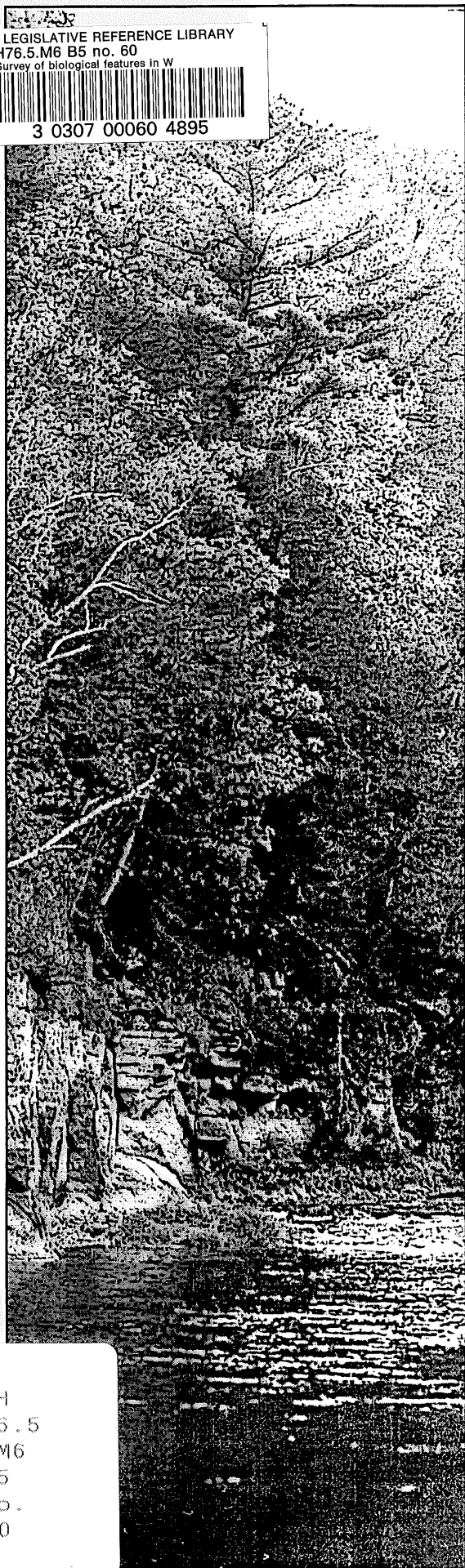


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Minnesota County Biological Survey,
Section of Ecological Services, Division of Fish and Wildlife
Minnesota Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155

April, 1999

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Minnesota County Biological Survey
Carmen Converse, MCBS Supervisor

Survey Staff in Whitewater State Park

Hannah Dunevitz, Plant Ecologist/Botanist
Gerda Nordquist, Animal Survey Coordinator/Mammalogist
Steve Stucker, Ornithologist
Carol Dorff Hall, Herpetologist

Field Survey Assistants

Elizabeth Baness, Amphibians and Reptiles
Jeffrey Davis, Amphibians and Reptiles
Mary Engelhard, Mammals
Mark Lisowski, Mammals
Pamela Page, Birds
Joseph Whittaker, Mammals

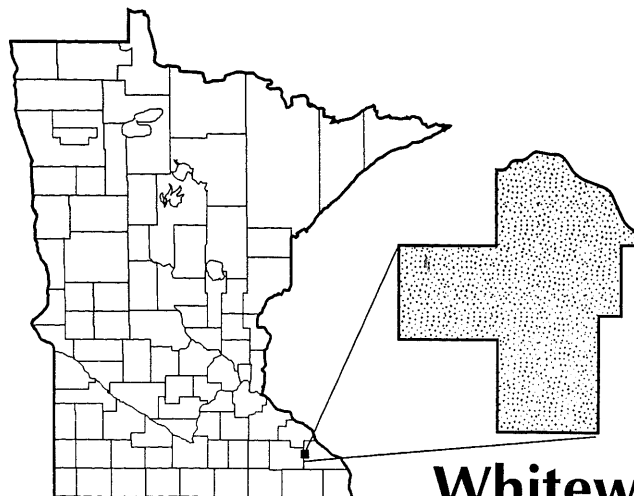
Data Management and Graphics Staff

Mary Miller, Natural Heritage Information System Data Manager
Sharron Nelson, Natural Heritage Information System Assistant Data Manager
Al Epp, Natural Heritage Information System GIS Manager
Hal Watson, Natural Heritage Information System GIS Manager
Tom Klein, Minnesota County Biological Survey Graphic Artist

