open-grown bur oak within a matrix of smaller, open-grown northern pin oak. These woodlands are oak savanna areas that have undergone succession as a result of fire suppression. Succession is continuing with the invasion of forest trees and shade tolerant herbs and will, if unchecked, eventually transform the woodlands into dry-mesic oak forest. Forest trees now in the woodland canopy include basswood (*Tilia americana*), yellow-bud hickory (*Carya cordiformis*), butternut (*Juglans cinerea*), white oak (*Quercus alba*), ironwood (*Ostrya virginiana*), elms (*Ulmus* spp.), black cherry (*Prunus serotina*), and a small amount of sugar maple (*Acer saccharum*). Armed shrubs are abundant, particularly blackberries (*Rubus* cf. *alleghaniensis*), indicating past heavy grazing. The groundlayer has fairly low species diversity and is also typical for woodlands with a history of heavy grazing. Pennsylvania sedge (*Carex pensylvanica*) and Kentucky bluegrass are the dominant herbs in this community, making much of the woodland look quite grassy. Some typical oak woodland plants are also present in the woodland, such as white snakeroot (*Eupatorium rugosum*) and hog peanuts (*Amphicarpaea bracteata*) (see species list).

There are small areas of maple-basswood forest within the area mapped as oak woodland in figure 3. These areas were too small to be considered as a separate element occurrence record in the NHIS. They occur along the south side of Louisville Swamp northwest of the outcrop area in sections 32 and 29. These localized patches are dominated by sugar maple, red oak and basswood, and have typical shade tolerant herbaceous plants such as maidenhair fern (*Adiantum pedatum*), wild leek (*Allium tricoccum*), blue cohosh (*Caulophyllum thalictroides*) and Virginia waterleaf (*Hydrophyllum virginianum*) (see species list from Cushing 1986).

#### *Rock Outcrop*

One of the most unusual natural features in the lower third of the Glacial River Warren Valley is the small area of flat exposures of Jordan sandstone in the northeast corner of the wayside. These outcrops straddle the boundary between the wayside and the adjoining Louisville Swamp Unit of the Minnesota Valley National Wildlife Refuge. These rock exposures have a distinctive assemblage of plants adapted to living in minimal accumulations of soil on the rock surface, a microenvironment subject to frequent, extreme drought. These plants include brittle cactus (*Opuntia fragilis*), rock spikemoss (*Selaginella rupestris*), flatsedge (*Cyperus aristatus*), poverty grass (*Sporobolus vaginiflorus*), Carolina cranes-bill (*Geranium carolinianum*), bluets (*Hedyotis longifolia*), blood milkwort (*Polygala sanguinea*), and several moss and lichen species. This flora has a strong affinity with the flora of rock outcrops found in southwestern Minnesota, such as that of the crystalline bedrock outcrops along the Minnesota River upstream from New Ulm. This is the only known outcrop site downstream from Mankato, and the only one in the valley known to occur on sandstone.

The Carver Rapids outcrops have several very rare plant species. Though numerous botanists have visited the outcrops in the past (Cushing 1971, Morley (date unknown), Moyle 1977, Cox 1977), these rare species were not discovered until 1998 when low river water levels presented an unusual opportunity to walk out to the site in the early and mid- spring when the plants were visible. Access to the site during the spring in recent decades has been very difficult due to heavy flooding within the Minnesota River and Sand Creek valleys. Because of the diversity and statewide rarity of rare plants on its outcrops, the Carver Rapids Wayside is a highly significant natural area of statewide importance.

#### *Floodplain Forest - silver maple subtype*

Floodplain forest covers most of the river bottoms on shallow channel/ridge topography between the rock-capped terrace and the Minnesota River. Silver maple, in association with peach-leaved willow, dominates the old river channels, whereas a combination of cottonwood, American elm, green ash, basswood, and black ash (*Fraxinus nigra*) dominate the better-drained ridges. The forest consists mostly of young to mid-aged trees with diameters most commonly in the range of 10 to 30 cm dbh. Scattered stumps are present throughout much of this forest, indicating significant selective logging in the not too distant past. Many of the larger trees are knobby-trunked trees that were undesirable for logging. The subcanopy and seedling layers contain a diverse assemblage of typical floodplain forest tree species, most of which are also represented in the canopy. A fairly diverse community of forest herbs occurs on the better-drained portions of the forest. Wood nettle (*Laportea canadensis*) and several vine species, particularly moonseed (*Menispermum canadense*), river grape (*Vitis riparia*) and bur cucumber (*Sycios angulatus*), are especially abundant. Other typical groundlayer species include Ontario aster (*Aster ontarionis*), white grass (*Leersia virginica*), Virginia waterleaf (*Hydrophyllum virginianum*), clearweed (*Pilea* spp.), and mad-dog skullcap (*Scutellaria lateriflora*). Old sand bars along the river are being invaded by sand bar willow and cottonwoods and are succeeding to forest (Noble 1979). As in every other floodplain forest along the Minnesota River, this stand has experienced an extraordinary flooding regime in recent years with numerous episodes of prolonged flooding, heavy silt and sand deposition, accumulation of large debris dams, and much reworking of the ground surface by flood waters.

Several exotic plant species are present in the forest. Reed canary grass is prevalent in a few open areas of recent silt deposition along the edge of the Minnesota River. Common buckthorn (*Rhamnus cathartica*) is scattered throughout the better-drained part of the forest, and should be monitored and removed if possible. Other exotic plants present in low numbers include moneywort (*Lysimachia nummularia*), burdock (*Arctium minus*), velvet weed (*Abutilon theophrasti*), creeping charley (*Glechoma hederacea*), and large-leaved plantain (*Plantago major*). As of 1998, it appears that this floodplain forest stand has not been colonized by garlic mustard (*Alliaria petiolata*), an exotic herb that has heavily colonized the floodplain forests at Fort Snelling State Park.

#### *Mixed Emergent Marsh*

Johnson Slough is an old river channel that follows the western edge of the rock terrace. Much of this slough is emergent marsh, dominated primarily by river bulrush and water smartweed (*Polygonum amphibium*) where standing water occurs throughout the season. Seasonally drained areas and shallow marsh on the periphery have patches dominated by common reed grass, rice cut grass, broad-leaved arrowhead, soft stem bulrush (*Scirpus validus*), lake sedge, giant bur-

reed, and sandbar willow. Typical marsh plants occur here, such as marsh spike-rush (*Eleocharis palustris*), woundwort (*Stachys palustris*), and southern blue-flag (*Iris virginica*). These areas are in good condition and have not been invaded by reed canary grass as in other wetlands in the area.

## Rare Plants

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

To date, 200 to 250 plants of the State Threatened kitten-tail have been recorded in Carver Rapids Wayside. The species occurs in widely scattered, small clumps of 20-60 plants throughout dry savanna (figure 3). The species occurs in open areas of native vegetation or in semi-shade on the fringes of woody vegetation. Searches for the plant were conducted by Boy Scout Troop # 41 of South Minneapolis, on September 21, 1996, as well as by the MCBS Plant Ecologist and Parks Resource Specialists in 1995-1996. None of these searches were conducted in the spring when the plant is flowering, due to the difficulty in accessing the site during heavy flooding. Carver Rapids Wayside probably contains several thousand kitten-tail plants and one of the largest kittentail populations presently known in Minnesota. Future searches should be conducted in the spring when the plant's conspicuous bright yellow flowers are present. This plant thrives in moderate shade, such as in a savanna with scattered trees, but does not occur in the heavy shade of oak woodlands. A key focus of management for this plant, therefore, would be to maintain the open savanna now present in the savanna restoration area. Heavy sumac cover poses a threat to the continued persistence of this species in the site.

### *Kentucky coffee tree (Gymnocladus dioica)*

The Kentucky Coffee tree is tracked in the Minnesota Natural Heritage Information System (NHIS), as it reaches the northernmost limits of its distribution in southern Minnesota, but is not a state-listed species. Approximately 20-30 mature trees were seen along the edge of the Minnesota River in floodplain forest near the rapids. The easiest tree to see is behind the park bench along the bike trail (post 387) where it passes by the edge of the river bend in the NE 1/4 of the SE 1/4 of section 31. This species appears to be reproducing by root suckering in the wayside and has produced numerous saplings in the area. These trees probably originated from Native Americans who camped in the area. The tree produces large pods with large, round seeds that were used by the Dakota people in a dice-like game (Richard Peterson, DNR forester, personal communication, Spector 1993).

### *Rough-seeded fameflower (Talinum rugospermum)*

Fewer than ten mature plants of the State Endangered rough-seeded fameflower occur in two locations on the Jordan sandstone outcrops in the northeastern part of the wayside. One concentration of plants is in the southeastern portion of the main outcrop area (located on National Wildlife Refuge land), and one occurs at the northernmost end of the outcrop area. Numerous small seedlings of the plant were seen in the vicinity of the mature plants in the spring of 1998. This is the only location known for this species in the Minnesota River Valley. There are 23 other locations known for this species in the state, all but one of which are on fluvial sand deposits in southeastern Minnesota. The other occurrence is on thin soil patches on igneous or basalt rocks along the St. Croix River in Interstate State Park (Chisago County). This is a highly disjunct and unusual occurrence of this species. This species is extremely rare throughout its range in North America.

*Wolf's spikerush (Eleocharis wolfii)*

A robust population of the State Endangered Wolf's spikerush was found on the Jordan sandstone outcrops in the early spring of 1998. This is one of only four known occurrences of this plant in Minnesota, and it is the first occurrence of the plant seen in the state since 1967. It is unknown if any of the other three populations of this species still survive in the state (Coffin and Pfannmuller 1988). Thousands of plants occur in moist, shallow soils on the margins of rainwater pools on the largest open outcrop located at the northwestern most tip of the main outcrop area in the wayside.

*Water-hyssop (Bacopa rotundifolia)*

Water-hyssop is a State Special Concern species that grows in ephemeral, rainwater pools on top of rock outcrops. Clusters of numerous plants were found in two large pools at the west side of the north end of the main area of Jordan sandstone outcrops in the wayside. The only other known occurrences of this species in Minnesota are on rock outcrops along the Minnesota River upstream from New Ulm and in the far southwestern corner of the state (Ownbey and Morley 1991).

*Carolina foxtail (Alopecurus carolinianus)*

Carolina foxtail is a non-listed species tracked in the NHIS. Hundreds of individuals of this grass were recorded in wet, muddy margins on the edges of ephemeral pools throughout the main area of rock outcrops within the site. All previously known occurrences of this species are west of New Ulm (Ownbey and Morley 1991), predominantly on rock outcrops along the Minnesota River.

*Virginia forget-me-not (Myosotis verna)*

Virginia forget-me-not is a non-listed species tracked in the NHIS. This plant was found on shallow, moist soils on the edges of rock exposures at the northern end of the main area of Jordan sandstone outcrops within the wayside. All previously known occurrences of this species in Minnesota are west of New Ulm (Ownbey & Morley 1991), and are predominantly on rock outcrops along the Minnesota River.

*Mousetail (Myosurus minimus)*

Mousetail is a non-listed species tracked in the NHIS. This plant was recorded on damp, shallow soils on the margins of rock exposures at the north end of the main area of Jordan sandstone outcrops within the wayside. All previously known occurrences of this species in Minnesota are in southwestern Minnesota (Ownbey and Morley 1991), predominantly along the Minnesota River valley west of Mankato.

## **Animals**

### Amphibians and Reptiles

*Survey results:* Surveys at the Carver Rapids Wayside included herp searches and turtle trapping techniques (Figure 3, Appendix 4). During these surveys four common species of herps were documented within Carver Rapids Wayside including one frog, one turtle, and two snakes (Appendix 5). Herp searches were conducted at three locations on 27 May and 24 September 1997 within floodplain forest, oak woodland, and grassland habitats. On 24 September 1997 a herp search was conducted in grassland habitat directly north of the wayside. During this survey

an additional species, the American toad, was documented and likely occurs within the wayside. Two turtle traps were set in backwaters of the Minnesota River on 24 September 1997, but were unsuccessful in capturing any turtles.

Dry grasslands and rock outcrops such as those at Carver Rapids Wayside provide attractive habitat for lizards and snakes which utilize rocks and rock crevices for cover, basking surfaces, and as winter hibernacula. Encroachment of woody vegetation has shaded some rock outcrops reducing the quality of the site for reptiles. Brush management such as cutting would enhance the habitat. Controlled burns should be scheduled for periods of reptile dormancy to minimize potential impacts to snakes and lizards (see further discussion in Management Recommendations section).

*Rare amphibians and reptiles:* Although no rare amphibians or reptiles were documented at this wayside, State Special Concern species, such as the Gopher snake and Western hognose snake, may be present. In addition, the delisted Fox snake and Milk snake have been documented nearby and also may be present in the wayside.

#### Breeding-season Birds

Survey results: Thirteen point counts were conducted on the wayside on 21 June 1997 (Figure 3, Appendix 4). Nine points were in oak savanna-woodland, three were in floodplain forest, and one was at an edge between floodplain forest and old field. A total of 49 bird species were found on the wayside, most of which are typical of fragmented forest habitats (interspersed trees, shrubs, and grassland; Appendix 6). Birds such as Northern Flicker, Eastern Kingbird, Eastern Bluebird, Gray Catbird, Brown Thrasher, Field Sparrow, and Indigo Bunting, were probably common in oak savanna and woodland in pre-settlement times. These familiar species have adapted well to fragmented habitats that have resulted from human disturbance and development.

Much of the savanna and woodland on the wayside is overgrown to the point of being structurally similar to forest, supporting several species typical of closed canopy forest that probably would not be present in large expanses of savanna. These forests grade into true floodplain forest on the west side of the wayside, and lowland forests to the east (Louisville Swamp). Several species occur both in floodplain forest and fragmented forest-edge habitats. House Wren, Song Sparrow, and Baltimore Oriole have probably always been common in these habitats. Historically, naturally-occurring disturbances, such as flooding or fires, would have created brushy openings, downed wood, and nest cavities. Human activities and habitat conversion now often create similar conditions required by many disturbance-adapted species.

On the wayside, floodplain forest along the Minnesota River supports several forest species, including those less tolerant of fragmented forests. This includes the three Special Concern species, Red-shouldered Hawk, Acadian Flycatcher, and Cerulean Warbler, that were found on the wayside (see *Rare birds*, below, and list of Element Occurrence Records). Other typical forest species found both in floodplain and upland forests were Eastern Wood-Pewee, Red-eyed Vireo, Ovenbird, and Scarlet Tanager.

One uncommon bird, the Chestnut-sided Warbler, was found on the Louisville Swamp Unit, and might be expected to occur on the wayside. Historically, Chestnut-sided Warblers were quite common in oak woodland-brushland in much of Minnesota. This species is now common in

early successional forests in central and northern Minnesota, but has become quite rare in southern Minnesota.

*Rare birds:*

*Red-shouldered Hawk (Buteo lineatus)*

This species was found in floodplain forest along the Minnesota River. In southern Minnesota, Red-shouldered Hawks are usually associated with relatively large tracts of mature floodplain and lowland hardwood forests that have enough nearby marsh or wet meadow openings for hunting. This species is very rare and sparsely-distributed in the Minnesota River Valley, which may be a consequence of the severe reduction of the once-continuous band of floodplain forest into small, isolated fragments. Also, frequent, extreme flood events may have reduced the number and quality of wetlands within the river valley.

*Acadian Flycatcher (Empidonax vireescens)*

One singing male was found in floodplain forest, near a wetland opening, along the Minnesota River. Acadian Flycatchers have been found at a few, widely-scattered locations in the Minnesota River Valley. This species is typically found only in relatively large tracts of mature deciduous forest, usually near small streams or wetland openings.

*Cerulean Warbler (Dendroica cerulea)*

One singing male was detected in floodplain forest along the Minnesota River. Like the Acadian Flycatcher, Cerulean Warblers are found in larger tracts of mature floodplain, lowland hardwood, or upland forests, often associated with rivers or wetland openings.

Mammals

*Survey results:* Two small mammal trap grids were set for a single trapnight in September 1997, in the old field by Jab's Farm and in the rock outcrop area. Only Masked shrews and Meadow voles were captured from these grids. During this time, bat droppings were found in one of the buildings. The size of droppings suggested that Big brown bats were roosting here.

*Rare mammals:* No rare mammals were found, however, the bat dropping suggest that a Big brown bat maternity colony may have been present in the farm building. At the time this was noted, the bats had all left. Another visit mid-summer is needed to confirm the presence of a maternity colony.

Fish and Mussels

*Survey results:* As part of a larger survey for Paddlefish in the Minnesota River, a gill net was set 29 September 1999, over a deep hole at a bend in the river near the Carver Rapids Wayside. Two Flathead catfish (*Pylodictis olivaris*) were captured. One had previously been tagged (#F35-649) in June 1997, upriver from New Ulm (river mile 159.8). During the fish survey, a large number of mussel shells were collected from narrow crevices in a rock ledge located near the bend of the river. These were later identified by Mike Davis, Project Manager of the Minnesota Statewide Mussel Survey in the Division of Ecological Services.

*Rare fish and mussels:* No rare fish were found, however, the mussels collected included 21 species, of which 10 were state-listed (refer to the Element Occurrence Records for the wayside). Previous mussel surveys in this area (Bright et al. 1990) found six state-listed species. In both

collections, none of the rare shells were from live specimens. The extremely rare mussels require harder, more stable river bottom substrates and relatively good water quality, and appear to be extirpated from the Minnesota River due to heavy siltation and water pollution (Dan Kelner, Mussel Survey Coordinator within the Natural Heritage and Nongame Research Program, pers. comm.). Some of these shells could be as old as 100 years.

### **Management Recommendations**

Controlled burning of the savanna has been an important and successful tool for reinvigorating the native grass and prairie forb community at Carver Rapids. The native grass cover has now returned to essentially full cover within the restoration area. Indian grass is particularly dense in much of the area. Future fire management should follow a longer interval of at least 5 or perhaps 10 years between burns, with the area divided into different burn units burned in different years. The restoration should be monitored to determine the best burn interval for maintaining the savanna. Too much controlled burning stimulates heavy clonal reproduction of sumac, decimates invertebrate populations, and promotes overly dense swards of native grasses.

Heavy smooth sumac cover in large parts of the wayside is the biggest threat to the savanna restoration and the continued persistence of plants and animals requiring unshaded grassland habitat. A large proportion of the restoration area is now covered by very dense, continuous thickets of sumac clones which appear to have been stimulated by frequent spring burns. Fall burns are useful but probably not sufficient to control the heavy sumac load in the site (Evans 1983). Literature on sumac control indicates that cutting sumac stems immediately after flowering in late spring to early summer over two to three successive years is effective (Evans 1983, Bolin 1994). According to DNR Scientific and Natural Areas (SNA) managers, sumac control is best accomplished by several years in a row of cutting all sumac stems in each clone early and then again after the new growth has hardened off, which is generally the first week in July in the metro area (E. Fuge and R. Djupstrom, pers. comm.). Cutting sumac in the site will be a massive task requiring crews of workers over several years. Painting herbicide on cut stumps may also be necessary. Herbicides must be applied very carefully to avoid drift onto desirable plant species.

The forb species diversity within the restoration area is still fairly low. To increase the diversity, seed from nearby dry sand-gravel prairie sites could be collected and introduced to the site. Some sand-gravel prairie remains on private land on outwash deposits on steep slopes on the west side of the Minnesota River (MCBS 1998). Monitoring should be conducted to assess progress in the restoration effort, as measured by the diversity and abundance of native plants as well as other organisms that are part of a functioning prairie ecosystem, such as ants, butterflies, small mammals, and snakes.

The woodlands in Carver Rapids have succeeded from a more open oak savanna, once maintained by fire from local Native Americans and later by heavy livestock grazing (F. Knoke, pers. comm.). Major portions of these woodlands are now mostly well-shaded habitats with occasional gaps heavily stocked with armed shrubs, and are well on the way to becoming dry-mesic oak forest. Prairie plants were not seen in most of the oak woodland in this survey but for an occasional forb such as sky blue aster (*Aster oolentangiensis*). The paucity and low diversity of prairie plants now remaining in the woodland suggests that planting prairie seed is needed to



recreate the diversity of plant species once present in the savanna. The potential for savanna restoration could be tested by testing the seed bank for remnant prairie seeds and/or by clearing and burning parts of the woodland to see how well the prairie comes back. Furthermore, not all the woodland need be converted to uniformly open savanna. Some patches should be left as oak woodland/oak forest, allowing a heterogenous array of habitats for wildlife and plants. Savannas typically contain a large range in the size and density of wooded patches (Faber-Langendoen and Davis 1995).

The use of heavy equipment, such as a hydro-axe, to clear out small trees and brush for savanna/prairie restoration should be closely monitored to determine its positive and negative consequences, such as its effects on sumac reproduction. Heavy equipment should never be used in areas at risk for severe soil compaction, such as on shallow soils over bedrock, where it will greatly degrade the habitat for desirable plant and animal species.

Common buckthorn occurs throughout the woodlands and should be removed. Few other exotics were seen within the woodlands but for widespread bluegrass (*Poa* spp.).

The Jordan sandstone rock outcrops have a distinctive flora associated with bare rock surfaces, patches of shallow soils, and ephemeral pools. These outcrops are the most delicate area to manage within the MVSRA, as they can be severely degraded or destroyed by trampling or over-burning. The numbers of people walking over the rock outcrop area should be limited. People who do walk on the outcrops should be instructed to avoid walking on shallow soil and ephemeral pool areas. Motorized vehicles should never be driven over the outcrops. Trampling-sensitive plants that persist throughout the season include the brittle cactus and numerous lichen and moss species.

The burn interval for the rock outcrop area should be set to at least 15 years between burns if the area is burned at all. The rock outcrop flora includes many slow-growing, long-lived plants that do not tolerate fire well. Fire can set back or eradicate slow-growing succulents such as cacti and fameflowers. As of 1998, the population of brittle cactus on the site is alarmingly smaller than the highly abundant numbers observed 1977 (Cox 1977). Also, Moyle (1977) stated that this was potentially the largest population of *Opuntia fragilis* to be seen in the state. Brittle cactus is now sparse at Carver Rapids Wayside. This species may have declined as a result of frequent burns intended to bring back the prairie community and control sumac.

The State Endangered rough-seeded fameflower is also a fire-sensitive, succulent plant. The tiny population of this species hanging on in the wayside may have also been set back by past frequent fires and is in danger of being wiped out by future controlled burns. This plant reproduces by seed but seedling survival depends greatly on the presence of moist spring and early summer conditions. Thus, a spring burn coupled with a dry spring and summer could eliminate this species from the wayside. The small areas occupied by these plants should be completely off limits for any burns in the future.

Minneopa State Park, near Mankato, has a similar mix of dry prairie with small Jordan Sandstone outcrops. The small-flowered fameflower, *Talinum parviflorum*, morphologically very similar to the rough-seeded fameflower, was once frequent on the rocks at Minneopa but is now completely absent from the park, possibly as a result of many years of controlled burning intended to bring back the native prairie community.

Many plants on the rock outcrops require open, unshaded conditions that are threatened by invasion of early-successional woody plants in cracks in the rock, such as red cedars. Brush control on the outcrops should be done by hand cutting and removal with extreme care to avoid disturbance to the delicate habitats present. The best time for brush control on the outcrops is in the late fall or winter when many plants are dormant. Motorized vehicles should never be driven on the outcrops.

Floodplain forest should be allowed to succeed naturally or be restored on formerly-cultivated Minnesota River bottoms adjacent to the wayside. Reestablished tracts of unfragmented forest would increase the area's populations of forest bird species (see discussion under Gifford Lake Wayside).

A primary management concern in the floodplain forest portion of the site should be to monitor and remove buckthorn. Otherwise, the stands are recovering from past logging and should improve in the future with the absence of further logging.



**Figure 3: Carver Rapids Wayside:  
locations of rare features, native plant  
communities, and survey sites.**

Minnesota County Biological Survey ; Map Version : 22 April, 2002





 MVSRA Boundary

 Trails

**Rare Features**

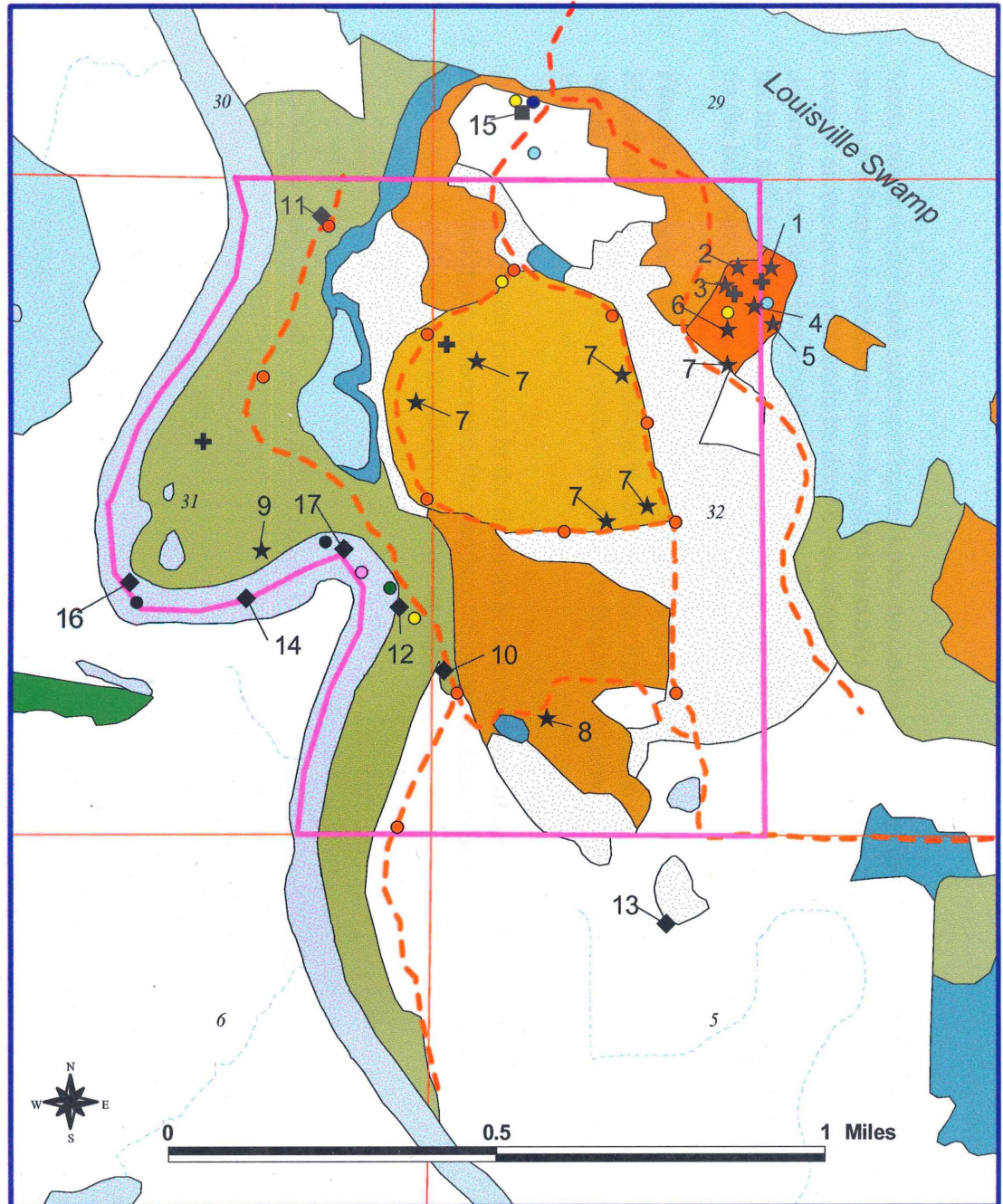
-  Rare Animals
-  Rare Plants
-  Animal Aggregations

**Native Plant Communities**

-  Rock Outcrop
-  Dry Oak Savanna - Sand/Gravel Subtype
-  Oak Woodland-Brushland
-  Maple-Basswood Forest
-  Floodplain Forest - Silver Maple Subtype
-  Emergent Marsh
-  Disturbed Savanna/Woodland

**Survey Sites**

-  Bird Point Counts
-  Herp Searches
-  Turtle Traps
-  Paddlefish Survey Point
-  Mammal Trap Grids
-  Bat Searches
-  Mussel Sampling Sites
-  Relevé Locations



Key to Rare Species Occurrences in Figure 3: Carver Rapids Wayside

Map No.	MN Status	Occur. No.*	Scientific Name	Common Name
1	NON	13	<i>Myosotis verna</i>	Forget-me-not
2	SPC	16	<i>Bacopa rotundifolia</i>	Water-hyssop
3	END	4	<i>Eleocharis wolfii</i>	Wolf's spike-rush
4	NON	34	<i>Myosurus minimus</i>	Mousetail
5	END	24	<i>Talinum rugospermum</i>	Rough-seeded fameflower
6	NON	34	<i>Alopecurus carolinianus</i>	Carolina foxtail
7	THR	98	<i>Besseyia bullii</i>	Kitten-tails
8	THR	103	<i>Besseyia bullii</i>	Kitten-tails
9	NON	12	<i>Gymnocladus dioica</i>	Kentucky coffee tree
10	SPC	49	<i>Empidonax vireescens</i>	Acadian flycatcher
11	SPC	73	<i>Dendroica cerulea</i>	Cerulean warbler
12	SPC	264	<i>Buteo lineatus</i>	Red-shouldered hawk
13	SPC	1774	<i>Haliaeetus leucocephalus</i>	Bald eagle
14	NON	5	<i>Scaphirhynchus platorhynchus</i>	Shovelnose sturgeon
15		42		Bat concentration
16	THR	24	<i>Quadrula metanevra</i>	Monkeyface mussel
16	END	7	<i>Arcidens confragosus</i>	Rock pocketbook mussel
16	THR	91	<i>Actinonaias ligamentina</i>	Mucket mussel
16	END	7	<i>Quadrula nodulata</i>	Wartyback mussel
16	END	7	<i>Lampsilis teres</i>	Yellow sandshell mussel
16	THR	25	<i>Tritogonia verrucosa</i>	Pistolgrip mussel
17	END	7	<i>Arcidens confragosus</i>	Rock pocketbook mussel
17	END	91	<i>Actinonaias ligamentina</i>	Mucket mussel
17	END	9	<i>Elliptio crassidens</i>	Elephant ear mussel
17	END	13	<i>Fusconaia ebena</i>	Ebonyshell mussel
17	END	7	<i>Lampsilis teres</i>	Yellow sandshell mussel
17	END	7	<i>Quadrula nodulata</i>	Wartyback mussel
17	SPC	159	<i>Elliptio dilatata</i>	Spike mussel
17	SPC	98	<i>Obovaria olivaria</i>	Hickorynut mussel
17	THR	24	<i>Quadrula metanevra</i>	Monkeyface mussel
17	SPC	125	<i>Lasmigona costata</i>	Fluted-shell mussel

\* Occurrence number identifies the element record in the Natural Heritage Information System.



Element: DRY OAK SAVANNA (SOUTHEAST) SAND-GRAVEL SUBTYPE #5  
S Rank: S2  
EO Size: 320 acres approx EO Rank: C Current Status: 1 Intended Status: 1  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HARRIS, F. (CO BIOL SURVEY 1995)  
SCATT'D QUER MACRO & Q. ELLIP, DBH TO 50 CM. SCATT'D THICKETS OF RHUS GLABRA & CORYLUS. PRAIRIE DOM'D MOSTLY BY SORGHAST, BOUT CURT, SCHIZ SCOP, PANICUM WILCOX. LOOSE SANDS W/ARISTIDA & SPOROB CRYPT. ROCK EXPOSURES. GOOD DIV NATIVES BUT SPARSE. V WEEDY THROUGHOUT: POA PRAT, POA COMP, SETARIA, AGROPYRON, BROMUS INER, AMBROSIA. GRAZED & HAYED IN PAST. NOW BURNED. INCL WOODLANDS SUCCEED'G TO FOREST. ON SHALLOW, SANDY SOILS OVER JORDAN SANDSTONE "ISLAND" IN MN RIV VALLEY.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W 0W32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 41" Long: 93 37' 12"  
Precision: approx. boundaries have been determined  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 03 August 1995

Voucher: RELEVÉ 1995 Verification: verified

Element: FLOODPLAIN FOREST SILVER MAPLE SUBTYPE #62  
S Rank: S3  
EO Size: EO Rank: C Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA MINNESOTA VALLEY NWR  
Source: HARRIS, F. (CO BIOL SURVEY 1996)

Location: SCOTT COUNTY, MN  
Legal : T115N R23W 0E31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 46" Long: 93 37' 38"  
Precision: approx. boundaries have been determined  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 27 September 1996

Voucher: Verification: verified

40 FOREST ON CHANNELS AND RIDGES OF FLOODPLAIN ALONG MN RIVER. LOW AREAS DOM BY YOUNG ACER SACCHARINUM (COMMONLY 20-30 CM DBH). HIGHER GRND DOM BY YOUNG TO MID AGE ULMUS AMER, FRAXINUS PENN, POPULUS DELT, FRAX NIGRA & SALIX AMYGD. SCATT'D HUGE POPULUS & ACER SAC. GROUND LAYER DOM BY LAPORTEA & LEERSIA VIRG; MODERATE DIVERSITY OF COMMON HERBS. SEVERAL VINE SPP ABUNDANT. SOME EXOTICS PRESENT. PAST SEL LOGGING - SCATT'D STUMPS PRESENT. MUCH GYMNOCLADUS BY RIVER.

Element: MAPLE-BASSWOOD FOREST (BIG WOODS) #119  
S Rank: S2  
EO Size: EO Rank: BC Current Status: Intended Status:  
Site: RAPIDS LAKE CBS Site #: 35  
Ownership: U.S. Fish and Wildlife Service (National Wildlife Refuge)  
Managed Area(s): MINNESOTA VALLEY NWR  
Source: HARRIS, F. & D.WOVCHA (CO BIOL SURVEY 1995)

Location: CARVER COUNTY, MN  
Legal : T115N R23W 0NSEW31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 17" Long: 93 38' 5"  
Precision: approx. boundaries have been determined  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 12 June 1995

Voucher: RELEVÉ 1995 Verification: verified

MATURE FOREST W/ CONT CANOPY DOM'D BY 40-50 CM DBH ACER SACCHARUM & TILIA, W/OCC FRAX NIGRA & ULMUS RUBRA. SCATT'D CANOPY GAPS. PATCHY SUBCANOPY MOSTLY ACER & OSTRYA; OCCAS SHRUBS. CONT GROUND LAYER W/ GOOD NATIVE DIVERSITY INCL EPHEMERALS. NICE AT E END; DEGRADED FROM PAST GRAZING & CUTTING WESTWARD. LARGE WASHOUTS PRESENT FROM HEAVY RUNOFF UPSLOPE. LOCATED IN SANDY LOAM ON STEEP, N-FACING SLOPE ON EDGE OF OUTWASH TERRACE ON W SIDE OF MINN RIVER VALLEY.

Element: ROCK OUTCROP (CENTRAL) #22  
S Rank: S4  
EO Size: EO Rank: B Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA MINNESOTA VALLEY NWR  
Source: HARRIS, F. (CO BIOL SURVEY 1995)

Location: SCOTT COUNTY, MN  
Legal : T115N R23W 0SENEW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 47" Long: 93 36' 49"  
Precision: approx. boundaries have been determined  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 03 August 1995

Voucher: Verification: verified

NUMEROUS EXPOSURES OF JORDAN SANDSTONE ON "ISLAND" W/IN MN RIVER VALLEY. MANY TYPICAL OUTCROP PLANT SPP COMMON INCL'G OPUNTIA FRAG, SELAGINELLA RUPE, CAREX BICK, SPOROBOLIS VAGINIFL, GERANIUM CAROLIN, CYPERUS ARIST, POLYGONUM TENU, & HEDYOTIS LONG. BETWEEN ROCK EXPOSURES IS DIST'D DRY PRAIRIE DOM'D BY ANDROPOGON GER, BOUTELOUA CURT, POA PRAT, POA COMP, BROMUS INERMIS, SEVERAL RARE PLANT SPP. OCCAS TREES IN CRACKS. PAST HEAVY GRAZING; RECENT MGNT W/ FIRE.

Element: BAT CONCENTRATION #42

EO Size: EO Rank: C Current Status: Intended Status:

Site: CARVER RAPIDS WAYSIDE CBS Site #: 18

Ownership: Owner unknown

Managed Area(s): CARVER RAPIDS WAYSIDE MN VALLEY NATIONAL WILDLIFE REFUGE

Source: NORDQUIST, G. (CO BIOL SURVEY 1997)

ACCUMULATION OF BAT DROPPINGS ON FLOOR AND TOP OF WOOD STOVE IN ONE OF THE BUILDINGS ON JABS FARM. LOCATION AND QUANTITY OF FRESH DROPPINGS INDICATED SEVERAL BATS WERE ROOSTING AROUND THE CHIMNEY AND ATTIC OF BUILDING. SIZE OF DROPPINGS SUGGEST EPTESICUS FUSCUS (SAMPLE COLLECTED). UNCERTAIN IF MATERNITY COLONY, NEED TO FOLLOW UP WITH AN EMERGENCE COUNT TO CONFIRM.

Location: SCOTT COUNTY, MN

Legal : T115N R23W SWSW29

Quad Map: JORDAN EAST (T15A)

Latitude: 44 44' 4" Long: 93 37' 10"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 27 September 1997

Voucher: Verification: sight or sound rec.

Element: ACTINONAIAS LIGAMENTINA (MUCKET MUSSEL) #91

State Status: THREATENED

EO Size: EO Rank: Current Status: Intended Status:

Site: CARVER RAPIDS

Ownership: Owner unknown

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HALL, C. & SCHMIDT, K. (CO BIOL SURVEY 1999); BRIGHT, R. (MUSSEL SURVEY OF MN RIVER)

1989: DEAD SPECIMENS ONLY COLLECTED BY BRIGHT (CARVER RAPIDS, LOUISVILLE SWAMP REFUGE; ACCESS IS AT CANOE CAMPSITE UPSTREAM OF CARVER RAPIDS.) 1999: OLD SHELL COLLECTED BY HALL & SCHMIDT DURING PADDLEFISH SURVEY ON MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN

Legal : T115N R23W SE31

Quad Map: JORDAN WEST (T15B)

Latitude: 44 43' 30" Long: 93 37' 56"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 29 September 1999

Voucher: Verification: verified

Element: ARCIDENS CONFRAGOSUS (ROCK POCKETBOOK MUSSEL) #7

State Status: ENDANGERED

EO Size: EO Rank: Current Status: Intended Status:

Site: CARVER RAPIDS

Ownership: Owner unknown

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HALL, C. & SCHMIDT, K. (CO BIOL SURVEY 1999); BRIGHT, R. (MUSSEL SURVEY OF MN RIVER)

1989: DEAD SPECIMENS ONLY COLLECTED BY BRIGHT (CARVER RAPIDS, LOUISVILLE SWAMP REFUGE; ACCESS IS AT CANOE CAMPSITE UPSTREAM OF CARVER RAPIDS.) 1999: OLD SPECIMEN COLLECTED BY HALL & SCHMIDT DURING PADDLEFISH SURVEY ON THE MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN

Legal : T115N R23W SE31

Quad Map: JORDAN WEST (T15B)

Latitude: 44 43' 28" Long: 93 37' 56"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 29 September 1999

Voucher: Verification: verified

Element: BUTEO LINEATUS (RED-SHOULDERED HAWK) #264

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:

Site: CARVER RAPIDS WAYSIDE CBS Site #: 18

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: JANSSEN, R. (CO BIOL SURVEY 1997)

BREEDING SEASON OBSERVATION. TWO BIRDS HEARD CALLING, ONE OF WHICH MAY HAVE BEEN A JUVENILE. HABITAT WAS DECIDUOUS FOREST ALONG THE MINNESOTA RIVER. BIRDS MAY ALSO HAVE BEEN IN CARVER COUNTY.

Location: SCOTT COUNTY, MN

Legal : T115N R23W NESE31

Quad Map: JORDAN EAST (T15A)

Latitude: 44 43' 24" Long: 93 37' 25"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 21 June 1997

Voucher: Verification: sight or sound rec.



Minnesota Natural Heritage Database  
Element Occurrence Records

ELEMENT OCCURRENCE RECORDS: CARVER RAPIDS WAYSIDE  
15:13 Wednesday, APRIL 17, 2002  
MnDNR, Natural Heritage and Nongame Research Program

Copyright 2002 State of Minnesota DNR

Element: DENDROICA CERULEA (CERULEAN WARBLER) #73  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: JANSSEN, R. (CO BIOL SURVEY 1997)  
BREEDING SEASON OBSERVATION. ONE MALE HEARD SINGING. HABITAT WAS DECIDUOUS

Location: SCOTT COUNTY, MN  
Legal : T115N R23W NENE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 55" Long: 93 37' 34"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 21 June 1997

Voucher: Verification: sight or sound rec.  
FOREST NEAR MINNESOTA RIVER.

Element: ELLIPTIO CRASSIDENS (IMPERIAL PEAR MUSSEL) #9  
State Status: ENDANGERED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HALL, C. & SCHMIDT, K. (CO BIOL SURVEY 1999)  
OLD SPECIMEN COLLECTED DURING PADDLEFISH SURVEY ON THE MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W NESE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 27" Long: 93 37' 40"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999

Voucher: Verification: verified  
ONLY DEAD SHELLS FOUND.

Element: ELLIPTIO DILATATA (SPIKE MUSSEL) #159  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HALL, C. & SCHMIDT, K. (CO BIOL SURVEY 1999)  
OLD SPECIMEN COLLECTED DURING PADDLEFISH SURVEY ON MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W NESE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 27" Long: 93 37' 38"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999

Voucher: Verification: verified  
ONLY DEAD SHELLS FOUND.

Element: EMPIDONAX VIRESCENS (ACADIAN FLYCATCHER) #49  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: JANSSEN, R. (CO BIOL SURVEY 1997)  
BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD. HABITAT WAS DECIDUOUS

Location: SCOTT COUNTY, MN  
Legal : T115N R23W NWSW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 19" Long: 93 37' 20"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 21 June 1997

Voucher: Verification: sight or sound rec.  
FOREST ALONG DRY STREAM BED, NEAR MINNESOTA RIVER.