Cover illustration rendered from a photograph by Dave Palmquist, Whitewater State Park Naturalist

Minnesota County Biological Survey
Section of Ecological Services, Division of Fish and Wildlife
Minnesota Department of Natural Resources

Biological Report No. 60



**Whitewater
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SURVEY OF BIOLOGICAL FEATURES
IN
WHITEWATER STATE PARK,
WINONA COUNTY, MINNESOTA

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

Biological Report No. 60
1999

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ACKNOWLEDGMENTS

We would like to recognize several individuals who contributed invaluable assistance to this project. Special thanks are due to Kathy Bolin, Department of Natural Resources (DNR), Regional Parks Resource Specialist, for her expertise on potential rare features in Whitewater State Park and vicinity and for obtaining funding to support the additional animal surveys that were conducted at the Park. Dave Palmquist, Whitewater State Park Naturalist, was a great resource. His detailed knowledge of the ecology of this area and eagerness to assist us with our survey efforts was greatly appreciated. Both Kathy and Dave assisted with the field surveys. Thanks goes to Harold Becker, Whitewater State Park Manager, for providing access information, to Dave Radford, Archaeologist for the Division of Parks and Recreation, who evaluated the potential impact of our planned survey activities on cultural features within the Park, and to Dave Svien, DNR District Forester, who provided helpful information about historic forest management in the region.

PREFACE

The Minnesota County Biological Survey (MCBS) was initiated in 1987 in recognition of the need to assess the status of the state's biological diversity and its rare natural resources. 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 Winona County during the 1991-1994 field seasons, with some follow-up surveys in 1996 and 1998. Through a cooperative agreement between MCBS and the Division of Parks and Recreation, surveys for rare animal species were expanded at Whitewater State Park beyond the normal MCBS coverage of Winona County. Data collected in the Park on native plant communities and rare plants, as part of the survey of Winona County, have been summarized for inclusion in this report.

During the interval between field surveys and completion of this report, the state list of endangered, threatened, and special concern species was reviewed and modified. The new list took effect on 1 July 1996. This report includes information on rare species that were listed previously, as well as those species added to the new list. All references to state-listed species in this report give the new state status, unless otherwise noted.

Additional information about many of the rare features described in this report can be found in the report, *Natural communities and rare species of Winona County* (Minnesota County Biological Survey 1994); a published wall map that shows the results of the completed inventory of the county, *Natural communities and rare species of Winona County* (Minnesota County Biological Survey 1996); and *Minnesota's endangered flora and fauna* (Coffin and Pfannmuller 1988). Additional information about natural resources in Whitewater State Park not included in the MCBS inventory is stored in the Parks Resource Management database at the DNR Regional Office in Rochester.

SURVEYS OF NATIVE PLANT COMMUNITIES AND RARE PLANTS IN WHITEWATER STATE PARK

Hannah Dunevitz, Plant Ecologist/Botanist

Native Plant Communities

Native plant communities are classified and described according to the composition and structure of the vegetation, but also by characteristics of the hydrology, landforms, soils, and natural disturbance regimes (including wildfires, windstorms, normal flood cycles, and the effects of native pathogens, insects, and microorganisms). Previous published reports and wall maps have referred to "natural communities", which are defined as groups of native plants and native animals that interact with each other, and their abiotic environment in ways not greatly altered by modern human activity or by introduced organisms (Minnesota County Biological Survey 1996). For the purposes of this report, "native plant communities" may be considered equivalent to the "natural communities" discussed elsewhere. The Natural Heritage and Nongame Research Program (NHNRP) developed a classification of natural communities that has been used by MCBS to identify and evaluate potential natural areas (Minnesota Natural Heritage Program 1993). This classification is currently under revision to describe native plant communities. Native plant communities have no legal protection in Minnesota. However, the NHNRP considers the identification, protection, and management of native plant communities and ecosystems a high priority.

Methods

Native plant community boundaries within the statutory boundaries of the Park were initially delineated using color infra-red aerial photography (National High Altitude Photograph Program, 24 April 1983, scale 1:58,000). In 1994, more recent aerial photography (National Aerial Photography Program, 17 April 1991, scale 1:40,000) was used to refine community boundaries and identify new roads and housing in adjacent private lands. Other sources of information consulted to map and describe native plant communities included Cooperative Stand Assessment (CSA) data from MNDNR Division of Forestry, Winona County soil survey (Lueth 1994), Minnesota soil atlas (University of Minnesota 1973), and geologic maps of Winona County (Balaban and Olsen 1984). Using all these sources, initial boundaries of native plant communities and disturbed areas in the Park were transcribed onto 7.5-minute topographic maps.

Nine site visits were made Whitewater State Park by the Plant Ecologist in May, July, and October 1992, September 1993, and December 1994. Other MCBS Plant Ecologists visited the Park in August 1994 to obtain additional releve data. Native plant communities were evaluated and given ecological quality ranks using a scale from A to D, with A being highest quality, or nearly pristine, and D lowest, or highly disturbed. The regional Parks Resource Specialist and the Whitewater State Park Naturalist accompanied the Plant Ecologist on several occasions and assisted with inventories and evaluations.

Seven releve plots were made in four native plant communities in the Park: maple-basswood forest, oak forest (mesic subtype), white pine-hardwood forest (mesic subtype), and lowland hardwood forest. Releve sampling is a method of describing vegetation in a semi-quantitative manner and is used statewide by MCBS (refer to Almendinger 1987). All releve data are entered into the releve database of the Natural Heritage Information System (NHIS), a computerized information system maintained by the NHNRP. Thus, individual plot data can be compared to data from other areas and the results used to gain further understanding of the vegetation of Minnesota.

Following site visits by the Plant Ecologist, native plant community boundaries were corrected on the topographic maps. The final boundaries were stored digitally using the ARC/INFO Geographic Information System. Locations and descriptions of each native plant community, known as "element occurrences", were entered into the NHIS.

Results

A comparison of present-day native plant communities in the Park to the vegetation prior to Euroamerican settlement indicates that portions of the vegetation in Whitewater State Park today are similar to that described in the 1850s (U.S. Surveyor General 1853-1855). The current vegetation cover maps of the Park identify eight native plant community types within the statutory boundaries of the Park (Figure 1). Where native plant communities continue outside the Park boundaries, the complete polygon is shown. Those portions located on private lands were determined using aerial photography and were not field checked. Each native plant community with an occurrence rank of C or better is listed in Table 1 together with the total acreage and the number of occurrences in the Park. Printouts of element occurrence records for all native plant community occurrences in the Park are included in Appendix 3 (also refer to Appendix 1 for a listing of all rare features recorded at Whitewater State Park and Appendix 2 for an explanation of the printout fields). The native plant community records include quality ranks and descriptive information about each occurrence.

Important factors determining where the native plant communities in the Park occur include topographic position, slope, aspect, hydrology, and fire history. Dry cliff communities are found on bluffs that are too steep to support soil development. Three algific talus slopes occur on north-facing bluffs in the Park. This rare plant community is found on talus of steep north-facing slopes where cool air escapes from ice stored in the rock strata below. Algific talus slopes provide habitat for a number of plants that are generally restricted to arctic and boreal regions, as well as several rare land snails thought to have survived in these habitats since the Ice Age.

The dry knobs on south- to southwest-facing slopes support bedrock bluff prairies in association with frequent rock outcrops. Oak woodland-brushland communities occupy some of the steep southwest- to west-facing slopes and often include many areas of talus and rock outcrops. Portions of these woodland communities were probably bedrock bluff prairies in the past that have become overgrown in the absence of fire. On several ridgetops and the steep upper slopes below them, white pine and white pine-hardwood forests occur. These communities are limited

to some of the steepest terrain, where white pines can obtain enough sunlight to continue to reproduce. They may have been somewhat more common when fire was a more active component of the landscape.

Lowland hardwood forests are found on benches along the Whitewater River and Trout Run Creek and in ravines associated with narrow streams.

The remainder of the slopes in Whitewater State Park are covered by oak forest and maple-basswood forest, communities that thrive in the absence of frequent fires. In the continued absence of fire or similar disturbances, it is likely that most of the oak forests in the Park will succeed to maple-basswood forests.