Element: FUSCONAIA EBENA (EBONY SHELL MUSSEL) #13  
State Status: ENDANGERED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HALL, C. & SCHMIDT, K. (CO BIOL SURVEY 1999)  
OLD SPECIMEN COLLECTED DURING PADDLEFISH SURVEY ON THE MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W NESE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 28" Long: 93 37' 36"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999

Voucher: Verification: verified

Element: HALIAEETUS LEUCOCEPHALUS (HALL'S EAGLE) #1774  
State Status: SPECIAL CONCERN Federal Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: SAND CREEK 5  
Ownership: U.S. Fish and Wildlife Service (National Wildlife Refuge)  
Managed Area(s): MINNESOTA VALLEY NWR  
Source: GALLI, J. (DNR)  
NESTING AREA. LOUISVILLE SWAMP SOUTH.

Location: SCOTT COUNTY, MN  
Legal : T114N R23W NENW05  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 42' 59" Long: 93 36' 55"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 1999

Voucher: SC -002 Verification: verified

Element: LAMPSILIS TERES (YELLOW SANDSHELL MUSSEL) #7  
State Status: ENDANGERED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HALL, C. & SCHMIDT, K. (CO BIOL SURVEY 1999); BRIGHT, R. (MUSSEL SURVEY OF MN RIVER)  
1989: DEAD SPECIMENS ONLY COLLECTED BY BRIGHT (CARVER RAPIDS, LOUISVILLE SWAMP REFUGE; ACCESS IS AT CANOE CAMPSITE UPSTREAM OF CARVER RAPIDS.) 1999: OLD SPECIMEN COLLECTED BY HALL & SCHMIDT DURING PADDLEFISH SURVEY ON THE MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W SE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 26" Long: 93 37' 56"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999

Voucher: Verification: verified

Element: LASMIGONA COSTATA (FLUTED-SHELL MUSSEL) #125  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HALL, C. & SCHMIDT, K. (CO BIOL SURVEY 1999)  
OLD SPECIMEN COLLECTED DURING PADDLEFISH SURVEY ON MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W NESE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 28" Long: 93 37' 34"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999

Voucher: Verification: verified

Minnesota Natural Heritage Database  
Element Occurrence Records

ELEMENT OCCURRENCE RECORDS: CARVER RAPIDS WAYSIDE  
15:13 Wednesday, APRIL 17, 2002  
MnDNR, Natural Heritage and Nongame Research Program

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Element: OBOVARIA OLIVARIA (HICKORYNUT MUSSEL) #98  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W NESE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 25" Long: 93 37' 43"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999  
Source: HALL,C. & SCHMIDT,K.(CO BIOL SURVEY 1999); BRIGHT,R.(MUSSEL SURVEY OF MN RIVER) Voucher: Verification: verified  
1989: DEAD SPECIMEN(S) COLLECTED BY BRIGHT DURING TIMED SEARCH FROM ACCESS AT CANOE CAMPSITE DOWNSTREAM TO ROCK OUTCROPPINGS/CARVER RAPIDS. 1999: OLD SPECIMEN COLLECTED BY HALL & SCHMIDT DURING PADDLEFISH SURVEY ON MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Element: QUADRULA METANEVRA (MONKEYFACE MUSSEL) #24  
State Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W SE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 25" Long: 93 37' 54"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999  
Source: HALL,C. & SCHMIDT,K.(CO BIOL SURVEY 1999); BRIGHT,R.(MUSSEL SURVEY OF MN RIVER) Voucher: Verification: verified  
1989: DEAD SPECIMENS ONLY COLLECTED BY BRIGHT (CARVER RAPIDS, LOUISVILLE SWAMP REFUGE; ACCESS IS AT CANOE CAMPSITE UPSTREAM OF CARVER RAPIDS.) 1999: OLD SPECIMEN COLLECTED BY HALL & SCHMIDT DURING PADDLEFISH SURVEY ON THE MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Element: QUADRULA NODULATA (WARTYBACK MUSSEL) #7  
State Status: ENDANGERED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W SE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 25" Long: 93 37' 51"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 29 September 1999  
Source: HALL,C. & SCHMIDT,K.(CO BIOL SURVEY 1999); BRIGHT,R.(MUSSEL SURVEY OF MN RIVER) Voucher: Verification: verified  
1989: DEAD SPECIMENS ONLY COLLECTED BY BRIGHT (CARVER RAPIDS, LOUISVILLE SWAMP REFUGE; ACCESS IS AT CANOE CAMPSITE UPSTREAM OF CARVER RAPIDS.) 1999: OLD SPECIMEN COLLECTED BY HALL & SCHMIDT DURING PADDLEFISH SURVEY ON THE MINNESOTA RIVER AT CARVER RAPIDS. 21 MUSSEL SPECIES FOUND AT SITE; 10 SPECIES WERE STATE-LISTED. ONLY DEAD SHELLS FOUND.

Element: SCAPHIRHYNCHUS PLATORYNCHUS (SHOVELNOSE STURGEON) #5  
State Status: No Legal Status  
EO Size: EO Rank: Current Status: Intended Status:  
Site: MINNESOTA VALLEY RECREATION AREA CBS Site #: 35  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Location: CARVER COUNTY, MN  
Legal : T115N R23W 31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 27" Long: 93 37' 56"  
Precision: within 0.50 mile  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 04 October 1990  
Source: MDNR ECO SERVICES Voucher: Verification: sight or sound rec.  
1 SPECIMEN SAMPLED DURING STREAM SURVEY OF MINNESOTA RIVER AT CARVER RAPIDS (RIVER MILE 34.9 THROUGH 35.6-RUN 13P) ON 19 AUG 1982 AND 1 SPECIMEN OBSERVED DURING MINNESOTA RIVER ASSESSMENT PROJECT STREAM SURVEY IN 1990.

Element: TRITOGONIA VERRUCOSA (PISTOLGRIP MUSSEL) #25  
State Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: BRIGHT,R.(1989 MUSSEL SURVEY OF MINNESOTA RIVER)  
DEAD SPECIMENS ONLY FOUND AT SITE (CARVER RAPIDS, LOUISVILLE SWAMP REFUGE;  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W SE31  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 25" Long: 93 37' 46"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 15 August 1989  
Voucher: Verification: verified  
ACCESS IS AT CANOE CAMPSITE UPSTREAM OF CARVER RAPIDS.)

Element: ALOPECURUS CAROLINIANUS (CAROLINA FOXTAIL) #34  
State Status: No Legal Status  
EO Size: EO Rank: AB Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: WHEELER,G.A.  
CA 4.5 MILES NNE OF JORDAN, 1.2 MILES W OF HWY 169. JORDAN SANDSTONE OUTCROP, ON EDGES OF OUTCROP AND ALONG MUDDY MARGINS OF SHALLOW ROCK POOLS.  
HUNDREDS OF PLANTS OBSERVED IN THE NORTHERN PART OF THE SITE, BUT UNCOMMON ELSEWHERE AT THIS OUTCROP COMPLEX.  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W SENENW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 48" Long: 93 36' 45"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 15 June 1998  
Voucher: MIN Verification: verified

Element: BACOPA ROTUNDIFOLIA (WATER-HYSSOP) #16  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: AB Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: WHEELER,G.A.  
CA 4.5 MILES NNE OF JORDAN, 1.2 MILES W OF HWY 169. ON JORDAN SANDSTONE OUTCROP, IN SHALLOW ROCK POOLS AND ALONG MUDDY MARGINS OF DEPRESSIONS.  
SEVERAL PLANTS OBSERVED ON ONE LARGE OUTCROP, BUT NOT SEEN ELSEWHERE AT THIS OUTCROP COMPLEX.  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W SENENW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 48" Long: 93 36' 45"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 15 June 1998  
Voucher: MIN Verification: verified

Element: BESSEYA BULLII (KITTEN-TAILS) #98  
State Status: THREATENED  
EO Size: EO Rank: A Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HARRIS,F. & S.VEST(SIGHT RECORD)  
5 CLUSTERS OF 25-50 PLANTS WERE SEEN WIDELY SCATTERED IN APPROX 160 ACRE AREA ENCOMPASSING PRAIRIE RESTORATION SITE IN FORMERLY GRAZED DRY OAK SAVANNA ON SHALLOW SANDY SOILS OVER SANDSTONE. IN PRAIRIE DOM'D BY SORGHASTRUM, BOUTELOUA CURT, SCHIZACHYRIUM SCOP, & PANICUM WILCOX. CLUSTERS ARE DIFFICULT TO SEE IN SWARD OF TALL GRASSES. ASSOCIATES INCLUDE COMANDRA, HELIANTHEMUM, LITHO INCISUM, ASTER OOLENT. MORE INTENSIVE SEARCHING WILL PROBABLY REVEAL MORE CLUSTERS.  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W 0W32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 30" Long: 93 37' 0"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 14 September 1995  
Voucher: Verification: sight or sound rec.

Minnesota Natural Heritage Database  
Element Occurrence Records

ELEMENT OCCURRENCE RECORDS: CARVER RAPIDS WAYSIDE  
15:13 Wednesday, APRIL 17, 2002  
MnDNR, Natural Heritage and Nongame Research Program

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Element: BESSEYA BULLII (KITTEN-TAILS) #103  
State Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: BOCKENSTEDT, P. (DNR PARKS) (96002)  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W NESWSW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 16" Long: 93 37' 8"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 24 September 1996  
Voucher: MIN Verification: verified  
APPROX 15 INDIVIDUALS LOCATED ON EDGE OF TRAIL ON SANDY, S-FACING SLOPE IN MODERATELY TO VERY WELL-DRAINED SOIL. CANOPY OF SCATTERED LARGE QUERCUS MACROCARPA & Q. ELLIPSOIDALIS. ASSOC FORB/GRASS SPP INCLUDE: ELYMUS CANADENSIS, ANEMONE VIRGINIANA, LESPEDEZA CAPITATA, BOUPELLOUA CURTIPENDULA & EUPHORBIA ESULA. PLANTS OCCURRED IN FULL OR NEARLY FULL SUN. NEAR SITE OF PARKS LEAFY SPURGE PLOT #103.

45  
Element: ELEOCHARIS WOLFII (WOLF'S SPIKE-RUSH) #4  
State Status: ENDANGERED  
EO Size: EO Rank: AB Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: WHEELER, G.A.  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W SENENW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 48" Long: 93 36' 49"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 15 June 1998  
Voucher: MIN Verification: verified  
CA 4.5 MILES NNE OF JORDAN, 1.2 MILES W OF HWY 169. VERY LOCALIZED ALONG MARGIN OF JORDAN SANDSTONE OUTCROP, WITH SELAGINELLA RUPESTRIS, GERANIUM CAROLINIANUS, JUNCUS INTERIOR AND, MORE UNCOMMONLY, MYOSURUS MINIMUS AND MYOSOTIS VERNA. HUNDREDS OF PLANTS OBSERVED BORDERING ONE LARGE OUTCROP, BUT NOT SEEN ELSEWHERE AT THIS OUTCROP COMPLEX.

Element: GYMNOCLADUS DIOICA (KENTUCKY COFFEE-TREE) #12  
EO Size: EO Rank: B Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): CARVER RAPIDS WAYSIDE  
Source: HARRIS, F. (SIGHT RECORD)  
Location: SCOTT COUNTY, MN  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 43' 29" Long: 93 37' 32"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Forestry District: 613  
Last Obs.: 27 September 1996  
Voucher: Verification: sight or sound rec.  
APPROXIMATELY 50 TREES WERE SEEN IN FLOODPLAIN FOREST. TREES WERE ALONG AT LEAST 1/4 MILE OF THE N EDGE OF THE MINNESOTA RIVER. SCATTERED LARGE TREES REACHING 55CM DBH. MOST ARE SMALL TREES/SAPLINGS. ON EDGE OF FOREST DOMINATED BY ACER SACCHARINUM, POPULUS DELTOIDES, SALIX AMYGDALOIDES, FRAXINUS PENNSYLVANICA & TILIA AMER. TREES PROBABLY ORIGINATED FROM NATIVE AMERICANS WHO CAMPED IN THE AREA. THE TREES ARE NEAR THE CARVER RAPIDS WHICH ARE VISIBLE IN LOW WATER.

Element: MYOSOTIS VERNA (FORGET-ME-NOT) #13  
State Status: No Legal Status  
EO Size: EO Rank: AB Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: WHEELER, G.A.  
Location: SCOTT COUNTY, MN  
Legal : T115N R23W SENENW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 48" Long: 93 36' 45"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 15 June 1998  
Voucher: MIN Verification: verified  
CA 4.5 MILES NNE OF JORDAN, 1.2 MILES W OF HWY 169. ALONG MARGIN OF JORDAN SANDSTONE OUTCROP, WITH SELAGINELLA RUPESTRIS, GERANIUM CAROLINIANUS, TUNCUS INTERIOR, ELEOCHARIS WOLFII AND, MORE UNCOMMONLY, MYOSURUS MINIMUS. LESS THAN 50 PLANTS OBSERVED IN THE NORTHERN PART OF THIS OUTCROP COMPLEX.

Element: MYOSURUS MINIMUS (MOUSETAIL) #34  
State Status: No Legal Status  
EO Size: EO Rank: AB Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: WHEELER, G.A.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W SENENW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 48" Long: 93 36' 45"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 15 June 1998

Voucher: MIN Verification: verified

CA 4.5 MILES NNE OF JORDAN, 1.2 MILES W OF HWY 169. ALONG MARGIN OF JORDAN SANDSTONE OUTCROP, WITH SELAGINELLA RUPESTRIS, GERANIUM CAROLINIANUS, JUNCUS INTERIOR, ELEOCHARIS WOLFII AND, MORE UNCOMMONLY, MYOSOTIS VERNA. OVER A HUNDRED PLANTS OBSERVED IN THE NORTHERN PART OF THIS OUTCROP COMPLEX.

Element: TALINUM RUGOSPERMUM (ROUGH-SEEDED FAMEFLOWER) #24  
State Status: ENDANGERED  
EO Size: EO Rank: BC Current Status: Intended Status:  
Site: CARVER RAPIDS WAYSIDE CBS Site #: 18  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: WHEELER, G.A.

Location: SCOTT COUNTY, MN  
Legal : T115N R23W SENENW32  
Quad Map: JORDAN EAST (T15A)  
Latitude: 44 43' 43" Long: 93 36' 45"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 15 June 1998

Voucher: MIN Verification: verified

~4.5 MILES NNE OF JORDAN, 1.2 MILES W OF HWY 169. ALONG MARGIN OF JORDAN SANDSTONE OUTCROP, WITH SELAGINELLA RUPESTRIS, GERANIUM CAROLINIANUS, OPUNTIA FRAGILIS. LESS THAN 10 PLANTS OBSERVED AT THIS OUTCROP COMPLEX.

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

**GENERAL INFORMATION**

Surveyor's Releve #: 95001 EO Rec #: 1207  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 6 Month: OCT Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 18 or Site Name: Carver Rapids Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: DPSESG (Dry Prairie (Southeast) Sand-Gravel Subtype)  
Commun. Ranking in Releve: BC Stand typical of Commun. Type: \_ Releve typical of Stand: \_

**LOCATIONAL INFORMATION**

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15A Universal: 44093F5 (Jordan East)  
Township: 115N (e.g. 143N) Range: 23W (e.g. 32W)  
QORT: NE QRT: NE of Section 31  
Latitude: 44 degrees, 43 minutes, 45 seconds LL/GPS registration:  
Longitude: 93 degrees, 37 minutes, 23 seconds \*Accuracy: \_ Marker: \_

**RELEVE INFORMATION**

Releve Size (sq. m.): 100 Elev. (ft.): 725 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: R  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Formerly heavily grazed prairie that has been frequently burned.  
Artificially dense sward of Sorghastrum present.  
With in large savanna undergoing restoration. Dom tree Q.mac

**OTHER DATA COLLECTED**

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover barely present**

- + Rhus glabra (Smooth sumac)
- + Rosa arkansana (Prairie rose)
- R. Corylus cf. americana OP (American hazelnut)
- R. Quercus ellipsoidalis (Northern pin oak)
- R. Rubus OP (Bramble)
- R. Symphoricarpos occidentalis OP (Wolfberry)

**Graminoid, Height: .0-2m, Cover continuous**

- 4. Sorghastrum nutans (Indian grass)
- 3. Schizachyrium scoparium (Little Bluestem)
- 1. Andropogon gerardii (Big bluestem)
- + Bouteloua curtipendula (Side-oats grama)
- + Carex (Sedge)
- + Cyperus lupulinus
- + Eragrostis spectabilis (Purple love grass)
- + Panicum wilcoxianum
- + Sporobolus heterolepis (Prairie dropseed)

**Forb, Height: .0-2m, Cover interrupted**

- 3. Aster ericoides (Heath aster)
- 1. Lespedeza capitata (Round-headed bush-clover)
- 1. Petalostemon purpureum (Purple prairie-clover)
- + Achillea millefolium
- + Ambrosia coronopifolia (Western ragweed)
- + Antennaria cf. neglecta (Pussytoes)
- + Aster colentangiensis (Sky-blue aster)

**THR**

- + Besseyia bullii (Kitten-tails)
- + Helianthemum bicknellii (Hoary frostweed)
- + Lithospermum carolinense (Hairy puccoon)
- + Monarda fistulosa (Wild bergamot)
- + Potentilla arguta (Tall cinquefoil)
- + Verbena stricta (Hairy blue vervain)

**Forb, Height: .0-2m, Cover interrupted (continued)**

- + . Viola cf. pedatifida (Prairie bird-foot violet)
- R. Artemisia ludoviciana OP (Western mugwort, White sage)



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: 98-04 EO Rec #: 0  
\*Surveyor's ID Code: GAW (Gerald A. Wheeler)  
Date: 22 Month: JUN Year: 1998 (e.g. 04 JUL 1993)  
CBS Site #: 18 or Site Name: Carver Rapids Wayside  
DNR Ownership Code: 00 (Private Ownership)  
\*NC Code: ROCEXX (Rock Outcrop (Central))  
Commun. Ranking in Releve: Stand typical of Commun. Type: Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15A Universal: 44093F5 (Jordan East)  
Township: 115N (e.g. 143N) Range: 23W (e.g. 32W)  
QORT: NE QRT: NW of Section 32  
Latitude: 44 degrees, 43 minutes, 50 seconds LL/GPS registration:  
Longitude: 93 degrees, 36 minutes, 45 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 6 Elev. (ft.): 0 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit:  
\*Geomorphic Unit:

Remarks: On surface of Jordan Sandstone outcrop; exposed to full sunlight. 1st  
of 3 microhabitats sampled at this location.

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry

\* = Variables with computerized code dictionaries (See Releve Handbook)

Lichen/Moss, Height: .0-.1m, Cover continuous

- 4. PARMELIA PLITTII (lichen)
- 2. PHYSCIA SUBTILIS (lichen)
- 1. PHAEOPHYSCIA SCIASTRA (lichen)
- +. DERMATOCARPON MINIATUM (lichen)
- +. DIMELAENA OREINA (lichen)
- +. Grimmia laevigata (moss)
- +. Hedwigia ciliata (moss)
- +. LECANORA MURALIS (lichen)
- +. RHIZOCARPON DISPORUM (lichen)
- +. Unknown or Indeterminable Plant
- R. CANDELARIELLA VITELLINA (lichen)



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Relève #: 98-05 EO Rec #: 0  
\*Surveyor's ID Code: GAW (Gerald A. Wheeler)  
Date: 22 Month: JUN Year: 1998 (e.g. 04 JUL 1993)  
CBS Site #: 18 or Site Name: Carver Rapids Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: ROCEXX (Rock Outcrop (Central))  
Commun. Ranking in Relève: Stand typical of Commun. Type: Relève typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15A Universal: 44093F5 (Jordan East)  
Township: 115N (e.g. 143N) Range: 23W (e.g. 32W)  
QORT: NE QRT: NW of Section 32  
Latitude: 44 degrees, 43 minutes, 50 seconds LL/GPS registration:  
Longitude: 93 degrees, 36 minutes, 45 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Relève Size (sq. m.): 3 Elev. (ft.): 0 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit:  
\*Geomorphic Unit:

Remarks: Margin of Jordan Sandstone outcrop; exposed to full sunlight. 2nd of 3  
microhabitats sampled at this location. On shallow soil over sandstone  
(margin of GAW 98-04)

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Relève Handbook)

Graminoid, Height: .0-2m, Cover patchy

END 2. Eleocharis wolfii (Spike-rush)  
1. Agrostis scabra (Rough bent-grass)  
1. Hordeum jubatum (Foxtail barley, squirrel-tail)  
1. Juncus interior (Species of rush)  
1. Poa pratensis (Kentucky bluegrass)  
+. Agropyron repens (Quack grass)  
NON +. Alopecurus carolinianus (Carolina foxtail)  
+. Carex brevior  
+. Cyperus aristatus  
+. Echinochloa crusgalli (Barnyard grass)  
+. Eleocharis obtusa (Spike-rush)  
+. Panicum lanuginosum (Hairy panic grass)  
R. Carex crawfordii

Forb, Height: .0-.5m, Cover patchy

3. Selaginella rupestris (Rock spikemoss)  
1. Ambrosia artemisiifolia (Common ragweed)  
+. Achillea millefolium  
+. Allium stellatum (Prairie wild onion)  
+. Erigeron strigosus (Daisy fleabane)  
+. Erysimum cheiranthoides (Wormseed mustard)  
+. Geranium carolinianum (Carolina cranesbill)  
+. Gratiola neglecta (Hedge-hyssop)  
+. Hedeoma hispida (Mock pennyroyal)  
+. Lepidium densiflorum (Pepper-grass)  
NON +. Myosurus minimus (Mouse-tail)  
+. Opuntia fragilis (Brittle opuntia)  
+. Polygonum tenue (Slender knotweed)  
+. Portulaca oleracea (Purslane)  
+. Potentilla norvegica (Rough cinquefoil)  
+. Silene antirrhina (Sleepy catchfly)  
+. Sonchus uliginosus (Sow-thistle)

**Forb, Height: .0-.5m, Cover patchy (continued)**

- + . Tradescantia bracteata (Bracted spiderwort)
- + . Veronica peregrina var. xalapensis (Speedwell)
- NON R. Myosotis verna (Virginia forget-me-not)

**Lichen/Moss, Height: .0-.1m, Cover rare**

- 1. Ceratodon purpureus (moss)
- 1. Polytrichum piliferum (moss)
- + . Abietinella abietina (moss)
- + . Campylium cf. polygamum (moss)
- + . CLADONIA PYXIDATA (lichen)
- + . Hedwigia ciliata (moss)
- + . Reboulia hemisphaerica (moss)

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: 98-06 EO Rec #: 0  
\*Surveyor's ID Code: GAW (Gerald A. Wheeler)  
Date: 22 Month: JUN Year: 1998 (e.g. 04 JUL 1993)  
CBS Site #: 18 or Site Name: Carver Rapids Wayside  
DNR Ownership Code: 00 (Private Ownership)  
\*NC Code: MPSEX (Mesic Prairie (Southeast))  
Commun. Ranking in Releve: Stand typical of Commun. Type: Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15A Universal: 44093F5 (Jordan East)  
Township: 115N (e.g. 143N) Range: 23W (e.g. 32W)  
QORT: NE QRT: NW of Section 32  
Latitude: 44 degrees, 43 minutes, 49 seconds LL/GPS registration:  
Longitude: 93 degrees, 36 minutes, 48 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 100 Elev. (ft.): 0 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit:  
\*Geomorphic Unit:

Remarks: In mesic prairie on shallow soil over sandstone between rock outcrop exposures; in full sunlight. 3rd of 3 microhabitats sampled at this location.

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

**Graminoid, Height: .0-2m, Cover continuous**

- 3. Andropogon gerardii (Big bluestem)
- 2. Agrostis scabra (Rough bent-grass)
- 2. Juncus interior (Species of rush)
- 2. Panicum lanuginosum (Hairy panic grass)
- 2. Poa pratensis (Kentucky bluegrass)
- 1. Carex brevior
- 1. Eleocharis (Spike-Rush)

**Forb, Height: .0-2m, Cover rare**

- 1. Ambrosia artemisiifolia (Common ragweed)
- + Achillea millefolium
- + Allium stellatum (Prairie wild onion)
- + Delphinium virescens (Prairie larkspur)
- + Erigeron strigosus (Daisy fleabane)
- + Geranium carolinianum (Carolina cranesbill)
- + Hedyotis longifolia (Bluets)
- + Potentilla norvegica (Rough cinquefoil)
- + Tradescantia bracteata (Bracted spiderwort)
- R. Sonchus uliginosus (Sow-thistle)

**Lichen/Moss, Height: .0-.1m, Cover barely present**

- + Brachythecium (moss)
- + CLADONIA PYXIDATA (lichen)
- + Polytrichum piliferum (moss)



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: \_\_\_\_\_ EO Rec #: 23498  
\*Surveyor's ID Code: JJH (Jason Husveth)  
Date: 30 Month: AUG Year: 2000 (e.g. 04 JUL 1993)  
CBS Site #: 0 or Site Name: Carver Rapids Floodplain  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: FFXSM (Floodplain Forest Silver Maple Subtype)  
Commun. Ranking in Releve: BC Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 115N (e.g. 143N) Range: 23W (e.g. 32W)  
QORT: SW QRT: NE of Section 31  
Latitude: 44 degrees, 43 minutes, 37 seconds LL/GPS registration:  
Longitude: 93 degrees, 37 minutes, 47 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 400 Elev. (ft.): 700 Slope: 02E Slope Position: \_  
\*ECS Subsection: 0  
Minnesota Soil Atlas Mapping Unit:  
\*Geomorphic Unit: 01E (Agassiz Lacustrine Plain, Beltrami Is.)

Remarks: Forest along MN River. Canopy: silver maple, american elm, green ash,  
cottonwood. Pronounced ridge & channels. Appears to flood each spring.  
Herb layer: native spp & exotic agr. weeds. Many snags/logs.

OTHER DATA COLLECTED

Soils: Y Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

**Woody Broadleaf Deciduous, Height: 10-35m, Cover continuous**

- 3. Populus deltoides (Cottonwood)
- 3. Salix nigra (Black willow)
- 2. Acer saccharinum (Silver maple, soft maple)

**Woody Broadleaf Deciduous, Height: .0-10m, Cover interrupted**

- 4. Acer saccharinum (Silver maple, soft maple)
- 3. Ulmus americana (American elm)
- 2. Fraxinus pennsylvanica (Green ash)
- 1. Acer negundo (Box elder)
- + Salix exigua (Sand-bar willow)

**Climber, Height: 5-10m, Cover almost absent**

- R. Sicyos angulatus (Bur-cucumber)

**Climber, Height: .0-2m, Cover barely present**

- 1. Menispermum canadense (Canada moonseed)
- 1. Parthenocissus inserta (Virginia creeper)
- 1. Sicyos angulatus (Bur-cucumber)

**Graminoid, Height: .0-2m, Cover patchy**

- 3. Leersia virginica (White grass)
- 1. Elymus virginicus (Wild-rye)
- + Phalaris arundinacea (Reed canary grass)

**Forb, Height: .0-2m, Cover continuous**

- 4. Laportea canadensis (Wood nettle)
- 3. Pilea pumila (Clearweed)
- 2. Impatiens capensis (Spotted touch-me-not, jewel-we)
- 2. Scutellaria lateriflora (Mad-dog skullcap)
- 1. Arctium minus (Common burdock)
- 1. Aster ontarionis (Ontario aster)
- 1. Bidens cernua (Nodding bur-marigold)

**Forb, Height: .0-2m, Cover continuous (continued)**

- +. *Abutilon theophrasti* (Velvet-leaf)
- +. *Campanula americana* (Tall bellflower)
- +. *Cryptotaenia canadensis* (Honestwort)
- +. *Eupatorium rugosum* (Common snakeroot)
- +. *Helenium autumnale* (Sneezeweed)
- +. *Leonurus cardiaca* (Motherwort)
- +. *Mimulus ringens* (Monkey-flower)
- +. *Rudbeckia laciniata* (Goldenglow)
- +. *Viola* (Violet)



- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9601                    MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
DATE: 0            1996                    Department of Natural Resources  
BY: Fred Harris & Gerald Wheeler            500 Lafayette Road  
Scott County, MN                    St. Paul, Minnesota 55155  
Jordan East (T15A)                    (651) 296-2835

Site Name: #18 Carver Rapids Wayside  
Location: NE of NW of S. 32, T. 115N, R. 23W  
Ownership: MN DNR Parks and Recreation  
Heritage Community Element: Rock Outcrop (Southwest)  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit: Minnesota Valley Outwash, R  
Other Data Collected:

----- SITE CHARACTERISTICS -----

Species lists from ca 10 acre area of flat exposures of Jordan sandstone. List includes shallow soils over rock, prairie between rock exposures, & wet depressions. Compiled Fall '96 & Spring '97

Achillea millefolium  
Agropyron repens (Quack grass)  
Agrostis stolonifera (Redtop)  
Allium stellatum (Prairie wild onion)  
NON Alopecurus carolinianus (Carolina foxtail)  
Ambrosia coronopifolia (Western ragweed)  
Andropogon gerardii (Big bluestem)  
Antennaria neglecta (Pussytoes)  
Aristida basiramea (Three-awn grass)  
NON Artemisia cf. campestris (Tall wormwood)  
Aster oblongifolius (Aromatic aster)  
Aster oolentangiensis (Sky-blue aster)  
SPC Bacopa rotundifolia (Water-hyssop)  
Bouteloua curtipendula (Side-oats grama)  
Bromus inermis (Smooth brome)  
Carex bicknellii  
Carex brevior  
Carex cephalophora  
Carex conoidea  
Carex crawfordii  
Carex meadii  
Carex molesta  
Carex muhlenbergii  
Carex scoparia  
Carex vulpinoidea  
Cirsium cf. discolor (Field thistle)  
Cyperus aristatus  
Cyperus lupulinus  
Cyperus schweinitzii  
Cystopteris fragilis (Fragile fern)  
Danthonia spicata (Poverty grass)  
Delphinium virescens (Prairie larkspur)  
Digitaria ischaemum (Smooth crabgrass)  
Eleocharis compressa (Spike-rush)  
Eleocharis ovata (Spike-rush)  
END Eleocharis wolfii (Spike-rush)

Species List Number 9601 Continued, Page 2

Eragrostis spectabilis (Purple love grass)  
Erigeron cf. strigosus (Daisy fleabane)  
Erysimum cheiranthoides (Wormseed mustard)  
Galium boreale (Northern bedstraw)  
Geranium carolinianum (Carolina cranesbill)  
Geum triflorum (Prairie smoke)  
Gnaphalium obtusifolium (Sweet everlasting)  
Hedeoma hispida (Mock pennyroyal)  
Hedyotis longifolia (Bluets)  
Helianthemum bicknellii (Hoary frostweed)  
Heuchera richardsonii (Alum-root)  
Juncus interior (Species of rush)  
Juncus tenuis (Path rush)  
Juniperus virginiana (Red cedar)  
Lechea stricta (Prairie pinweed)  
Lepidium densiflorum (Pepper-grass)  
Lespedeza capitata (Round-headed bush-clover)  
Lithospermum carolinense (Hairy puccoon)  
NON Myosurus minimus (Mouse-tail)  
NON Myosotis verna (Virginia forget-me-not)  
Opuntia fragilis (Brittle opuntia)  
Oxalis dillenii (Yellow wood-sorrel)  
Panicum capillare (Witch grass)  
Panicum oligoanthes (Scribner's panic grass)  
Panicum lanuginosum var. fasciculatum (Hairy panic grass)  
Panicum wilcoxianum  
Phalaris arundinacea (Reed canary grass)  
Plantago major (Common plantain)  
Poa compressa (Canada bluegrass)  
Poa pratensis (Kentucky bluegrass)  
Polygonum arenastrum (Common knotweed)  
Polygala sanguinea (Purple milkwort)  
Polygonum tenue (Slender knotweed)  
Polypodium virginianum (Common polypody)  
Portulaca oleracea (Purslane)  
Potentilla argentea (Silvery cinquefoil)  
Potentilla arguta (Tall cinquefoil)  
Potentilla norvegica (Rough cinquefoil)  
Potentilla recta (Rough-fruited cinquefoil)  
Quercus macrocarpa (Bur oak)  
Rhus glabra (Smooth sumac)  
Rubus (Bramble)  
Rumex acetosella (Red sorrel)  
Schizachyrium scoparium (Little Bluestem)  
Selaginella rupestris (Rock spikemoss)  
Setaria glauca (Yellow foxtail)  
Silene antirrhina (Sleepy catchfly)  
Sorghastrum nutans (Indian grass)  
Sporobolus neglectus (Poverty grass)  
END Talinum rugospermum (Rough-seeded fameflower)  
Ulmus americana (American elm)  
Verbena stricta (Hairy blue vervain)  
Verbascum thapsus (Mullein)  
Veronica peregrina cf. var. xalapensis (Speedwell)  
Viola pedatifida (Prairie bird-foot violet)

- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9602  
DATE: 0 1996  
BY: Fred S. Harris

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
Department of Natural Resources  
500 Lafayette Road  
St. Paul, Minnesota 55155  
(651) 296-2835

Site Name: #18 Carver Rapids Wayside  
Location: W of S. 32, T. 115N, R. 23W  
Ownership: Owner Unknown  
Heritage Community Element: Dry Oak Savanna (Southeast) Sand-Gravel Subtype  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit: R  
Other Data Collected:

----- SITE CHARACTERISTICS -----

List from savanna & open prairie. In formerly heavily grazed pasture.  
Now being restored w/prescribed burning. On deep sand soil over Jordan  
sandstone. List doesn't include rock outcrop or oak woodlnd.

Achillea millefolium  
Agastache foeniculum (Blue giant-hyssop)  
Agropyron repens (Quack grass)  
Agrostis scabra (Rough bent-grass)  
Agrostis stolonifera (Redtop)  
Allium stellatum (Prairie wild onion)  
Ambrosia artemisiifolia (Common ragweed)  
Ambrosia coronopifolia (Western ragweed)  
Amorpha canescens (Lead-plant)  
Andropogon gerardii (Big bluestem)  
Antennaria cf. neglecta (Pussytoes)  
Aristida basiramea (Three-awn grass)  
NON Artemisia cf. campestris (Tall wormwood)  
Artemisia ludoviciana (Western mugwort, White sage)  
Asclepias syriaca (Common milkweed)  
Asclepias verticillata  
Aster ericoides (Heath aster)  
Aster oblongifolius (Aromatic aster)  
Aster oolentangiensis (Sky-blue aster)  
Berteroa incana (Hoary alyssum)  
THR Besseya bullii (Kitten-tails)  
Bouteloua curtipendula (Side-oats grama)  
Bromus inermis (Smooth brome)  
Campanula rotundifolia (Harebell)  
Cannabis sativa (Hemp, marijuana)  
Carduus nutans (Nodding thistle, musk thistle)  
Carex bicknellii  
Carex brevior  
Carex pensylvanica  
Cirsium discolor (Field thistle)  
Comandra umbellata (Bastard toad-flax)  
Conyza canadensis (Horseweed)  
Corylus americana (American hazelnut)  
Cyperus lupulinus  
Cyperus schweinitzii  
Danthonia spicata (Poverty grass)

Species List Number 9602 Continued, Page 2

Eragrostis spectabilis (Purple love grass)  
Erigeron strigosus (Daisy fleabane)  
Galium boreale (Northern bedstraw)  
Gentiana puberulenta (Downy gentian)  
Geum triflorum (Prairie smoke)  
cf. Gnaphalium (Sweet everlasting)  
Hedeoma hispida (Mock pennyroyal)  
Hedyotis longifolia (Bluets)  
Helianthemum bicknellii (Hoary frostweed)  
Helianthus rigidus (Stiff sunflower)  
Heuchera richardsonii (Alum-root)  
Juncus tenuis (Path rush)  
Juniperus virginiana (Red cedar)  
Koeleria macrantha (June Grass)  
Lechea stricta (Prairie pinweed)  
Lespedeza capitata (Round-headed bush-clover)  
Lithospermum caroliniense (Hairy puccoon)  
Lithospermum incisum (Narrow-leaved puccoon)  
Medicago lupulina (Black medick)  
Melilotus officinalis (Yellow sweet-clover)  
Mirabilis hirsuta (Hairy four-o'clock)  
Monarda fistulosa (Wild bergamot)  
Panicum capillare (Witch grass)  
Panicum oligoanthos (Scribner's panic grass)  
Panicum lanuginosum var. fasciculatum (Hairy panic grass)  
Panicum cf. wilcoxianum  
Petalostemon candidum (White prairie-clover)  
Petalostemon purpureum (Purple prairie-clover)  
Phalaris arundinacea (Reed canary grass)  
Phleum pratense (Timothy)  
Physalis heterophylla (Clammy ground-cherry)  
Plantago major (Common plantain)  
Plantago patagonica (Wolly plantain)  
Poa compressa (Canada bluegrass)  
Poa pratensis (Kentucky bluegrass)  
Potentilla argentea (Silvery cinquefoil)  
Potentilla arguta (Tall cinquefoil)  
Prunus americana (Wild plum)  
Prunus americana (Wild plum)  
Prunus serotina (Black cherry)  
Quercus ellipsoidalis (Northern pin oak)  
Quercus macrocarpa (Bur oak)  
Rhus glabra (Smooth sumac)  
Rosa arkansana (Prairie rose)  
Rubus (Bramble)  
Schizachyrium scoparium (Little Bluestem)  
Setaria glauca (Yellow foxtail)  
Solidago canadensis  
Solidago nemoralis (Gray goldenrod)  
Sorghastrum nutans (Indian grass)  
Sporobolus asper (Rough dropseed)  
Sporobolus cryptandrus (Sand dropseed)  
Sporobolus heterolepis (Prairie dropseed)  
Stipa comata (Needle grass)  
Stipa spartea (Porcupine grass)  
Symphoricarpos occidentalis (Wolfberry)  
Taraxacum officinale (Common dandelion)  
Tradescantia occidentalis (Western spiderwort)

Species List Number 9602 Continued, Page 3

Tragopogon dubius (Yellow goat's-beard)  
Trifolium pratense (Red clover)  
Trifolium repens (White clover)  
Urtica dioica (Stinging nettle)  
Verbena stricta (Hairy blue vervain)  
Verbascum thapsus (Mullein)  
Viola cf. pedatifida (Prairie bird-foot violet)



- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9603  
DATE: 0 1996  
BY: Fred S. Harris  
Scott County, MN  
Jordan West (T15B)

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
Department of Natural Resources  
500 Lafayette Road  
St. Paul, Minnesota 55155  
(651) 296-2835

Site Name: #18 Carver Rapids Wayside  
Location: E of S. 31, T. 115N, R. 23W  
Ownership: MN DNR Parks and Recreation  
Heritage Community Element: Floodplain Forest Silver Maple Subtype  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit: Minnesota Valley Outwash, A  
Other Data Collected:

----- SITE CHARACTERISTICS -----

Species list for floodplain forest on bottomlands along east bank of Minnesota River.

Abutilon theophrasti (Velvet-leaf)  
Acer negundo (Box elder)  
Acer saccharinum (Silver maple, soft maple)  
Ambrosia trifida (Great ragweed)  
Arctium minus (Common burdock)  
Aster ontarionis (Ontario aster)  
Bidens cernua (Nodding bur-marigold)  
Bidens vulgata (Common beggar-ticks)  
Campanula americana (Tall bellflower)  
Celtis occidentalis (Hackberry)  
Chelone glabra (Turtlehead)  
Cryptotaenia canadensis (Honewort)  
Echinochloa muricata (Barnyard grass)  
Elymus virginicus (Wild-rye)  
Eupatorium rugosum (Common snakeroot)  
Fraxinus nigra (Black ash)  
Fraxinus pennsylvanica (Green ash)  
NON Gymnocladus dioica (Kentucky coffee-tree)  
Helenium autumnale (Sneezeweed)  
Hydrophyllum virginianum (Virginia waterleaf)  
Impatiens capensis (Spotted touch-me-not, jewel-we)  
SPC Juglans cinerea (Butternut)  
Laportea canadensis (Wood nettle)  
Leersia virginica (White grass)  
Leonurus cardiaca (Motherwort)  
Lycopus americanus (Cut-leaved bugleweed)  
Lysimachia nummularia (Moneywort)  
Menispermum canadense (Canada moonseed)  
Mimulus ringens (Monkey-flower)  
Parthenocissus inserta (Virginia creeper)  
Phalaris arundinacea (Reed canary grass)  
Phlox divaricata (Blue Phlox)  
Pilea pumila (Clearweed)  
Plantago major (Common plantain)  
Populus deltoides (Cottonwood)  
Populus tremuloides (Quaking aspen)

Species List Number 9603 Continued, Page 2

Quercus macrocarpa (Bur oak)  
Rhamnus cathartica (Common buckthorn)  
Rudbeckia laciniata (Goldenglow)  
Salix amygdaloides (Peach-leaved willow)  
Salix exigua (Sand-bar willow)  
Scutellaria lateriflora (Mad-dog skullcap)  
Sicyos angulatus (Bur-cucumber)  
Sium suave (Water-parsnip)  
Smilax hispida (Green-briar)  
Tilia americana (Basswood)  
Ulmus americana (American elm)  
Urtica dioica (Stinging nettle)  
NON Vitis riparia (Wild grape)  
Zanthoxylum americanum (Prickly-ash)



- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9728  
DATE: 25 SEP 1997  
BY: Fred S. Harris  
Scott County, MN  
Jordan East (T15A)

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
Department of Natural Resources  
500 Lafayette Road  
St. Paul, Minnesota 55155  
(651) 296-2835

Site Name: MCBS #18 Carver Rapids Wayside  
Location: N of SW of S. 32, T. 115N, R. 23W  
Ownership: Owner Unknown  
Heritage Community Element: Oak Woodland-Brushland (Central)  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit: A  
Other Data Collected:

----- SITE CHARACTERISTICS -----

Woodland on well-drained, sandy soil. Dominated by large *Quercus macrocarpa* & small *Q. ellipsoidalis*. Past heavy grazing.