Two points about community nomenclature and mapping should be mentioned. First, the NHNRP recognizes mesic (sites with average soil moisture) and dry (sites with limited soil moisture) subtypes of oak forest and white pine-hardwood forest communities. These subtypes cannot be distinguished from aerial photography, so in places where sites were not field inventoried, no subtype was assigned. Second, a smaller-scale map would show many more polygons than the map included in this report because the frequent variations in aspect and topography throughout the Park result in many small occurrences of native plant communities. The polygons on these maps often represent the dominant native plant community type; for example, within a mesic oak forest polygon, one might find small inclusions of maple-basswood forest on the steepest north-facing slopes and small bluff prairie openings on steep southern exposures.

Figure 2 identifies the ecological quality ranks of all native plant communities that were visited. Empty polygons are those not visited by the Plant Ecologist and which, therefore, were not given ranks. Areas ranked A, AB, or B can be considered high quality native plant communities that show little unnatural disturbance and resemble pre-Euroamerican settlement vegetation. Areas ranked BC or C are more disturbed, but are still considered to be intact native plant communities. A rank of CD indicates a highly disturbed area that is still recognizable as a native plant community, such as a bedrock bluff prairie with much woody invasion or a forest that has been heavily grazed or logged. None of the areas visited were given D (extremely disturbed) ranks.

The results of the relevés in maple basswood, oak, white pine-hardwood, and lowland hardwood forests are found in Appendix 4, along with a summary of all plant species recorded from the relevés.

Rare Plants

Rare plant surveys focused on species officially listed under the Federal Endangered Species Act of 1973, Public Law 93-205, or Minnesota Statute 84.0895. As noted in the Preface to this report, a revised state list took effect on July 1, 1996. However, the focus of rare species inventory efforts in Whitewater State Park was on those species listed at the time of the survey

(1991 through 1994). Listed species include federally and state endangered and threatened species, as well as state special concern species (Coffin and Pfannmuller 1988). Endangered and threatened species are provided the highest level of legal protection under federal and state laws. In addition, the NHNRP keeps track of selected species that are not legally listed or protected. Some of these are federal candidate species (proposed endangered or proposed threatened). Others require further field survey to determine their status and are designated as non-listed rare species.

Methods

All rare plants encountered during the native plant community survey work in 1992 through 1994 were documented by the Plant Ecologist. Specimens were collected of selected species and deposited in the Herbarium of the Bell Museum of Natural History at the University of Minnesota in St. Paul. Many rare plants had been documented by others in previous surveys; those that had not been recorded into the NHIS were entered as part of this project. All new occurrences were recorded in the NHIS, and all locations were digitally recorded using ARC/INFO geographic information system.

Results

Fourteen different species of rare plants have been documented in Whitewater State Park (Figures 3 and 4, Appendices 1 and 5), with a total of 34 occurrence records. Two are state-endangered species, Round-stemmed false foxglove (*Agalinis gattereri*) and Golden-seal (*Hydrastis canadensis*). One species, Spreading sedge (*Carex laxiculmis*) is state-threatened. Seven species are considered special concern in Minnesota and the remaining four have no legal status. It is likely that additional populations of some of these species occur in the Park in areas not closely examined during field surveys.

SURVEYS OF RARE ANIMALS IN WHITEWATER STATE PARK

Gerda Nordquist, Animal Survey Coordinator/Mammalogist
Steve Stucker, Ornithologist
Carol Dorff Hall, Herpetologist

The Minnesota County Biological Survey (MCBS) conducted surveys for amphibians, reptiles, birds, and small mammals in Whitewater State Park from April through August 1993, with follow up work in August 1996 and July 1998. Rare animal species were the focus of the animal survey effort, with targeted species being determined by historical records and the presence of appropriate habitat within the Park. These included species that were federally-listed as endangered or threatened and species that were state-listed as endangered, threatened, or of special concern in 1993. In addition, species added to the state list after the 1996 revision are addressed in this report, however these were not targeted at the time of the Survey. A number of non-listed species that are tracked by the Natural Heritage Information System's (NHIS) Rare Features database due to uncertainty of their status also were included (Table 2). Prior to the MCBS surveys, the Rare Features database recorded 14 locations for seven rare animal species in the Park. These included one fish, American brook lamprey; one amphibian, Pickerel frog; three reptiles, Eastern milk snake, Timber rattlesnake, and Eastern hognose snake, and two birds, Peregrine falcon and Louisiana waterthrush. Following completion of MCBS animal surveys, eight new locations were added for Pickerel frog, Louisiana waterthrush, Eastern pipistrelle, and Little brown myotis maternity colony (Figures 3 and 6, Appendix 6; see also Appendix 1 for a listing of rare features and Appendix 2 for an explanation of printout fields).