*Acer saccharum* (Sugar maple)  
*Achillea millefolium*  
*Ambrosia artemisiifolia* (Common ragweed)  
*Amelanchier sanguinea* (Round-leaved juneberry)  
*Amphicarpaea bracteata* (Hog-peanut)  
*Apocynum androsaemifolium* (Spreading dogbane)  
*Apocynum androsaemifolium* (Spreading dogbane)  
*Arctium minus* (Common burdock)  
*Aster cordifolius* (Heart-leaved aster)  
*Aster oolentangiensis* (Sky-blue aster)  
*Carex blanda*  
*Carex pensylvanica*  
*Carya cordiformis* (Bitternut hickory)  
*Cirsium cf. discolor* (Field thistle)  
*Conyza*  
*Cornus foemina* (Gray dogwood)  
*Corylus americana* (American hazelnut)  
*Elymus hystrix* (Bottlebrush grass)  
*Erigeron* (Fleabane)  
*Eupatorium rugosum* (Common snakeroot)  
*Festuca obtusa* (Nodding fescue)  
*Fraxinus pennsylvanica* (Green ash)  
*Galium boreale* (Northern bedstraw)  
*Geum canadense* (White avens)  
*Helianthus* (Sunflower)  
SPC *Juglans cinerea* (Butternut)  
*Juncus tenuis* (Path rush)  
*Juniperus virginiana* (Red cedar)  
*Lactuca* (Lettuce)  
*Menispermum canadense* (Canada moonseed)  
*Monarda fistulosa* (Wild bergamot)  
*Nepeta cataria* (Catnip)  
*Ostrya virginiana* (Ironwood, hop hornbeam)  
*Parthenocissus inserta* (Virginia creeper)  
*Plantago major* (Common plantain)  
*Poa pratensis* (Kentucky bluegrass)

Species List Number 9728 Continued, Page 2

Populus tremuloides (Quaking aspen)  
Prunus americana (Wild plum)  
Prunus serotina (Black cherry)  
Prunus virginiana (Chokecherry)  
Quercus alba (White oak)  
Quercus ellipsoidalis (Northern pin oak)  
Quercus macrocarpa (Bur oak)  
Quercus rubra (Northern red oak)  
Rhamnus cathartica (Common buckthorn)  
Rhus radicans  
Rhus typhina (Staghorn sumac)  
Ribes missouriense  
Rubus allegheniensis (Common blackberry)  
Rubus occidentalis (Black raspberry)  
Rubus strigosus (Red raspberry)  
Sambucus pubens (Red-berried Elder)  
Sanicula canadensis (Canadian black snakeroot)  
Setaria glauca (Yellow foxtail)  
Smilax hispida (Green-briar)  
Solidago ulmifolia (Elm-leaved goldenrod)  
Symphoricarpos occidentalis (Wolfberry)  
Taraxacum officinale (Common dandelion)  
Tilia americana (Basswood)  
Trifolium pratense (Red clover)  
Ulmus americana (American elm)  
Ulmus rubra (Red elm, slippery elm)  
NON Vitis riparia (Wild grape)  
Zanthoxylum americanum (Prickly-ash)

- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9877  
DATE: 0 1997  
BY: Gerald A. Wheeler  
Scott County, MN  
Jordan East (T15A)

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
Department of Natural Resources  
500 Lafayette Road  
St. Paul, Minnesota 55155  
(651) 296-2835

Site Name: Carver Rapids Wayside  
Location: NE of NW of S. 32, T. 115N, R. 23W  
Ownership: MN DNR Parks and Recreation  
Heritage Community Element: Rock Outcrop (Southwest)  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit:  
Other Data Collected:

----- SITE CHARACTERISTICS -----

List of lichens from Jordan Sandstone outcrops. Includes species from exposed and shaded microhabitats. Includes seven species collected from bark of deciduous trees.

ASPICILIA CINEREA (lichen)  
CANDELARIELLA VITELLINA (lichen)  
CANTFIND no match in MNTaxa, MossTaxa, or LichTaxa  
CANTFIND no match in MNTaxa, MossTaxa, or LichTaxa  
CLADONIA GRACILIS (lichen)  
CLADINA MITIS (lichen)  
CLADONIA PYXIDATA (lichen)  
CLADONIA UNCIALIS (lichen)  
DERMATOCARPON MINIATUM (lichen)  
DIMELAENA OREINA (lichen)  
ENDOCARPON PUSILLUM (lichen)  
GRAPHIS SCRIPTA (lichen)  
LECANORA MURALIS (lichen)  
PARMELIA BALTIMORENSIS (lichen)  
PARMELIA BOLLIANA (lichen)  
PARMELIA CONSPERSA (lichen)  
PARMELIA CUMBERLANDIA (lichen)  
PARMELIA PLITTII (lichen)  
PARMELIA RUDECTA (lichen)  
PELTIGERA (lichen)  
PELTIGERA RUFESCENS (lichen)  
PHAEOPHYSCIA ADIASTOLA (lichen)  
PHAEOPHYSCIA RUBROPULCHRA (lichen)  
PHAEOPHYSCIA SCIASTRA (lichen)  
PHYSCIA AIPOLIA (lichen)  
PHYSCIA PHAEA (lichen)  
PHYSCIA STELLARIS (lichen)  
PHYSCIA SUBTILIS (lichen)  
RHIZOCARPON DISPORUM (lichen)  
RINODINA VERRUCOSA (lichen)



- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9878  
DATE: 0 1997  
BY: Gerald A. Wheeler  
Scott County, MN  
Jordan East (T15A)

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
Department of Natural Resources  
500 Lafayette Road  
St. Paul, Minnesota 55155  
(651) 296-2835

Site Name: Carver Rapids Wayside  
Location: NE of NW of S. 32, T. 115N, R. 23W  
Ownership: MN DNR Parks and Recreation  
Heritage Community Element: Rock Outcrop (Southwest)  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit:  
Other Data Collected:

----- SITE CHARACTERISTICS -----

List of bryophytes from Jordan Sandstone outcrops. Includes one liverwort (Reboulia). Includes mosses from exposed and shaded areas. Three species were collected from bark of trees.

Abietinella abietina (moss)  
Anomodon attenuatus (moss)  
Anomodon minor (moss)  
Brachythecium (moss)  
Campylium cf. polygamum (moss)  
Ceratodon purpureus (moss)  
Dicranum (moss)  
Entodon cladorrhizans (moss)  
Grimmia laevigata (moss)  
Grimmia pilifera (moss)  
Hedwigia ciliata (moss)  
Homomallium adnatum (moss)  
Orthotrichum pumilum (moss)  
Orthotrichum stragulatum (moss)  
Plagiomnium cuspidatum (moss)  
Pleurozium schreberi (moss)  
Polytrichum juniperinum (moss)  
Polytrichum piliferum (moss)  
Pylaisiella polyantha (moss)  
Reboulia hemisphaerica (moss)



- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9931  
DATE: 0 1986  
BY: E.J.Cushing

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
Department of Natural Resources  
500 Lafayette Road  
St. Paul, Minnesota 55155  
(651) 296-2835

Site Name: Carver Rapids Wayside  
Location: NE of NW of S. 32, T. 115N, R. 23W  
Ownership: Owner Unknown  
Heritage Community Element: Maple-Basswood Forest (Big Woods)  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit:  
Other Data Collected:

----- SITE CHARACTERISTICS -----

Acer saccharum (Sugar maple)  
Adiantum pedatum (Maidenhair fern)  
Allium tricoccum (Wild leek)  
Amphicarpaea bracteata (Hog-peanut)  
Arisaema triphyllum (Jack-in-the-pulpit)  
Asarum canadense (Wild ginger)  
Athyrium angustum (Lady fern)  
Carex pensylvanica  
Carya cordiformis (Bitternut hickory)  
Caulophyllum thalictroides (Blue cohosh)  
Circaea lutetiana (Enchanter's nightshade)  
Cryptotaenia canadensis (Honewort)  
Elymus hystrix (Bottlebrush grass)  
Galium aparine (Cleavers)  
Galium triflorum (Three-flowered bedstraw)  
Hepatica acutiloba (Sharp-lobed hepatica)  
Hydrophyllum virginianum (Virginia waterleaf)  
Laportea canadensis (Wood nettle)  
Menispermum canadense (Canada moonseed)  
Osmorhiza claytonii (Sweet cicely)  
Ostrya virginiana (Ironwood, hop hornbeam)  
Parthenocissus inserta (Virginia creeper)  
Phryma leptostachya (Lopseed)  
Prunus virginiana (Chokecherry)  
Quercus macrocarpa (Bur oak)  
Quercus rubra (Northern red oak)  
Rhamnus cathartica (Common buckthorn)  
Ribes cynosbati (Prickly gooseberry, dogberry)  
Sambucus pubens (Red-berried Elder)  
Sanguinaria canadensis (Bloodroot)  
Sanicula gregaria (Black snakeroot)  
Smilacina racemosa (False Solomon's-seal)  
Solidago flexicaulis (Zig-zag goldenrod)  
Thalictrum dioicum (Early meadow rue)  
Tilia americana (Basswood)  
Ulmus americana (American elm)

Species List Number 9931 Continued, Page 2

Ulmus rubra (Red elm, slippery elm)  
Uvularia grandiflora (Yellow bellwort)  
Viola pubescens (Smooth yellow violet)  
NON Vitis riparia (Wild grape)  
Zanthoxylum americanum (Prickly-ash)



## Sioux Vista Dunes / Thompson Ferry Areas

Sioux Vista Dunes consists of a portion of a Glacial River Warren terrace where deep deposits of fine sand have been reworked by wind into sand dunes. The area is adjacent to the present day Minnesota River. Most of the dunes have been converted into a housing development known as Sioux Vista Estates. The State Recreation Area land in lot 3 of section 5, along the Minnesota River trail, contains dry barrens prairie on the dunes, as well as an area of floodplain forest on adjacent Minnesota River bottomlands. Sand dunes and corresponding habitats are very uncommon in Minnesota.

### Native Plant Communities

#### *Dry Prairie - barrens subtype*

Formerly-grazed dry prairie occurs on well-developed sand dunes on a glacial river terrace along the south bank of the Minnesota River. This is one of the rarest prairie types in Minnesota, as there are very few areas of dunes in the state. The prairie contains a distinctive set of plants able to persist in extremely dry conditions presented by soils formed in nearly pure sand. The prairie is dominated primarily by June grass, little bluestem, porcupine grass, Wilcox's panic grass, and side-oats grama grass. Hairy grama grass dominates the driest microsites on the crests of dunes. Blowout-like areas of loose sands are dominated by sand reed grass (*Calamovilfa longifolia*) and sand dropseed (*Sporobolus cryptandrus*). The site has a moderate diversity of typical native plant species and, in Minnesota, includes some species found almost exclusively on dry sand prairies, such as snake cotton (*Froelichia floridana*), silky prairie clover (*Petalostemon villosum*), carolina puccoon (*Lithospermum carolinense*), and western spiderwort (*Tradescantia occidentalis*). The prairie has been heavily grazed in the past and the most prevalent forbs are grazing increasers, such as western ragweed, stiff sunflower (*Helianthus rigidus*), and hoary vervain. A moderate to heavy infestation of the exotic Kentucky bluegrass occurs in the site. Canada bluegrass and smooth brome are other exotic grasses present at low levels in the site. With the lack of fire in recent times, eastern red cedar (*Juniperus virginiana*) has colonized the area and will eventually cover the entire site if left unchecked. Numerous planted Colorado blue spruce trees (*Picea pungens*) are also present.

#### *Floodplain Forest - silver maple subtype*

A mature stand of floodplain forest occupies Minnesota River bottomlands within the site. This stand is dominated by a continuous canopy of silver maple averaging 35 to 50 cm dbh. Scattered, much larger silver maples are present. Occasional cottonwoods and peach-leaved willow trees are also represented in the canopy. American elm, silver maple and black ash compose most of the trees in the subcanopy layer. Seedlings consist primarily of scattered silver maple and cottonwoods. Surface soils consist of deep, minimally-vegetated alluvium deposited from episodes of prolonged, heavy flooding. Several typical floodplain herbs occur in patches on higher ground within the floodplain, including Virginia wild rye (*Elymus virginicus*), white grass, clearweed (*Pilea* spp.), and wood nettle.

Exotic species are nearly absent but for a large canopy gap area that has much yellow foxtail. Buckthorn was not seen in this stand.

## Rare Plants

No rare plants have been recorded within the state land in this site. Rhombic-petaled evening primrose (*Oenothera rhombipetala*), a state Special Concern species that grows in dry sand barrens prairie, was recorded in private land immediately adjacent to the state tract. This plant may turn up on the dunes within the site in the future.

## Animals

### Amphibians and Reptiles

*Survey results:* Herp searches were conducted at three locations within the Sioux Vista Dunes Management Unit. Surveys were conducted on 22 May, 4 June, and 24 July 1997 and included oak woodland, woodland-grassland edge, and cutbank habitats (Figure 4, Appendix 4). Four species, including a frog, turtle, lizard, and snake were documented at the Management Unit (Appendix 5). Most of these species are representative of the dry prairie and woodland habitats present at the site.

The large cut-bank along the Minnesota River provides ideal nesting habitat for riverine turtles. A gravid Common map turtle was the only turtle observed at the site during an early June survey, however, numerous turtle tracks and predated nests provided evidence that this is a heavily used turtle nesting site. Spiny softshell turtles were observed in the Minnesota River and captured in traps near the Management Unit. The Smooth softshell turtle, a State Species of Special Concern, has been observed 20 river miles upstream from the wayside and may potentially use the cutbank as a nesting site.

### *Rare amphibians and reptiles:*

#### *Milk snake (Lampropeltis triangulum)*

Milk snakes were observed during herp searches at the Management Unit. This species was removed from the state's Endangered, Threatened, and Special concern species list in 1996, although this species continues to be tracked in the Natural Heritage Information System (NHIS). This species frequently occurs in the bluff country of southeastern Minnesota, but populations exist among forested tracts along the Minnesota River between New Ulm and St. Paul.

#### *Eastern Hognose Snake (Heterodon platirhinos)*

#### *Western Hognose Snakes (Heterodon nasicus)*

Park staff have observed hognose snakes at the Management Unit in the past (F. Knoke, pers. comm.). NHIS records indicate that in 1989, E. Moyer observed an Eastern hognose snake (a delisted species) along the state corridor trail upriver from the Thompson Ferry. Both the Western hognose snake (a species of Special Concern) and the Eastern hognose snake could be present within the Sioux Vista Dunes Management Unit. Both species are associated with sandy, well-drained soils, however, the Western hognose typically occurs in open grasslands, whereas the Eastern hognose occupies woodland habitats and forest edges. Although these species are easily confused with one another, confirmation of their identity can easily be made by viewing the belly of an adult snake: adult Eastern hognose snakes have cream-colored belly scales; adult Western hognose snakes have black belly scales. Since only 30 Western hognose snake records exist statewide, confirmed sightings provide valuable information for conservation efforts. A salvaged (roadkill) specimen or good photo are needed to provide confirmation of the species,

yet a good description that includes observations of belly scales on adult snakes would be useful documentation.

#### *Gopher snake (Pituophis catenifer)*

The Gopher snake (Bullsnake), a species of Special Concern, has also been observed near the Management Unit. This species occupies dry prairie and savanna habitats and is often associated with the Western hognose snake. The Minnesota River sand terraces in Scott County provide ideal habitat for dry prairie species, and several Gopher snake records exist from this vicinity. These records mark the western-most concentration of numerous sightings of Gopher snakes along the Minnesota River. Unfortunately, many records are of snakes found dead on the heavily-traveled roads in the area, particularly U.S. Highway 169, south of Jordan.

#### Breeding-season Birds

No bird surveys were conducted on this site.

#### Mammals

*Survey results:* Two small mammal trap grids were set July 1997 in dry prairie openings (Figure 3, Appendix 4). No mammals were captured in the loose sand above the cutbank. White-footed mice were the only small mammal taken from a dry prairie area that was overgrown with eastern red cedar (Appendix 7). This species follows the invasion of woody plants into prairie habitats and frequently is the predominant small mammal as prairies become overgrown with shrubs and trees.

Foraging bat surveys, conducted during July 1997 at the Thompson Ferry boat landing, recorded Big brown bats.

*Rare mammals:* No rare mammals were found, however, the dry prairie habitat at this site and adjacent private lands is ideal for several rare small mammals, including the Plains pocket mouse and Western harvest mouse, that have been found elsewhere in Scott County.

#### **Management Recommendations**

Though the site is somewhat weedy due to past heavy grazing, the prairie should greatly improve with controlled fire management. The planted Colorado blue spruce trees and invading eastern red cedars are shading out the prairie and should be removed. Adjoining the DNR tract to the southwest is Sioux Vista Estates section 5/lot 4, which has the same prairie barrens habitat. The owners of this lot should be informed about the nature and significance of their prairie and encouraged to maintain it in a natural state. They might allow the DNR to burn the prairie on their tract.

Sioux Vista Estates residents should be educated about the significance of this small remnant of native habitat and encouraged to help protect the rare, prairie-associated animals that still live in the area.

Continued development of the lands around the Unit will degrade the remaining tracts of open grassland habitat. In addition, development will isolate the small tract of protected dry prairie

that exists within the Unit and reduce the viability of populations that occur there today. Protection of additional dry prairie and other open grassland tracts should be considered through either acquisition or easement. Amphibians and reptiles have low dispersal capabilities and are vulnerable to fast moving vehicles when crossing roads. Species such as the Gopher snake are especially vulnerable since they are often targeted by vehicle drivers. Educating local landowners of the benefits of these snakes and the significance of this area may help gain local awareness and appreciation for these species and reduce snake mortality.

There is severe erosion of the sand dunes along the bike trail as it passes by the edge of the Minnesota River. This will be difficult to control as long as the river continues to experience extreme floods.

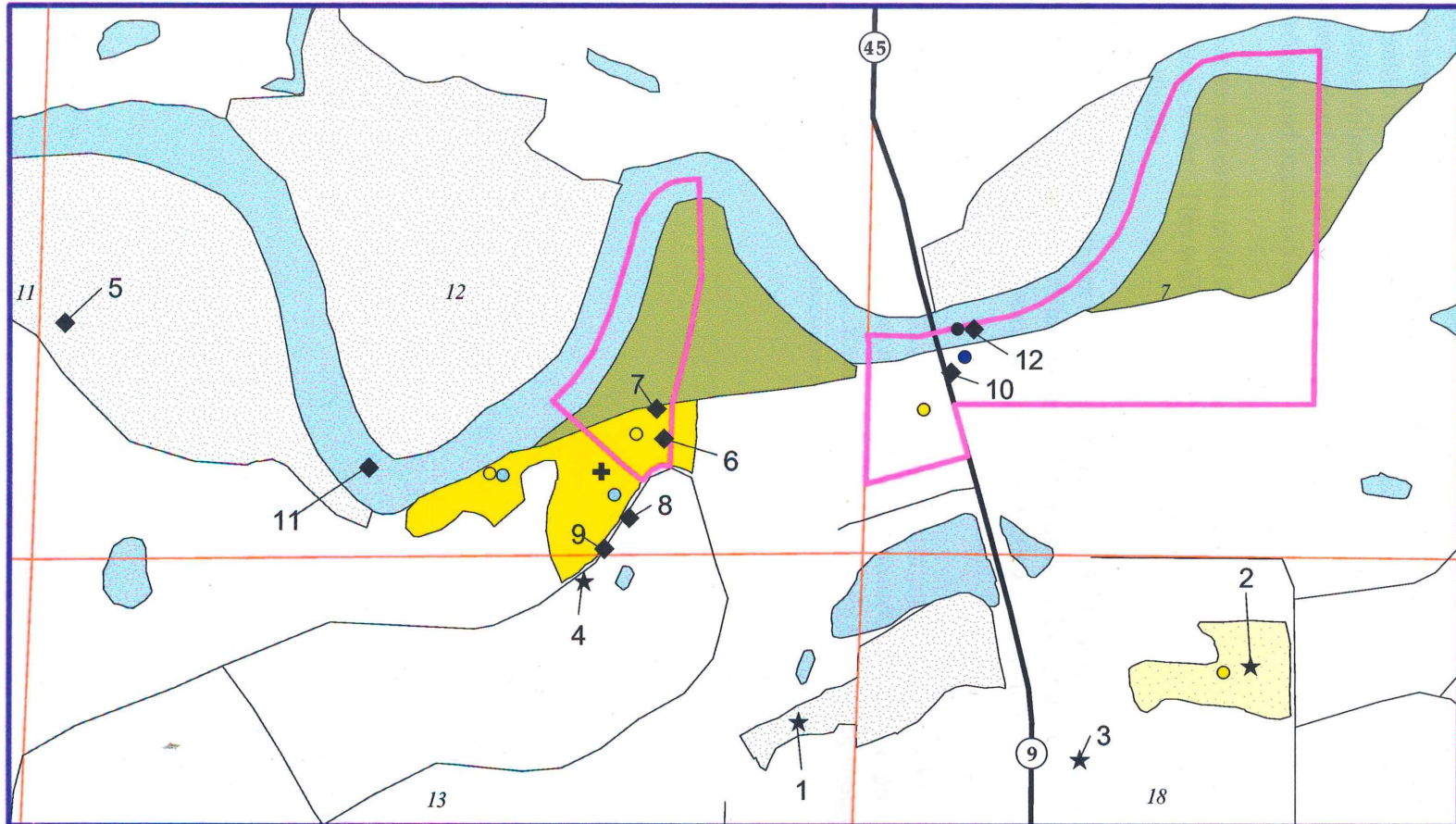
The State Corridor Trail lies at the top of the cutbank along the Minnesota River possibly impacting nesting turtles. While no mortality was observed along the trail, moving the trail further from the river, or closing it during the nesting season should be considered especially if trail use increases.

In the absence of any further logging, the floodplain forest stand should continue to recover. Intact floodplain forest canopies are rare in the Minnesota Valley and provide important nesting habitat for many bird species. Exotic species, especially buckthorn, should be monitored in the stand and removed if they become abundant.



**Figure 4: Sioux Vista Dunes and Thompson Ferry Units:  
locations of rare features, native plant communities, and survey sites.**

Minnesota County Biological Survey - Map Version: 22 April, 2002



MVSRA Boundary

**Rare Features**  
 Rare Animals  
 Rare Plants

**Native Plant Communities**

Dry Prairie - Barrens Subtype  
 Dry Prairie - Sand/Gravel Subtype  
 Floodplain Forest  
 Disturbed Vegetation

**Survey Sites**

Herp Searches  
 Mammal Trap Grids  
 Bat Searches  
 Mussel Sampling Sites  
 Relevé Locations



0 0.5 1 Miles

Key to Rare Features in Figure 4: Sioux Vista Dunes and Thompson Ferry Units.

Map No.	MN Status	Occur. No.*	Scientific Name	Common Name
1	THR	40	<i>Besseya bullii</i>	Kitten-tails
2	THR	105	<i>Besseya bullii</i>	Kitten-tails
3	SPC	30	<i>Baptisia alba</i>	White wild indigo
4	SPC	20	<i>Oenothera rhombipetala</i>	Rhombic-petaled evening primrose
5	SPC	1775	<i>Haliaeetus leucocephalus</i>	Bald eagle
6	SPC	34	<i>Heterodon platirhinos</i>	Eastern hognose snake
7	SPC	94	<i>Lampropeltis triangulum</i>	Milk snake
8	SPC	93	<i>Lampropeltis triangulum</i>	Milk snake
9	SPC	90	<i>Pituophis catenifer</i>	Gopher snake
10	SPC	103	<i>Pituophis catenifer</i>	Gopher snake
11	SPC	66	<i>Cycleptus elongatus</i>	Blue sucker
12	THR	90	<i>Actinonaias ligamentina</i>	Mucket mussel

\* Occurrence number identifies the element record in the Natural Heritage Information System.





Element: DRY PRAIRIE (SOUTHEAST) BARRENS SUBTYPE #7

S Rank: S1

EO Size: EO Rank: C Current Status: Intended Status:

Site: SIOUX VISTA DUNES CBS Site #: 23

Ownership: Private

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. (CO BIOL SURVEY 1995)

PRAIRIE DOM'D BY KOELERIA, PANICUM WILCOX, SCHIZ SCOP, BOUT CURT & BOUT HIRSUTA. LOOSE SANDY PATCHES DOM BY SPOROBOLIS CRYP & CALAMOVILFA. GOOD DIV NATIVE BARRENS. SPP INCL PULSATILLA, PETAL VILL, FROELICHIA, TRADESC BRAC, LITHO INCIS & CAREX BREVIOR. ONCE GRAZED. WEEDY W/MUCH AMBROSIA PSIL & POA PRAT THROUGHOUT. PATCHES OF BROMUS INERMIS, POA COMP. NUMEROUS LARGE JUNIPERUS VIRG. PLANTED PINES. ON STABILIZED, WINDBLOWN DUNES ON TERRACE WITHIN MINN RIVER VALLEY.

Location: SCOTT COUNTY, MN

Legal : T114N R24W 0ESWSE12

Quad Map: JORDAN WEST (T15B)

Latitude: 44 41' 23" Long: 93 39' 0"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 14 July 1995

Voucher: RELEVE 1995 Verification: verified

Element: DRY PRAIRIE (SOUTHEAST) SAND GRAVEL SUBTYPE #45

S Rank: S2

EO Size: EO Rank: BC Current Status: 1 Intended Status:

Site: ST. LAWRENCE 13 CBS Site #: 24

Ownership: Private

Managed Area(s): not managed or no record

Source: HARRIS, F. (CO BIOL SURVEY 1996)

PRAIRIE DOM'D BY SCHIZACHYRIUM SCOP, SORGHASTRUM NUTANS, BOUTELOUA CURT, & STIPA SPARTEA. VERY NICE DIVERSITY OF TYPICAL PLANTS INCL PULSATILLA, LITHOSPERMUM CAROLINIENSE, PETALOSTEMUM VILLOSUM, & 1000'S OF BESSEYA. MODERATE TO LOW AMTS POA PRAT & POA COMP. MUCH BROMUS INER ON EDGES. FREQ CLUMPS OF LARGE JUNIPERUS VIRG. GRAZED MANY YEARS AGO. ON EXCESSIVELY-DRAINED GRAVELLY SAND ON N-FACING SLOPE ON EDGE OF SECOND OUTWASH TERRACE WITHIN MN RIVER VALLEY.

Location: SCOTT COUNTY, MN

Legal : T114N R23W NENW18

Quad Map: JORDAN WEST (T15B)

Latitude: 44 41' 13" Long: 93 38' 4"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 03 September 1996

Voucher: Verification: verified

Element: FLOODPLAIN FOREST SILVER MAPLE SUBTYPE #44

S Rank: S3

EO Size: EO Rank: BC Current Status: Intended Status:

Site: SIOUX VISTA DUNES CBS Site #: 23

Ownership: Private

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. (CO BIOL SURVEY 1995)

MATURE FOREST W/COMPLETE CANOPY OF MOSTLY ACER SACCHARINUM (AVG DBH 35-50 CM); POPULUS DELT & SALIX NIGRA ALSO IN CANOPY. INTERRUPTED SUBCAN MOSTLY ACER; SHRUBS SPARSE. HERB PATCHES ON SHALLOW RIDGES DOM'D BY PILEA, LAPORTEA, & LEERSIA VIRG W/ OTHER TYPICAL SPP. FEW EXOTICS THOUGH QUITE WEEDY W/ SETARIA, CONYZA, URTICA ALONG RIVER EDGE. HAS HEAVY DEPOSITION & DRIFTING OF SAND/SILT FROM RECENT FLOODING. LOCATED IN FLOODPLAIN ALONG S SIDE OF MINN RIVER.

Location: SCOTT COUNTY, MN

Legal : T114N R24W SE12

Quad Map: JORDAN WEST (T15B)

Latitude: 44 41' 34" Long: 93 38' 50"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 28 September 1995

Voucher: Verification: verified

Element: ACTINONAIAS LIGAMENTINA (MUCKET MUSSEL) #90

State Status: THREATENED

EO Size: EO Rank: Current Status: Intended Status:

Site: SAND CREEK 7

Ownership: Owner unknown

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: BRIGHT, R. (1989 MUSSEL SURVEY OF MINNESOTA RIVER)

DEAD SPECIMENS ONLY FOUND AT SITE (PUBLIC WATER ACCESS AT CO HWY 9 BRIDGE; SITE FROM 120-210M DOWNSTREAM OF BRIDGE.)

Location: SCOTT COUNTY, MN

Legal : T114N R23W SW07

Quad Map: JORDAN WEST (T15B)

Latitude: 44 41' 35" Long: 93 38' 24"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 11 August 1989

Voucher: Verification: verified

Minnesota Natural Heritage Database  
Element Occurrence Records

ELEMENT OCCURRENCE RECORDS: SIOUX VISTA DUNES/THOMPSON FERRY UNIT  
12:51 Tuesday, AUGUST 06, 2002  
MnDNR, Natural Heritage and Nongame Research Program

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Element: CYCLEPTUS ELONGATUS (BLUE SUCKER) #66  
State Status: SPECIAL CONCERN  
EO Size:           EO Rank:           Current Status:           Intended Status:  
Site: SAN FRANCISCO 12  
Ownership: Owner unknown  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: U.S. GEOLOGICAL SURVEY NAWQA STUDY  
2 FISH SAMPLED IN REACH 1 (RIVER MILE 39.1-39.4) AND 1 IN REACH 2 (RIVER MILE 39.6-39.9). REFER TO SPECIAL PUBLICATION 139; BIOLOGICAL SURVEY OF THE MINNESOTA RIVER FOR STREAM MILES.

Location: CARVER COUNTY, MN  
Legal : T114N R24W SESW12  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 25" Long: 93 39' 21"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 19 August 1996

Voucher:                           Verification: photo rec.

Element: HALIAEETUS LEUCOCEPHALUS (BALD EAGLE) #1775  
State Status: SPECIAL CONCERN           Federal Status: THREATENED  
EO Size:           EO Rank:           Current Status:           Intended Status:  
Site: ST. LAWRENCE 12  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: GALLI, J. (DNR)  
NESTING AREA. JORDAN AIRFIELD. NEST GONE.

Location: SCOTT COUNTY, MN  
Legal : T114N R24W NWSW12  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 34" Long: 93 39' 48"  
Precision: MNHP could not relocate

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 2001

Voucher: SC -003                   Verification: verified

Element: HETERODON PLATYRHINOS (EASTERN HOGNOSE SNAKE) #34  
State Status: No Legal Status  
EO Size:           EO Rank:           Current Status:           Intended Status:  
Site: SIOUX VISTA DUNES           CBS Site #: 23  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: MOYER, E. (DNR GREEN SLIP)  
1 SNAKE OBSERVED ALONG STATE CORRIDOR TRAIL, 0.5 MILE UP RIVER FROM THOMPSON FERRY. SEEN IN SAND DUNE AREA SOUTH OF THE MINNESOTA RIVER.

Location: SCOTT COUNTY, MN  
Legal : T114N R24W SE12  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 27" Long: 93 38' 55"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 1989

Voucher:                           Verification: sight or sound rec.

Element: LAMPROPELTIS TRIANGULUM (MILK SNAKE) #93  
State Status: No Legal Status  
EO Size:           EO Rank:           Current Status:           Intended Status:  
Site: ST. LAWRENCE 13           CBS Site #: 24  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: HALL, C. (CO BIOL SURVEY 1997)  
1 SNAKE WAS FOUND UNDER A BOARD ON THE SHOULDER OF A GRAVEL ROAD ADJACENT TO DRY PRAIRIE. THE SNAKE MEASURED 675MM SVL, AND 750MM TBL & HAD MANY SMALL LESIONS.

Location: SCOTT COUNTY, MN  
Legal : T114N R24W SWSE12  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 22" Long: 93 38' 58"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 04 June 1997

Voucher:                           Verification: photo rec.

Element: LAMPROPELTIS TRIANGULUM (MILK SNAKE) #94  
State Status: No Legal Status  
EO Size: EO Rank: Current Status: Intended Status:  
Site: ST. LAWRENCE 13 CBS Site #: 24  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: HALL,C. AND J.LECLERE (CO BIOL SURVEY 1997)  
1 ADULT SNAKE WAS FOUND UNDER A LOG IN A GRASSY CLEARING ADJACENT TO OAK WOODLAND HABITAT. THE SNAKE MEASURED 785MM SVL, AND 895MM TBL.

Location: SCOTT COUNTY, MN  
Legal : T114N R24W SESE12  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 30" Long: 93 38' 52"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 22 May 1997

Voucher: Verification: photo rec.

Element: PITUOPHIS CATENIFER (GOPHER SNAKE) #90  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: ST. LAWRENCE 13 CBS Site #: 24  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: HARRIS,F.(CO BIOL SURVEY 1996)  
LARGE MATURE BULLSNAKE SEEN CROSSING EAST SIOUX VISTA DRIVE ON NORTH SIDE OF LOOP NEAR LOT 4 IN SIOUX VISTA ESTATES DEVELOPMENT. NEAR APPROX 15 ACRES OF DRY SAND PRAIRIE ON SAND DUNES.

Location: SCOTT COUNTY, MN  
Legal : T114N R24W SE12  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 21" Long: 93 39' 8"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: August 1996

Voucher: Verification:

Element: PITUOPHIS CATENIFER (GOPHER SNAKE) #103  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: SAND CREEK 7  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: JESSEN,T.(CO BIOL SURVEY 1997)  
1 SNAKE FOUND DEAD ON CO RD 9 JUST SOUTH OF THE MINNESOTA RIVER ACCESS.

Location: SCOTT COUNTY, MN  
Legal : T114N R23W SWSW07  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 31" Long: 93 38' 28"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 23 June 1997

Voucher: Verification: sight or sound rec.

Element: BAPTISIA ALBA (WHITE WILD INDIGO) #30  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: D Current Status: 1 Intended Status:  
Site: ST. LAWRENCE 13 CBS Site #: 24  
Ownership: Private  
Managed Area(s): not managed or no record  
Source: HARRIS,F.(96232)  
A SINGLE, LARGE PLANT GROWING ON LEVEL, MOWED AIRFIELD. SITE IS MOWED EACH YEAR IN JUNE AND THEN LEFT ALONE. OWNER HAS SEEN PLANTS THERE FOR OVER 15 YEARS. LOCATED ON TOP OF LARGE, GRAVELLY OUTWASH DEPOSIT WITHIN THE MINNESOTA RIVER VALLEY.

Location: SCOTT COUNTY, MN  
Legal : T114N R23W NENW18  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 7" Long: 93 38' 18"  
Precision: within 0.25 mile, confirmed

DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 03 September 1996

Voucher: MIN Verification: verified

Element: BESSEYA BULLII (KITTEN-TAILS) #40  
State Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: ST. LAWRENCE 13 CBS Site #: 24  
Ownership: Private  
Managed Area(s): not managed or no record  
Source: OLFELT, D. (S.N.)  
Location: SCOTT COUNTY, MN  
Legal : T114N R24W NENE13  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 8" Long: 93 38' 43"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 24 April 1990  
Voucher: MIN Verification: verified  
ABOUT 1.25 MILES NW OF JORDAN ON 40 DEGREE NW-FACING SLOPE SOUTH OF THE MINN R. 100+ PLANTS SCATTERED AND IN SMALL GROUPS AT THE EDGE OF A DEGRADED (BROMUS INERMIS AND JUNIPERUS VIRGINIANA ENCROACHMENT). ABOUT 30% OF POPULATION IN EARLY FLOWERING STAGE. FOUND WITH GEUM TRIFLORUM, STIPA SPARTEA, PANICUM VIRG, ANEMONE PATENS. 1991: 1200-1400 PLANTS OBSERVED BY J. HENGELFELT IN ENE 13 & IN T114 R23 NNW18. LAND OWNED BY GROTE, ERICKSON, JOHNSON & STOCKER IS REGISTERED

Element: BESSEYA BULLII (KITTEN-TAILS) #105  
State Status: THREATENED  
EO Size: EO Rank: AB Current Status: 0 Intended Status:  
Site: ST. LAWRENCE 13 CBS Site #: 24  
Ownership: Private  
Managed Area(s): not managed or no record  
Source: HARRIS, F. (96231)  
Location: SCOTT COUNTY, MN  
Legal : T114N R23W NENW18  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 13" Long: 93 38' 3"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 03 September 1996  
Voucher: MIN Verification: verified  
1000'S OF PLANTS IN DRY PRAIRIE OPENINGS AMONG CLUMPS OF LARGE JUNIPERS. IN COMMUNITY DOMINATED BY SCHIZACHYRIUM SCOPARIUM, SORGHASTRUM NUTANS, BOUTELOUA CURTIPENDULA & STIPA SPARTEA. WITH NICE DIVERSITY OF PRAIRIE PLANTS INCL PETALOSTEMUM VILLOSUM, PULSATILLA, KOELERIA. SITE WAS GRAZED MANY YEARS AGO. LOCATED ON N-FACING SLOPE ON EDGE OF GRAVELLY/SANDY OUTWASH TERRACE WITHIN THE MINNESOTA RIVER VALLEY.

Element: OENOTHERA RHOMBIPETALA (RHOMBIC-PETALED EVENING PRIMROSE) #20  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: D Current Status: Intended Status:  
Site: ST. LAWRENCE 13 CBS Site #: 24  
Ownership: Private  
Managed Area(s): not managed or no record  
Source: HARRIS, F. (95045)  
Location: SCOTT COUNTY, MN  
Legal : T114N R24W NENWNE13  
Quad Map: JORDAN WEST (T15B)  
Latitude: 44 41' 18" Long: 93 39' 2"  
Precision: within 0.25 mile, confirmed  
DNR Region: 6  
Wildlife Area: 605  
Forestry District: 613  
Last Obs.: 16 August 1995  
Voucher: MIN Verification: verified  
APPROX 20 PLANTS SCATTERED IN DISTURBED DRY, SAND BARRENS PRAIRIE ALONG SIDE OF ROAD. ON EDGE OF HORSE PASTURE. ONE PLANT NORTH OF ROAD AND REST SOUTH OF ROAD IN SIOUX VISTA ESTATES DEVELOPMENT.

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: 95002 EO Rec #: 21529  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 14 Month: JUL Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 24 or Site Name: Sioux Vista Dunes  
DNR Ownership Code: 00 (Private Ownership)  
\*NC Code: DPSEBA (Dry Prairie (Southeast) Barrens Subtype)  
Commun. Ranking in Releve: B Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: SW QRT: SE of Section 12  
Latitude: 44 degrees, 41 minutes, 25 seconds LL/GPS registration:  
Longitude: 93 degrees, 39 minutes, 1 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 100 Elev. (ft.): 750 Slope: 10NE Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: RLPD  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Prairie on well-vegetated dune composed of exc-drained fine sand  
Located within valley just S of MN River.  
Releve taken in large opening among large junipers.

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

Woody Needleleaf Evergreen, Height: 2-10m, Cover rare  
+. Juniperus virginiana (Red cedar)

Woody Broadleaf Deciduous, Height: .0-.5m, Cover barely present  
+. Amorpha canescens (Lead-plant)  
+. Quercus macrocarpa (Bur oak)

Graminoid, Height: .0-.5m, Cover continuous  
3. Koeleria macrantha (June-Grass)  
2. Panicum wilcoxianum  
2. Poa pratensis (Kentucky bluegrass)  
1. Schizachyrium scoparium (Little bluestem)  
+. Bouteloua curtipendula (Side-oats grama)  
+. Bouteloua hirsuta (Hairy grama)

Forb, Height: .0-.5m, Cover interrupted  
3. Petalostemon villosus (Silky prairie-clover)  
2. Ambrosia coronopifolia (Western ragweed)  
1. Helianthus rigidus (Stiff sunflower)  
1. Pulsatilla nuttalliana (Pasque-flower)  
+. Anemone cylindrica (Thimbleweed)  
+. Antennaria plantaginifolia (Plantain-leaved pussytoes)  
+. Apocynum androsaemifolium (Spreading dogbane)  
+. Campanula rotundifolia (Harebell)  
+. Delphinium virescens (Prairie larkspur)  
+. Erigeron philadelphicus (Philadelphia fleabane)  
+. Geum triflorum (Prairie smoke)  
+. Hedeoma hispida (Mock pennyroyal)  
+. Heterotheca villosa (Prairie golden aster)  
+. Lepidium virginicum (Virginia pepper-grass)  
+. Liatris punctata (Dotted blazing-star)  
+. Linum (Flax)  
+. Lithospermum carolinense (Hairy puccoon)

**Forb, Height: .0-.5m, Cover interrupted (continued)**

- + . *Petalostemon purpureum* (Purple prairie-clover)
- + . *Physalis heterophylla* (Clammy ground-cherry)
- + . *Sisyrinchium cf. campestre* (Blue-eyed-grass)
- + . *Smilacina stellata* OP (Starry false Solomon's-seal)
- + . *Tradescantia occidentalis* (Western spiderwort)
- R. *Silene antirrhina* (Sleepy catchfly)
- R. *Taraxacum cf. officinale* (Common dandelion)
- R. *Tragopogon dubius* (Yellow goat's-beard)
- R. Unknown or Indeterminable Plant

**Forb, Height: .0-.1m, Cover interrupted**

- 4. *Selaginella rupestris* (Rock spikemoss)

## Lawrence Wayside/ Belle Plaine Wayside

The Lawrence Wayside occupies a portion of the present Minnesota River floodplain as well as part of a large Glacial River Warren terrace. To the southwest, the Belle Plaine Wayside exists completely within the active floodplain of the Minnesota River. The vegetation of the floodplain at the time of European-American settlement was mostly floodplain forest interrupted with several sloughs or small lakes that had open water and emergent marshes (MCBS 1995, Marschner 1974). Outside the floodplain, the terrace was covered with mesic to dry prairie and savanna communities with numerous small wetland swales and basins containing wet prairie, wet meadow or emergent marshes. Large portions of the site have been cultivated and exist today as old fields dominated mostly by smooth brome grass. The wetter old fields near the river are reverting to floodplain forest or marsh communities. Much of the uncultivated uplands in these waysides were heavily grazed in the past.

### Native Plant Communities

#### *Oak Woodland - Brushland*

Former oak savannas that have succeeded to oak woodland-brushland cover the nearly level uplands on the terrace where it was not cleared and plowed for agriculture. These woodlands are dominated primarily by large, open-grown bur oaks, many of which exceed 60 cm dbh. Most of the woodland areas have a dense, nearly impenetrable matrix of smaller trees and shrubs between the bur oaks. Scattered small openings are also present. Common trees include eastern red cedar, green ash, aspen, basswood, and northern pin oak. The dense shrub thicket includes much hazel (*Corylus americana*), gray dogwood, smooth sumac, prickly ash (*Zanthoxylum americanum*), and several species of arrow-wood (*Viburnum* spp.). Common buckthorn, an exotic shrub, is highly abundant as small trees and small seedlings throughout the woodland. Tatarian honeysuckle (*Lonicera tatarica*) is another exotic shrub present in the woodlands. The woodlands have a diverse assemblage of herbaceous plants, most of which are shade tolerant species. Prairie species are nearly absent except in openings. Pennsylvania sedge is the most prevalent herb throughout the woodland, indicating past heavy grazing. Other common herbs include hog peanut, lopseed (*Phryma leptostachya*), pointed-leaved tick-trefoil (*Desmodium glutinosum*), sweet-scented bedstraw (*Galium triflorum*), red baneberry (*Actaea rubra*), gregarious black snakeroot (*Sanicula gregaria*), and columbine (*Aquilegia canadensis*).

Most openings in the woodland are dominated by exotic or weedy grasses, particularly redtop, Kentucky bluegrass and smooth brome grass, and contain a low number of grazing-tolerant, prairie species such as Canada goldenrod (*Solidago canadensis*), stiff goldenrod (*Solidago rigida*), wild bergamot (*Monarda fistulosa*), and yarrow (*Achillea millefolium*). Some herbs with prairie affinities still occur in occasional open areas, such as golden alexanders, (*Zizia aurea*), gray coneflower (*Ratibida pinnata*), stiff sunflower, and Culver's root (*Veronicastrum virginicum*). There are just a few openings dominated by prairie grasses, particularly Indian grass, big bluestem, little bluestem, and/or side-oats grama. Most of these openings have a low to moderate diversity of prairie species consisting of grazing increasers. The most diverse prairie openings occur along the railroad tracks.

#### *Wet Prairie*

Wet prairie occurs in three shallow, wet swales surrounded by oak woodland. These swales are dominated by cord grass (*Spartina pectinata*), woolly sedge (*Carex lanuginosa*), and Sartwell's

sedge (*Carex sartwellii*). Scattered shrubs include meadowsweet (*Spiraea alba*), false indigo (*Amorpha fruticosa*), and red osier dogwood (*Cornus stolonifera*). The swales also have scattered winged-angled loosestrife plants (*Lythrum alatum*), a native species that looks like the exotic purple loosestrife (*Lythrum salicaria*). Species diversity is moderate to low and includes several typical forbs, such as New England aster (*Aster novae-angliae*), mountain mint (*Pycnanthemum virginianum*), ironweed, gayfeather (*Liatris pycnostachya*), and boneset (*Eupatorium perfoliatum*).

The wet prairie swales have been negatively impacted by past grazing, though they were less heavily grazed than the uplands. Some graminoids that increase with grazing are present throughout the swales, particularly reedtop (*Agrostis stolonifera*), Kentucky bluegrass, and Baltic rush (*Juncus balticus*). Reed canary grass is also present on the margins of the prairie swales.

#### *Wet Meadow/Emergent Marsh*

Several swales contain mosaics of wet, sedge-dominated meadow in shallower water, or marsh communities in deeper water areas. Common dominant species in the meadows include lake sedge and tussock sedge (*Carex stricta*), which co-occur with lesser amounts of cord grass, bluejoint (*Calamagrostis canadensis*), marsh spike-rush, boneset and joe pye weed (*Eupatorium maculatum*). Deeper, standing water areas have marshes dominated by cattails (*Typha latifolia* and *angustifolia*), river bulrush, bur reed, sweet flag, rice cut-grass, tall reed grass, and soft stem bulrush. Common plants include broad-leaved arrowhead, blue monkey-flower (*Mimulus ringens*), water-parsnip, marsh bellflower (*Campanula aparinoides*), and dotted smartweed (*Polygonum punctatum*). Patches of common bladderwort (*Utricularia vulgaris*), with duckweed (*Lemna* sp.) and large yellow water-crowfoot (*Ranunculus flabellaris*) occur in open water areas.

In one swale, the marsh/meadow community contains a rich fen-like community dominated by wiregrass sedge (*Carex lasiocarpa*) (see relevé). Narrow leaf cattail is an invasive species that is abundant in many parts of these wetlands. Frequent patches of water smartweed, marsh spike-rush and giant bur-reed are also present.

#### *Floodplain Forest - silver maple subtype*

An outstanding remnant of floodplain forest occurs on the west side of the Minnesota River, to the south and east of Kelly lake. This stand has essentially been uncut and may old enough to qualify as an old growth forest stand. Much of the stand has a patchy supercanopy composed of huge, straight-boled cottonwoods with diameters ranging from 60 to 80 cm dbh. Below the cottonwoods is a dense canopy of straight-boled silver maples with diameters mostly within a 35 to 50 cm dbh size class. Scattered other canopy trees include green ash, hackberry, and peach-leaved willow. Scattered large, dead American elms are also present. Subcanopy trees are predominantly silver maple, but also include much green ash and American elm. Much of the ground surface consists of bare mineral soils due to the heavy silt and sand deposition from frequent episodes of heavy flooding and heavy shade from the very dense tree canopy. Shrubs and herbs are mostly confined to high ground under canopy gaps. Common plants in these herb patches include wood nettle, clearweed (*Pilea* sp.), Virginia wild rye, and beggarticks (*Bidens* sp.). Vines are also abundant, particularly river grape, moonseed, and bur cucumber.

This forest stand has no evidence of recent or past logging activities. The stand is an outstanding example of the endpoint of point-bar succession (Noble 1979), and is one of very few uncut floodplain forest stands remaining in the Minnesota River Valley today. The main disturbance to



the stand is the excessive flooding by the Minnesota River, which frequently deposits and reworks large drifts of sand and silt on the ground. This excessive flooding regime results from the rapid runoff of surface water within the Minnesota River basin, greatly exacerbated by human-induced drainage within the basin, and is the reason the stand was not given an "A" quality rank in the NHIS Rare Features Database.

## Rare Plants

### *Small white lady's slipper (Cypripedium candidum)*

A few small clumps of the small white lady's slipper orchid, a State Special Concern species, were located by park staff in wet-mesic and mesic prairie in roadside ditches along county road 57 at the southwest end of the Lawrence Wayside. Herbicide use should be prohibited in this area. This species may well occur in similar prairie areas on the margins of swales elsewhere in the wayside.

### *Rattlesnake master (Eryngium yuccifolium)*

Approximately 50 plants of the rattlesnake master, a State Special Concern species, occur in a very small opening along the railroad tracks on the edge of the oak woodland area. These plants are in mesic prairie dominated by Indian grass, prairie dropseed and scattered shrubs in the most intact patch of upland prairie left in the wayside (see relevé). This plant formerly ranged over much of southeastern Minnesota but is now rare due to the loss of its mesic prairie habitat.

## Animals

### Amphibians and Reptiles

*Survey results:* Surveys at the Lawrence and Belle Plaine Waysides consisted of anuran surveys, herp searches, and turtle trapping (Figure 5, Appendix 4). Within the waysides, surveys documented nine species of herpetofauna, including one listed species (Appendix 5). Anuran surveys were conducted on three nights (22 April, 21 May, and 4 June 1997) at three locations in forested and open wetland habitats in Carver and Scott counties. Anuran surveys documented the Western chorus frog, Cope's gray tree frog, and American toad. Herp searches were conducted at five locations, including Carver, Scott, and Sibley counties, within grassland and forest edge habitat. Searches were conducted on 12 June 1996, and 22-23 May and 28 August 1997, documenting the Cope's gray tree frog, Northern leopard frog, Gopher snake, and American toad. Turtle traps were set within Minnesota River backwaters on 28 August 1997, capturing six Painted turtles and several species of fish including Carp (*Cyprinus carpio*), crappies (*Pomoxis* sp.), sunfish (*Lepomis* sp.), bullheads (*Ictalurus* sp.), Channel catfish (*Ictalurus punctatus*) and Freshwater drum (*Aplodinotus grunniens*). False map turtles, Common map turtles, and softshell turtles (*Apalone* sp.) were observed basking at the site. Three herp searches were conducted on tracts near the waysides documenting two additional species, including the delisted Fox snake. These species also likely occur within the waysides.

### *Rare amphibians and reptiles:*

#### *Gopher snake (Pituophis catenifer)*

A Gopher snake (Bullsnake) was documented during a herp search within the Lawrence Wayside. The sand terraces and associated grasslands near Jordan provide ideal habitat for this

species of Special Concern. Although the NHIS Rare Features Database has several Gopher snake records from this area, many records are of snakes found dead on U.S. Highway 169. Protection of additional dry prairie and other open grassland tracts should be considered through either acquisition or easement. Educating local landowners of the benefits of these snakes and the significance of this area may help gain local awareness and appreciation for these species, potentially reducing snake mortality.

### Breeding-season Birds

*Survey results:* Twenty-four point counts were conducted on the Lawrence and Belle Plaine Waysides on 3 - 5 and 18 June 1997 (Figure 5, Appendix 4). Seventeen points were on the Scott County portion of the wayside, including seven in open shrub-edge habitats, six in old field, two in oak savanna-woodland, and two in disturbed floodplain forest. An additional seven point counts were conducted in floodplain forest adjoining Kelly Lake, in Carver County. Red-shouldered Hawk playback surveys were conducted at two locations near Kelly Lake (Figure 5, Appendix 4).

A total of 88 bird species were found on the waysides (Appendix 6). Relatively open habitats were prevalent, with a mix of old field, shrubs, and small areas of trees. The disturbed, fragmented nature of the vegetation is reflected in the birds found on the waysides. Common species were those typical of shrubby edge and fragmented forest habitats, including American Crow, American Robin, Yellow Warbler, Common Yellowthroat, and Song Sparrow. Several birds of grassland and overgrown oak savanna-woodland habitats, such as Northern Harrier, Sedge Wren, Eastern Towhee, Field Sparrow, Bobolink, Eastern Meadowlark, and Brewer's Blackbird, were also present but in low numbers.

Birds requiring larger tracts of closed-canopy forest were uncommon on much of the Lawrence Wayside, but well-represented in the floodplain forest surrounding Kelly Lake. This included species such as Eastern Wood-Pewee, Red-eyed Vireo, and American Redstart. Several uncommon to rare species found only around Kelly Lake included Barred Owl, Brown Creeper, Cerulean Warbler (see *Rare birds* section) and Prothonotary Warbler. The latter species is the only Minnesota bird found exclusively in floodplain forest.

Uncommon species found on the waysides included Blue-winged, Chestnut-sided, and Mourning warblers. Blue-winged Warblers are a forest-open edge species, more commonly found in southeastern Minnesota. Several Chestnut-sided Warblers were found on the wayside (see note in discussion of Carver Rapids Wayside). Mourning Warblers, like the Chestnut-sided, are relatively common in early successional forests in central and northern Minnesota, but quite rare in southern Minnesota. The Mourning Warbler found on the wayside may have been a late migrant. MCBS has found this species at scattered locations elsewhere in southern Minnesota later in the breeding season, however, which seems to indicate rare nesting in the region.

### *Rare birds:*

#### *Loggerhead Shrike (Lanius ludovicianus)*

One individual was found on the wayside, in an area of old field with scattered trees. Loggerhead Shrikes require areas of relatively short grasses for hunting, with widely scattered small trees (red cedar is often favored) and shrubs for perches and nesting. This species often

perches on roadside utility wires or barbed wire fences. Loggerhead Shrikes are found in drier upland areas, and generally do not occur in wet areas.

*Cerulean Warbler (Dendroica cerulea)*

Five singing males were found in the high-quality floodplain forest surrounding Kelly Lake. Cerulean Warblers are found in larger tracts of mature floodplain, lowland hardwood, or upland forests, often associated with rivers or wetland openings. The five individuals found here is the largest known population in the Minnesota River Valley.

*Henslow's Sparrow (Ammodramus henslowi)*

One singing male was found in an old field. Henslow's Sparrows require relatively large tracts of old field or prairie, with old weed stalks or similar vegetation used as singing perches. The grasslands on the wayside may be too small to support a population of this species. The individual found could not be relocated on several subsequent visits, and probably did not nest or maintain a territory in the area.

Mammals

*Survey results:* Four small mammal trap grids were set in the Lawrence Wayside, July 1997, in a range of open and semi-open habitats (Figure 5, Appendix 4). Seven species of small mammals were captured (Appendix 7). Although grassland habitats were selected, woodland species such as White-footed mice and Eastern chipmunks were taken from these grids. Also, shrews and Meadow jumping mice, most common in mesic-to-wet habitats were taken from most grids. Foraging bat surveys were made around the Corbel House, an old stone building built in 1855 that was reported to have bats in the attic (F. Knoke, pers. comm.).

*Rare mammals:* No rare mammal species were found at Lawrence Wayside, however, the Corbel House was found to support two maternity colonies of Little brown myotis and Big brown bats. Counts of bats emerging in the evening from the attic exceeded 1500 individuals of both species. This building served as a very important maternity site for female bats and young -- the number of bats emerging from this building exceeded the size of any other known maternity colony in Minnesota. In addition, the presence of two species in one site was unique. Regrettably, the building was re-roofed a couple years later and no provisions were made to provide an alternative roosting location for returning female bats.

**Management Recommendations**

The management of woodlands in the site has included brush clearing and controlled burning to reestablish savanna. Though this has increased the amount of open savanna/prairie cover, the diversity of prairie plant species is very low due to past heavy grazing and woodland succession. A complete savanna restoration would involve reintroducing native prairie seed to restore the original species diversity. Restoration of savanna in a very similar oak woodland with a heavy buckthorn infestation at the Carleton College Arboretum, in Northfield, Minnesota, required complete replanting of native prairie species (M. Bakke and M. McKone, Carleton College, pers. comm.). Care should be taken to avoid excessive burning of the site, particularly spring burning, which is likely to promote a very heavy thicket of smooth sumac and present an even more difficult management problem. Monitoring to assess progress in savanna restoration should consider the diversity of animal species, such as ants, butterflies, small mammals, reptiles and

amphibians, as well as plant species. Also, the woodland areas should not be completely eliminated, as patches of heavier cover are important for wildlife and a heterogeneous array of wooded patches is a natural feature of savannas (Faber-Langendoen and Davis 1995). One of the main management objectives should be to remove dense buckthorn thickets currently present in the oak woodlands.

The Kelly lake floodplain forest stand should be off limits to any logging. The high quality tree canopy, due to the absence of logging, makes this stand one of the top forest remnants for rare breeding birds in the Minnesota River Valley. The stand should be monitored for exotic plant species with appropriate control measures when necessary.

An effort should be made to acquire the 1 mile stretch of prairie on steep southeast facing slopes on the north side of the Minnesota River Valley, located west of Hallquist Lake, occurring mostly within the Belle Plaine Wayside statutory boundary. This is one of the larger areas of prairie left in east end of the Minnesota River Valley--its in fair to good condition but urgently needs brush control to prevent it from becoming too overgrown with invasive shrubs and trees. This prairie also contains a population of kitten-tails, a State Threatened plant.

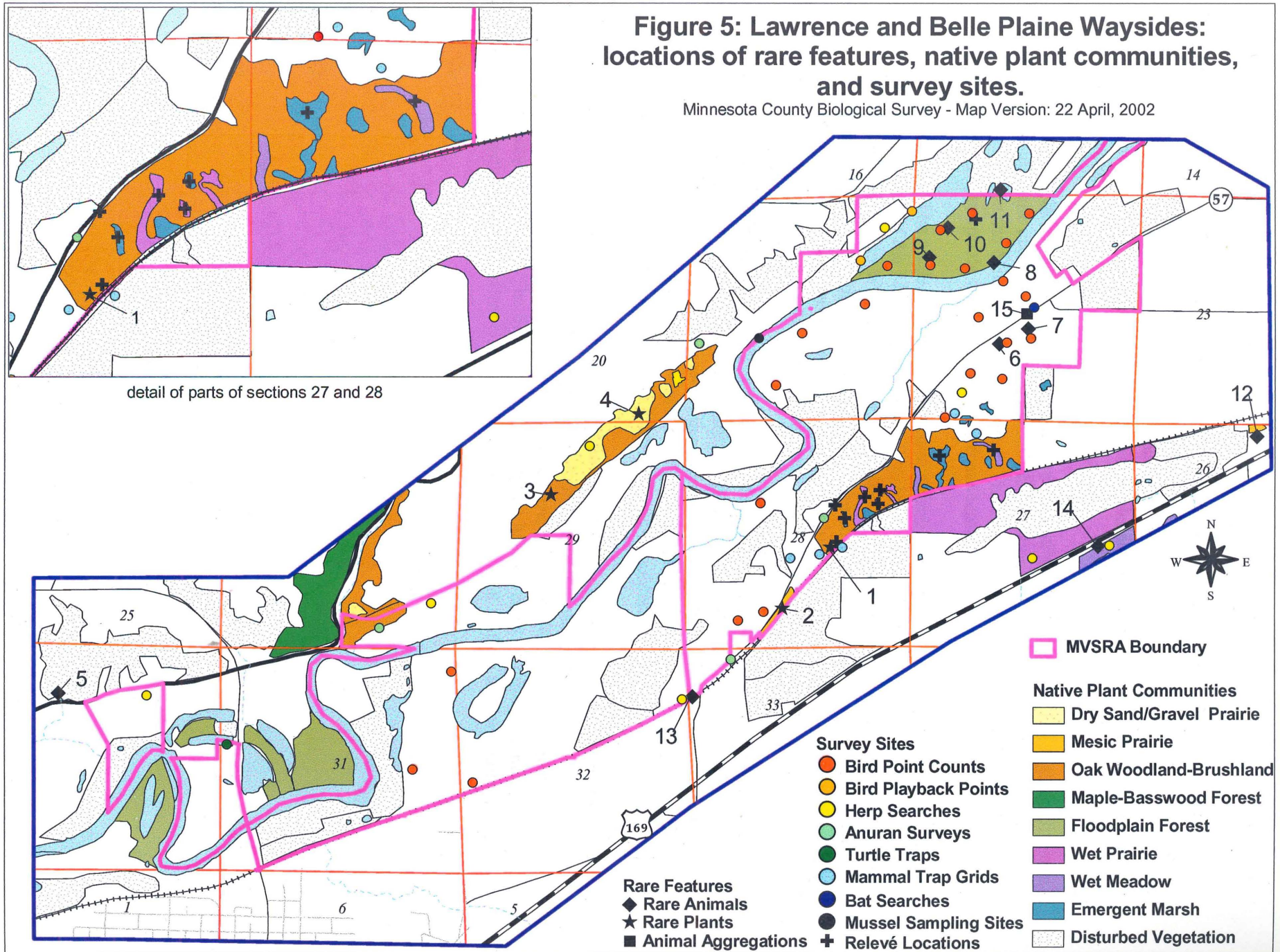
Silver maple floodplain forest will eventually develop naturally on the floodplain old fields. The succession to forest could be accelerated by tree planting (see related discussion under Gifford Lake Wayside). Reestablished forest on the extensive areas of bottomland old fields in these two waysides would greatly increase the amount of nesting habitat available for many native bird species, such as great blue herons, bald eagles and red-shouldered hawks.

Other building sites on the waysides should be examined to see if they currently support (or could be modified to support) bat maternity colonies. Alternatively, construction of a "bat condo", similar to the one at Sakatah Lake State Park, would provide an alternative roost site for female bats and young. The Sakatah Lake bat condo has served as an important maternity site and has provided an excellent educational opportunity for park visitors to learn more about bats.



**Figure 5: Lawrence and Belle Plaine Waysides:  
locations of rare features, native plant communities,  
and survey sites.**

Minnesota County Biological Survey - Map Version: 22 April, 2002



Key to Rare Species Occurrences in Figure 5: Lawrence and Belle Plaine Waysides

Map No.	MN Status	Occur. No.*	Scientific Name	Common Name
1	SPC	72	<i>Eryngium yuccifolium</i>	Rattlesnake master
2	SPC	276	<i>Cypripedium candidum</i>	Small white lady's slipper
3	NON	11	<i>Gymnocladus dioica</i>	Kentucky coffee tree
4	THR	1	<i>Besseyia bullii</i>	Kitten-tails
5	SPC	1368	<i>Haliaeetus leucocephalus</i>	Bald eagle
6	END	24	<i>Ammodramus henslowii</i>	Henslow's sparrow
7	THR	170	<i>Lanius ludovicianus</i>	Loggerhead shrike
8	SPC	74	<i>Dendroica cerulea</i>	Cerulean warbler
9	SPC	75	<i>Dendroica cerulea</i>	Cerulean warbler
10	SPC	76	<i>Dendroica cerulea</i>	Cerulean warbler
11	SPC	77	<i>Dendroica cerulea</i>	Cerulean warbler
12	SPC	94	<i>Pituophis catenifer</i>	Gopher snake
13	SPC	95	<i>Pituophis catenifer</i>	Gopher snake
14	NON	136	<i>Elaphe vulpina</i>	Fox snake
15		38		Bat concentration

\* Occurrence number identifies the element record in the Natural Heritage Information System.





Element: DRY PRAIRIE (CENTRAL) SAND-GRAVEL SUBTYPE #67

S Rank: S2

EO Size: 160 acres approx EO Rank: BC Current Status: Intended Status:

Site: HALLQUIST LAKE PRAIRIE CBS Site #: 36

Ownership: Private

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. (CO BIOL SURVEY 1995); COX, C. (SNA)

APPROX 1 MILE OF STEEP SE-SLOPES ON EXCESSIVELY DRAINED, SALIDA LOAMY SAND. PRAIRIE VARIES FROM EXCELLENT TO DEGRADED CONDITION. DOM MOSTLY BY BOUTELOUA CURT, SCHIZACHRYIUM, BOUTELOUA H, KOELERIA. EXCELLENT SPP DIVERSITY. PARTS W/ HEAVY INFESTATIONS OF POA PRAT, POA COMP, AMBROSIA COR. MUCH IS GETTING OVERGROWN BY RHUS TYPH, JUNIPERUS VIRG, PRUNUS AM. PAST GRAZING. NEEDS FIRE & BRUSH CONTROL. ON N SIDE OF MN RIVER VALLEY ON EDGE OF LG OUTWASH TERRACE.

Location: CARVER COUNTY, MN

Legal : T114N R24W NWNE29

Quad Map: JORDAN WEST (T15B)

Latitude: 44 39' 25" Long: 93 44' 8"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 1995

Voucher: Verification: verified

Element: FLOODPLAIN FOREST SILVER MAPLE SUBTYPE #40

S Rank: S3

EO Size: EO Rank: BC Current Status: Intended Status:

Site: SAN FRANCISCO 31 CBS Site #: 17

Ownership: Private

Managed Area(s): not managed or no record

Source: HARRIS, F. (CO BIOL SURVEY 1995)

FOREST ON PARALLEL RIDGES & SWALES DOM'D BY ACER SACCHARINUM (AVG 30-45 CM DBH), W/MUCH POPULUS DELT, FRAXINUS PENN, SALIX NIGRA, ULMUS AMER. SUBCAN OF MUCH ACER SACCHARINUM & ULMUS AMER, W/OCC CELTIS & ACER NEG. FEW SHRUBS. GROUND LAYER DOM'D MOSTLY BY LAPORTEA & PILEA ON RIDGES UNDER THIN CANOPY, W/MOD DIV TYPICAL SPP. EXOTICS ABSENT. HEAVY SILT/SAND DEPOSITION/DRIFTING FROM HEAVY FLOODING. MUCH DEADFALL; BEAVER ACTIVITY; BACKWATER SLOUGHS. ALONG N SIDE OF MN RIVER.

Location: CARVER COUNTY, MN

Legal : T114N R24W ONNESW31

Quad Map: BELLEPLAINE NORTH (T14A)

Latitude: 44 38' 17" Long: 93 45' 35"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 12 October 1995

Voucher: Verification: verified

Element: FLOODPLAIN FOREST SILVER MAPLE SUBTYPE #45

S Rank: S3

EO Size: EO Rank: B Current Status: Intended Status:

Site: KELLY LAKE CBS Site #: 5

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. (CO BIOL SURVEY 1995)

FOREST ON SHALLOW RIDGE/SWALE TOPOGRAPHY IN ACTIVE FLOODPLAIN ON N SIDE OF MINN RIVER. CANOPY W/FEW GAPS & HIGH TREE STEM DENSITY DOM'D BY ACER SACCHARINUM (AVG 35-50CM DBH) & SUPERCANOPY OF STRAIGHT POPULUS DELT (65-70CM DBH FREQ). PATCHY SUBCANOPY MOSTLY SILVER M; SHRUBS NEARLY ABSENT; TYPICAL HERBS, MOSTLY LIMITED TO PATCHES UNDER INFREQ GAPS. WEEDS (CONYZA, SETARIA, TARAXACUM, SONCHUS) ALONG RIVER EDGE. HEAVY RECENT DEPOSITION OF SAND/SILT. FINEST STAND LEFT IN COUNTY.

Location: CARVER COUNTY, MN

Legal : T114N R24W NW22

Quad Map: JORDAN WEST (T15B)

Latitude: 44 40' 15" Long: 93 42' 5"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 25 August 1995

Voucher: RELEVÉ 1995 Verification: verified

Element: MAPLE-BASSWOOD FOREST (BIG WOODS) #125

S Rank: S2

EO Size: 60 acres approx EO Rank: C Current Status: Intended Status:

Site: SAN FRANCISCO 30 CBS Site #: 16

Ownership: Private

Managed Area(s): MN VALLEY REC AREA (STATUTORY BNDRY)

Source: WOVCHA, D.S. (CO BIOL SURVEY 1995)

MAPLE-BASSWD FOREST ON NE-FACING SLOPES & IN RAVINE BOTTOMS ALONG STREAM VALLEY. PATCHY CANOPY OF 30-40CM DIAM ACER SACCHARUM & TILIA W/AREAS OF BETULA PAPPYRIF & POPULUS & SOME JUGLANS CINEREA (ALIVE BUT NOT HEALTHY). SUBCANOPY & SHRUBLAYER PATCHY, OFTEN DENSE. FAIRLY RICH GROUND LAYER; PATCHES OF CAREX PENNSYLVANICA. S-FACING & UPPER SLOPES W/INCLUSIONS OF OVERGROWN WOODLAND DOM BY 25-35CM DIAMETER OPEN-GROWN QUERCUS & ACER SACCHARUM W/DENSE OSTRYA, POPULUS, & CARYA BIXBYI

Location: CARVER COUNTY, MN

Legal : T114N R24W SW300W0E30

Quad Map: BELLEPLAINE NORTH (T14A)

Latitude: 44 38' 59" Long: 93 45' 27"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 21 June 1995

Voucher: Verification: verified

## ELEMENT OCCURRENCE RECORDS: LAWRENCE AND BELLE PLAINE WAYSIDES

11:38 Tuesday, APRIL 16, 2002

Minnesota Natural Heritage Database  
Element Occurrence Records

MnDNR, Natural Heritage and Nongame Research Program

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Element: MIXED EMERGENT MARSH (PRAIRIE) #34

Location: SCOTT COUNTY, MN

DNR Region: 6

S Rank: S2

Legal : T114N R24W 0S0NNW27

Wildlife Area: 605

EO Size:

EO Rank: BC

Current Status:

Intended Status:

Quad Map: JORDAN WEST (T15B)

Forestry District: 613

Site: LAWRENCE WAYSIDE

CBS Site #: 26

Latitude: 44 39' 27" Long: 93 42' 13"

Last Obs.:10 August 1995

Ownership: MN DNR Parks and Recreation

Precision: approx. boundaries have been determined

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Voucher: RELEVE 1995 Verification: verified

Source: HARRIS,F.(CO BIOL SURVEY 1995)

IN SEVERAL SHALLOW SWALES DOM'D MOSTLY BY SCIRPUS ACUTUS, CAREX LACUSTRIS, SPARGANIUM EURYCARPUM, TYPHA SP, ACORUS CAL, LEERSIA ORYZ, &amp; CAREX

ROSTRATA. PART OF ONE SWALE IS RICH PEN-LIKE W/ MUCH CAREX LASIOCARPA. FAIRLY DIVERSE ASSEMBLAGE OF TYPICAL WETLAND PLANTS PRESENT. FREE OF EXOTICS

BUT FOR SMALL AMOUNTS OF PHALARIS OR REDTOP ON EDGES IN SOME PARTS. IN COMPLEX SWELL-SWALE TOPOGRAPHY W/DIST'D OAK WOODLAND ON UPLANDS. ON TERRACE IN MINN RIVER VALLEY.

Element: WET MEADOW #93

Location: SCOTT COUNTY, MN

DNR Region: 6

S Rank: S3

Legal : T114N R24W 0S0NNW27

Wildlife Area: 605

EO Size:

EO Rank: C

Current Status:

Intended Status:

Quad Map: JORDAN WEST (T15B)

Forestry District: 613

Site: LAWRENCE WAYSIDE

CBS Site #: 26

Latitude: 44 39' 26" Long: 93 42' 8"

Last Obs.:10 August 1995

Ownership: MN DNR Parks and Recreation

Precision: approx. boundaries have been determined

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Voucher: Verification: verified

Source: HARRIS,F.(CO BIOL SURVEY 1995)

SEVERAL MEADOWS IN NARROW SWALES DOM MOSTLY BY CAREX LACUSTRIS, W/LESSER AMTS SPARGANIUM EURYCARPUM, SPARTINA PECTINATA, LEERSIA ORYZOIDES OR

PHRAGMITES. MODERATE TO LOW DIVERSITY OF TYPICAL SPECIES. PHALARIS ARUNDINACEA PRESENT ON EDGES &amp; IN SLIGHTLY BETTER-DRAINED AREAS. PAST GRAZING.

SURROUNDED BY DISTURBED OAK WOODLAND. ON OUTWASH TERRACE IN MINNESOTA RIVER VALLEY.

Element: WET PRAIRIE (SOUTHEAST) #3

Location: SCOTT COUNTY, MN

DNR Region: 6

S Rank: S1

Legal : T114N R24W NESENE28

Wildlife Area: 605

Site: LAWRENCE WAYSIDE

CBS Site #: 26

Latitude: 44 39' 19" Long: 93 42' 31"

Last Obs.:07 August 1995

Ownership: MN DNR Parks and Recreation

Precision: approx. boundaries have been determined

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Voucher: RELEVES Verification: verified

Source: HARRIS,F.(CO BIOL SURVEY 1995)

PRAIRIE DOM'D MOSTLY BY SPARTINA PECT W/SEVERAL CARICES INCL CAREX LANUG, C. SARTWELLII, C.BEBBII. SMALL PATCHES SHRUBS MOSTLY SALIX DISCOLOR &amp;

CORNUS STOL. GOOD DIVERSITY OF TYPICAL NATIVE SPP. EXOTICS PRESENT BUT IN SMALL LOCALIZED PATCHES ON EDGES: PHALARIS, AGROSTIS STOL. LIMITED PAST

GRAZING. LOCATED IN SHALLOW, NARROW SWALES SURROUNDED BY OAK WOODLAND HEAVILY DIST'D FROM PAST GRAZING. ON TERRACE WITHIN MINN RIVER VALLEY.

Element: WET PRAIRIE (SOUTHEAST) #5

Location: SCOTT COUNTY, MN

DNR Region: 6

S Rank: S1

Legal : T114N R24W 0N27NW26

Wildlife Area: 605

EO Size:

EO Rank: C

Current Status: 0

Intended Status:

Quad Map: JORDAN WEST (T15B)

Forestry District: 613

Site: ST LAWRENCE 27

CBS Site #: 27

Latitude: 44 39' 7" Long: 93 41' 27"

Last Obs.:03 September 1996

Ownership: Private

Precision: approx. boundaries have been determined

Managed Area(s): not managed or no record

Voucher: Verification: verified

Source: HARRIS,F.(CO BIOL SURVEY 1996)

WIDE ZONE OF SEEPAGE-INFLUENCED, WET TO WET-MESIC PRAIRIE SURROUNDING BIG TYPHA MARSH. DOM'D MOSTLY BY SPARTINA PECT, CAREX STRICTA, JUNCUS BALT.

GOOD DIVERSITY NATIVE SPP INCL CAREX PRAIREA, LYSIMACHIA QUAD, LOBELIA SIPH, ASTER PUNI. HEAVY CATTLE GRAZING. SEVERE SOIL COMPACTION/HUMMOCKING.

SOME PHALARIS, SONCHUS, CIRSIUM ARV. MUCH AGROSTIS STOL ON DRIER PARTS. ON MARLY MUCK ON TERRACE WITHIN MN RIVER VALLEY.

## ELEMENT OCCURRENCE RECORDS: LAWRENCE AND BELLE PLAINE WAYSIDES

11:38 Tuesday, APRIL 16, 2002

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\*\*\*\*\* DESTROYED \*\*\*\*\*

Element: BAT CONCENTRATION #38

EO Size: EO Rank: A Current Status: Intended Status:  
 Site: LAWRENCE WAYSIDE CBS Site #: 26  
 Ownership: MN DNR Parks and Recreation  
 Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
 Source: NORDQUIST,G., CRAWFORD,S. & MAERCKLEIN,R.(CO BIOL SURVEY 1997)  
 LARGE MATERNITY COLONIES FOR MYOTIS LUCIFUGUS & EPTESICUS FUSCUS IN THE ATTIC OF THE HISTORIC CORBEL HOUSE. BETWEEN 1200 & 1500 FEMALES AND YOUNG WERE RECORDED EXITING THE BUILDING AT NIGHT DURING LATE SUMMER, 1997. SINCE THEN, THE BUILDING WAS RE-ROOFED AND BATS CAN NO LONGER USE THIS SITE.

Location: SCOTT COUNTY, MN  
 Legal : T114N R24W NWSE22  
 Quad Map: JORDAN WEST (T15B)  
 Latitude: 44 40' 0" Long: 93 41' 43"  
 Precision: within 0.25 mile, confirmed  
 DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 29 July 1997

Voucher: Verification: verified

Element: AMMODRAMUS HENSIOWII (HENSIOW'S SPARROW) #24

State Status: ENDANGERED

EO Size: EO Rank: Current Status: Intended Status:  
 Site: LAWRENCE WAYSIDE CBS Site #: 26  
 Ownership: MN DNR Parks and Recreation  
 Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
 Source: STUCKER,S. & CARLSON,D. (CO BIOL SURVEY 1997)  
 BREEDING SEASON OBSERVATION. ONE SINGING MALE SEEN AND HEARD. HABITAT WAS OLD FIELD DOMINATED BY BROME, WITH SOME KENTUCKY BLUEGRASS AND SMALL (< 1 METER) SUMAC SHRUBS. BIRD WAS NOT FOUND ON SUBSEQUENT VISITS.

Location: SCOTT COUNTY, MN  
 Legal : T114N R24W NESW22  
 Quad Map: JORDAN WEST (T15B)  
 Latitude: 44 39' 53" Long: 93 41' 52"  
 Precision: within 0.25 mile, confirmed  
 DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 03 June 1997

Voucher: Verification: sight or sound rec.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #74

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:  
 Site: KELLY LAKE CBS Site #: 5  
 Ownership: MN DNR Parks and Recreation  
 Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
 Source: STUCKER,S. & CARLSON,D. (CO BIOL SURVEY 1997)  
 BREEDING SEASON OBSERVATION. ONE MALE HEARD SINGING ALONG MINNESOTA RIVER. HABITAT WAS FLOODPLAIN FOREST, DOMINATED BY SILVER MAPLE AND COTTONWOOD, WITH SOME BLACK WILLOW. MOST TREES 25-60 CM DBH. FOREST RECENTLY FLOODED, WITH MUCH MUD AND WOODY DEBRIS.

Location: CARVER COUNTY, MN  
 Legal : T114N R24W SENW22  
 Quad Map: JORDAN WEST (T15B)  
 Latitude: 44 40' 12" Long: 93 41' 54"  
 Precision: within 0.25 mile, confirmed  
 DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 03 June 1997

Voucher: Verification: sight or sound rec.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #75

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:  
 Site: KELLY LAKE CBS Site #: 5  
 Ownership: MN DNR Parks and Recreation  
 Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
 Source: STUCKER,S. & CARLSON,D. (CO BIOL SURVEY 1997)  
 SEASON OBSERVATION. ONE MALE HEARD SINGING. HABITAT WAS FLOODPLAIN FOREST, DOMINATED BY COTTONWOOD AND SILVER MAPLE. RATHER YOUNG, BUT DIVERSE FOREST WITH COTTONWOODS 20-25 CM DBH.

Location: CARVER COUNTY, MN  
 Legal : T114N R24W SWNW22  
 Quad Map: JORDAN WEST (T15B)  
 Latitude: 44 40' 13" Long: 93 42' 15"  
 Precision: within 0.25 mile, confirmed  
 DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 18 June 1997

Voucher: Verification: sight or sound rec. BREEDING

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11:38 Tuesday, APRIL 16, 2002

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Element: DENDROICA CERULEA (CERULEAN WARBLER) #76  
 State Status: SPECIAL CONCERN  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: KELLY LAKE CBS Site #: 5  
 Ownership: MN DNR Parks and Recreation  
 Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
 Source: STUCKER, S. & CARLSON, D. (CO BIOL SURVEY 1997)  
 BREEDING SEASON OBSERVATION. TWO MALES HEARD SINGING. HABITAT WAS FLOODPLAIN FOREST, WITH COTTONWOOD, SILVER MAPLE, ELM AND ASH. COTTONWOODS 50-60 CM DBH, WITH MOST OTHER TREES 15-20 CM DBH.

Location: CARVER COUNTY, MN  
 Legal : T114N R24W NWNW22  
 Quad Map: JORDAN WEST (T15B)  
 Latitude: 44 40' 20" Long: 93 42' 9"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 18 June 1997

Voucher: Verification: sight or sound rec.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #77  
 State Status: SPECIAL CONCERN  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: HALLQUIST LAKE PRAIRIE CBS Site #: 37  
 Ownership: Owner unknown  
 Managed Area(s): not managed or no record  
 Source: STUCKER, S. & CARLSON, D. (CO BIOL SURVEY 1997)  
 BREEDING SEASON OBSERVATION. ONE MALE HEARD SINGING. HABITAT WAS FLOODPLAIN FOREST WITH TALL COTTONWOODS AND SUBCANOPY OF SILVER MAPLE. BIRD WAS JUST NORTH OF CBS# 5 (KELLY LAKE, MN VALLEY RECREATION AREA).

Location: CARVER COUNTY, MN  
 Legal : T114N R24W SESW15  
 Quad Map: JORDAN WEST (T15B)  
 Latitude: 44 40' 29" Long: 93 41' 52"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 18 June 1997

Voucher: Verification: sight or sound rec.

Element: ELAPHE VULPINA (FOX SNAKE) #136  
 State Status: No Legal Status  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: ST. LAWRENCE 26 SW CBS Site #: 28  
 Ownership: Owner unknown  
 Managed Area(s): not managed or no record  
 Source: HALL, C. AND J. LECLERE (CO BIOL SURVEY 1997)  
 1 ADULT SNAKE WAS FOUND UNDER A BOARD NEAR HWY 169. HABITAT CONSISTED OF A COMBINATION OF WOODLAND AND GRASSLAND. THE SNAKE MEASURED 710MM SVL, AND 820MM TBL.

Location: SCOTT COUNTY, MN  
 Legal : T114N R24W NESE27  
 Quad Map: JORDAN WEST (T15B)  
 Latitude: 44 39' 6" Long: 93 41' 19"  
 Precision: within 0.25 mile, confirmed

DNR Region: 6  
 Wildlife Area: 605  
 Forestry District: 613  
 Last Obs.: 22 May

Voucher: Verification: photo rec.

Element: HALIAEETUS LEUCOCEPHALUS (BALD EAGLE) #1368  
 State Status: SPECIAL CONCERN Federal Status: THREATENED  
 EO Size: EO Rank: Current Status: Intended Status:  
 Site: BELLE PLAINE WAYSIDE  
 Ownership: Private  
 Managed Area(s): MINNESOTA VALLEY RECREATION AREA (STAT)  
 Source: SCHLADWEILER, J. (DNR)  
 NESTING AREA. BELLE PLAIN.

Location: SIBLEY COUNTY, MN  
 Legal : T114N R25W NW36  
 Quad Map: BELLEPLAINE NORTH (T14A)  
 Latitude: 44 38' 28" Long: 93 46' 58"  
 Precision: within 0.25 mile, confirmed

DNR Region: 4  
 Wildlife Area: 415  
 Forestry District: 442  
 Last Obs.: 1995

Voucher: SI -001 Verification: verified

## ELEMENT OCCURRENCE RECORDS: LAWRENCE AND BELLE PLAINE WAYSIDES

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11:38 Tuesday, APRIL 16, 2002

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Element: LANIUS LUDOVICIANUS (LOGGERHEAD SHRIKE) #170

State Status: THREATENED

EO Size:

EO Rank:

Current Status:

Intended Status:

Site: LAWRENCE WAYSIDE

CBS Site #: 26

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: STUCKER, S. &amp; CARLSON, D. (CO BIOL SURVEY 1997)

BREEDING SEASON OBSERVATION. ONE BIRD HEARD SINGING. BIRD WAS PERCHED AT TOP OF COTTONWOOD TREE; THEN FLEW TO SOUTH. HABITAT WAS OLD FIELD WITH

SCATTERED COTTONWOOD, RED CEDAR, AND ELM.

Location: SCOTT COUNTY, MN

Legal : T114N R24W NWSE22

Quad Map: JORDAN WEST (T15B)

Latitude: 44 39' 57" Long: 93 41' 42"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 03 June 1997

Voucher:

Verification: sight or sound rec.

Element: PITUOPHIS CATENIFER (GOPHER SNAKE) #94

State Status: SPECIAL CONCERN

EO Size:

EO Rank:

Current Status:

Intended Status:

Site: ST. LAWRENCE 26

Ownership: Owner unknown

Managed Area(s): not managed or no record

Source: HARRIS, F. (CO BIOL SURVEY 1997)

(APPROX 3.5 FEET LONG) WAS OBSERVED IN A SMALL MESIC PRAIRIE REMNANT.

Location: SCOTT COUNTY, MN

Legal : T114N R24W NWNE26

Quad Map: JORDAN WEST (T15B)

Latitude: 44 39' 33" Long: 93 40' 27"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 21 August 1997

Voucher:

Verification: sight or sound rec. 1 SNAKE

Element: PITUOPHIS CATENIFER (GOPHER SNAKE) #95

State Status: SPECIAL CONCERN

EO Size:

EO Rank:

Current Status:

Intended Status:

Site: LAWRENCE WAYSIDE

CBS Site #: 26

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: LECLERE, J. (CO BIOL SURVEY 1996)

POSTERIOR HALF OF ADULT SNAKE WAS FOUND ALONG RAILROAD TRACKS NEAR THE CR 57 CROSSING. ADJACENT HABITAT CONSISTED OF GRASSLAND. SPECIMEN WAS RETAINED.