Amphibians and Reptiles

Herpetofaunal surveys at Whitewater State Park targeted two amphibian and ten reptile species (Table 2). Site selection was based on the species of interest and their preferred habitats. Due to previous survey efforts focusing on Timber rattlesnakes within Whitewater State Park (Keyler and Oldfield 1992), MCBS staff did not conduct intensive searches for this species in the Park.

Methods

Anuran surveys. Anuran surveys document breeding frogs and toads during periods of chorusing that extend from April through July. Wetland locations were surveyed sunset. All species heard calling during a 3- to 5-minute period were identified and the intensity of their calls (i.e., an index of the number of calling individuals) were recorded. An anuran survey route of ten stops was established, six of these stops were located within Park boundaries (see Figure 5 for a map and Table 3 for a list showing locations of survey sites). Anuran surveys were conducted three times during the breeding season, on 27 April, 25 May, and 13 July 1993.

Drift fences. Drift fences capture more secretive herpetofauna, such as salamanders, and to record seasonal movements of a variety of species. Each drift fence consists of a 50-foot roll of

aluminum flashing with eight five-gallon buckets buried flush with the ground on either side of the flashing. Two drift fences were installed in the Park, one in lowland hardwood forest adjacent to Trout Run Creek and the other at the base of a slope of mesic forest near the Whitewater River. The fences were opened from 22 April through 8 June 1993, for a total of 376 trap nights each. Buckets were checked two to three times per week during this period and all herpetofauna and small mammals were removed and identified.

Incidental observations: Incidental records of herpetofauna also were recorded when encountered. Voucher specimens were collected and preserved for permanent storage at the Bell Museum of Natural History, University of Minnesota, St. Paul.

Results

A total of five species of amphibians and two species of reptiles were documented in the Park during MCBS animal surveys (Table 4). Additional species were recorded from the Park during previous herpetofaunal surveys (Keyler and Oldfield 1992, Moriarty 1985). Amphibians and reptiles also have been recorded by Park staff and visitors. Timber rattlesnake sightings are reported to Park staff almost annually. Other species have been documented near the Park and are likely to occur within the Park boundaries.

Anuran surveys. Four species of frogs were documented in the Park during anuran surveys. Although few frogs called during the April and July surveys, four species were documented during the survey in May. The site with the greatest intensity of calls was in the vicinity of the old Park office, where Chorus frogs, American toads, and Eastern gray treefrogs were heard. Spring peepers were recorded near the new Park headquarters. Although Pickerel frogs were heard directly north of the Park and several individuals were hand-captured from the Heim tract in 1998, none were heard within Park boundaries during the 1993 anuran surveys.

Drift fences. Only two species of amphibians, American toad and Pickerel frog, were captured in the drift fence buckets. The low diversity of herps captured in the drift fences was comparable to results at other forested sites in Winona County. Species with toepads, such as Spring peepers and Gray treefrogs, have the ability to adhere to walls of drift fence buckets and therefore may have been under-represented with this type of sampling. Drift fences also captured small mammals, which are discussed in the mammal section.

Rare amphibians and reptiles

Rare herpetofauna of the Park were primarily associated with forest habitats. Timber rattlesnakes, Eastern hognose snakes, and Milk snakes utilize south-facing rock outcrops and bluff prairies as overwintering den sites and basking sites, but occupy adjacent forest and forest edge during most of the summer. Trout Run Creek and the Whitewater River provide habitat for the Pickerel frog, a species which breeds in shallow oxbows of forested river valleys and feeds in grassy openings. The presence of suitable habitat at Whitewater State Park provides an excellent opportunity for protection of these forest species.