Location: SCOTT COUNTY, MN

Legal : T114N R24W NWNW33

Quad Map: JORDAN WEST (T15B)

Latitude: 44 38' 30" Long: 93 43' 31"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 12 June 1996

Voucher:

Verification: verified

Element: BESSEYA BULLII (KITTEN-TAILS) #1

State Status: THREATENED

EO Size:

EO Rank: B

Current Status:

Intended Status:

Site: HALLQUIST LAKE PRAIRIE

CBS Site #: 36

Ownership: Private

Managed Area(s): not managed or no record

Source: WHEELER, G.A. (4415)

1979: GROWING ON DRY HILLSIDE FULLY EXPOSED TO SUNLIGHT. CA 5.0 MILES SW OF EAST UNION ON RTE 40. T114N R24W SEC 20. SPECIES COULD NOT BE FOUND WHEN SEARCHED BY A. DUXBURY [IN SEC 20?] ON 8-16-82.

Location: CARVER COUNTY, MN

Legal : T114N R24W SESE20

Quad Map: JORDAN WEST (T15B)

Latitude: 44 39' 37" Long: 93 43' 51"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 17 July 1979

Voucher: 709422 MIN

Verification: verified

## ELEMENT OCCURRENCE RECORDS: LAWRENCE AND BELLE PLAINE WAYSIDES

11:38 Tuesday, APRIL 16, 2002

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Element: CYPRIPEDIUM CANDIDUM (SMALL WHITE LADY'S-SLIPPER) #276

State Status: SPECIAL CONCERN

EO Size: EO Rank: C Current Status: Intended Status:

Site: LAWRENCE WAYSIDE CBS Site #: 26

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: KNOKE, F. &amp; HARRIS, F. (SIGHT RECORD)

SEVERAL SMALL CLUSTERS OF PLANTS WERE SEEN IN WET-MESIC TO MESIC PRAIRIE STRIPS ON BOTH SIDES OF COUNTY ROAD 57. WITH ANDROPOGON GERARDII, SORGHASTRUM NUTANS, PANICUM VIRGATUM, LOBELIA SIPHILITICA, LYSIMACHIA QUADRIFLORA. EAST SIDE OF ROAD IS NARROW PRAIRIE STRIP BETWEEN ROAD AND RAILROAD.

Location: SCOTT COUNTY, MN

Legal : T114N R24W NESESW28

Quad Map: JORDAN WEST (T15B)

Latitude: 44 38' 51" Long: 93 43' 2"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: May 1995

Voucher: Verification: sight or sound rec.

Element: ERYNGIUM YUCCIFOLIUM (RATTLESNAKE-MASTER) #72

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:

Site: LAWRENCE WAYSIDE CBS Site #: 26

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: BOCKENSTEDT, P. (97001)

SPECIMEN FOUND IN SMALL PRAIRIE OPENING ADJACENT TO RR RIGHT OF WAY. ~50 PLANTS PRESENT IN IMMEDIATE AREA. MESIC TO WET-MESIC SOIL. ASSOCIATED SPECIES: ZIZEA AUREA, POTENTILLA ARGUTA, SOLIDAGO RIGIDA, LILIUM MICHIGANENSE.

Location: SCOTT COUNTY, MN

Legal : T114N R24W NWSE28

Quad Map: JORDAN WEST (T15B)

Latitude: 44 39' 6" Long: 93 42' 49"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 17 May 1997

Voucher: MIN Verification: verified

Element: GYMNOCLADUS DIOICA (KENTUCKY COFFEE-TREE) #11

State Status: No Legal Status

EO Size: EO Rank: Current Status: Intended Status:

Site: HELENA 27 CBS Site #: 36

Ownership: Owner unknown

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HALL, C., M. STILLINGER, S. TANATA, AND J. LECLERE (CO BIOL SURVEY 1997)

SEED PODS WERE FOUND AND COLLECTED DURING HERP SURVEY OF SITE. LOCATED ON GROUND ON FORESTED RIDGE DIRECTLY NORTH OF TRAIL TO OLD BUILDING SITE.

Location: CARVER COUNTY, MN

Legal : T114N R24W SENW29

Quad Map: JORDAN WEST (T15B)

Latitude: 44 39' 17" Long: 93 44' 18"

Precision: within 0.25 mile, confirmed

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 22 May 1997

Voucher: Verification: verified

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: 95003 EO Rec #: 21535  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 7 Month: AUG Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 26 or Site Name: Lawrence Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: WPSEX (Wet Prairie (Southeast))  
Commun. Ranking in Releve: BC Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: SE QRT: NE of Section 28  
Latitude: 44 degrees, 39 minutes, 17 seconds LL/GPS registration:  
Longitude: 93 degrees, 42 minutes, 36 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 100 Elev. (ft.): 750 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: RLWD  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: At trans. between wet prairie & wet meadow in shallow, narrow swale  
Surrounded by disturbed oak woodland.  
Edges are somewhat fen-like w/Carex prairea & Lysim. quad

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry

\* = Variables with computerized code dictionaries (See Releve Handbook)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover barely present**

- + . Cornus stolonifera (Red-osier dogwood)
- + . Fraxinus pennsylvanica SD (Green ash)

**Graminoid, Height: .0-2m, Cover continuous**

- 4. Spartina pectinata (Prairie cordgrass)
- 1. Agrostis stolonifera (Redtop)
- 1. Carex lacustris
- 1. Carex lanuginosa
- 1. Eleocharis erythropoda Group (Spike-rush)
- 1. Leersia oryzoides (Rice cut grass)
- + . Carex cf. bebbii
- + . Juncus dudleyi (Dudley's rush)
- R. Carex stipata OP

**Forb, Height: .0-2m, Cover patchy**

- 2. Lycopus americanus (Cut-leaved bugleweed)
- 1. Eupatorium perfoliatum (Common boneset)
- 1. Impatiens capensis (Spotted touch-me-not, jewel-we)
- 1. Pycnanthemum virginianum (Virginia mountain-mint)
- + . Apocynum androsaemifolium (Spreading dogbane)
- + . Asclepias incarnata (Swamp milkweed)
- + . Aster
- + . Cicuta maculata (Water-hemlock)
- + . Epilobium leptophyllum (Linear-leaved willow-herb)
- + . Lysimachia quadriflora (Prairie loosestrife)
- + . Lythrum alatum (Wing-angled loosestrife)
- + . Mimulus ringens (Monkey-flower)
- + . Polygonum punctatum (Dotted smartweed)
- + . Solidago gigantea (Giant goldenrod)
- + . Sonchus uliginosus (Sow-thistle)
- + . Teucrium canadense cf. (Germander)
- + . Verbena hastata (Blue vervain)

**Forb, Height: .0-2m, Cover patchy (continued)**

- + . Vernonia fasciculata (Ironweed)
- + . Viola (Violet)
- R. Mentha arvensis (Common mint)



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: \_\_\_\_\_ EO Rec #: 21550  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 7 Month: AUG Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 26 or Site Name: Lawrence wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: MEPRXX (Mixed Emergent Marsh (Prairie))  
Commun. Ranking in Releve: BC Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: NE QRT: NE of Section 28  
Latitude: 44 degrees, 39 minutes, 19 seconds LL/GPS registration:  
Longitude: 93 degrees, 42 minutes, 31 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 100 Elev. (ft.): 750 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: RLPD  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Wetland in shallow depression surrounded by disturbed oak woodland  
Dense moss carpet(not spagnum), at base of plants.  
One foot standing water below moss layer. Soft muck w/methane

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry

\* = Variables with computerized code dictionaries (See Releve Handbook)

Graminoid, Height: .0-2m, Cover continuous

4. Scirpus cf. acutus (Hard-stemmed bulrush)
3. Carex rostrata cf. var. utriculata
3. Sparganium eurycarpum
1. Eleocharis cf. erythropoda (Spike-rush)

Forb, Height: .0-.5m, Cover barely present

1. Polygonum amphibium (Water smartweed)
- + Epilobium cf. leptophyllum (Linear-leaved willow-herb)
- + Typha latifolia (Broad-leaved cattail)



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: 95005 EO Rec #: 21535  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 7 Month: AUG Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 26 or Site Name: Lawrence Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: WPSEXX (Wet Prairie (Southeast))  
Commun. Ranking in Releve: B Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: NE QRT: NE of Section 28  
Latitude: 44 degrees, 39 minutes, 16 seconds LL/GPS registration:  
Longitude: 93 degrees, 42 minutes, 31 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 100 Elev. (ft.): 750 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: RLPD  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Wet prairie in shallow swale surrounded by formerly grazed oak woodland

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry

\* = Variables with computerized code dictionaries (See Releve Handbook)

**Woody Broadleaf Deciduous, Height: 2-5m, Cover barely present**

1. Fraxinus pennsylvanica (Green ash)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover barely present**

1. Cornus stolonifera (Red-osier dogwood)
1. Fraxinus pennsylvanica (Green ash)
- +. Salix cf. discolor (Pussy willow)
- +. Ulmus cf. americana (American elm)

**Graminoid, Height: .0-2m, Cover continuous**

5. Spartina pectinata (Prairie cordgrass)
1. Carex lanuginosa
1. Carex sartwellii
1. Eleocharis erythropoda (Spike-rush)
- +. Carex bebbii
- +. Carex stipata
- +. Carex stricta
- +. Glyceria striata (Fowl manna grass)
- +. Juncus dudleyi (Dudley's rush)
- +. Lythrum alatum (Wing-angled loosestrife)
- +. Phalaris arundinacea (Reed canary grass)
- +. Unknown or Indeterminable Plant
- R. Agrostis stolonifera OP (Redtop)
- R. Carex lacustris OP
- R. Leersia oryzoides OP (Rice cut grass)
- R. Scirpus atrovirens OP

**Forb, Height: .0-2m, Cover rare**

1. Equisetum pratense (Meadow horsetail)
1. Lysimachia quadriflora (Prairie loosestrife)
- +. Aster novae-angliae (New England aster)
- +. Gentiana andrewsii (Closed gentian)
- +. Iris virginica (Southern blue flag)

**Forb, Height: .0-2m, Cover rare (continued)**

- + . *Lycopus americanus* (Cut-leaved bugleweed)
- + . *Pycnanthemum virginianum* (Virginia mountain-mint)
- + . *Senecio cf. aureus* (Golden ragwort)
- + . *Solidago gigantea* (Giant goldenrod)
- + . Unknown or Indeterminable Plant
- R. *Achillea millefolium* OP
- R. *Apocynum androsaemifolium* OP (Spreading dogbane)
- R. *Asclepias incarnata* OP (Swamp milkweed)
- R. *Epilobium leptophyllum* OP (Linear-leaved willow-herb)
- R. *Eupatorium perfoliatum* (Common boneset)
- R. *Lycopus uniflorus* (Northern bugleweed)
- R. *Teucrium canadense* (Germander)
- R. *Verbena hastata* OP (Blue vervain)

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Relève #: 95006 EO Rec #: 21550  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 8 Month: AUG Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 26 or Site Name: Lawrence Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: MEPRXX (Mixed Emergent Marsh (Prairie))  
Commun. Ranking in Relève:A Stand typical of Commun. Type: Relève typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: NW QRT: NW of Section 27  
Latitude: 44 degrees, 39 minutes, 27 seconds LL/GPS registration:  
Longitude: 93 degrees, 42 minutes, 11 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Relève Size (sq. m.): 100 Elev. (ft.): 750 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: RLPD  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Emerg. marsh in large shallow basin surrounded by oak woodland .  
Degraded by past grazing. On black, stinky muck w/1.5 to 0.5 ft st H2O  
Grades into patches dom. entirely by Typha or Scirpus fluv.

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry

\* = Variables with computerized code dictionaries (See Relève Handbook)

**Graminoid, Height: .0-2m, Cover continuous**

- 3. Sparganium eurycarpum
- 3. Typha cf. angustifolia (Narrow-leaved cat-tail)
- 2. Scirpus cf. validus (Softstem bulrush)
- 1. Carex lanuginosa
- 1. Eleocharis cf. erythropoda (Spike-rush)
- +. Calamagrostis canadensis (Blue-joint)
- +. Leersia oryzoides (Rice cut grass)
- +. Typha latifolia (Broad-leaved cattail)

**Forb, Height: .1-.5m, Cover barely present**

- 1. Campanula aparinoides (Marsh Bellflower)
- 1. Polygonum punctatum (Dotted smartweed)
- +. Acorus calamus (Sweet flag)
- +. Epilobium leptophyllum (Linear-leaved willow-herb)
- +. Lycopodium americanum (Cut-leaved bugleweed)
- +. Lysimachia thyrsoiflora (Tufted loosestrife)
- +. Mentha arvensis (Common mint)
- +. Polygonum amphibium (Water smartweed)
- +. Polygonum (Knotweed; Smartweed)
- +. Scutellaria galericulata (Marsh skullcap)
- +. Sium suave (Water-parsnip)
- +. Teucrium canadense OP (Germander)
- R. Galium trifidum (Small bedstraw)
- R. Impatiens capensis (Spotted touch-me-not, jewel-we)
- R. Rumex orbiculatus (Great water dock)

**Forb, Height: .0-.1m, Cover continuous**

- 4. Lemna minor (Lesser duckweed)
- 4. Lemna trisulca (Ivy-leaved duckweed)



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: 95007 EO Rec #: 51550  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 10 Month: AUG Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 26 or Site Name: Lawrence Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: RFTRXX (Rich Fen (Transition))  
Commun. Ranking in Releve: AB Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: NE QRT: NW of Section 27  
Latitude: 44 degrees, 39 minutes, 28 seconds LL/GPS registration:  
Longitude: 93 degrees, 41 minutes, 54 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 100 Elev. (ft.): 750 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: RLPD  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Lge narrow wetland in shallow swale surrounded by oak woodland  
Dist by past grazing. Dense, cont. mat of moss @ H2O surface throughout.  
Grades into Cx lacustris & Scirpus cf. acutus dom'd comm.s.

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

Graminoid, Height: .0-2m, Cover continuous

- 4. Carex lasiocarpa
- 3. Typha angustifolia (Narrow-leaved cat-tail)
- 1. Eleocharis cf. erythropoda (Spike-rush)
- R. Carex lacustris OP

Forb, Height: .0-.5m, Cover rare

- 2. Polygonum amphibium (Water smartweed)
- 1. Sparganium cf. eurycarpum
- +. Epilobium leptophyllum (Linear-leaved willow-herb)
- +. Equisetum fluviatile (Water horsetail)
- R. Lysimachia thyrsoflora (Tufted loosestrife)

Lichen/Moss, Height: .0-.1m, Cover continuous

- 5. Unknown or Indeterminable Plant





12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Relève #: 95016 EO Rec #: 21556  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 13 Month: SEP Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 5 or Site Name: Carver 5  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: FFXSM (Floodplain Forest Silver Maple Subtype)  
Commun. Ranking in Relève: BC Stand typical of Commun. Type: \_ Relève typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 10 (Carver)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: NW QRT: NW of Section 22  
Latitude: 44 degrees, 40 minutes, 22 seconds LL/GPS registration:  
Longitude: 93 degrees, 42 minutes, 0 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Relève Size (sq. m.): 400 Elev. (ft.): 710 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: A  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Forest w/super canopy of lrg, straight-boled Populus delt. dbh 35-70cm  
Silver maples range 35-45cm dbh. Very high density of tree stems.  
Receives heavy flooding by MN river.

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry

\* = Variables with computerized code dictionaries (See Relève Handbook)

**Woody Broadleaf Deciduous, Height: 20-35m, Cover continuous**

- 5. Populus deltoides (Cottonwood)
- 2. Acer saccharinum (Silver maple, soft maple)

**Woody Broadleaf Deciduous, Height: 10-20m, Cover patchy**

- 3. Acer saccharinum (Silver maple, soft maple)
- 1. Fraxinus pennsylvanica (Green ash)
- 1. Ulmus americana (American elm)

**Woody Broadleaf Deciduous, Height: 2-10m, Cover continuous**

- 4. Ulmus americana (American elm)
- 1. Fraxinus pennsylvanica (Green ash)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover almost absent**

- +. Acer saccharinum (Silver maple, soft maple)
- +. Ulmus cf. americana (American elm)
- R. Celtis occidentalis (Hackberry)

**Climber, Height: .1-20m, Cover barely present**

- NON 1. Vitis riparia (Wild grape)

**Climber, Height: .0-.1m, Cover almost absent**

- NON +. Vitis riparia (Wild grape)

**Forb, Height: .0-.5m, Cover barely present**

- +. Pilea pumila (Clearweed)
- R. Laportea canadensis (Wood nettle)
- R. Sicyos angulatus OP (Bur-cucumber)



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: \_\_\_\_\_ EO Rec #: 0  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 29 Month: AUG Year: 1997 (e.g. 04 JUL 1993)  
CBS Site #: 26 or Site Name: Lawrence Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: MPSEXX (Mesic Prairie (Southeast))  
Commun. Ranking in Releve: A Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: NW QRT: SE of Section 28  
Latitude: 44 degrees, 39 minutes, 5 seconds LL/GPS registration:  
Longitude: 93 degrees, 42 minutes, 47 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 100 Elev. (ft.): 738 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 0  
Minnesota Soil Atlas Mapping Unit: SLWD  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Approx. 150 sq meter patch along W side of RR on edge of overgrown  
Quer. macrocarpa savanna. On deep, moist, sandy loam. Occ. lg. glacial  
erratics at surface. Site has had a fire w/in last few years

OTHER DATA COLLECTED

Soils: \_\_\_\_\_ Forestry: o=old growth Water Chemistry: \_\_\_\_\_ Publication:  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

Woody Needleleaf Evergreen, Height: .0-2m, Cover almost absent  
R. Juniperus virginiana DD (Red cedar)

Woody Broadleaf Deciduous, Height: 2-10m, Cover rare  
R. Quercus macrocarpa OP (Bur oak)

Woody Broadleaf Deciduous, Height: .0-2m, Cover patchy  
3. Amorpha canescens (Lead-plant)  
+. Cornus foemina (Gray dogwood)  
+. Corylus cf. americana (American hazelnut)  
+. Populus tremuloides (Quaking aspen)  
+. Rosa arkansana (Prairie rose)  
+. Rubus (Bramble)  
R. Rhus glabra OP (Smooth sumac)

Graminoid, Height: .0-2m, Cover continuous  
4. Sorghastrum nutans (Indian grass)  
2. Sporobolus heterolepis (Prairie dropseed)  
1. Andropogon gerardii (Big bluestem)  
1. Panicum leibergii ## (Leiberg's panic grass)  
R. Elymus canadensis OP (Nodding wild-rye)

Forb, Height: .0-2m, Cover interrupted  
3. Solidago rigida (Stiff goldenrod)  
2. Aster ericoides (Heath aster)  
2. Coreopsis palmata (Stiff tickseed)  
SPC 1. Eryngium yuccifolium (Rattlesnake-master)  
1. Phlox pilosa (Prairie phlox, downy phlox)  
1. Ratibida pinnata (Gray-headed coneflower)  
+. Artemisia ludoviciana (Western mugwort, White sage)  
+. Aster oolentangiensis (Sky-blue aster)  
+. Comandra umbellata (Bastard toad-flax)  
+. Desmodium canadense (Tick-trefoil)

Forb, Height: .0-2m, Cover interrupted (continued)

- + . *Fragaria virginiana* (Common strawberry)
- + . *Galium boreale* (Northern bedstraw)
- + . *Helianthus rigidus* (Stiff sunflower)
- + . *Lespedeza capitata* (Round-headed bush-clover)
- + . *Liatris ligulistylis* ## (Blazing-star)
- + . *Liatris pycnostachya* (Gay-feather)
- + . *Lithospermum caroliniense* (Hairy puccoon)
- + . *Petalostemon candidum* (White prairie-clover)
- + . *Petalostemon purpureum* (Purple prairie-clover)
- + . *Potentilla arguta* (Tall cinquefoil)
- + . *Pycnanthemum virginianum* (Virginia mountain-mint)
- + . *Rhus radicans*
- + . *Solidago canadensis*
- + . *Solidago gigantea* (Giant goldenrod)
- + . *Viola pedata* (Bird-foot violet)
- R. *Ambrosia artemisiifolia* (Common ragweed)
- R. *Anemone cylindrica* (Thimbleweed)
- R. *Erigeron cf. strigosus* (Daisy fleabane)
- R. *Prunella vulgaris* OP (Heal-all)
- R. *Viola pedatifida* (Prairie bird-foot violet)

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Relève #: 99-17 EO Rec #: 0  
\*Surveyor's ID Code: GAW (Gerald A. Wheeler)  
Date: 19 Month: AUG Year: 1999 (e.g. 04 JUL 1993)  
CBS Site #: 26 or Site Name: State Park  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: WMXXXX (Wet Meadow)  
Commun. Ranking in Relève: Stand typical of Commun. Type: Relève typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: SW QRT: NE of Section 28  
Latitude: 44 degrees, 39 minutes, 12 seconds LL/GPS registration:  
Longitude: 93 degrees, 42 minutes, 42 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Relève Size (sq. m.): 100 Elev. (ft.): 0 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit:  
\*Geomorphic Unit:

Remarks: **Spartina/sedge dominated stand in wet meadow.**  
**On terrace in Glacial River Warren Valley.**

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry

\* = Variables with computerized code dictionaries (See Relève Handbook)

**Graminoid, Height: .0-2m, Cover continuous**

- 3. *Spartina pectinata* (Prairie cordgrass)
- 2. *Calamagrostis canadensis* (Blue-joint)
- 2. *Carex cf. lacustris*
- 2. *Carex lanuginosa*
- +. *Agrostis stolonifera* (Redtop)
- +. *Bromus ciliatus* (Fringed brome)
- +. *Carex bebbii*
- +. *Eleocharis cf. erythropoda* (Spike-rush)

**Forb, Height: .0-2m, Cover rare**

- 1. *Eupatorium perfoliatum* (Common boneset)
- +. *Asclepias incarnata* (Swamp milkweed)
- +. *Aster umbellatus* (Flat-topped aster)
- +. *Cicuta maculata* (Water-hemlock)
- +. *Epilobium cf. ciliatum* (Willow-herb)
- +. *Eupatorium maculatum* (Spotted Joe-pye weed)
- +. *Lobelia siphilitica* (Great lobelia)
- +. *Lycopus americanus* (Cut-leaved bugleweed)
- +. *Mentha arvensis var. glabrata* (Common mint)
- +. *Pycnanthemum virginianum* (Virginia mountain-mint)
- +. *Rumex orbiculatus* (Great water dock)
- +. *Scutellaria galericulata* (Marsh skullcap)
- +. *Stachys palustris* (Hedge-nettle)
- +. *Verbena hastata* (Blue vervain)
- R. *Cirsium muticum* (Swamp thistle)



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Relleve #: 99-18  
\*Surveyor's ID Code: GAW (Gerald A. Wheeler) EO Rec #: 0  
Date: 19 Month: AUG Year: 1999 (e.g. 04 JUL 1993)  
CBS Site #: 26 or Site Name: Lawrence Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: WMXXXX (Wet Meadow)  
Commun. Ranking in Relleve: Stand typical of Commun. Type: \_ Relleve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T15B Universal: 44093F6 (Jordan West)  
Township: 114N (e.g. 143N) Range: 24W (e.g. 32W)  
QORT: SW QRT: NE of Section 28  
Latitude: 44 degrees, 39 minutes, 15 seconds LL/GPS registration:  
Longitude: 93 degrees, 42 minutes, 45 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Relleve Size (sq. m.): 100 Elev. (ft.): 0 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit:  
\*Geomorphic Unit:

Remarks: Sedge dominated stand in moist meadow.  
On terrace in Glacial River Warren Valley.

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry

\* = Variables with computerized code dictionaries (See Relleve Handbook)

**Woody Broadleaf Deciduous, Height: .0-5m, Cover barely present**

- +. Fraxinus pennsylvanica (Green ash)
- +. Populus deltoides ssp. monilifera (Cottonwood)
- +. Ulmus americana (American elm)

**Graminoid, Height: .0-2m, Cover continuous**

- 3. Carex stricta
- 2. Carex cristatella
- 2. Carex lanuginosa
- 1. Agrostis stolonifera (Redtop)
- 1. Eleocharis cf. erythropoda (Spike-rush)
- 1. MUHLGLOM no match in MNTaxa, MossTaxa, or LichTaxa
- +. Carex bebbii
- +. Juncus dudleyi (Dudley's rush)

**Forb, Height: .0-2m, Cover rare**

- 1. Solidago gigantea (Giant goldenrod)
- 1. Verbena hastata (Blue vervain)
- +. Apocynum cannabinum (Indian hemp)
- +. Asclepias incarnata (Swamp milkweed)
- +. Aster umbellatus (Flat-topped aster)
- +. Cicuta maculata (Water-hemlock)
- +. Fragaria virginiana (Common strawberry)
- +. Lythrum alatum (Wing-angled loosestrife)
- +. Monarda fistulosa (Wild bergamot)
- +. Solidago canadensis var. gilvocanescens (Canada goldenrod)
- +. Stachys palustris (Hedge-nettle)
- +. Unknown or Indeterminable Plant
- +. Vernonia fasciculata (Ironweed)
- +. Viola nephrophylla (Northern bog violet)
- R. Epilobium cf. ciliatum (Willow-herb)
- R. Sonchus uliginosus (Sow-thistle)





## Blakeley Wayside/ Jessenland 25

The Blakeley Wayside occurs on the Altamont ground moraine of the Des Moines Lobe of the Late Wisconsin glacialiation (Hobbs and Goebel 1982). Upland soils in the site are predominantly formed in loamy, calcareous gray till (Harms 1959). The site is situated just outside the edge of the Glacial River Warren Valley. The topography is highly dissected with steep-sided ravines draining into the Minnesota River. The wayside includes remnants of the "Big Woods," a large area of American elm, basswood, red oak and sugar maple-dominated forests located between present-day Mankato and St. Cloud on the edge of the prairies at the time of European-American settlement in the mid-1800s (Marschner 1974, Grimm 1984). At that time, the vegetation of the wayside consisted of mesic maple-basswood and oak forests on steep north-facing slopes and level uplands, and oak woodlands/savannas on steep south and west-facing slopes. Small areas of dry hill prairie occurred on steep, excessively-drained south- to southwest-facing slopes. Approximately 98 percent of the Big Woods has since been destroyed by clearing for agriculture and urban development (Wovcha and Harris 1998). This wayside and adjacent forested tracts constitutes one of the largest forest remnants left in the Big Woods and Scott County.

An interesting and unusual geological feature in the site is the presence of a slump block on the north slope in the NW1/4 of the NE1/4 of section 31. The block is a huge piece of the ravine side which "calved" off of the slope at least 80 to 100 years ago and has completely revegetated with mature, mesic forest. Several intermittent pools occur at mid-slope between the slump block and the ravine side slope.

Near the Blakeley Wayside in Sibley County, the MVSRA tract in Jessenland Township section 25 includes a stand of floodplain forest surrounding an old Minnesota River oxbow on the valley bottomlands.

### Native Plant Communities

#### *Maple-basswood Forest (Big Woods subtype)*

Mesic forest dominated primarily by basswood, red oak and sugar maple occurs on sheltered north to east-facing slopes in the ravines. Other common tree species in the canopy include red elm, black ash, bigtooth aspen (*Populus grandidentata*), and white oak. The subcanopy in these stands varies from low to high cover, and consists primarily of sugar maple, and ironwood. Mesic toe slopes have much blue beech (*Carpinus caroliniana*). Shrub cover is generally sparse; common shrubs include bladder nut (*Staphylea trifoliata*), alternate-leaved dogwood (*Cornus alternifolia*), choke cherry (*Prunus virginiana*), and gooseberries (*Ribes cynosbati*). The ground layer in much of the maple-basswood stands is continuous and highly diverse. Common dominant herbs include wood nettle, Virginia waterleaf, wild ginger (*Asarum canadense*), and peduncled sedge (*Carex pedunculata*). Spring ephemerals are abundant on the lower portions of north-facing slopes.

The woods at Blakeley Wayside have all been logged in the past. These stands are even-aged, with a common age of the dominant cohort of around 50 to 80 years. Cut stumps are present in parts. Other evidence of past logging includes frequent multiple-stemmed basswood trees in parts and an old logging road. The oldest, highest quality forest in the site occurs on north-facing slopes above the slump block in the north half of the northeast quarter of section 31. This is a

mature stand dominated by straight-boled trees ranging up to approx 80 to 100 years old.

Much of the site was probably grazed many years ago, as evidenced by the old barbed wire fencing that still exists in some areas. The mesic forests have not sustained much ill effects from grazing, as they have ground layers in fine condition.

The mesic hardwood forests in the wayside are a popular local site for morel mushroom collecting.

#### *Oak Forest (mesic subtype)/Oak Woodland-Brushland*

Mesic oak forest occurs on level uplands and west-facing slopes within the site. Dominant species are red oak and northern pin oak, or hybrids of these two species. These stands are quite variable in composition, depending on site moisture. On mesic sites, such as on lower slopes and in sheltered draws, sugar maple, basswood and red elm co-dominate with red oak. The ground layers in these areas includes many species seen in maple-basswood forest.

On upper slopes and level uplands, the forest grades into dry-mesic oak forest lacking many mesic forest plant species. Basswood dominates these stands, sugar maple is absent, and white oak is abundant. The ground layer consists of dry-mesic forest plants, including shining bedstraw (*Galium concinnum*), pointed-leaved tick-trefoil, hog-peanut, heart-leaved aster (*Aster cordifolius*), and golden alexanders. Stands on the driest microsites were formerly oak savanna.

On the upper half of true south facing slopes (e.g. north of Salisbury Hill Drive in section 30), the forest grades into oak woodland dominated by open-grown bur oak, northern pin oak, and a red oak/pin oak hybrid. Ironwood is abundant in the understory, as commonly seen in formerly grazed woods. Eastern red cedar is abundant in the most open areas. Pennsylvania sedge dominates the ground layer. A significant portion of the ground is bare soil.

Most of the oak forests in the wayside have been logged in the past, as the stands are even-aged (with trees averaging 45-60 cm dbh or approx 80 years old) and include many multiple-stemmed trees. The only part of the site with clean, straight-boled oaks is in the N1/2 of the NE1/4 of section 31 on the north-facing slope.

#### *Lowland Hardwood Forest*

Lowland hardwood forest occurs on sandy/gravelly bottomlands in two narrow ravines in section 31 along intermittent streams that run underground during dry periods in late summer/fall. This forest is dominated primarily by basswood, black ash and hackberry, with patches dominated by cottonwood. Other important tree species include sugar maple, red elm, rock elm (*Ulmus thomasi*) and bur oak. The tree canopy is quite patchy in cover, with large gaps that probably result from American elm mortality due to Dutch elm disease. Occasional large, dead American elms are still present. Subcanopy layers are generally interrupted to continuous in cover and consist primarily of ironwood, red elm, bitternut hickory, and hackberry, but have a diverse number of species present. These stands have a diverse groundlayer that includes several spring ephemerals. Common dominant groundlayer plants include tall scouring rush (*Equisetum hyemale*), Ostrich fern (*Matteucia struthiopteris*), wood nettle, cleavers (*Galium aparine*), and Virginia waterleaf. Characteristic lowland hardwood species in the stand include tall coneflower (*Rudbeckia laciniata*), cow-parsnip (*Heracleum lanatum*), Virginia wild-rye, ambiguous sedge (*Carex amphibola* var. *turgida*), and white grass.

### *Floodplain Forest - silver maple subtype*

A stand of floodplain forest in good condition occurs along the Minnesota River in section 25 of Jessenland Township, Sibley County. The topography consists of numerous channels and low ridges parallel to the river. Even-aged, multiple-stemmed silver maples form a dense canopy in much of the forest, with tree diameters most commonly in the 40 to 55 cm dbh range. Several tall, straight-boled cottonwoods with diameters reaching 100+ cm dbh occur throughout the stand. Other canopy trees include green ash, black ash, hackberry, black willow, peach-leaved willow, and box elder. American elm is mostly absent in the canopy but is common in the subcanopy and small sapling layers. The groundlayer includes a moderate diversity of typical species in patches on ridges where canopy cover is sparse. The stand includes a couple of seasonally-wet sloughs and an oxbow lake. The forest experiences heavy seasonal flooding, as evidenced by deep sand and silt deposits on the ground, large debris dams, and ice scars on tree trunks. There is no evidence of recent logging in the stand, but the mid-aged, multiple stemmed silver maples suggest a clearcut around 80 years ago.

### **Rare Plants**

No rare plants were documented within the Blakeley Wayside during the MCBS survey, despite numerous visits. Scanlon (1971) recorded Kentucky coffee tree, a non-listed species tracked in the NHIS, on the ravine bottoms in the site in 1971. The plant ecologist searched for this species but could not relocate it in the wayside.

### **Animals**

#### Amphibians and Reptiles

*Survey results:* Herp surveys at the Blakeley Wayside included four anuran surveys locations (Figure 6, Appendix 4). Anuran surveys were conducted on 22 April, 5 May, and 21 May 1997, and included riparian and emergent marsh habitats. Four anuran species were documented (Appendix 5). A single herp search was conducted on 3 June 1998, targeting riparian habitat and wetlands within the hardwood forest. Four common species of herps were documented including one toad and three frogs (Appendix 5). The perched wetlands at this site provide important fishless breeding habitat for forest-dwelling amphibians.

*Rare amphibians and reptiles:* No rare amphibian or reptile species were documented at this site although Smooth softshell turtles have been observed in the Minnesota River both upriver and downriver from the wayside. They may utilize the river corridor along the wayside for feeding and dispersal.

#### Breeding-season Birds

*Survey results:* Six point counts were conducted on 6 June 1997, all in deciduous forest (Figure 6, Appendix 4). Red-shouldered Hawk playback surveys were conducted at three locations (Figure 6, Appendix 4). A total of 29 bird species were found on the wayside (Appendix 6). The relatively low number of species is indicative of unfragmented, good-quality forest. Typical edge species, such as Gray Catbird, Common Yellowthroat, Song Sparrow, and Brown-headed Cowbird were rare or absent on the wayside. These species are commonly found in more open habitats, including oak woodland-brushland and disturbed forest communities with brushy openings, as well as grasslands and shrubby wetlands.

The wayside's relatively contiguous, closed-canopy forest had many typical forest species, including several of those less tolerant of fragmented forests. Forest species found on the wayside included Eastern Wood-Pewee, Red-eyed Vireo, Blue-gray Gnatcatcher, Wood Thrush, Ovenbird, and Scarlet Tanager. The only other wayside where MCBS found Wood Thrushes was Rush River, and Scarlet Tanagers were only found at two additional waysides -- Rush River and Carver Rapids. One uncommon (regionally rare) bird, the Mourning Warbler, was found on the wayside.

*Rare birds:* The wayside has potential habitat for rare species, particularly Acadian Flycatcher, Cerulean Warbler, and Louisiana Waterthrush, but none were found. A waterthrush observed on the wayside on 5 June 1998 was initially identified as a Northern Waterthrush. However, Northern Waterthrushes nest in shrub-conifer swamps in northern Minnesota and migrate through southern Minnesota in early-to-mid May. A waterthrush observed on the wayside in June, in habitat much more typical of Louisiana Waterthrushes, might in fact have been the latter species.

#### Mammals

No mammal surveys were conducted at the wayside.

#### **Management Recommendations**

The Blakeley Wayside and adjacent forest tracts contains one of the largest tracts of forest left in the Big Woods ecological subsection. Only 1 to 2 % of the Big Woods forests remain in Minnesota, due to clearing for agriculture and urban development. Several areas of existing forest adjacent to the present wayside should be acquired so that more of this forest is protected. Priority areas for addition to the wayside should include: the west half of the southwest quarter of section 30; the south half of the northwest quarter of section 31; and the east half of the northeast quarter of section 31. These areas include fingers of level upland, currently or formerly-cultivated, that should be reforested. The NE quarter of the NE quarter of section 31 would also include a remnant of dry hill prairie.

Presently, the biggest threat to Blakeley Wayside and adjacent forests is erosion on steep slopes. Very large washouts now occur along the stream in the ravine bottoms and on upper slopes where water runs off of cultivated or formerly cultivated fields above the ravines. The heavy erosion appears to be a recent phenomenon in the site and correlates with the installation of drain tile in adjacent cultivated fields within the last 20 years, as there was no mention of washouts in Scanlon and Cushing's inventory of the site in 1971. Steps to ameliorate the erosion should include acquisition of adjacent uplands, particularly on ridges between wooded valleys, so that drain tile can be removed. Otherwise, drain tile outlets and other runoff sources at the tops of ravines should be piped down to the bottomlands to keep the runoff water from cutting into the steep slopes.

The acquisition of additional lands adjacent to the slopes, particularly the tops of spur ridges, would provide a logical management unit to protect existing forest areas and provide additional level terrain for trails. Revegetation of formerly cultivated uplands adjacent to existing forests should focus on planting oaks from acorns gathered on site. This would help reduce the high

edge to interior ratio of the existing forests and benefit many wildlife species that require interior forest conditions. The added lands on level terrain would provide opportunities for trail development on less erodible lands outside of the tract protected by a conservation easement.

Existing forest stands should be monitored for invasive exotic species, such as common buckthorn and garlic mustard (*Alliaria petiolata*), and appropriate steps taken to control them.

Dirt bikes are also causing a significant amount of erosion on existing trails within the wayside.

Formerly-cultivated Minnesota River bottomlands in Blakeley Wayside and Jessenland 25 should be allowed to revert to floodplain forest.

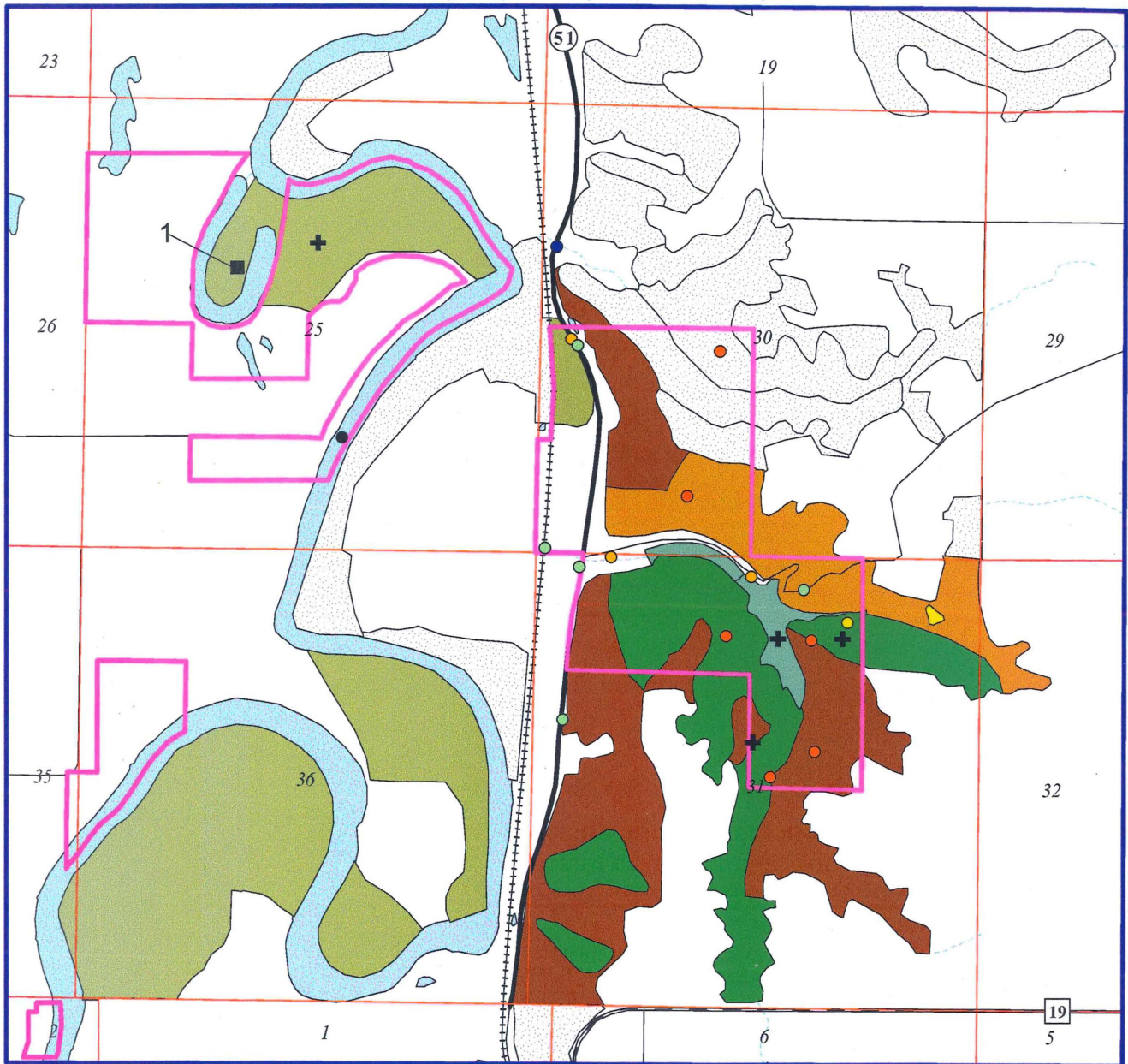
If acquired, the small hill prairie remnant in the northeast quarter of the northeast quarter of section 31 should be restored with brush removal and controlled burning. A bigger threat to this prairie is heavy ravine erosion, however, which has taken out huge portions of the valley sides at the head of the creek valley below the prairie.





**Figure 6: Blakeley Wayside and Jessenland 25:  
locations of rare features, native plant communities, and survey sites.**

Minnesota County Biological Survey - Map Version : 22 April, 2002



**MVSRA Boundary**

**Rare Features**  
■ Animal Aggregations

**Native Plant Communities**

- Maple-Basswood Forest
- Oak Forest - Mesic Subtype
- Oak Woodland-Brushland
- Lowland Hardwood Forest
- Floodplain Forest-Silver Maple Subtype
- Dry Hill Prairie
- Disturbed Forest/Woodland

**Survey Sites**

- Bird Point Counts
- Bird Playback Points
- Anuran Surveys
- Herp Searches
- Bat Searches
- Mussel Sampling Sites
- ⊕ Relevé Locations



0 0.5 1 Miles



Key to Rare Species Occurrences in Figure 6: Blakeley Wayside and Jessenland 25

Map No.	MN Status	Occur. No.*	Scientific Name	Common Name
1		956		Colonial Waterbird Nesting Site (Great Blue Heron)

\* Occurrence number identifies the element record in the Natural Heritage Information System.



## ELEMENT OCCURRENCE RECORDS: BLAKELEY WAYSIDE AND JESSENLAND 25

Minnesota Natural Heritage Database  
Element Occurrence Records

11:35 Tuesday, APRIL 16, 2002

MnDNR, Natural Heritage and Nongame Research Program

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Element: FLOODPLAIN FOREST SILVER MAPLE SUBTYPE #41

S Rank: S3

EO Size: EO Rank: BC Current Status: Intended Status:

Site: JESSENLAND 25 CBS Site #: 23

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. (CO BIOL SURVEY 1995)

Location: SIBLEY COUNTY, MN

Legal : T113N R26W 0N25

Quad Map: HENDERSON (T14C)

Latitude: 44 34' 8" Long: 93 53' 50"

Precision: approx. boundaries have been determined

DNR Region: 4

Wildlife Area: 415

Forestry District: 442

Last Obs.: 27 September 1995

Voucher: RELEVÉ 1995 Verification: verified

FOREST ON CHANNEL-RIDGE TOPOGRAPHY ALONG W SIDE OF MINN RIVER. DOM'D BY ACER SACCHARINUM UNDER SUPERCANOPY OF STRAIGHT-BOLED POPULUS DELT. FRAXINUS PENN, CELTIS, FRAX NIGRA, & OCCAS ACER NEGUNDO ALSO REACH CANOPY. FREQ CANOPY GAPS. SHRUBS NEARLY ABSENT. HERB LAYER ALL NATIVE, W/MODERATE DIVERSITY, & LIMITED TO DENSE PATCHES ON RIDGES UNDER THIN SPOTS IN CANOPY. WEEDS/EXOTIC LIMITED TO EDGES ALONG RIVER & FIELDS. HEAVY RECENT FLOODING. HERON COLONY.

Element: FLOODPLAIN FOREST SILVER MAPLE SUBTYPE #59

S Rank: S3

EO Size: EO Rank: BC Current Status: 1 Intended Status: 8

Site: BLAKELEY 36 CBS Site #: 52

Ownership: Private

Managed Area(s): not managed or no record

Source: HARRIS, F. (CO BIOL SURVEY 1998)

Location: SCOTT COUNTY, MN

Legal : T113N R26W SW36

Quad Map: HENDERSON (T14C)

Latitude: 44 32' 53" Long: 93 54' 18"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 20 October 1998

Voucher: Verification: verified

FOREST ON CHANNELS & RIDGES ON FLOODPLAIN ALONG E SIDE OF MN RIVER. MATURE STAND DOM'D BY MID-AGED ACER SACCHARINUM (40-50 CM DBH), W/PATCHES OF LARGER TREES DUE TO LOGGING HISTORY. FAIRLY HIGH TREE STEM DENSITY. OCCASIONAL POPULUS DELT, SALLX AMYGD, FRAXINUS PENN, CELTIS & ULMUS AMER. SEVERAL LARGE, EPHEMERAL SLOUGHS. HEAVY SILT/SAND DEPOSITION & DRIFTING FROM PAST FLOODING. ONE OF LARGEST STANDS LEFT.

Element: LOWLAND HARDWOOD FOREST #54

S Rank: S4

EO Size: EO Rank: BC Current Status: Intended Status:

Site: BLAKELEY WAYSIDE CBS Site #: 49

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. &amp; D.WOVCHA (CO BIOL SURVEY 1995)

Location: SCOTT COUNTY, MN

Legal : T113N R25W NENENW31

Quad Map: HENDERSON (T14C)

Latitude: 44 33' 20" Long: 93 52' 44"

Precision: approx. boundaries have been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 15 May 1995

Voucher: RELEVÉ 1995 Verification: verified

FOREST DOMINATED MOSTLY BY MATURE FRAXINUS NIGRA, TILIA, POPULUS DELT, ULMUS RUBRA & CELTIS. FREQ CANOPY GAPS DUE TO ELM DEATHS. HIGH SUBCANOPY COVER OF SAME TREES + OSTRYA, CARPINUS AND OCCAS ACER NEGUNDO. HIGH HERB DIVERSITY INCL EPHEMERALS. NO EXOTICS SEEN. SOME CUT STUMPS PRESENT. MUCH WOODY DEBRIS & SCATT'D HUGE ELM SNAGS. ALONG CREEK ON SANDY ALLUVIAL TERRACE W/IN STEEP-SIDED RAVINE IN HIGHLY DISSECTED TILL IN WACONIA-WASECA MORAINÉ GEOM AREA.

Element: MAPLE-BASSWOOD FOREST (BIG WOODS) #28

S Rank: S2

EO Size: 40 acres approx EO Rank: BC Current Status: Intended Status:

Site: BLAKELEY WAYSIDE (80 acres approx.) CBS Site #: 49

Ownership: MN DNR Parks and Recreation

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. (1995); WENDT, K. (1982); WOOLSEY &amp; MAXSON (1980); CUSHING &amp; SCANLAN (1971) Voucher: RELEVÉ 1971 Verification: verified

Location: SCOTT COUNTY, MN

Legal : T113N R25W NE31

Quad Map: HENDERSON (T14C)

Latitude: 44 33' 18" Long: 93 52' 34"

Precision: approx. boundaries have not been determined

DNR Region: 6

Wildlife Area: 605

Forestry District: 613

Last Obs.: 1995

MATURE MAPLE-BASSWOOD FOREST DOMINATED BY QUERCUS ALBA; Q. BOR. (>85 YRS), TILIA (60-70 YRS), AND ULMUS. VEGETATION COVER VARIES FROM VALLEY FLOOR TO RAVINE SLOPES. SOME SELECTIVE LOGGING. ACER SACCHARUM COMMON IN SOME AREAS AS SEEDLINGS AND SAPLINGS. RICH SPRING FLORA. GYMNOCLADUS PRESENT. STRONGLY DISSECTED TILL PLAIN W RAVINES DRAINING N & E INTO MINN. RIVER. SOILS ARE LOAM TO CLAY LOAM. IN WACONIA-WASECA MORAINÉ GEOMORPHIC REGION.

## ELEMENT OCCURRENCE RECORDS: BLAKELEY WAYSIDE AND JESSENLAND 25

11:35 Tuesday, APRIL 16, 2002

Minnesota Natural Heritage Database  
Element Occurrence Records

MnDNR, Natural Heritage and Nongame Research Program

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Element: MAPLE-BASSWOOD FOREST (BIG WOODS) #167

S Rank: S2

EO Size: EO Rank: BC

Current Status:

Intended Status:

Site: BLAKELEY 19

CBS Site #: 66

Ownership: Private

Managed Area(s): not managed or no record

Source: HARRIS, F. (CO BIOL SURVEY 1996)

MID-AGED FOREST ON STEEP N-FACING SLOPES IN CREEK VALLEY. DOM BY STRAIGHT-BOLED ACER SACCHARUM (AVG 35-45 CM DBH, UP TO 55 CM), W/ MUCH TILIA &amp; QUERCUS RUBRA. CANOPY COVER APPROX 80% &amp; FREQ LARGE DEADFALLS. EXCELLENT SPECIES DIVERSITY INCL SPRING EPHEMERALS. LEVEL AREAS AT TOP OF SLOPE COMPLETELY COVERED BY POPULUS GRAND. EXOTICS NOT SEEN. LOCATED ON TILL IN THE WACONIA-WASECA MORaine GEOMORPHIC AREA.

Location: SCOTT COUNTY, MN

DNR Region: 6

Legal : T113N R25W SE19SWSW20

Wildlife Area: 605

Quad Map: BELLE PLAIN SOUTH (T14D)

Forestry District: 613

Latitude: 44 34' 22" Long: 93 52' 0"

Last Obs.: 30 May 1996

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Element: OAK FOREST (BIG WOODS) MESIC SUBTYPE #17

S Rank: S2

EO Size: EO Rank: C

Current Status:

Intended Status:

Site: BLAKELEY WAYSIDE

CBS Site #: 49

Ownership: Private

Managed Area(s): MINNESOTA VALLEY RECREATION AREA

Source: HARRIS, F. (CO BIOL SURVEY 1995)

FOREST DOM'D MOSTLY BY OPEN-GROWN QUERCUS RUBRA (40-50 CM DBH COMMON) W/MUCH ACER SACCHARUM, QUERCUS ALBA, &amp; TILIA. SUBCAN W/MUCH OSTRYA &amp; ACER W/SCATTERED JUNIPERUS VIRG. SHRUBS SPARSE. MODERATE DIV MESIC FOREST HERBS WELL ESTAB'D THROUGHOUT, INCL EPHEMERALS. PARTS MUCH GRAZED IN PAST &amp; HAVE INCREASED CAREX PENN. EXOTICS NOT SEEN. INCLS SHELTERED COVES OF MB FOREST. ON STEEP W SLOPES IN SANDY SOILS ON EDGE OF MN RIVER VALLEY ON WACONIA-WASECA MORaine GEOM AREA.

Legal : T113N R25W OW300W31

Wildlife Area: 605

Quad Map: HENDERSON (T14C)

Forestry District: 613

Latitude: 44 33' 40" Long: 93 53' 9"

Last Obs.: 01 September 1995

Precision: approx. boundaries have been determined

Voucher: RELEVE 1995

Verification: verified

Element: COLONIAL WATERBIRD NESTING SITE #956

EO Size: EO Rank:

Current Status:

Intended Status:

Site: JESSENLAND 25

CBS Site #: 23

Ownership: Private

Managed Area(s): not managed or no record

Source: HARRIS, F.

JESSENLAND. GREAT BLUE HERON.

Location: SIBLEY COUNTY, MN

DNR Region: 4

Legal : T113N R26W NW25

Wildlife Area: 415

Quad Map: HENDERSON (T14C)

Forestry District: 442

Latitude: 44 34' 0" Long: 93 54' 10"

Last Obs.: 27 September 1995

Precision: within 0.25 mile, confirmed

Voucher:

Verification: verified

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: 95010 EO Rec #: 8469  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 31 Month: AUG Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 49 or Site Name: Blakeley Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: OABWME (Oak Forest (Big Woods) Mesic Subtype)  
Commun. Ranking in Releve: BC Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T14C Universal: 44093E8 (Henderson)  
Township: 113N (e.g. 143N) Range: 25W (e.g. 32W)  
QORT: SE QRT: NW of Section 31  
Latitude: 44 degrees, 33 minutes, 6 seconds LL/GPS registration:  
Longitude: 93 degrees, 52 minutes, 46 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 400 Elev. (ft.): 960 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: LLWL  
\*Geomorphic Unit: 34 (Waconia-Waseca Moraine)

Remarks: Forest on lvl ground @ edge of crk valley on loamy till on S of MN RV  
Even-aged stand dominated by multi-stemmed trees w/30-40cm dbh  
Much woody debris on ground. Occasional old, rotted stumps

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

**Woody Broadleaf Deciduous, Height: 10-20m, Cover continuous**

- 4. Quercus rubra (Northern red oak)
- 2. Fraxinus pennsylvanica (Green ash)
- 1. Acer saccharum (Sugar maple)
- 1. Carya cordiformis (Bitternut hickory)
- 1. Populus tremuloides (Quaking aspen)
- 1. Tilia americana (Basswood)

**Woody Broadleaf Deciduous, Height: 2-10m, Cover interrupted**

- 3. Acer saccharum (Sugar maple)
- 3. Ostrya virginiana (Ironwood, hop hornbeam)
- 1. Carpinus caroliniana (American hornbeam, blue beech)
- R. Fraxinus nigra (Black ash)
- SPC R. Juglans cinerea DD (Butternut)
- R. Prunus serotina OP (Black cherry)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover interrupted**

- 3. Prunus virginiana (Chokecherry)
- 2. Ostrya virginiana (Ironwood, hop hornbeam)
- 1. Acer saccharum (Sugar maple)
- 1. Carya cordiformis (Bitternut hickory)
- 1. Fraxinus pennsylvanica (Green ash)
- +. Cornus alternifolia (Pagoda dogwood)
- +. Cornus foemina cf. ssp. racemosa (Gray dogwood)
- +. Corylus cf. americana (American hazelnut)
- +. Quercus rubra (Northern red oak)
- +. Ribes cynosbati (Prickly gooseberry, dogberry)
- +. Ribes missouriense
- +. Tilia americana (Basswood)
- +. Ulmus (Elm)
- +. Viburnum lentago (Nannyberry)
- +. Viburnum rafinesquianum (Downy arrowwood)
- R. Acer negundo (Box elder)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover interrupted (continued)**

- R. *Dirca palustris* (Leatherwood)
- R. *Prunus cf. serotina* (Black cherry)
- R. *Staphylea trifolia* (Bladdernut)
- R. *Symphoricarpos albus* (Snowberry)
- R. *Zanthoxylum americanum* (Prickly-ash)

**Climber, Height: .0-.5m, Cover rare**

- 2. *Parthenocissus inserta* (Virginia creeper)
- +. *Menispermum canadense* (Canada moonseed)
- NON R. *Vitis riparia* (Wild grape)

**Graminoid, Height: .0-.5m, Cover barely present**

- 1. *Carex rosea*
- +. *Carex cf. blanda*
- +. *Carex pensylvanica*
- +. *Leersia virginica* (White grass)
- +. Unknown or Indeterminable Plant

**Forb, Height: .0-.5m, Cover patchy**

- 1. *Circaea lutetiana* (Enchanter's nightshade)
- 1. *Galium concinnum*
- 1. *Geranium maculatum* (Wild geranium)
- 1. *Hepatica acutiloba* (Sharp-lobed hepatica)
- 1. *Sanguinaria canadensis* (Bloodroot)
- 1. *Sanicula cf. gregaria* (Black snakeroot)
- +. *Amphicarpaea bracteata* (Hog-peanut)
- +. *Aralia nudicaulis* (Wild sarsaparilla)
- +. *Asarum canadense* (Wild ginger)
- +. *Aster cf. cordifolius* (Heart-leaved aster)
- +. *Desmodium glutinosum* (Pointed-leaved tick-trefoil)
- +. *Helianthus* (Sunflower)
- +. *Hydrophyllum virginianum* (Virginia waterleaf)
- +. *Laportea canadensis* (Wood nettle)
- +. *Osmorhiza cf. claytonii* (Sweet cicely)
- +. *Phlox divaricata* (Blue Phlox)
- +. *Phryma leptostachya* (Lopseed)
- +. *Rhus radicans*
- +. *Smilax cf. ecirrata* (Carrion-flower)
- +. *Smilacina racemosa* (False Solomon's-seal)
- +. *Solidago flexicaulis* (Zig-zag goldenrod)
- +. *Thalictrum dioicum* (Early meadow rue)
- +. *Uvularia grandiflora* (Yellow bellwort)
- +. *Viola* (Violet)
- +. *Zizia aurea* (Golden alexanders)
- R. *Apocynum androsaemifolium* (Spreading dogbane)
- R. *Cryptotaenia canadensis* (Honestwort)
- R. *Galium triflorum* (Three-flowered bedstraw)
- R. *Geum canadense* (White avens)
- R. *Maianthemum canadense* (Canada mayflower)
- R. *Monotropa uniflora* (Indian pipe)

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

**GENERAL INFORMATION**

Surveyor's Releve #: 95011 EO Rec #: 21547  
\*Surveyor's ID Code: HAW (Fred S. Harris and Daniel S. Wovcha)  
Date: 15 Month: MAY Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 49 or Site Name: Blakeley Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: LHXXXX (Lowland Hardwood Forest)  
Commun. Ranking in Releve: BC Stand typical of Commun. Type: \_ Releve typical of Stand: \_

**LOCATIONAL INFORMATION**

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T14C Universal: 44093E8 (Henderson)  
Township: 113N (e.g. 143N) Range: 25W (e.g. 32W)  
QORT: NW QRT: NE of Section 31  
Latitude: 44 degrees, 33 minutes, 18 seconds LL/GPS registration:  
Longitude: 93 degrees, 52 minutes, 42 seconds \*Accuracy: \_ Marker: \_

**RELEVE INFORMATION**

Releve Size (sq. m.): 400 Elev. (ft.): 780 Slope: 02N Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: A  
\*Geomorphic Unit: 34 (Waconia-Waseca Moraine)

Remarks: Canopy impacted by elm disease. Main canopy trees aprox. 40cm dbh.  
Much large; medium diam. woody debris in various stages of decay.  
Rich mesic forest groundlayer. No exotics or signs of dist.

**OTHER DATA COLLECTED**

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

**Woody Broadleaf Deciduous, Height: 10-35m, Cover interrupted**

- 2. Celtis occidentalis (Hackberry)
- 2. Fraxinus nigra (Black ash)
- 2. Tilia americana (Basswood)
- R. Quercus macrocarpa DD OP (Bur oak)
- R. Ulmus rubra DD (Red elm, slippery elm)

**Woody Broadleaf Deciduous, Height: 2-10m, Cover rare**

- 3. Ulmus rubra (Red elm, slippery elm)
- 2. Carya cordiformis (Bitternut hickory)
- 2. Celtis occidentalis (Hackberry)
- 1. Acer saccharum (Sugar maple)
- 1. Carpinus caroliniana (American hornbeam, blue beech)
- 1. Corylus (Hazelnut)
- 1. Ostrya virginiana (Ironwood, hop hornbeam)
- 1. Ulmus (Elm)
- +. Cornus alternifolia (Pagoda dogwood)
- +. Fraxinus nigra (Black ash)
- +. Fraxinus cf. pennsylvanica (Green ash)
- +. Prunus virginiana (Chokecherry)
- +. Ulmus thomasii (Rock elm)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover continuous**

- 4. Ulmus cf. rubra (Red elm, slippery elm)
- 1. Celtis occidentalis (Hackberry)
- 1. Prunus virginiana (Chokecherry)
- 1. Ribes cynosbati (Prickly gooseberry, dogberry)
- +. Acer saccharum (Sugar maple)
- +. Carpinus caroliniana (American hornbeam, blue beech)
- +. Corylus (Hazelnut)
- +. Fraxinus nigra (Black ash)
- +. Rubus (Bramble)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover continuous (continued)**

- + . *Tilia americana* (Basswood)
- R. *Cornus alternifolia* (Pagoda dogwood)

**Climber, Height: .0-5m, Cover almost absent**

- + . *Smilax cf. hispida* (Green-briar)
- R. Unknown or Indeterminable Plant

**Graminoid, Height: .0-.5m, Cover almost absent**

- + . *Carex cf. amphibola*
- + . Unknown or Indeterminable Plant

**Forb, Height: .0-.5m, Cover continuous**

- 5. *Equisetum hyemale* (Tall scouring-rush)
- 4. *Hydrophyllum virginianum* (Virginia waterleaf)
- 2. *Sanguinaria canadensis* (Bloodroot)
- 1. *Asarum canadense* (Wild ginger)
- 1. *Laportea canadensis* (Wood nettle)
- 1. *Sanicula* (Sanicle; Black Snakeroot)
- + . *Allium tricoccum* (Wild leek)
- + . *Anemone quinquefolia*
- + . *Caulophyllum thalictroides* (Blue cohosh)
- + . *Claytonia virginica* (Virginia spring-beauty)
- + . *Dicentra cucullaria* (Dutchman's-breeches)
- + . *Erythronium albidum* (White trout-lily)
- + . *Galium aparine* (Cleavers)
- + . *Geranium maculatum* (Wild geranium)
- + . *Geum canadense* (White avens)
- + . *Matteuccia struthiopteris* (Ostrich fern)
- + . *Mitella diphylla* (Miterwort)
- + . *Phlox divaricata* (Blue Phlox)
- + . *Ranunculus abortivus* (Kidney-leaf buttercup)
- + . *Rudbeckia laciniata* (Goldenglow)
- + . cf. *Smilacina* (False Solomon's-seal)
- + . *Solidago flexicaulis* (Zig-zag goldenrod)
- + . *Thalictrum dioicum* (Early meadow rue)
- + . *Trillium* (Trillium; Wakerobin)
- + . *Uvularia grandiflora* (Yellow bellwort)
- + . *Viola pubescens* (Smooth yellow violet)
- + . *Viola cf. sororia* (Common blue violet)
- R. *Arisaema triphyllum* (Jack-in-the-pulpit)
- R. Unknown or Indeterminable Plant



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Releve #: 9604 EO Rec #: 8469  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 22 Month: MAY Year: 1996 (e.g. 04 JUL 1993)  
CBS Site #: 49 or Site Name: Blakeley Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: MBBWXX (Maple-Basswood Forest (Big Woods))  
Commun. Ranking in Releve: B Stand typical of Commun. Type: \_ Releve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T14C Universal: 44093E8 (Henderson)  
Township: 113N (e.g. 143N) Range: 25W (e.g. 32W)  
QORT: NW QRT: NE of Section 31  
Latitude: 44 degrees, 33 minutes, 18 seconds LL/GPS registration:  
Longitude: 93 degrees, 52 minutes, 33 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Releve Size (sq. m.): 400 Elev. (ft.): 900 Slope: 30N Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: LLWL  
\*Geomorphic Unit: 34 (Waconia-Waseca Moraine)

Remarks: Mature forest on upper part of steep slope along ravine.  
In dissected Des Moines lobe till near edge of MN river valley.  
Nice duff layer & heavy leaf cover on ground. sandy lm soil

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

**Woody Broadleaf Deciduous, Height: 10-35m, Cover continuous**

- 3. Acer saccharum (Sugar maple)
- 3. Quercus rubra (Northern red oak)
- 3. Tilia americana (Basswood)

**Woody Broadleaf Deciduous, Height: 2-10m, Cover interrupted**

- 4. Acer saccharum (Sugar maple)
- 1. Ostrya virginiana (Ironwood, hop hornbeam)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover interrupted**

- 4. Acer saccharum (Sugar maple)
- 1. Carya cordiformis (Bitternut hickory)
- + Cornus alternifolia (Pagoda dogwood)
- + Ostrya virginiana (Ironwood, hop hornbeam)
- + Prunus virginiana (Chokecherry)
- + Quercus rubra SD (Northern red oak)
- + Ribes cynosbati ## (Prickly gooseberry, dogberry)
- + Staphylea trifolia (Bladdernut)
- + Tilia americana SD (Basswood)
- + Ulmus (Elm)
- + Viburnum rafinesquianum (Downy arrowwood)
- + Zanthoxylum americanum (Prickly-ash)

**Climber, Height: .0-5m, Cover barely present**

- 1. Menispermum canadense (Canada moonseed)
- 1. Parthenocissus cf. inserta (Virginia creeper)

**Graminoid, Height: .0-.5m, Cover patchy**

- 3. Carex pedunculata
- 2. Carex pensylvanica
- + Brachyelytrum erectum (Bearded short-husk)
- + Carex spengelii

**Graminoid, Height: .0-.5m, Cover patchy (continued)**

- + . *Oryzopsis racemosa* ## (Black-fruited rice-grass)
- R. *Carex cf. blanda*

**Forb, Height: .0-2m, Cover continuous**

- 4. *Asarum canadense* (Wild ginger)
- 3. *Hydrophyllum virginianum* (Virginia waterleaf)
- 2. *Thalictrum dioicum* (Early meadow rue)
- 1. *Aralia nudicaulis* (Wild sarsaparilla)
- 1. *Dicentra cucullaria* (Dutchman's-breeches)
- 1. *Hepatica acutiloba* (Sharp-lobed hepatica)
- 1. *Mitella diphylla* (Miterwort)
- 1. *Osmorhiza cf. claytonii* (Sweet cicely)
- 1. *Solidago flexicaulis* (Zig-zag goldenrod)
- + . *Actaea rubra* (Red baneberry)
- + . *Adiantum pedatum* (Maidenhair fern)
- + . *Allium tricoccum* (Wild leek)
- + . *Anemone quinquefolia*
- + . *Aralia racemosa* (American spikenard)
- + . *Botrychium virginianum* (Rattlesnake-fern)
- + . *Caulophyllum thalictroides* (Blue cohosh)
- + . *Claytonia virginica* (Virginia spring-beauty)
- + . *Erythronium albidum* (White trout-lily)
- + . *Phryma leptostachya* (Lopseed)
- + . *Polygonatum commutatum* (Giant Solomon's-seal)
- + . *Prenanthes alba* (White rattlesnake-root)
- + . *Ranunculus abortivus* (Kidney-leaf buttercup)
- + . *Sanguinaria canadensis* (Bloodroot)
- + . *Sanicula cf. marilandica* (Black snakeroot)
- + . *Uvularia grandiflora* (Yellow bellwort)
- + . *Viola pubescens* (Smooth yellow violet)
- R. *Aster cf. cordifolius* ## (Heart-leaved aster)
- R. *Phlox divaricata* OP (Blue Phlox)
- R. *Rudbeckia laciniata* OP (Goldenglow)
- R. *Smilax cf. ecirrata* ## (Carrion-flower)
- R. *Taraxacum officinale* (Common dandelion)
- R. *Trillium flexipes* OP (Declining trillium)
- R. *Viola sororia* OP ## (Common blue violet)

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Relève #: 95027 EO Rec #: 21605  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 27 Month: SEP Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 2 or Site Name: Jessenland 25  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: FFXSM (Floodplain Forest Silver Maple Subtype)  
Commun. Ranking in Relève:B Stand typical of Commun. Type:\_ Relève typical of Stand:\_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 72 (Sibley)  
Quad Codes DNR: T14C Universal: 44093E8 (Henderson)  
Township: 113N (e.g. 143N) Range: 26W (e.g. 32W)  
QORT: SE QRT: NW of Section 25  
Latitude: 44 degrees, 34 minutes, 3 seconds LL/GPS registration:  
Longitude: 93 degrees, 53 minutes, 57 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Relève Size (sq. m.): 400 Elev. (ft.): 722 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: A  
\*Geomorphic Unit: 32 (Minnesota Valley Outwash)

Remarks: Forest on shallow ridges & channels on bottomlands along MN river.  
On moist heavy silty soils. Was flooded much of spring & early summer  
Abund. wdy debris incl. many trunks in var. stages of decay

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Relève Handbook)

Woody Broadleaf Deciduous, Height: 20-35m, Cover continuous  
5. Acer saccharinum (Silver maple, soft maple)  
R. Fraxinus pennsylvanica OP (Green ash)

Woody Broadleaf Deciduous, Height: 2-20m, Cover patchy  
3. Acer negundo (Box elder)  
2. Acer saccharinum (Silver maple, soft maple)  
1. Fraxinus pennsylvanica (Green ash)

Woody Broadleaf Deciduous, Height: .0-2m, Cover rare  
2. Acer saccharinum (Silver maple, soft maple)  
+. Acer negundo (Box elder)  
+. Celtis occidentalis (Hackberry)  
+. Ulmus (Elm)  
R. Fraxinus cf. pennsylvanica (Green ash)

Climber, Height: .0-2m, Cover rare  
+. Menispermum canadense (Canada moonseed)  
+. Smilax hispida (Green-briar)  
NON +. Vitis riparia (Wild grape)

Graminoid, Height: .0-2m, Cover rare  
2. Leersia virginica (White grass)  
R. Elymus virginicus OP (Wild-rye)

Forb, Height: .0-2m, Cover continuous  
4. Pilea pumila (Clearweed)  
2. Sicyos angulatus (Bur-cucumber)  
1. Laportea canadensis (Wood nettle)  
+. Aster ontarionis (Ontario aster)  
+. Bidens vulgata (Common beggar-ticks)  
+. Physalis cf. virginiana ## (Ground-cherry)  
+. Scutellaria lateriflora (Mad-dog skullcap)

**Forb, Height: .0-2m, Cover continuous (continued)**

- + . Stachys tenuifolia (Rough hedge-nettle)
- R. Polygonum (Knotweed; Smartweed)

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Relève #: 9604 EO Rec #: 8469  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 22 Month: MAY Year: 1996 (e.g. 04 JUL 1993)  
CBS Site #: 49 or Site Name: Blakeley Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: MBBWXX (Maple-Basswood Forest (Big Woods))  
Commun. Ranking in Relève: B Stand typical of Commun. Type: \_ Relève typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 70 (Scott)  
Quad Codes DNR: T14C Universal: 44093E8 (Henderson)  
Township: 113N (e.g. 143N) Range: 25W (e.g. 32W)  
QORT: NW QRT: NE of Section 31  
Latitude: 44 degrees, 33 minutes, 18 seconds LL/GPS registration:  
Longitude: 93 degrees, 52 minutes, 33 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Relève Size (sq. m.): 400 Elev. (ft.): 900 Slope: 30N Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: LLWL  
\*Geomorphic Unit: 34 (Waconia-Waseca Moraine)

Remarks: Mature forest on upper part of steep slope along ravine.  
In dissected Des Moines lobe till near edge of MN river valley.  
Nice duff layer & heavy leaf cover on ground. sandy lm soil

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Relève Handbook)

**Woody Broadleaf Deciduous, Height: 10-35m, Cover continuous**

- 3. Acer saccharum (Sugar maple)
- 3. Quercus rubra (Northern red oak)
- 3. Tilia americana (Basswood)

**Woody Broadleaf Deciduous, Height: 2-10m, Cover interrupted**

- 4. Acer saccharum (Sugar maple)
- 1. Ostrya virginiana (Ironwood, hop hornbeam)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover interrupted**

- 4. Acer saccharum (Sugar maple)
- 1. Carya cordiformis (Bitternut hickory)
- + Cornus alternifolia (Pagoda dogwood)
- + Ostrya virginiana (Ironwood, hop hornbeam)
- + Prunus virginiana (Chokecherry)
- + Quercus rubra SD (Northern red oak)
- + Ribes cynosbati ## (Prickly gooseberry, dogberry)
- + Staphylea trifolia (Bladdernut)
- + Tilia americana SD (Basswood)
- + Ulmus (Elm)
- + Viburnum rafinesquianum (Downy arrowwood)
- + Zanthoxylum americanum (Prickly-ash)

**Climber, Height: .0-5m, Cover barely present**

- 1. Menispermum canadense (Canada moonseed)
- 1. Parthenocissus cf. inserta (Virginia creeper)

**Graminoid, Height: .0-.5m, Cover patchy**

- 3. Carex pedunculata
- 2. Carex pensylvanica
- + Brachyelytrum erectum (Bearded short-husk)
- + Carex sprengei

**Graminoid, Height: .0-.5m, Cover patchy (continued)**

- + . *Oryzopsis racemosa* ## (Black-fruited rice-grass)
- R. *Carex cf. blanda*

**Forb, Height: .0-2m, Cover continuous**

- 4. *Asarum canadense* (Wild ginger)
- 3. *Hydrophyllum virginianum* (Virginia waterleaf)
- 2. *Thalictrum dioicum* (Early meadow rue)
- 1. *Aralia nudicaulis* (Wild sarsaparilla)
- 1. *Dicentra cucullaria* (Dutchman's-breeches)
- 1. *Hepatica acutiloba* (Sharp-lobed hepatica)
- 1. *Mitella diphylla* (Miterwort)
- 1. *Osmorhiza cf. claytonii* (Sweet cicely)
- 1. *Solidago flexicaulis* (Zig-zag goldenrod)
- + . *Actaea rubra* (Red baneberry)
- + . *Adiantum pedatum* (Maidenhair fern)
- + . *Allium tricoccum* (Wild leek)
- + . *Anemone quinquefolia*
- + . *Aralia racemosa* (American spikenard)
- + . *Botrychium virginianum* (Rattlesnake-fern)
- + . *Caulophyllum thalictroides* (Blue cohosh)
- + . *Claytonia virginica* (Virginia spring-beauty)
- + . *Erythronium albidum* (White trout-lily)
- + . *Phryma leptostachya* (Lopseed)
- + . *Polygonatum commutatum* (Giant Solomon's-seal)
- + . *Prenanthes alba* (White rattlesnake-root)
- + . *Ranunculus abortivus* (Kidney-leaf buttercup)
- + . *Sanguinaria canadensis* (Bloodroot)
- + . *Sanicula cf. marilandica* (Black snakeroot)
- + . *Uvularia grandiflora* (Yellow bellwort)
- + . *Viola pubescens* (Smooth yellow violet)
- R. *Aster cf. cordifolius* ## (Heart-leaved aster)
- R. *Phlox divaricata* OP (Blue Phlox)
- R. *Rudbeckia laciniata* OP (Goldenglow)
- R. *Smilax cf. ecirrata* ## (Carrion-flower)
- R. *Taraxacum officinale* (Common dandelion)
- R. *Trillium flexipes* OP (Declining trillium)
- R. *Viola sororia* OP ## (Common blue violet)

- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9605

DATE: 15 MAY 1971

BY: Edward J. Cushing

Scott County, MN

Belle Plain South (T14D)

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM

Department of Natural Resources

500 Lafayette Road

St. Paul, Minnesota 55155

(651) 296-2835

Site Name: Lehnert Woods

Location: NE of NE of S. 31, T. 113N, R. 25W

Ownership: Private Ownership

Heritage Community Element: Dry Prairie (Southwest)

Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)

Soil Atlas Mapping Unit: Minnesota Valley Outwash, 11w1

Other Data Collected:

----- SITE CHARACTERISTICS -----

Partial species list from prairie patch on East and West facing slopes of spur ridge on gray till.

Amelanchier humilis Group (Low juneberry)  
Amorpha canescens (Lead-plant)  
Apocynum cf. androsaemifolium (Spreading dogbane)  
Astragalus crassicaarpus (Buffalo-bean, ground-plum)  
Comandra umbellata (Bastard toad-flax)  
Coreopsis palmata (Stiff tickseed)  
Elymus cf. canadensis (Nodding wild-rye)  
Fragaria virginiana (Common strawberry)  
Galium boreale (Northern bedstraw)  
Juniperus communis var. depressa (Bush juniper)  
Lathyrus venosus (Veiny pea)  
Lithospermum canescens (Hoary puccoon)  
Lonicera dioica var. glaucescens (Wild Honeysuckle)  
Monarda fistulosa (Wild bergamot)  
Ostrya virginiana (Ironwood, hop hornbeam)  
Panicum virgatum (Switchgrass)  
Petalostemon purpureum (Purple prairie-clover)  
Polygala senega (Seneca snakeroot)  
Prunus virginiana (Chokecherry)  
Quercus macrocarpa (Bur oak)  
Rhus radicans  
Ribes americanum (Wild black currant)  
Smilacina racemosa (False Solomon's-seal)  
Sorghastrum nutans (Indian grass)  
Zanthoxylum americanum (Prickly-ash)





## Rush River Wayside

The Rush River Wayside occurs on steep slopes and bottomlands within the Rush River Valley near its confluence with the Minnesota River. The soils within the site are predominantly loams formed in loamy, calcareous till on slopes and uplands (Lester series), or silt loam formed in alluvium on the river bottomlands. A small portion of the site includes loamy sand (Lasa series) formed in outwash deposits from Glacial River Warren (Domeier 1997). As in the Blakeley Wayside, the Rush River Wayside includes a remnant of the Big Woods forests. The vegetation in the wayside at the time of European-American settlement was predominantly mesic maple-basswood and oak forests on level uplands and north to east-facing slopes, oak woodlands, savanna and dry prairie on steep south-facing slopes, and lowland hardwood and floodplain forests on the river bottoms (Marschner 1974, MCBS 1995).

### Native plant communities

#### *Maple-Basswood Forest*

Maple-basswood forest occurs on steep north to east-facing slopes within the wayside on both sides of the Rush River. These are fairly even-aged stands dominated by mid-aged basswood, sugar maple (averaging 40 to 45 cm dbh), and red oak (most commonly 40 to 60 cm dbh). Very few larger trees were seen. The canopy cover is continuous. Few trees of other species were recorded in the canopy, except for a large aspen clone. Subcanopy trees are abundant, with interrupted to continuous cover, and consist mostly of sugar maple and ironwood. Shrubs are generally sparse but include bladder-nut, gooseberries (*Ribes cynosbati* and *R. missouriense*), red-berried elder (*Sambucus pubens*), downy arrowwood (*Viburnum rafinesquianum*), and nannyberry (*Viburnum lentago*). Ground layer herb cover is continuous and diverse, and contains spring ephemerals. Pennsylvania sedge is abundant in parts of these stands, which in mesic forest stands is a consequence of past grazing.

The forests in this wayside are young to middle-aged due to much selective logging in the past. Some stands were clearcut 60-80 years ago, such as on the level ridge top in the NW1/4 of the SW1/4 of the SE1/4 of section 15 that is now dominated by multiple-stemmed trees (oaks and basswoods) that resprouted from cut stumps. The wayside has also been grazed in the past, as evidenced by old barbed-wire fencing, faint cattle trails on some steep slopes, and the high abundance of some grazing increaser species, particularly Pennsylvania sedge. In spite of these disturbances, these forests are in good condition. Though the structure has been altered, the mesic forests still retain a good diversity of native tree species, including many oaks. The overall species diversity in tree, shrub, and herb layers is excellent. Exotic plants, such as common buckthorn, are essentially absent. Management of these forests should allow recovery without any further logging or grazing activities. Surface erosion by rainwater running off upper slopes is causing gullying on some steep slopes and should be addressed.

#### *Mesic Oak Forest*

Small areas of mid-aged mesic oak forest are present on uppermost slopes and ridge tops. These are dominated primarily by multiple-stemmed red oaks (commonly 35-45 cm dbh), and also include white oak, bur oak, and sugar maple. These stands also have a heavy understory component of sugar maple and ironwood. Ground layers also contain much Pennsylvania sedge as well as a good diversity of mesic forest herbs. These stands have the same land-use history as the maple-basswood forest in the wayside.

### *Lowland Hardwood Forest*

A small occurrence of lowland hardwood forest occurs on a terrace at the foot of the slope in the SW1/4 of the SW1/4 of the SW1/4 of section 15. This stand is dominated by black ash and red elm, and has an excellent diversity of native wildflower species.

Some floodplain forest in very poor condition occurs on bottomlands along the Rush River.

### *Dry Prairie - sand/gravel subtype*

A small remnant of dry prairie occurs on the south facing side of a steep-sided knob in the NE1/4 of the NE1/4 of the SE1/4 of section 15. The prairie occurs on excessively-drained sandy/gravelly soil (Lasa series) formed in gravelly outwash deposited by Glacial River Warren (Domeier 1997). Scattered, well-rounded, igneous boulders are present on the ground surface. Little bluestem and sideoats grama grass dominate the prairie, with much hairy grama in loose sandy spots. The flora of the prairie contains species tolerant of very xeric conditions, such as clammy weed (*Polanisia dodecandra*), dotted gayfeather (*Liatris punctata*), narrow-leaved puccoon (*Lithospermum incisum*), green milkweed (*Asclepias viridiflora*), and tall wormwood (*Artemisia campestris*). The overall species diversity in this remnant is fairly low. The prairie slope has undergone much invasion by red cedars and, to a lesser extent, smooth sumac. A dense thicket of prickly ash is situated at the foot of the slope. Heavy erosion from surface water runoff is degrading the prairie slope.

### **Rare Plants**

#### *Low milk-vetch (Astragalus lotiflorus)*

A small number of individuals of the low milk-vetch were observed in the dry prairie on a patch of bare sand. This is a non-listed species that is tracked in the NHIS. The plant typically occurs in dry, gravelly prairies in western Minnesota, and this location is one of only four known occurrences in Minnesota east of Redwood Falls.

A search for snow trillium (*Trillium nivale*), a state special concern species, in May 1996 in lowland hardwood and maple-basswood forest did not reveal any occurrences.

### **Animals**

#### Amphibians and Reptiles

*Survey results:* Herp surveys were conducted on the Rush River Wayside during 1996, 1997, and 1998 field seasons (Figure 7, Appendix 4). Anuran surveys were conducted at one location on 22 April and 6 May 1997, and herp searches were conducted at five locations within forested, riparian habitat on 26 May 1996, 6 May and 4 June 1997, and 3 June 1998. Surveys of the Rush River Wayside documented nine common species including one toad, four frogs, two turtles, and two snakes (Appendix 5).

*Rare amphibians and reptiles:* No rare amphibians or reptiles were found at Rush River Wayside. However, the meandering nature of the Rush River, with numerous sandy points and cut-banks, offers suitable nesting habitat for riverine turtles. Wood turtles were observed in the mid-1900s in the Minnesota River Valley by a local teacher and naturalist (Art Straub, pers. comm.). These observations were not confirmed, however, the forested corridor and potential nesting sites present in the Rush River Wayside could provide ideal habitat for this State Threatened species.

### Breeding-season Birds

*Survey results:* Twelve point counts were conducted in the wayside on 11-12 June 1997; seven in deciduous forest, three in forest-open edge, and two in disturbed floodplain forest (Figure 7, Appendix 4). Red-shouldered Hawk playback surveys were conducted at ten locations (Figure 7, Appendix 4). A substantial portion of the wayside consisted of disturbed uplands and floodplain, with open grass becoming overgrown with shrubs, small trees, and patches of cottonwood. A total of 70 species of birds were detected, including species typical of forest and fragmented habitats (mix of trees, shrubs, and grassland openings; Appendix 6).

The wayside did have several areas of better quality mesic oak and maple-basswood forest. Forest species found on the wayside included Eastern Wood-Pewee, Red-eyed Vireo, Blue-gray Gnatcatcher, Wood Thrush, Ovenbird, and Scarlet Tanager. The only other wayside where MCBS found Wood Thrushes was Blakeley, and Scarlet Tanagers were only found at two additional waysides -- Blakeley and Carver Rapids.

Typical edge species, such as Gray Catbird, Yellow Warbler, Common Yellowthroat, Song Sparrow, and Brown-headed Cowbird, were present on the wayside. However, species requiring more extensive grasslands, such as Eastern Kingbird, Eastern Bluebird, Clay-colored Sparrow, and Eastern Meadowlark were rare or absent. Another grassland species, the Bobolink, was only detected in old fields just outside of the wayside boundary.

Regionally uncommon species included Least Flycatcher, Blue-winged and Mourning warblers, and Eastern Towhee.

#### *Rare birds:*

##### *Red-shouldered Hawk (Buteo lineatus)*

One bird was heard calling far in the distance in the vicinity of the central/eastern portion of the wayside. The exact location of the bird could not be determined, and it may have been outside of the park boundary. Although the specific location of this individual was not found, the record is significant due to the scarcity of this species in the Minnesota River Valley. The floodplain forests on the wayside are relatively young, and are only marginally suitable for Red-shouldered Hawks. It is more likely that this bird was in better quality, more extensive floodplain forest to the east of the wayside, at the confluence of the Rush and Minnesota rivers. However, as the floodplain forest on the wayside is allowed to mature, Red-shouldered Hawks might be expected to occur on the wayside.

##### *Cerulean Warbler (Dendroica cerulea)*

One singing male was found in lowland deciduous forest near the edge of the Rush River, in the southwestern corner of the wayside. Like the Red-shouldered Hawk, Cerulean Warblers require larger tracts of relatively mature, closed canopy forest. Habitat for Cerulean Warblers will improve as forest on the wayside is allowed to mature.

### Mammals

*Survey results:* Small mammal trap grids were set at three locations in the Rush River Wayside during July 1997, two grids in old fields and one grid in an overgrown hillside prairie (Figure 7, Appendix 4). Two species, White-footed mouse and Meadow vole, were the only small

mammals captured on the grids and were both present on all grids (Appendix 7). Foraging bat surveys were conducted at several locations along the river corridor. Species documented were Big brown bats and Little brown myotis.

*Rare mammals:* No rare mammals were found at the Rush River Wayside during MCBS surveys. A portion of an elk antler had been recovered from the bank of the Rush River near the wayside in 1990 (T. Jessen, pers. comm.). This was from the native population of elk that were widespread across the state prior to European-American settlement and extirpated from Minnesota by the late 1800s (Nordquist and Birney 1988).

### **Management Recommendations**

The condition of the wayside's forests will continue to improve in the absence of further logging and grazing. Exotic species should be monitored and controlled before they become a problem. In addition to common buckthorn, the forest should be monitored for garlic mustard, a recently-introduced Eurasian weed that is rapidly colonizing mesic hardwood forests in the state.

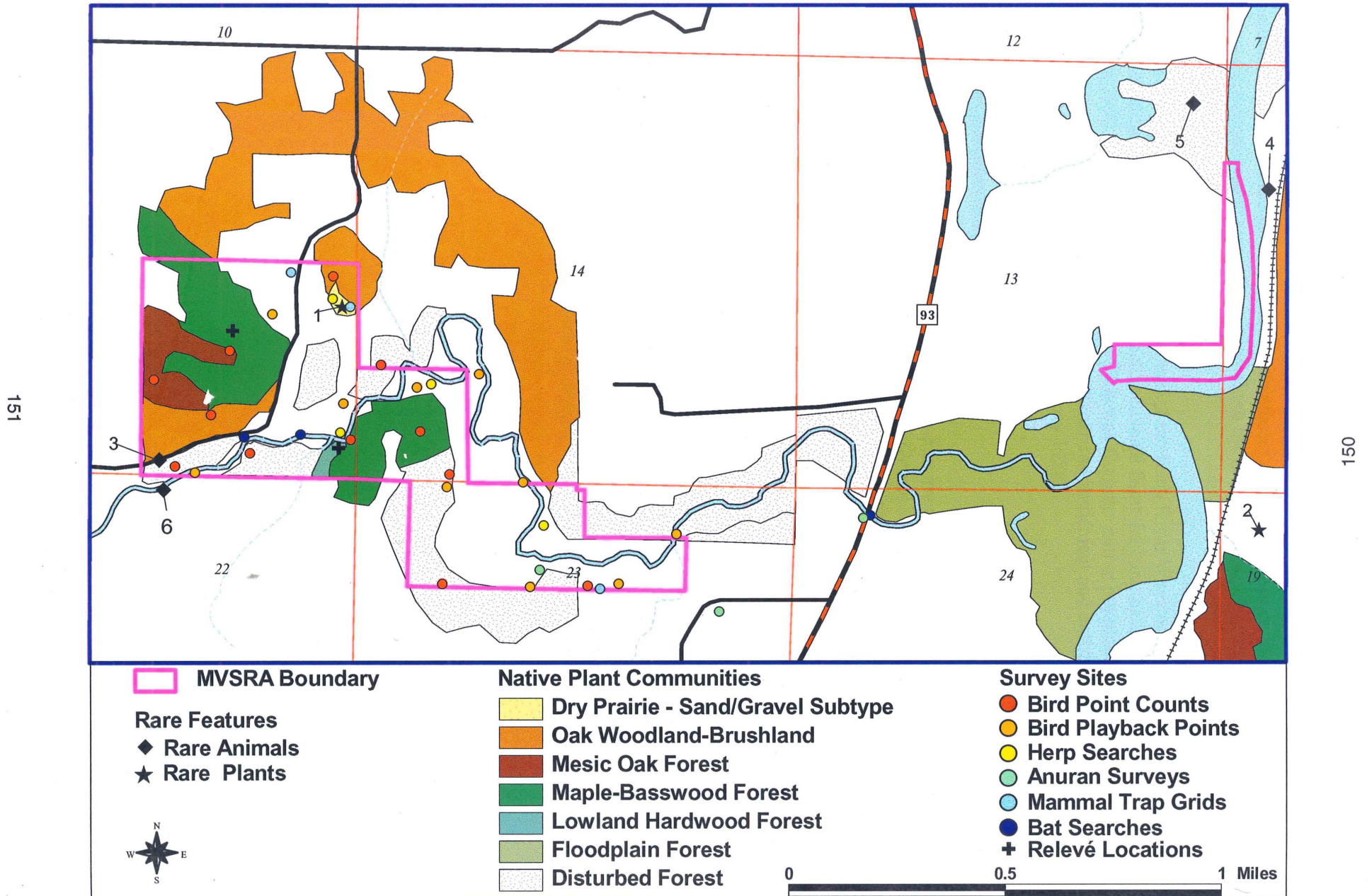
The acquisition or protection through other means of adjacent private tracts would provide an opportunity to restore forests to areas that are currently cultivated or formerly cultivated. This would reduce the fragmented nature of the site and enhance its suitability for plants and animals that need interior forest conditions, such as the Cerulean warbler.

The steep prairie slope is suffering greatly from surface erosion, as it presently has several deep gullies exposing loose, gravelly outwash. The major management needs are to stop the erosion, allow the eroded areas to revegetate, and stop the invasion of woody plants into the prairie. The prairie is fairly sparsely vegetated and any steps to reinvigorate the grass cover, such as controlled burning and removing eastern red cedars, would help hold the soil.



**Figure 7: Rush River Wayside: locations of rare features, native plant communities, and survey sites.**

Minnesota County Biological Survey - Map Version: 22 April, 2002



Key to Rare Features in Figure 7: Rush River Wayside

Map No.	MN Status	Occur. No.*	Scientific Name	Common Name
1	NON	85	<i>Astragalus lotiflorus</i>	Low milk-vetch
2	NON	6	<i>Gymnocladus dioica</i>	Kentucky coffee tree
3	SPC	82	<i>Dendroica cerulea</i>	Cerulean warbler
4	SPC	2144	<i>Haliaeetus leucocephalus</i>	Bald eagle
5	SPC	2143	<i>Haliaeetus leucocephalus</i>	Bald eagle
6	SPC	1	<i>Cervus elaphus</i>	Elk

\* Occurrence number identifies the element record in the Natural Heritage Information System.





Element: DRY PRAIRIE (SOUTHEAST) SAND-GRAVEL SUBTYPE #54  
S Rank: S2  
EO Size: EO Rank: C Current Status: Intended Status:  
Site: RUSH RIVER WAYSIDE CBS Site #: 35  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HARRIS, F. (CO BIOL SURVEY 1995)  
PRAIRIE ON STEEP S SIDE OF ISOLATED KNOB OF TILL WITHIN RUSH RIVER VALLEY. MAIN DOMINANTS ARE SCHIZACHYRIUM SCOP & BOUTELOUA CURT, W/ MUCH BOUTELOUA HIRSUTA IN LOOSE SANDY SPOTS. MODERATE DIVERSITY OF PLANTS ADAPTED TO EXCESSIVELY-DRAINED SOILS. SUBSTRATE IS LOOSE, GRAVELLY OUTWASH & THERE IS MUCH EROSION INCL HUGE WASHOUT ON EAST SIDE. BETWEEN THREE OPENINGS, PRAIRIE IS COMPLETELY OVERGROWN WITH JUNIPERUS VIRG. LOCATED WITHIN WACONIA-WASECA MORaine GEOMORPHIC AREA.

Location: SIBLEY COUNTY, MN  
Legal : T112N R26W NENESE15  
Quad Map: HENDERSON (T14C)  
Latitude: 44 30' 19" Long: 93 55' 44"  
Precision: approx. boundaries have been determined

DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 01 September 1991

Voucher: Verification: verified

Element: FLOODPLAIN FOREST SILVER MAPLE SUBTYPE #58  
S Rank: S3  
EO Size: EO Rank: C Current Status: Intended Status:  
Site: HENDERSON 13 CBS Site #: 37  
Ownership: Private  
Managed Area(s): MN VALLEY RECREATION AREA (STAT BNDRY)  
Source: HARRIS, F. (CO BIOL SURVEY 1998)  
FOREST AT CONFLUENCE OF RUSH & MN RIVERS. EVEN AGE STAND DOM BY YOUNG ACER SACCHARINUM MOSTLY 30-45 CM DBH, W/SOME PATCHES OF MORE MATURE TREES COMMONLY 40-55 CM DBH. OCCAS CLEAN-STEMMED, SUPERCANOPY SIZE POPULUS DELT. MANY FALLEN TREES FROM RECENT HEAVY WINDS. SCATT'D CUT STUMPS FROM RECENT SELECTIVE LOGGING. GROUND LAYER DOM BY LAPORTEA; MOD DIVERSITY TYPICAL HERBS. PHALARIS ABUNDANT NEAR MN RIVER. HEAVY SAND/SILT DEPOSITION FROM PAST FLOODING. ALSO ON QUAD U14B.

Location: SIBLEY COUNTY, MN  
Legal : T112N R26W 0N240S13  
Quad Map: HENDERSON (T14C)  
Latitude: 44 29' 57" Long: 93 53' 34"  
Precision: approx. boundaries have been determined

DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 16 October 1998

Voucher: Verification: verified

Element: MAPLE-BASSWOOD FOREST (BIG WOODS) #116  
S Rank: S2  
EO Size: EO Rank: C Current Status: Intended Status:  
Site: RUSH RIVER WAYSIDE CBS Site #: 35  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: HARRIS, F. (CO BIOL SURVEY 1995)  
EVEN-AGED, 60-90 YEAR OLD, SECOND GROWTH FOREST W/CONTINUOUS CANOPY IN NWSE15 & SWSW14 DOM'D BY ACER SAC (AVG 35-45CM DBH), QUERCUS RUBRA, & TILIA. ULMUS RUB, POPULUS GRAND, FRAX PENN IN CANOPY. PATCHY SUBCANOPY; SPARSE SHRUBS; CONTINUOUS HERB LAYER W/MODERATE DIVERSITY. FEW EXOTICS. PAST GRAZING HAS LEFT AREAS OF HIGH CAREX PENN COVER IN FEW PARTS. ON NW/N/NE SLOPES ON SANDY LOAM IN TILL-DERIVED COLLUVIUM ALONG RUSH RIVER IN WACONIA-WASECA MORaine GEOMORPHIC AREA.

Location: SIBLEY COUNTY, MN  
Legal : T112N R26W NWSE15SW14  
Quad Map: HENDERSON (T14C)  
Latitude: 44 30' 19" Long: 93 56' 5"  
Precision: approx. boundaries have been determined

DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 01 September 1995

Voucher: RELEVE 1995 Verification: verified

Element: MAPLE-BASSWOOD FOREST (BIG WOODS) #155  
S Rank: S2  
EO Size: EO Rank: BC Current Status: 1 Intended Status:  
Site: STRAUB'S WOODS CBS Site #: 3  
Ownership: Private  
Managed Area(s): not managed or no record  
Source: HARRIS, F. (CO BIOL SURVEY 1996)  
MATURE, MOSTLY EVEN-AGED STAND DOM'D BY ACER SACCHARUM (AVG 35-45 CM DBH), TILIA AMER, & QUERCUS RUBRA, W/ULMUS RUBRA, FRAX PENN, FRAX NIGRA, & QUERCUS MAC. OCC LARGER TREES. CONTIN CANOPY, FEW SHRUBS, CONTIN HERB LAYER. EXCELL SPP DIVERSITY INCL SPRING EPHEMERALS. PAST SEL CUTTING REMOVED DEAD ELMS & LEFT SCATT'D MULTI-STEMMED OAKS & TILIA. NO EXOTICS. ON LEVEL UPLAND RIDGE & STEEP NE SLOPE ALONG RAVINE ON E EDGE OF MINN RIVER VALLEY. IN WACONIA-WASECA MORaine GEOMORPH AREA.

Location: LESUEUR COUNTY, MN  
Legal : T112N R25W SWNW19  
Quad Map: LE SUEUR (U14B)  
Latitude: 44 29' 45" Long: 93 53' 8"  
Precision: approx. boundaries have been determined

DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 19 August 1996

Voucher: Verification: verified

Element: OAK FOREST (BIG WOODS) #1  
S Rank: S3  
EO Size: EO Rank: BC Current Status: 1 Intended Status:  
Site: STRAUB'S WOODS CBS Site #: 3  
Ownership: Private  
Managed Area(s): not managed or no record  
Source: HARRIS, F. (CO BIOL SURVEY 1996)  
MATURE STAND DOM'D BY QUERCUS RUBRA (AVG 35-50 CM DBH) & TILIA AMER ON W-FACING SLOPE OF E SIDE OF MN RIVER VALLEY. MOSTLY STRAIGHT TREES EXCEPT SOME MULTI-STEMMED TREES AT TOP OF SLOPE. PAST SELECTIVE CUTTING. CONTIN CANOPY W/MUCH MAPLE IN CANOPY ON LOWER SLOPES. EXCELLENT SHRUB & HERB SPECIES DIVERSITY. NO EXOTICS. IN WACONIA-WASECA MORAINNE GEOMORPHIC AREA.

Location: LESUEUR COUNTY, MN  
Legal : T112N R25W 0WSWNW19  
Quad Map: LE SUEUR (U14B)  
Latitude: 44 29' 41" Long: 93 53' 16"  
Precision: approx. boundaries have been determined

DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 19 August 1996

Voucher: Verification: verified

Element: CERVUS ELAPHUS (ELK) #1  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: HENDERSON 22 CBS Site #: 35  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: JESSEN, T.  
BASAL PORTION OF ELK ANTLER (APPROXIMATELY 2 FEET) FOUND IN GRAVEL BANK OF THE RUSH RIVER DURING SUMMER, 1990. ANTLER WAS IMBEDDED IN SAND AND GRAVEL BANK 3-4 FEET BELOW GROUND LEVEL. PHOTOGRAPHS ON FILE, JESSEN STILL HAS ANTLER. SPECIMEN FROM ORIGINAL, EXTIRPATED POPULATION OF ELK IN STATE.

Location: SIBLEY COUNTY, MN  
Legal : T112N R26W NWNE22  
Quad Map: LE SUEUR (U14B)  
Latitude: 44 29' 59" Long: 93 56' 15"  
Precision: within 0.25 mile, confirmed

DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: July 1990

Voucher: Verification: photo rec.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #82  
State Status: SPECIAL CONCERN  
EO Size: EO Rank: Current Status: Intended Status:  
Site: RUSH RIVER WAYSIDE CBS Site #: 35  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: STUCKER, S. AND SCHUMACHER, C. (CO BIOL SURVEY 1997)  
BREEDING SEASON OBSERVATION. ONE MALE HEARD SINGING. HABITAT WAS MATURE DECIDUOUS FOREST ON SLOPE ADJACENT TO RUSH RIVER. DIVERSE LOWLAND HARDWOODS IMMEDIATELY ADJACENT TO STREAM.

Location: SIBLEY COUNTY, MN  
Legal : T112N R26W SWSE15  
Quad Map: HENDERSON (T14C)  
Latitude: 44 30' 3" Long: 93 56' 13"

DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 12 June 1997

Voucher: Verification: sight or sound rec.

Element: HALIAEETUS LEUCOCEPHALUS (BALD EAGLE) #2143  
State Status: SPECIAL CONCERN Federal Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: HENDERSON 13  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: GELVIN-INNVÆR, L. (DNR)  
NESTING AREA. HENDERSON.

Location: SIBLEY COUNTY, MN  
Legal : T112N R26W NENE13  
Quad Map: HENDERSON (T14C)  
Latitude: 44 30' 44" Long: 93 53' 24"  
Precision: within 0.25 mile, confirmed

DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 2000

Voucher: SI -002B Verification: verified

Element: HALIAEETUS LEUCOCEPHALUS (BALD EAGLE) #2144  
State Status: SPECIAL CONCERN Federal Status: THREATENED  
EO Size: EO Rank: Current Status: Intended Status:  
Site: TYRONE 18  
Ownership: Owner unknown  
Managed Area(s): not managed or no record  
Source: GELVIN-INNVAER, L. (DNR)  
NESTING AREA. HENDERSON.

Location: LESUEUR COUNTY, MN  
Legal : T112N R25W SWNW18  
Quad Map: HENDERSON (T14C)  
Latitude: 44 30' 37" Long: 93 53' 11"  
Precision: within 0.25 mile, confirmed  
DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 2000  
Voucher: SI -002A Verification: verified

Element: ASTRAGALUS LOTIFLORUS (LOW MILK-VETCH) #85  
State Status: No Legal Status  
EO Size: EO Rank: CD Current Status: Intended Status:  
Site: RUSH RIVER WAYSIDE CBS Site #: 35  
Ownership: MN DNR Parks and Recreation  
Managed Area(s): MINNESOTA VALLEY RECREATION AREA  
Source: WHEELER, G.A. (20268)  
CA 2 MI SW OF HENDERSON. DRY PRAIRIE ON W-FACING SLOPE, IN SANDY BLOWOUT. WITH BOUTELOUA HIRSUTA, LIATRIS PUNCTATA, POLANISIA DODECANDRA, EUPHORBIA  
GLYPTOSPERMA. LESS THAN 10 PLANTS OBSERVED AT THIS SITE.

Location: SIBLEY COUNTY, MN  
Legal : T112N R26W SESESE15  
Quad Map: HENDERSON (T14C)  
Latitude: 44 30' 25" Long: 93 55' 47"  
Precision: within 0.25 mile, confirmed  
DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 03 August 1999  
Voucher: MIN Verification: verified

Element: GYMNOCLADUS DIOICA (KENTUCKY COFFEE-TREE) #6  
State Status: No Legal Status  
EO Size: EO Rank: A Current Status: 1 Intended Status:  
Site: STRAUB'S WOODS CBS Site #: 3  
Ownership: Private  
Managed Area(s): not managed or no record  
Source: HARRIS, F. (96132)  
AT LEAST 100 TREES: ONE SMALL CLUSTER ON TOP OF DRY RIDGE IN FORMERLY GRAZED OAK WOODLAND ON S-FACING SLOPE IN SMALL RAVINE IN SEC 19; ANOTHER LARGER  
CLUSTER IN MESIC FOREST AT FOOT OF W-FACING SLOPE IN NESENE24, T112N R26W. LARGEST TREES REACH 45-50 CM DBH. ABUNDANT SMALL SEEDLINGS IN MOIST  
FOOTSLOPE SOILS.

Location: LESUEUR COUNTY, MN  
Legal : T112N R25W NWNWNW19  
Quad Map: LE SUEUR (U14B)  
Latitude: 44 29' 56" Long: 93 53' 12"  
Precision: within 0.25 mile, confirmed  
DNR Region: 4  
Wildlife Area: 415  
Forestry District: 442  
Last Obs.: 17 July 1996  
Voucher: MIN Verification: verified



12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

GENERAL INFORMATION

Surveyor's Relleve #: 95025  
\*Surveyor's ID Code: FSH (Fred S. Harris) EO Rec #: 5231  
Date: 1 Month: SEP Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 0 or Site Name: Rush River Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: MBBWXX (Maple-Basswood Forest (Big Woods))  
Commun. Ranking in Relleve: BC Stand typical of Commun. Type: \_ Relleve typical of Stand: \_

LOCATIONAL INFORMATION

State Code: MN \*County Code: 72 (Sibley)  
Quad Codes DNR: T14C Universal: 44093E8 (Henderson)  
Township: 112N (e.g. 143N) Range: 26W (e.g. 32W)  
QORT: NW QRT: SE of Section 15  
Latitude: 44 degrees, 30 minutes, 19 seconds LL/GPS registration:  
Longitude: 93 degrees, 56 minutes, 5 seconds \*Accuracy: \_ Marker: \_

RELEVE INFORMATION

Relleve Size (sq. m.): 400 Elev. (ft.): 850 Slope: 30N Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: LLWL  
\*Geomorphic Unit: 34 (Waconia-Waseca Moraine)

Remarks: Forest on steep slope on sandy-loam soil over gravelly, bouldery till  
Med. sized boulders at surface. Larger trees not seen.  
Even-aged forest w/dom's avg. 35-45 cm dbh.

OTHER DATA COLLECTED

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Relleve Handbook)

**Woody Broadleaf Deciduous, Height: 10-35m, Cover continuous**

- 3. Acer saccharum (Sugar maple)
- 3. Tilia americana (Basswood)
- 1. Quercus rubra (Northern red oak)

**Woody Broadleaf Deciduous, Height: 2-10m, Cover interrupted**

- 4. Acer saccharum (Sugar maple)
- 1. Ostrya virginiana (Ironwood, hop hornbeam)
- +. Tilia americana (Basswood)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover interrupted**

- 4. Acer saccharum (Sugar maple)
- +. Carya cordiformis (Bitternut hickory)
- +. Fraxinus (Ash)
- +. Ostrya virginiana (Ironwood, hop hornbeam)
- +. Quercus rubra (Northern red oak)
- +. Ribes cynosbati (Prickly gooseberry, dogberry)
- +. Sambucus pubens (Red-berried Elder)
- +. Ulmus (Elm)
- +. Zanthoxylum americanum (Prickly-ash)
- R. Celtis occidentalis (Hackberry)

**Climber, Height: .0-.5m, Cover barely present**

- R. Smilax hispida (Green-briar)

**Graminoid, Height: .0-2m, Cover rare**

- 2. Carex rosea
- 1. Carex pedunculata
- +. Carex cf. blanda ##
- +. Carex pensylvanica
- +. Elymus hystrix (Bottlebrush grass)

**Forb, Height: .0-.5m, Cover continuous**

- 3. *Asarum canadense* (Wild ginger)
- 3. *Hydrophyllum virginianum* (Virginia waterleaf)
- 2. *Impatiens capensis* (Spotted touch-me-not, jewel-we)
- 1. *Hepatica acutiloba* (Sharp-lobed hepatica)
- 1. *Osmorhiza claytonii* (Sweet cicely)
- +. *Adiantum pedatum* (Maidenhair fern)
- +. *Aquilegia canadensis* (Columbine)
- +. *Campanula americana* (Tall bellflower)
- +. *Circaea lutetiana* (Enchanter's nightshade)
- +. *Cryptotaenia canadensis* (Honewort)
- +. *Eupatorium rugosum* (Common snakeroot)
- +. *Galearis spectabilis* (Showy orchis)
- +. *Mitella diphylla* (Miterwort)
- +. *Phryma leptostachya* (Lopseed)
- +. *Ranunculus* (Buttercup; Crowfoot)
- +. *Sanguinaria canadensis* (Bloodroot)
- +. *Solidago flexicaulis* (Zig-zag goldenrod)
- +. *Trillium cf. flexipes* (Declining trillium)
- +. Unknown or Indeterminable Plant
- +. *Urtica cf. dioica* (Stinging nettle)
- +. *Uvularia grandiflora* (Yellow bellwort)
- +. *Viola cf. pratincola*
- R. *Aralia racemosa* (American spikenard)
- R. *Arisaema triphyllum* (Jack-in-the-pulpit)
- R. *Botrychium virginianum* OP (Rattlesnake-fern)
- R. Unknown or Indeterminable Plant ## (Goosefoot)
- R. *Geum canadense* (White avens)
- R. Unknown or Indeterminable Plant ##
- R. *Viola pubescens* (Smooth yellow violet)

12:17 Monday, APRIL 29, 2002

----- FINAL RELEVE REPORT FORM, MINNESOTA VEGETATION DATABASE -----

**GENERAL INFORMATION**

Surveyor's Releve #: 95026 EO Rec #: 5231  
\*Surveyor's ID Code: FSH (Fred S. Harris)  
Date: 26 Month: SEP Year: 1995 (e.g. 04 JUL 1993)  
CBS Site #: 2 or Site Name: Rush River Wayside  
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)  
\*NC Code: LHXXXX (Lowland Hardwood Forest)  
Commun. Ranking in Releve: AB Stand typical of Commun. Type: \_ Releve typical of Stand: \_

**LOCATIONAL INFORMATION**

State Code: MN \*County Code: 72 (Sibley)  
Quad Codes DNR: T14C Universal: 44093E8 (Henderson)  
Township: 112N (e.g. 143N) Range: 26W (e.g. 32W)  
QORT: SE QRT: SE of Section 15  
Latitude: 44 degrees, 30 minutes, 5 seconds LL/GPS registration:  
Longitude: 93 degrees, 55 minutes, 47 seconds \*Accuracy: \_ Marker: \_

**RELEVE INFORMATION**

Releve Size (sq. m.): 400 Elev. (ft.): 755 Slope: 00LV Slope Position: \_  
\*ECS Subsection: 18 (Big Woods)  
Minnesota Soil Atlas Mapping Unit: A  
\*Geomorphic Unit: 34 (Waconia-Waseca Moraine)

Remarks: Mature forest w/ straight boled trees reaching 65 cm dbh.  
On level terrace south of Rush River  
Heavy, moist silty soil

**OTHER DATA COLLECTED**

Soils: N Forestry: N o=old growth Water Chemistry: N Publication: N  
y=forestry  
\* = Variables with computerized code dictionaries (See Releve Handbook)

**Woody Broadleaf Deciduous, Height: 10-35m, Cover continuous**

- 4. Fraxinus nigra (Black ash)
- 3. Ulmus rubra (Red elm, slippery elm)
- +. Acer saccharinum OP (Silver maple, soft maple)
- +. Populus deltoides OP (Cottonwood)

**Woody Broadleaf Deciduous, Height: 2-10m, Cover continuous**

- 3. Fraxinus nigra (Black ash)
- 3. Ostrya virginiana (Ironwood, hop hornbeam)
- 1. Acer saccharum (Sugar maple)
- +. Celtis occidentalis (Hackberry)

**Woody Broadleaf Deciduous, Height: .0-2m, Cover rare**

- 1. Acer saccharum (Sugar maple)
- 1. Prunus virginiana (Chokecherry)
- 1. Ribes missouriense
- +. Celtis occidentalis (Hackberry)
- +. Fraxinus cf. nigra (Black ash)
- +. Ribes cynosbati (Prickly gooseberry, dogberry)
- +. Ulmus cf. rubra (Red elm, slippery elm)
- +. Viburnum lentago ## (Nannyberry)
- R. Carya cordiformis OP (Bitternut hickory)
- R. Rhamnus cathartica (Common buckthorn)
- R. Sambucus cf. pubens OP (Red-berried Elder)
- R. Tilia americana (Basswood)

**Climber, Height: .0-2m, Cover barely present**

- 1. Parthenocissus inserta (Virginia creeper)
- +. Menispermum canadense (Canada moonseed)
- +. Smilax hispida (Green-briar)

**Graminoid, Height: .0-2m, Cover rare**

- 2. Carex pedunculata
- 1. Carex cf. rosea
- +. Carex amphibola ##
- +. Cinna arundinacea ## (Wood reedgrass)
- +. Elymus hystrix (Bottlebrush grass)
- +. Unknown or Indeterminable Plant

**Forb, Height: .0-2m, Cover continuous**

- 4. Hydrophyllum virginianum (Virginia waterleaf)
- 2. Sanicula gregaria (Black snakeroot)
- 1. Cryptotaenia canadensis (Honewort)
- +. Allium tricoccum (Wild leek)
- +. Arisaema triphyllum (Jack-in-the-pulpit)
- +. Aster ontarionis ## (Ontario aster)
- +. Caulophyllum thalictroides (Blue cohosh)
- +. Circaea lutetiana (Enchanter's nightshade)
- +. Geum canadense (White avens)
- +. Laportea canadensis (Wood nettle)
- +. Liliium cf. michiganense (Michigan lily)
- +. Maianthemum canadense (Canada mayflower)
- +. Osmorhiza claytonii (Sweet cicely)
- +. Pilea pumila (Clearweed)
- +. Unknown or Indeterminable Plant (Buttercup; Crowfoot)
- +. Smilax cf. ecirrata (Carrion-flower)
- +. Smilacina racemosa (False Solomon's-seal)
- +. Thalictrum dasycarpum (Tall meadow rue)
- +. Uvularia grandiflora (Yellow bellwort)
- +. Viola cf. pratincola
- +. Viola pubescens (Smooth yellow violet)
- +. Viola sororia ## (Common blue violet)
- R. Aster cordifolius (Heart-leaved aster)
- R. Trillium flexipes (Declining trillium)



- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9873                    MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
DATE: 0                    1999                    Department of Natural Resources  
BY: Fred Harris & Gerald Wheeler                    500 Lafayette Road  
Sibley County, MN                    St. Paul, Minnesota 55155  
Henderson (T14C)                    (651) 296-2835

Site Name: Rush River Wayside  
Location: E of S. 15, T. 112N, R. 26W  
Ownership: MN DNR Parks and Recreation  
Heritage Community Element: Dry Prairie (Southeast) Hill Subtype  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit:  
Other Data Collected:

----- SITE CHARACTERISTICS -----

List is from dry prairie in NE SE 15 & SW SE 15. From Harris (1995) & Wheeler (1999).

Achillea millefolium  
Allium stellatum (Prairie wild onion)  
Ambrosia artemisiifolia (Common ragweed)  
Ambrosia coronopifolia (Western ragweed)  
Amorpha canescens (Lead-plant)  
Andropogon gerardii (Big bluestem)  
Anemone cylindrica (Thimbleweed)  
Anemone virginiana (Thimbleweed)  
Antennaria plantaginifolia (Plantain-leaved pussytoes)  
Artemisia serrata ((Leafy mugwort))  
Artemisia campestris cf. ssp. caudata  
Asclepias syriaca (Common milkweed)  
Asclepias verticillata  
Asclepias viridiflora (Green milkweed)  
Aster oblongifolius (Aromatic aster)  
Aster oolentangiensis (Sky-blue aster)  
Aster sericeus (Silky aster)  
Astragalus canadensis (Canada milk-vetch)  
Astragalus crassicaarpus (Buffalo-bean, ground-plum)  
NON Astragalus lotiflorus  
Bouteloua curtipendula (Side-oats grama)  
Bouteloua hirsuta (Hairy grama)  
Calylophus serrulata (Toothed-leaved evening primros)  
Campanula rotundifolia (Harebell)  
Carex umbellata  
Cenchrus longispinus (Sandbur)  
Chenopodium album (Lamb's quarters)  
Cirsium altissimum (Tall thistle)  
Cyperus lupulinus  
Elymus canadensis (Nodding wild-rye)  
Euphorbia glyptosperma (Ridge-seeded spurge)  
Hedeoma hispida (Mock pennyroyal)  
Heuchera richardsonii (Alum-root)  
Juniperus virginiana (Red cedar)  
Liatris aspera (Rough blazing star)  
Liatris punctata (Dotted blazing-star)

Species List Number 9873 Continued, Page 2

Linum sulcatum (Yellow flax)  
Lithospermum canescens (Hoary puccoon)  
Lithospermum incisum (Narrow-leaved puccoon)  
Melilotus alba (White sweet-clover)  
Melilotus officinalis (Yellow sweet-clover)  
Mirabilis hirsuta (Hairy four-o'clock)  
Monarda fistulosa (Wild bergamot)  
Muhlenbergia cuspidata (Plains muhly)  
Oenothera biennis (Common evening-primrose)  
Onosmodium molle  
Panicum oligosanthes (Scribner's panic grass)  
Petalostemon purpureum (Purple prairie-clover)  
Polanisia dodecandra cf. var. dodecandra (Clammy-weed)  
Polygonum tenue (Slender knotweed)  
Potentilla arguta (Tall cinquefoil)  
Psoralea esculenta (Breadroot, prairie-turnip)  
Pulsatilla nuttalliana (Pasque-flower)  
Ratibida pinnata (Gray-headed coneflower)  
Rhus glabra (Smooth sumac)  
Rosa arkansana (Prairie rose)  
Schizachyrium scoparium (Little Bluestem)  
Setaria viridis (Green foxtail)  
Silene antirrhina (Sleepy catchfly)  
Solidago nemoralis (Gray goldenrod)  
Sorghastrum nutans (Indian grass)  
Sporobolus heterolepis (Prairie dropseed)  
Stipa spartea (Porcupine grass)  
Tragopogon dubius (Yellow goat's-beard)  
Verbena stricta (Hairy blue vervain)  
Verbascum thapsus (Mullein)  
Viola pedatifida (Prairie bird-foot violet)  
Zanthoxylum americanum (Prickly-ash)

- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9874                    MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
DATE: 0            1999                    Department of Natural Resources  
BY: Fred Harris & Gerald Wheeler            500 Lafayette Road  
Sibley County, MN                    St. Paul, Minnesota 55155  
Henderson (T14C)                    (651) 296-2835

Site Name: Rush River Wayside  
Location: E of S. 15, T. 112N, R. 26W  
Ownership: MN DNR Parks and Recreation  
Heritage Community Element: Lowland Hardwood Forest  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit:  
Other Data Collected:

----- SITE CHARACTERISTICS -----

List includes Floodplain Forest and Lowland Hardwood stands along Rush River. From Harris (1995) and Wheeler (1999).

no match in MNTaxa, MossTaxa, or LichTaxa  
Acer saccharinum (Silver maple, soft maple)  
Apios americana (Groundnut)  
Arctium minus (Common burdock)  
Arisaema triphyllum (Jack-in-the-pulpit)  
Aster ontarionis (Ontario aster)  
Campanula americana (Tall bellflower)  
Carex amphibola cf. var. turgida  
Celtis occidentalis (Hackberry)  
Clematis virginiana (Virgin's bower)  
Conyza canadensis (Horseweed)  
Cryptotaenia canadensis (Honewort)  
Elymus villosus (Wild-rye)  
Elymus virginicus (Wild-rye)  
Equisetum hyemale (Tall scouring-rush)  
Fraxinus nigra (Black ash)  
Geranium maculatum (Wild geranium)  
Glechoma hederacea (Creeping charlie)  
Heracleum lanatum (Cow-parsnip)  
Impatiens capensis (Spotted touch-me-not, jewel-we)  
Laportea canadensis (Wood nettle)  
Leonurus cardiaca (Motherwort)  
Lonicera tatarica (Tartarian Honeysuckle)  
Matteuccia struthiopteris (Ostrich fern)  
Menispermum canadense (Canada moonseed)  
Mentha arvensis (Common mint)  
Nepeta cataria (Catnip)  
Ostrya virginiana (Ironwood, hop hornbeam)  
Pilea pumila (Clearweed)  
Populus deltoides (Cottonwood)  
Ranunculus abortivus (Kidney-leaf buttercup)  
Rudbeckia laciniata (Goldenglow)  
Sambucus pubens (Red-berried Elder)  
Scrophularia lanceolata (Lance-leaved figwort)  
Smilax hispida (Green-briar)  
Solanum dulcamara (Bittersweet nightshade)

Species List Number 9874 Continued, Page 2

Solanum ptycanthum (Black nightshade)  
Stachys palustris (Hedge-nettle)  
Teucrium canadense (Germander)  
Ulmus rubra (Red elm, slippery elm)  
Urtica dioica (Stinging nettle)  
Verbena urticifolia (White vervain)  
Viola sororia (Common blue violet)  
NON Vitis riparia (Wild grape)

- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9875                    MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
DATE: 0                    1999                    Department of Natural Resources  
BY: Fred S. Harris                    500 Lafayette Road  
Sibley County, MN                    St. Paul, Minnesota 55155  
Henderson (T14C)                    (651) 296-2835

Site Name: Rush River Wayside  
Location: E of S. 15, T. 112N, R. 26W  
Ownership: MN DNR Parks and Recreation  
Heritage Community Element: Maple-Basswood Forest (Big Woods)  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit:  
Other Data Collected:

----- SITE CHARACTERISTICS -----

List includes Maple Basswood Forest, Mesic Oak Forest, and Oak Woodlnd  
from E 15 and W 14. From Harris (1995) and Wheeler (1999).

Acer negundo (Box elder)  
Acer saccharum (Sugar maple)  
Actaea rubra (Red baneberry)  
Adiantum pedatum (Maidenhair fern)  
Agrimonia gryposepala (Agrimony)  
Amphicarpaea bracteata (Hog-peanut)  
Aplectrum hyemale (Putty-root)  
Aquilegia canadensis (Columbine)  
Arabis (Rock-Cress)  
Asarum canadense (Wild ginger)  
Aster cordifolius (Heart-leaved aster)  
Athyrium angustum (Lady fern)  
Betula papyrifera (Paper birch)  
Botrychium virginianum (Rattlesnake-fern)  
Carex blanda  
Carex cephalophora  
Carex eburnea  
Carex hirtifolia  
Carex peckii  
Carex pedunculata  
Carex pennsylvanica  
Carex rosea  
Carex saximontana  
Carex sprengei  
Carex tenera  
Carya cordiformis (Bitternut hickory)  
Caulophyllum thalictroides (Blue cohosh)  
Celastrus scandens (Climbing bittersweet)  
Celtis occidentalis (Hackberry)  
Cinna arundinacea (Wood reedgrass)  
Circaea lutetiana (Enchanter's nightshade)  
Cornus foemina (Gray dogwood)  
Corylus americana (American hazelnut)  
Cryptotaenia canadensis (Honestwort)  
Desmodium glutinosum (Pointed-leaved tick-trefoil)  
Elymus hystrix (Bottlebrush grass)

Species List Number 9875 Continued, Page 2

Erigeron philadelphicus (Philadelphia fleabane)  
Erigeron strigosus (Daisy fleabane)  
Eupatorium rugosum (Common snakeroot)  
Festuca obtusa (Nodding fescue)  
Fragaria virginiana (Common strawberry)  
Fraxinus pennsylvanica (Green ash)  
Galearis spectabilis (Showy orchis)  
Galium aparine (Cleavers)  
Galium concinnum  
Galium triflorum (Three-flowered bedstraw)  
Geum canadense (White avens)  
Hepatica acutiloba (Sharp-lobed hepatica)  
Hydrophyllum virginianum (Virginia waterleaf)  
SPC Juglans cinerea (Butternut)  
Juniperus communis (Bush juniper)  
Lactuca canadensis (Canada wild lettuce)  
Lappula squarrosa (Stickseed)  
Lonicera dioica (Wild Honeysuckle)  
Mitella diphylla (Miterwort)  
Oryzopsis racemosa (Black-fruited rice-grass)  
Osmorhiza claytonii (Sweet cicely)  
Osmorhiza longistylis (Anise-root)  
Ostrya virginiana (Ironwood, hop hornbeam)  
Oxalis stricta (Yellow wood-sorrel)  
Parthenocissus inserta (Virginia creeper)  
Phlox divaricata (Blue Phlox)  
Phryma leptostachya (Lopseed)  
Polygonatum commutatum (Giant Solomon's-seal)  
Populus tremuloides (Quaking aspen)  
Prenanthes alba (White rattlesnake-root)  
Prunus serotina (Black cherry)  
Prunus virginiana (Chokecherry)  
Quercus alba (White oak)  
Quercus macrocarpa (Bur oak)  
Quercus rubra (Northern red oak)  
Rhamnus cathartica (Common buckthorn)  
Rhus typhina (Staghorn sumac)  
Rhus radicans (Poison ivy)  
Ribes cynosbati (Prickly gooseberry, dogberry)  
Ribes missouriense  
Rubus occidentalis (Black raspberry)  
Rubus strigosus (Red raspberry)  
Sambucus pubens (Red-berried Elder)  
Sanguinaria canadensis (Bloodroot)  
Sanicula marilandica (Black snakeroot)  
Smilax ecirrata (Carrion-flower)  
Smilax lasioneura (Carrion-flower)  
Smilacina racemosa (False Solomon's-seal)  
Solidago flexicaulis (Zig-zag goldenrod)  
Staphylea trifolia (Bladdernut)  
Thalictrum dioicum (Early meadow rue)  
Tilia americana (Basswood)  
Trillium cernuum  
Triosteum perfoliatum (Horse-gentian)  
Ulmus americana (American elm)  
Ulmus rubra (Red elm, slippery elm)  
Uvularia grandiflora (Yellow bellwort)  
Viburnum lentago (Nannyberry)

Species List Number 9875 Continued, Page 3

Viburnum rafinesquianum (Downy arrowwood)  
Vicia americana (American vetch)  
Viola sororia (Common blue violet)  
NON Vitis riparia (Wild grape)





- FINAL SPECIES LIST REPORT FORM, MINNESOTA VEGETATION DATABASE -

DNR SPECIES LIST NUMBER: 9876  
DATE: 0 1999  
BY: Gerald A. Wheeler  
Sibley County, MN  
Henderson (T14C)

MINNESOTA NATURAL HERITAGE & NONGAME RESEARCH PROGRAM  
Department of Natural Resources  
500 Lafayette Road  
St. Paul, Minnesota 55155  
(651) 296-2835

Site Name: Rush River Wayside  
Location: E of S. 15, T. 112N, R. 26W  
Ownership: MN DNR Parks and Recreation  
Heritage Community Element: Unknown Community Name  
Element Occurrence Size: 0 (acres), Rank: na, Sitesize: 0 (acres)  
Soil Atlas Mapping Unit:  
Other Data Collected:

----- SITE CHARACTERISTICS -----

List is from banks of Rush River.

Agrostis stolonifera cf. var. major (Redtop)  
Amaranthus tamariscinus (Water-hemp)  
Artemisia biennis (Biennial wormwood)  
Bidens vulgata (Common beggar-ticks)  
Cornus stolonifera (Red-osier dogwood)  
Cyperus aristatus  
Cyperus esculentus  
Equisetum arvense (Field horsetail)  
Eragrostis hypnoides  
Erysimum cheiranthoides (Wormseed mustard)  
Euthamia graminifolia (Grass-leaved goldenrod)  
Juncus dudleyi (Dudley's rush)  
Juncus tenuis (Path rush)  
Juncus torreyi (Species of rush)  
Mimulus ringens (Monkey-flower)  
Panicum virgatum (Switchgrass)  
Penthorum sedoides (Ditch stonecrop)  
Phalaris arundinacea (Reed canary grass)  
Phleum pratense (Timothy)  
Polygonum pennsylvanicum (Pennsylvania smartweed)  
Potentilla norvegica (Rough cinquefoil)  
Ranunculus cymbalaria (Sea-side crowfoot)  
Rorippa islandica cf. var. fernaldiana (Yellow-cress)  
Rumex crispus (Curly dock)  
Sagittaria latifolia (Broad-leaved arrowhead)  
Salix amygdaloides (Peach-leaved willow)  
Salix exigua (Sand-bar willow)  
Scirpus atrovirens  
Verbena hastata (Blue vervain)  
Xanthium strumarium (Cocklebur)



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## Appendix 1: Codes for Selected Fields in Relevé Printouts\*

### EXAMPLE RECORD:

**Forb, Height: .0-2m, Cover continuous**

*(life form, height classes, coverage)*

<b>SPC</b>	<b>R . 1</b>	<b>Panax quinquefolius</b>	<b>OP</b>	<b>(American ginseng)</b>
<i>(status cover.sociability)</i>		<i>scientific name</i>	<i>remarks</i>	<i>common name)</i>

### CODES:

#### Life Forms

Broadleaf evergreen  
 Broadleaf deciduous  
 Needleleaf evergreen  
 Needleleaf deciduous  
 Graminoid  
 Forb  
 Lichens & mosses  
 Climbers

#### Height Classes

>35m.  
 20-35m.  
 10-20m.  
 5-10m.  
 2-5m.  
 .5-2m.  
 .1-.5m.  
 <.1m.

#### Coverage

continuous >75%  
 interrupted 50-75%  
 patchy 25-50%  
 rare 5-25%  
 barely present 1-5%  
 almost absent <1%

#### Status

END State Endangered  
 THR State Threatened  
 SPC State Special Concern  
 NON Not listed, tracked

#### Cover

5 75-100%  
 4 50-75%  
 3 25-50%  
 2 5-25%  
 1 1-5%  
 + <1%  
 R single

#### Sociability

5 extensive mat  
 4 small colonies, broken mat  
 3 large group, many plants  
 2 grouped, few plants  
 1 growing singly

#### Remarks

OP outside plot (within 1 m.)  
 SD seedling  
 DD dead  
 DY dying  
 GE germinating  
 ## specimen collected

\* for full explanations of relevé fields, see the MNDNR Natural Heritage Program Relevé Handbook (Almendinger 1987)





**Appendix 2: DNR Relevé Numbers, Plant Community Types, Dates, Sizes and Locations of Relevés in the Minnesota Valley State Recreation Area**

DNR Relevé #	Native Plant Community Type	Date	Plot Size (sq. m.)	Legal Location	NAD27 Latitude* (deg, min, sec)	NAD27 Longitude* (deg, min, sec)
<b>Carver Rapids Wayside</b>						
5024	Dry Prairie (Southeast) Sand-gravel Subtype	6-Oct-96	100	T115N R23W NENE31	44,43,45.01	-93,37,20.13
8208	Mesic Prairie (Southeast)	22-Jun-98	100	T115N R23W NENW32	44,43,49.01	-93,36,48.07
8207	Rock Outcrop (Central)	22-Jun-98	3	T115N R23W NENW32	44,43,50.02	-93,36,45.08
8206	Rock Outcrop (Central)	22-Jun-98	6	T115N R23W NENW32	44,43,50.02	-93,36,45.08
8364	Floodplain Forest - Silver Maple Subtype	30-Aug-00	400	T115N R23W SWNE31	44,43,37.14	-93,37,47.55
<b>Sioux Vista Dunes and Thompson Ferry</b>						
5025	Dry Prairie (Southeast) Barrens Subtype	14-Jul-95	100	T114N R24W SWSE12	44,41,24.88	-93,39,00.61
<b>Lawrence and Belle Plaine Waysides</b>						
7198	Mesic Prairie (Southeast)	29-Aug-97	100	T114N R24W NWSE28	44,39,05.20	-93,42,46.55
5026	Wet Prairie (Southeast)	7-Aug-95	100	T114N R24W SENE28	44,39,16.94	-93,42,35.53
5028	Wet Prairie (Southeast)	7-Aug-95	100	T114N R24W NENE28	44,39,15.51	-93,42,31.27
5030	Rich Fen (Transition)	10-Aug-95	100	T114N R24W NENW27	44,39,28.20	-93,41,53.85
5027	Mixed Emergent Marsh (Prairie)	7-Aug-95	100	T114N R24W NENE28	44,39,18.66	-93,42,30.53
5029	Mixed Emergent Marsh (Prairie)	8-Aug-95	100	T114N R24W NWNW27	44,39,26.86	-93,42,11.44
8226	Wet Meadow	19-Aug-99	100	T114N R24W SWNE28	44,39,12.08	-93,42,42.24
8227	Wet Meadow	19-Aug-99	100	T114N R24W SWNE28	44,39,14.97	-93,42,45.42
5039	Floodplain Forest - Silver Maple Subtype	13-Sep-95	400	T114N R24W NWNW22	44,40,21.91	-93,42,00.32
<b>Blakeley Wayside and Jessenland 25</b>						
6098	Maple-basswood Forest (Big Woods)	22-May-96	400	T113N R25W NWNE31	44,33,17.99	-93,52,32.66
5033	Oak Forest (Big Woods) Mesic Subtype	31-Aug-95	400	T113N R25W SENW31	44,33,06.07	-93,52,46.15
5034	Lowland Hardwood Forest	15-May-95	400	T113N R25W NWNE31	44,33,18.10	-93,52,42.11
5050	Floodplain Forest - Silver Maple Subtype	27-Sep-95	400	T113N R26W SENW25	44,34,03.03	-93,53,57.08
<b>Rush River Wayside</b>						
5048	Maple-Basswood Forest (Big Woods)	1-Sep-95	400	T112N R26W NWSE15	44,30,18.63	-93,56,04.95
5049	Lowland Hardwood Forest	26-Sep-95	400	T112N R26W SESE15	44,30,04.64	-93,55,46.98

\* determined in ArcView 3.2, not by field measurement



Appendix 3. Rare animals and animal aggregations associated with habitats represented in the Minnesota River Valley State Recreational Area.

[Species are associated with their primary habitats. Species and aggregations identified as "Element" do not have state statuses but are tracked by the NHIS Rare Features database.]

Species	State status	
<b>DECIDUOUS FORESTS</b>		
Birds:	Bald eagle ( <i>Haliaeetus leucocephalus</i> ) Red-shouldered Hawk ( <i>Buteo lineatus</i> ) Acadian flycatcher ( <i>Empidonax virescens</i> ) Cerulean warbler ( <i>Dendroica cerulea</i> ) Louisiana waterthrush ( <i>Seiurus motacilla</i> )	Special Concern Special Concern Special Concern Special Concern Special Concern
Mammals:	Northern myotis ( <i>Myotis septentrionalis</i> ) Eastern pipistrelle ( <i>Pipistrellus subflavus</i> ) Bat maternity colonies and hibernacula	Special Concern Special Concern Element
<b>FOREST EDGES and OPENINGS</b>		
Reptiles:	Five-lined skink ( <i>Eumeces fasciatus</i> ) Racer ( <i>Coluber constrictor</i> ) Fox snake ( <i>Elaphe vulpina</i> ) Eastern hognose snake ( <i>Heterodon platirhinos</i> ) Milk snake ( <i>Lampropeltis triangulum</i> ) Timber rattlesnake ( <i>Crotalus horridus</i> )	Special Concern Special Concern Element Element Element Threatened
Birds:	Hooded warbler ( <i>Wilsonia citrina</i> ) Bell's vireo ( <i>Vireo bellii</i> )	Special Concern Element
Mammals:	Eastern spotted skunk ( <i>Spilogale putorius</i> )	Threatened
<b>PRAIRIES (native and restored) and OLD FIELDS</b>		
Reptiles:	Western hognose snake ( <i>Heterodon nasicus</i> ) Gopher snake ( <i>Pituophis catenifer</i> )	Special Concern Special Concern
Birds:	Upland sandpiper ( <i>Bartramia longicauda</i> ) Loggerhead shrike ( <i>Lanius ludovicianus</i> ) Henslow's sparrow ( <i>Ammodramus henslowii</i> )	Element Threatened Endangered
Mammals:	Plains pocket mouse ( <i>Perognathus flavescens</i> ) W. harvest mouse ( <i>Reithrodontomys megalotis</i> ) Prairie vole ( <i>Microtus ochrogaster</i> ) Least weasel ( <i>Mustela nivalis</i> )	Special Concern Element Special Concern Special Concern
<b>AQUATIC HABITATS</b>		
Amphibians:	Northern cricket frog ( <i>Acris crepitans</i> ) Bullfrog ( <i>Rana catesbeiana</i> )	Endangered Element
Reptiles:	Snapping turtle ( <i>Chelydra serpentina</i> ) Wood turtle ( <i>Clemmys insculpta</i> ) Blanding's turtle ( <i>Emydoidea blandingii</i> ) Smooth softshell ( <i>Apalone mutica</i> )	Special Concern Threatened Threatened Special Concern
Birds:	American bittern ( <i>Botaurus lentiginosus</i> ) Common moorhen ( <i>Gallinula chloropus</i> )	Element Special Concern



Appendix 4. Locations and associated habitats for MCBS animal surveys in the Minnesota Valley State Recreational Area (refer to Figures 2 - 7 for maps of these locations).

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**Gifford Lake Wayside and Nyssen's Lake Unit**

Amphibian and Reptile Surveys

*Anuran surveys*

T115N	R23W	NWSW 9	Floodplain forest
T115N	R23W	NWNW 11	Emergent marsh
T115N	R23W	NE 16	Emergent marsh

*Herp search*

T115N	R23W	NWNW11	Grassland edge
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Breeding Bird Surveys

*Point counts*

T115N	R23W	NESE 3	Forest edge
T115N	R23W	NWSE 9	Floodplain forest
T115N	R23W	NESE 9	Floodplain forest
T115N	R23W	NWNW10	Floodplain forest
T115N	R23W	SWNW 10	Floodplain forest (2 points)
T115N	R23W	SESW 16	Forest edge
T115N	R23W	NWSW 16	Floodplain forest
T115N	R23W	NESE 17	Floodplain forest
T115N	R23W	SWSE 17	Wet meadow
T115N	R23W	SESE 17	Forest edge
T115N	R23W	NENW 20	Grassland (2 points)
T115N	R23W	SENE 20	Floodplain forest (2 points)

Mammal Surveys

*Trap grids*

T115N	R23W	NWSE 9	Floodplain forest
T115N	R23W	SESW 16	Grassland

*Bat surveys*

T115N	R23W	NWSE 9	Floodplain forest (2 stops)
T115N	R23W	SESW 16	Wooded lake shore

**Carver Rapids Wayside**

Amphibian and Reptile Surveys

*Herp search*

T115N	R23W	SE 31	Floodplain forest, rock outcrops, backwater
T115N	R23W	NWNW 32	Oak woodland
T115N	R23W	NENW 32	Grassland, rock outcrops

*Turtle traps*

T115N	R23W	NESE 31	Minnesota River backwater
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**Carver Rapids Wayside**

Breeding Bird Surveys

*Point counts*

T115N	R23W	NENE 31	Floodplain forest
T115N	R23W	NENE 31	Oak savanna-woodland
T115N	R23W	SWNE 31	Floodplain forest
T115N	R23W	SENE 31	Oak savanna-woodland
T115N	R23W	SESE 31	Forest edge
T115N	R23W	NWNW 32	Oak savanna-woodland
T115N	R23W	NENW 32	Oak savanna-woodland (2 points)
T115N	R23W	SENW 32	Oak savanna-woodland
T115N	R23W	NWSW 32	Oak savanna-woodland
T115N	R23W	NESW32	Oak savanna-woodland
T115N	R23W	SWSW 32	Floodplain forest
T115N	R23W	SESW 32	Oak savanna-woodland

Mammal Surveys

*Trap grids*

T115N	R23W	SWSW 29	Old field
T115N	R23W	NENW 32	Dry prairie, rock outcrop

*Bat survey*

T115N	R23W	SWSW 29	Old farmstead
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Fish and Mussel Survey

T115N	R23W	NESE 31	Minnesota River, adjacent rock outcrop
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**Sioux Vista Dunes and Thompson Ferry Units**

Amphibian and Reptile Surveys

*Herp searches*

T114N	R23W	SWSW 7	Oak woodland, grassland
T114N	R24W	SWSE 12	Cut-bank, riparian edge
T114N	R24W	SESE 12	Oak woodland, grassland

Mammal Surveys

*Trap grids*

T114N	R24W	SWSE 12	Dry sand prairie opening
T114N	R24W	SESE 12	Overgrown dry sand prairie

*Bat survey*

T114N	R23W	NWSW 7	Minnesota River shoreline
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**Lawrence Wayside and Belle Plaine Wayside**

Amphibian and Reptile Surveys

*Anuran surveys*

T114N	R24W	SWNE 28	Grassland, forest edge, emergent marsh
T114N	R24W	SWSE 30	Forest edge, backwaters
T114N	R24W	SWNW 33	Grassland, emergent marsh

*Herp searches*

T114N	R24W	NENE 21	Grassland, forest edge
T114N	R24W	SW 22	Grassland, emergent marsh, disturbed
T114N	R24W	SE 30	Grassland, forest edge
T114N	R24W	NWNW 33	Grassland
T114N	R24W	NE 36	Grassland

*Turtle traps*

T114N	R24W	SWNW 31	Minnesota River backwaters
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Breeding Bird Surveys

*Point counts*

T114N	R24W	SENE 21	Forest edge
T114N	R24W	SENE 21	Floodplain forest
T114N	R24W	SESW 21	Forest edge
T114N	R24W	NWSE 21	Grassland
T114N	R24W	NWNW 22	Floodplain forest (2 points)
T114N	R24W	SWNW 22	Floodplain forest (2 points)
T114N	R24W	SENW 22	Floodplain forest (2 points)
T114N	R24W	NWNE 22	Floodplain forest
T114N	R24W	SWNE 22	Grassland
T114N	R24W	NESW 22	Grassland (2 points)
T114N	R24W	SWSW 22	Oak savanna-woodland
T114N	R24W	SESW 22	Oak savanna-woodland
T114N	R24W	SESW 22	Forest edge
T114N	R24W	NWSE 22	Forest edge
T114N	R24W	SENW 28	Forest edge
T114N	R24W	SWSW 28	Grassland
T114N	R24W	SESW 28	Grassland
T114N	R24W	NENE 31	Forest edge
T114N	R24W	NESE 31	Floodplain forest
T114N	R24W	NWSW 32	Forest edge

*Playback*

T114N	R24W	NENE 21	Floodplain forest
T114N	R24W	SENE 21	Floodplain forest

**Lawrence Wayside and Belle Plaine Wayside**

Mammal Surveys

*Trap grids*

T114N	R24W	SWSW 22	Oak savanna
T114N	R24W	SESW 22	Overgrown wet prairie
T114N	R24W	NESW 28	Wet prairie
T114N	R24W	NWSE 28	Mesic prairie, old field

*Bat survey*

T114N	R24W	NESW 22	Historic stone homestead
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**Blakeley Wayside and Jessenland 25**

Amphibian and Reptile Surveys

*Anuran surveys*

T113N	R25W	NWSW 30	Floodplain forest, emergent marsh
T113N	R25W	SWSW 30	Emergent marsh
T113N	R25W	NWNW 31	Floodplain forest, emergent marsh
T113N	R25W	NWNE 31	Emergent marsh

*Herp search*

T113N	R25W	NE 31	Hardwood forest, seasonal ponds
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Breeding Bird Surveys

*Point counts*

T113N	R25W	NESW 30	Deciduous forest
T113N	R25W	SESW 30	Deciduous forest
T113N	R25W	NENW 31	Deciduous forest
T113N	R25W	NWNE 31	Deciduous forest
T113N	R25W	SWNE 31	Deciduous forest (2 points)

*Playback*

T113N	R25W	NWSW 30	Floodplain forest
T113N	R25W	NWNW 31	Floodplain forest
T113N	R25W	NWNE 31	Deciduous forest

**Rush River Wayside**

Amphibian and Reptile Surveys

*Anuran survey*

T112N	R26W	NENW 23	Hardwood forest, seasonal pond
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Appendix 4. Continued.

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**Rush River Wayside**

*Herp searches*

T112N	R26W	SW 14	Riparian
T112N	R26W	NESE 15	Grassland, disturbed area
T112N	R26W	SESE 15	Riparian
T112N	R26W	NWNE 23	Riparian
T112N	R26W	N 23	Riparian

Breeding Bird Surveys

*Point counts*

T112N	R26W	NWSW 14	Floodplain forest
T112N	R26W	SWSW 14	Deciduous forest (2 points)
T112N	R26W	NWSE 15	Deciduous forest (2 points)
T112N	R26W	NESE 15	Forest edge
T112N	R26W	SWSE 15	Deciduous forest
T112N	R26W	SWSE 15	Floodplain forest
T112N	R26W	SESE 15	Deciduous forest
T112N	R26W	SESE 15	Forest edge
T112N	R26W	NWNW 23	Deciduous forest
T112N	R26W	NWNE 23	Forest edge

*Playback*

T112N	R26W	NWNE 23	Floodplain forest (2 points)
T112N	R26W	NWNW 23	Floodplain forest
T112N	R26W	NENW 23	Floodplain forest
T112N	R26W	SWSW 14	Floodplain forest
T112N	R26W	NESW 14	Floodplain forest
T112N	R26W	SESW 14	Floodplain forest
T112N	R26W	SESE 15	Floodplain forest
T112N	R26W	SWSE 15	Floodplain forest
T112N	R26W	NESE 15	Deciduous forest

Mammal Surveys

*Trap grids*

T112N	R26W	NESE 15	Overgrown prairie openings, old field
T112N	R26W	SWNE 23	Old field

*Bat survey*

T112N	R26W	SWSE 15	Forested river edge
T112N	R26W	SESE 15	Shrubby shoreline

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Appendix 5. Amphibians and reptiles documented in the Minnesota Valley State Recreational Area.  
 (List includes all Minnesota herpetofauna; O = recorded in vicinity.)

G/N - Gifford Lake Wayside and Nyssen's Lake Unit  
 CR - Carver Rapids Wayside  
 SV - Sioux Vista Dunes and Thompson Ferry Areas  
 L/B - Lawrence Wayside and Belle Plaine Wayside  
 B/J - Blakeley Wayside and Jessenland 25  
 RR - Rush River Wayside

Common name	Scientific name	Wayside or Unit					
		G/N	CR	SV	L/B	B/J	RR
<b>Salamanders</b>							
Mudpuppy	<i>Necturus maculosus</i>						
Blue-spotted salamander	<i>Ambystoma laterale</i>						
Spotted salamander	<i>Ambystoma maculatum</i>						
Tiger salamander	<i>Ambystoma tigrinum</i>						
Eastern newt	<i>Notophthalmus viridescens</i>						
Redback salamander	<i>Plethodon cinereus</i>						
Four-toed salamander	<i>Hemidactylium scutatum</i>						
<b>Frogs and Toads</b>							
American toad	<i>Bufo americanus</i>	XXX	O		XXX	XXX	XXX
Great Plains toad	<i>Bufo cognatus</i>						
Canadian toad	<i>Bufo hemiophrys</i>						
Northern cricket frog	<i>Acris crepitans</i>						
Cope's gray treefrog	<i>Hyla chrysoscelis</i>	XXX			XXX		XXX
Gray treefrog	<i>Hyla versicolor</i>						
Spring peeper	<i>Pseudacris crucifer</i>						
Western chorus frog	<i>Pseudacris triseriata</i>	XXX		XXX	XXX	XXX	XXX
Bullfrog	<i>Rana catesbeiana</i>						
Green frog	<i>Rana clamitans</i>						
Pickerel frog	<i>Rana palustris</i>						
Northern leopard frog	<i>Rana pipiens</i>	XXX	XXX		XXX	XXX	XXX
Mink frog	<i>Rana septentrionalis</i>						
Wood frog	<i>Rana sylvatica</i>					XXX	XXX
<b>Turtles</b>							
Snapping turtle	<i>Chelydra serpentina</i>						XXX
Common map turtle	<i>Graptemys geographica</i>			XXX	XXX		
False map turtle	<i>Graptemys pseudogeographica</i>				XXX		
Ouachita map turtle	<i>Graptemys ouachitensis</i>						
Painted turtle	<i>Chrysemys picta</i>		XXX		XXX		
Blanding's turtle	<i>Emydoidea blandingii</i>						
Wood turtle	<i>Clemmys insculpta</i>						
Smooth softshell	<i>Apalone mutica</i>					O	
Spiny softshell	<i>Apalone spinifera</i>			O			XXX
<b>Lizards</b>							
Six-lined racerunner	<i>Cnemidophorus sexlineatus</i>						
Five-lined skink	<i>Eumeces fasciatus</i>						
Prairie skink	<i>Eumeces septentrionalis</i>			XXX	O		

Appendix 5. Continued

Common name	Scientific name	Wayside or Unit					
		G/N	CR	SV	L/B	B/J	RR
<b>Snakes</b>							
Northern water snake	<i>Nerodia sipedon</i>						
Brown snake	<i>Storeria dekayi</i>	O	XXX				XXX
Redbelly snake	<i>Storeria occipitomaculata</i>						
Plains garter snake	<i>Thamnophis radix</i>	O					
Common garter snake	<i>Thamnophis sirtalis</i>	XXX	XXX		XXX		XXX
Lined snake	<i>Tropidoclonion lineatum</i>						
Western hognose snake	<i>Heterodon nasicus</i>						
Eastern hognose snake	<i>Heterodon platirhinos</i>			XXX*			
Ringneck snake	<i>Diadophis punctatus</i>						
Racer	<i>Coluber constrictor</i>						
Smooth green snake	<i>Opheodrys vernalis</i>						
Rat snake	<i>Elaphe obsoleta</i>						
Fox snake	<i>Elaphe vulpina</i>				O		
Gopher (Bull) snake	<i>Pituophis catenifer</i>			O	XXX		
Milk snake	<i>Lampropeltis triangulum</i>			XXX			
Massasauga	<i>Sistrurus catenatus</i>						
Timber rattlesnake	<i>Crotalus horridus</i>						

\* record obtained from other sources

Appendix 6. Breeding birds documented in the Minnesota Valley State Recreational Area.  
 (List includes all bird species potentially breeding in the MVSRA; O = recorded in vicinity)

G/N - Gifford Lake Wayside and Nyssen's Lake Unit  
 CR - Carver Rapids Wayside  
 L/B - Lawrence Wayside and Belle Plaine Wayside  
 B/J - Blakeley Wayside and Jessenland 25  
 RR - Rush River Wayside  
 All - Combined list of all waysides and units

Common Name	Wayside or Unit					
	G/N	CR	L/B	B/J	RR	All
Common Loon						
Pied-billed Grebe						
Double-crested Cormorant	XXX		XXX			XXX
American Bittern						
Least Bittern						
Great Blue Heron	XXX	XXX	XXX		XXX	XXX
Great Egret						
Green Heron	XXX		XXX			XXX
Black-crowned Night-Heron		XXX	XXX			XXX
Turkey Vulture			XXX		XXX	XXX
Canada Goose	XXX	O	XXX		XXX	XXX
Wood Duck	XXX	XXX	XXX			XXX
Gadwall						
Mallard		XXX	XXX			XXX
Blue-winged Teal			XXX			XXX
Northern Shoveler						
Green-winged Teal						
Redhead						
Ring-necked Duck						
Hooded Merganser		O				
Ruddy Duck						
Osprey		O				
Bald Eagle		O				
Northern Harrier			XXX			XXX
Cooper's Hawk	XXX		XXX			XXX
Red-shouldered Hawk		XXX			XXX	XXX
Broad-winged Hawk						
Red-tailed Hawk	XXX	O	XXX		XXX	XXX
American Kestrel						
Ring-necked Pheasant (I)	XXX	O	XXX		XXX	XXX
Ruffed Grouse					XXX	XXX
Wild Turkey	XXX	XXX	XXX	XXX	XXX	XXX
Virginia Rail						
Sora						
Common Moorhen						
American Coot						
Killdeer		XXX	XXX	XXX	XXX	XXX
Spotted Sandpiper	XXX	XXX	XXX		XXX	XXX
Upland Sandpiper						
Common Snipe						

Appendix 6. Continued.

Common Name	Wayside or Unit					
	G/N	CR	L/B	B/J	RR	All
American Woodcock					XXX	XXX
Forster's Tern			XXX			XXX
Black Tern						
Rock Dove (I)			XXX		XXX	XXX
Mourning Dove	XXX	XXX	XXX		XXX	XXX
Black-billed Cuckoo		O				
Yellow-billed Cuckoo			XXX			XXX
Eastern Screech-Owl						
Great Horned Owl						
Barred Owl			XXX			XXX
Long-eared Owl						
Common Nighthawk					XXX	XXX
Whip-poor-will					XXX	XXX
Chimney Swift	XXX		XXX			XXX
Ruby-throated Hummingbird			XXX	XXX	XXX	XXX
Belted Kingfisher	XXX	XXX	XXX		XXX	XXX
Red-headed Woodpecker			XXX			XXX
Red-bellied Woodpecker	XXX	XXX	XXX	XXX	XXX	XXX
Yellow-bellied Sapsucker	XXX	O	XXX		XXX	XXX
Downy Woodpecker	XXX	XXX	XXX	XXX	XXX	XXX
Hairy Woodpecker	XXX	XXX	XXX		XXX	XXX
Northern Flicker	XXX	XXX	XXX		XXX	XXX
Pileated Woodpecker	XXX		XXX		XXX	XXX
Eastern Wood-Pewee	XXX	XXX	XXX	XXX	XXX	XXX
Acadian Flycatcher		XXX				XXX
Alder Flycatcher			XXX	XXX		XXX
Willow Flycatcher	XXX	O				XXX
Least Flycatcher	XXX	O	XXX		XXX	XXX
Eastern Phoebe		XXX	XXX			XXX
Great Crested Flycatcher	XXX	XXX	XXX	XXX	XXX	XXX
Eastern Kingbird		XXX	XXX		XXX	XXX
Loggerhead Shrike			XXX			XXX
Bell's Vireo						
Yellow-throated Vireo	XXX	O	XXX		XXX	XXX
Warbling Vireo	XXX	O	XXX		XXX	XXX
Red-eyed Vireo	XXX	XXX	XXX	XXX	XXX	XXX
Blue Jay	XXX	XXX	XXX	XXX	XXX	XXX
American Crow	XXX	XXX	XXX	XXX	XXX	XXX
Horned Lark						
Purple Martin	XXX		XXX			XXX
Tree Swallow	XXX	O	XXX		XXX	XXX
Northern Rough-winged Swallow		XXX	XXX		XXX	XXX
Bank Swallow	XXX	O	XXX		XXX	XXX
Cliff Swallow						
Barn Swallow		XXX	XXX		XXX	XXX
Black-capped Chickadee	XXX	XXX	XXX	XXX	XXX	XXX
White-breasted Nuthatch	XXX	XXX	XXX	XXX	XXX	XXX
Brown Creeper		O	XXX			XXX

Appendix 6. Continued.

Common Name	Wayside or Unit					
	G/N	CR	L/B	B/J	RR	All
House Wren	XXX	XXX	XXX	XXX	XXX	XXX
Winter Wren						
Sedge Wren	XXX	XXX	XXX			XXX
Marsh Wren			XXX			XXX
Blue-gray Gnatcatcher	XXX	XXX	XXX	XXX	XXX	XXX
Eastern Bluebird		XXX	XXX		XXX	XXX
Veery						
Wood Thrush				XXX	XXX	XXX
American Robin	XXX	XXX	XXX	XXX	XXX	XXX
Gray Catbird	XXX	XXX	XXX		XXX	XXX
Brown Thrasher		XXX	XXX		XXX	XXX
European Starling (I)			XXX		XXX	XXX
Cedar Waxwing	XXX	XXX	XXX	XXX	XXX	XXX
Blue-winged Warbler		XXX	XXX	XXX	XXX	XXX
Yellow Warbler	XXX	XXX	XXX		XXX	XXX
Chestnut-sided Warbler		XXX	XXX			XXX
Cerulean Warbler		XXX	XXX		XXX	XXX
American Redstart	XXX	O	XXX		XXX	XXX
Prothonotary Warbler	XXX	O	XXX			XXX
Ovenbird		XXX	XXX	XXX	XXX	XXX
Louisiana Waterthrush						
Mourning Warbler		O	XXX	XXX	XXX	XXX
Common Yellowthroat	XXX	XXX	XXX	XXX	XXX	XXX
Scarlet Tanager		XXX		XXX	XXX	XXX
Eastern Towhee			XXX		XXX	XXX
Chipping Sparrow			XXX		XXX	XXX
Clay-colored Sparrow		O			XXX	XXX
Field Sparrow		XXX	XXX		XXX	XXX
Vesper Sparrow					XXX	XXX
Lark Sparrow			O			
Savannah Sparrow						
Grasshopper Sparrow						
Henslow's Sparrow			XXX			XXX
Song Sparrow	XXX	XXX	XXX		XXX	XXX
Swamp Sparrow	XXX	O	XXX			XXX
Northern Cardinal	XXX	XXX	XXX	XXX	XXX	XXX
Rose-breasted Grosbeak	XXX	XXX	XXX	XXX	XXX	XXX
Indigo Bunting	XXX	XXX	XXX	XXX	XXX	XXX
Dickcissel						
Bobolink			XXX		O	XXX
Red-winged Blackbird	XXX	XXX	XXX		XXX	XXX
Eastern Meadowlark			XXX			XXX
Western Meadowlark						
Yellow-headed Blackbird						
Brewer's Blackbird			XXX			XXX
Common Grackle	XXX	XXX	XXX	XXX		XXX
Brown-headed Cowbird	XXX	XXX	XXX	XXX	XXX	XXX
Orchard Oriole						

Appendix 6. Continued.

Common Name	Wayside or Unit					
	G/N	CR	L/B	B/J	RR	All
Baltimore Oriole	XXX	XXX	XXX	XXX	XXX	XXX
House Finch					XXX	XXX
American Goldfinch	XXX	XXX	XXX	XXX	XXX	XXX
House Sparrow (I)	XXX		XXX		XXX	XXX



Appendix 7. Mammals documented in the Minnesota Valley State Recreational Area.  
 (List includes all mammal species potentially occurring in the MVSRA)

G/N - Gifford Lake Wayside and Nyssen's Lake Unit  
 CR - Carver Rapids Wayside  
 SV - Sioux Vista Dunes and Thompson Ferry Areas  
 L/B - Lawrence Wayside and Belle Plaine Wayside  
 B/J - Blakeley Wayside and Jessenland 25  
 RR - Rush River Wayside

Common Name	Scientific Name	Wayside or Unit				
		G/N	CR	SV	L/B	RR
<b>New World Opossums</b>						
Virginia opossum	<i>Didelphis virginiana</i>					
<b>Shrews and Moles</b>						
Arctic shrew	<i>Sorex arcticus</i>					
Masked shrew	<i>Sorex cinereus</i>		XXX		XXX	
Hayden's shrew	<i>Sorex haydeni</i>					
Pygmy shrew	<i>Sorex hoyi</i>					
Common water shrew	<i>Sorex palustris</i>					
Northern short-tailed shrew	<i>Blarina brevicauda</i>				XXX	
Eastern mole	<i>Scalopus aquaticus</i>				XXX	
<b>Bats</b>						
Little brown myotis	<i>Myotis lucifugus</i>	XXX				XXX
Northern myotis	<i>Myotis septentrionalis</i>					
Eastern red bat	<i>Lasiurus borealis</i>	XXX				
Hoary bat	<i>Lasiurus cinereus</i>	XXX				
Silver-haired bat	<i>Lasionycteris noctivagans</i>					
Eastern pipistelle	<i>Pipistrellus subflavus</i>					
Big brown bat	<i>Eptesicus fuscus</i>	XXX	XXX			XXX
<b>Carnivores</b>						
Coyote	<i>Canis latrans</i>			XXX	XXX	
Gray wolf	<i>Canis lupus</i>					
Red fox	<i>Vulpes vulpes</i>					
Common gray fox	<i>Urocyon cinereoargenteus</i>					
Black bear	<i>Ursus americanus</i>					
Common raccoon	<i>Procyon lotor</i>	XXX	XXX	XXX	XXX	XXX
Ermine	<i>Mustela erminea</i>					
Long-tailed weasel	<i>Mustela frenata</i>					
Least weasel	<i>Mustela nivalis</i>					
American mink	<i>Mustela vison</i>					
American badger	<i>Taxidea taxus</i>					
Northern river otter	<i>Lutra canadensis</i>					
Eastern spotted skunk	<i>Spilogale putorius</i>					
Striped skunk	<i>Mephitis mephitis</i>					
Mountain lion	<i>Felis concolor</i>					
Bobcat	<i>Lynx rufus</i>					
<b>Ungulates</b>						
Elk	<i>Cervus elaphus</i>					XXX
Mule deer	<i>Odocoileus hemionus</i>					
White-tailed deer	<i>Odocoileus virginianus</i>	XXX	XXX	XXX	XXX	XXX

Appendix 7. Continued.

Common Name	Scientific Name	Wayside or Unit				
		G/N	CR	SV	L/B	RR
<b>Rodents</b>						
Eastern chipmunk	<i>Tamias striatus</i>	XXX			XXX	
Woodchuck	<i>Marmota monax</i>					
Franklin's ground squirrel	<i>Spermophilus franklinii</i>					
Thirteen-lined ground squirrel	<i>Spermophilus tridecemlineatus</i>				XXX	
Eastern gray squirrel	<i>Sciurus carolinensis</i>					
Eastern fox squirrel	<i>Sciurus niger</i>					
Red squirrel	<i>Tamiasciurus hudsonicus</i>	XXX				XXX
Southern flying squirrel	<i>Glaucomys volans</i>					
Plains pocket gopher	<i>Geomys bursarius</i>		XXX		XXX	
Plains pocket mouse	<i>Perognathus flavescens</i>					
American beaver	<i>Castor canadensis</i>					
Western harvest mouse	<i>Reithrodontomys megalotis</i>					
White-footed mouse	<i>Peromyscus leucopus</i>	XXX	XXX		XXX	XXX
Prairie deer mouse	<i>Peromyscus maniculatus bairdii</i>					
Northern grasshopper mouse	<i>Onychomys leucogaster</i>					
Norway rat	<i>Rattus norvegicus</i>					
House mouse	<i>Mus musculus</i>					
Southern red-backed vole	<i>Clethrionomys gapperi</i>					
Prairie vole	<i>Microtus ochrogaster</i>					
Meadow vole	<i>Microtus pennsylvanicus</i>		XXX		XXX	XXX
Common muskrat	<i>Ondatra zibethicus</i>					
Southern bog lemming	<i>Synaptomys cooperi</i>					
Meadow jumping mouse	<i>Zapus hudsonius</i>				XXX	
Common porcupine	<i>Erethizon dorsatum</i>					
<b>Rabbits and Hares</b>						
Eastern cottontail	<i>Sylvilagus floridanus</i>			XXX	XXX	
White-tailed jackrabbit	<i>Lepus townsendii</i>					

## Rare Features Database Print-outs: An Explanation of Fields

The Rare Features database is part of the Natural Heritage Information System, and is maintained by the Natural Heritage and Nongame Research Program, a unit within the Section of Ecological Services, Minnesota Department of Natural Resources (DNR).

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### **Field Name: [Full (non-abbreviated) field name, if different]. Further explanation of field.**

-C-

CBS Site: [County Biological Survey site number]. In each county, the numbering system begins with 1.

CLASS: A code which classifies features by broad taxonomic group: NC = natural community; SA = special animal; SP = special plant; GP = geologic process; GT = geologic time; OT = other (e.g. colonial waterbird colonies, bat hibernacula).

Cty: [County]. Minnesota counties (ordered alphabetically) are numbered from 1 (Aitkin) to 87 (Yellow Medicine).

CURRENT STATUS: Present protection status, from 0 (owner is not aware of record) to 9 (dedicated as a Scientific and Natural Area).

-D-

DNR Region: 1=NW, 2=NE, 3=E Central, 4=SW, 5=SE, 6= Minneapolis/St. Paul Metro.

DNR Quad: [DNR Quadrangle code]. DNR-assigned code of the U.S. Geologic Survey topographic map on which the rare feature occurs.

-E-

ELEMENT or Element: See "Element Name (Common Name)"

Element Name (Common Name): The name of the rare feature. For plant and animal species records, this field holds the scientific name, followed by the common name in parentheses; for all other elements (such as plant communities, which have no scientific name) it is solely the element name.

EO RANK: [Element Occurrence Rank]. An evaluation of the quality and condition of natural communities from A (highest) to D (lowest).

EO Size: [Element Occurrence Size]. The size in acres (often estimated) of natural communities.

-F-

FED STATUS: [Federal Status]. Status of species under the Federal Endangered Species Law: LE=endangered, LT=threatened, C=species which have been proposed for federal listing.

Federal Status: See "FED STATUS"

Forestry District: The Minnesota DNR's Division of Forestry district number.

-G-

GLOBAL RANK: The abundance of an element globally, from G1 (critically imperiled due to extreme rarity on a world-wide basis) to G5 (demonstrably secure, though perhaps rare in parts of its range). Global ranks are determined by the Conservation Science Division of The Nature Conservancy.

-I-

INTENDED STATUS: Desired protection status. See also "CURRENT STATUS." If a complete list of protection status codes is needed, please contact the Natural Heritage Program.

-L-

LAST OBSERVED or Last Observed Date or Last Observation: Date of the most recent record of the element at the location.

Latitude: The location at which the occurrence is mapped on Natural Heritage Program maps. NOTE: There are various levels of precision in the original information, but this is not reflected in the latitude/longitude data. For some of the data, particularly historical records, it was not possible to determine exactly where the original observation was made (e.g. "Fort Snelling", or "the south shore of Lake Owasso"). Thus the latitude/longitude reflect the mapped location, and not necessarily the observation location.

Legal: Township, range and section numbers.

Long: [Longitude]. See NOTE under "Latitude"

-M-

MANAGED AREA or Managed Area(s): Name of the federally, state, locally, or privately managed park, forest, preserve, etc., containing the occurrence, if any. If this field is blank, the element probably occurs on private land. If "(STATUTORY BOUNDARY)" occurs after the name of a managed area, the location may be a private inholding within the statutory boundary of a state forest or park.

Map Sym: [Map Symbol].

MN STATUS: [Minnesota Status]. Legal status of plant and animal species under the Minnesota endangered species law: END=endangered, THR=threatened, SPC=special concern, NON= no legal status, but rare and may become listed if declines continue. This field is blank for natural communities and colonial waterbird nesting sites, which have no legal status in Minnesota, but are tracked by the database.

-N-

NC Rank: [Natural Community Rank].

-O-

Occ #: [Occurrence Number]. The occurrence number, in combination with the element name, uniquely identifies each record.

OCCURRENCE NUMBER: See "Occ #"

# OF OCCURS: The number of records existent in the database for each element within the area searched.

Ownership: Indicates whether the site is publicly or privately owned; for publicly owned land, the agency with management responsibility is listed.

-P-

Precision: Precision of locational information of occurrence: C (confirmed) = known within 1/4 mile radius, U (unconfirmed) = known within 1/2 mile, N (non-specific) = known within 1 mile, G (general) = occurs within the general region, X (unmappable)=location is unmappable on USGS topographic quadrangles (often known only to the nearest county), O (obscure/gone)=element no longer exists at the location.

PS: [Primary Section]. The section containing all or the greatest part of the occurrence.

-Q-

Quad Map: See "DNR Quad"

-R-

Rec #: [Record number].

RNG or Rng: [Range number].

-S-

SECTION or Section: [Section number(s)]. Some records are given only to the nearest section (s), but most are given to the nearest quarter-section or quarter-quarter-section (e.g., SWNW32 denotes the SW1/4 of the NW1/4 of section 32). A "0" is used as a place holder when a half-section is specified (e.g., 0N03 refers to the north 1/2 of section 3). When an occurrence crosses section boundaries, both sections are listed, without punctuation (e.g., the NE1/4 of section 19 and NW1/4 of section 20 is displayed as "NE19NW20").

Site: A name which refers to the geographic area within which the occurrence lies. If no name for the area exists (a locally used name, for example), one is assigned by the County Biological Survey or the Natural Heritage Program.

Source: The collector or observer of the rare feature occurrence.

S RANK: [State Rank]. A rank assigned to the natural community type which reflects the known extent and condition of that community in Minnesota. Ranks range from 1 (in greatest need of conservation action in the state) to 5 (secure under present conditions). A "?" following a rank indicates little information is available to rank the community. Communities for which information is especially scarce are given a "U", for "rank undetermined". The ranks do not represent a legal status. They are used by the Minnesota Department of Natural Resources to set priorities for research, inventory and conservation planning. The state ranks are updated as inventory information becomes available.

State Status: See "MN STATUS"

-T-

TWP or Twp: [Township number].

-V-

Verification: A reflection of the reliability of the information on which the record is based. The highest level of reliability is "verified," which usually indicates a collection was made or, in the case of bird records, nesting was observed. Plant records based on collections made before 1970 are unverified.

Voucher: The museum or herbarium where specimens are maintained, and the accession number assigned by the repository. In the case of bald eagles, this is the breeding area number.

-W-

Wildlife Area: The Minnesota DNR's Section of Wildlife administrative number.

## Data Security

Locations of some rare features must be treated as sensitive information because widespread knowledge of these locations could result in harm to the rare features. For example, wildflowers such as orchids and economically valuable plants such as ginseng are vulnerable to exploitation by collectors; other species, such as bald eagles, are sensitive to disturbance by observers. For this reason, we prefer that publications not identify the precise locations of vulnerable species. We suggest describing the location only to the nearest section. If this is not acceptable for your purposes, please call and discuss this issue with the Environmental Review Specialist for the Heritage and Nongame Research Program at 651/296-7863.

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Biological Report No. 72

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