Breeding-season Birds

Of the twelve rare bird species potentially occurring in southeastern Minnesota, six species, associated with upland forest and forest edge habitats, were expected to occur at Whitewater State Park (Table 2). Rare bird species not expected to be found in the Park were those associated with wetlands or large grassland habitats. These habitats, although present in the vicinity of the Park, were not present, to any extent, within the Park boundaries.

Methods

A total of 21 point count surveys were conducted in the Park, between 4 and 30 June 1993. At each point, all birds heard or seen during a five-minute interval were identified and evidence of breeding behavior or nesting was recorded. Points were spaced 300 to 350 meters apart and at least 150 meters from the edge of the habitat, where possible. Point counts were conducted from sunrise to 0930 hours, during suitable weather conditions (i.e., wind less than 10 mph, precipitation no greater than a light rain). Nineteen points were located in deciduous forest and two points were in old field or edge habitats (refer to Figure 5 for a map and Table 3 for a list of survey locations).

Additional surveys were conducted for Louisiana waterthrushes by walking along the Whitewater River and Trout Run Creek and listening for this species' loud, distinctive song.

Incidental records of birds observed at or near Whitewater State Park also were recorded.

Results

MCBS bird surveys recorded 57 species in the Park during the breeding season (Table 5). Two special concern species, the Louisiana waterthrush and Cerulean warbler (which was added to the state list in 1994). An additional 31 species may be expected to occur in the Park based on the presence of suitable habitat and the Park's location within the species' ranges in Minnesota (Janssen 1987, MCBS data), but were not detected by MCBS. Six of these species, including the state special concern Acadian flycatcher, were confirmed present in the Whitewater State Park by Jennifer Hathaway Stucker, while conducting graduate research on bird biodiversity in southeastern Minnesota during 1996 and 1997.

Most bird species found in the Park are typical of deciduous forest and fragmented forest-edge habitats. The Park's avifauna is similar to that of other good quality forested sites surveyed in the region. Common bird species included many neotropical migrants, such as Eastern wood-pewee, Wood thrush, Red-eyed vireo, and Ovenbird. Unfortunately, Brown-headed cowbirds were relatively common in the Park. This nest parasite, which occurs more frequently in open or fragmented habitats than in extensive, closed-canopy forests, may be a factor in the decline of many forest songbird species.

Non-forested and developed areas in the Park, such as those around the headquarters area, provided habitat for many open country and edge species not typically found in extensive deciduous forests. For example, 28 bird species were seen or heard at the picnic ground and

swimming beach area during a 15 minute period on 30 June 1993. Species detected included Northern rough-winged and Barn swallows, Eastern bluebird, Warbling vireo, Yellow warbler, and Common grackle. These species generally are able to adapt to human disturbances (e.g., urbanization, farming, and forest fragmentation) and are common and widespread in much of the state. The presence of these "edge" species in what was historically extensive deciduous forest is indicative of conditions that may be detrimental to birds requiring large tracts of unfragmented forest.

Limited areas of wetland and grassland habitats occur in the Park. Many bird species typical of these habitats require relatively large tracts of habitat. Several wetland- and grassland-associated species nest near the Park, at Whitewater Wildlife Management Area (WMA) and in surrounding cultivated fields or pastures. These species may not occur regularly within the Park. For example, Sedge wrens and Savannah sparrows commonly occur in grasslands throughout the Paleozoic Plateau. The old fields and other grasslands in the Park may not be extensive enough to support these species. Historically, large tracts of these habitats were probably never present within the Park boundaries, and thus these species were likely never common nesters in the Park.

Rare birds

Louisiana waterthrush. Three singing male Louisiana waterthrushes were found in the Park during MCBS surveys, one along the Middle Fork of the Whitewater River, and the other two along Trout Run Creek. During the breeding seasons of 1996 and 1997, J. Hathaway Stucker found two or three singing male waterthrushes along the Middle Fork and more than three males on Trout Run Creek. The Park probably supports a total of five or six pairs of Louisiana Waterthrushes in a typical year (individual territories probably change slightly from year to year).

Whitewater State Park contains excellent Louisiana waterthrush habitat, which consists of clear, swiftly-flowing streams with a closed canopy of mature forest overhead. This species nests in root masses and crevices of cut-banks along streams, and forages at the water's edge (Robinson 1995). A narrow corridor of trees along a stream is not sufficient for waterthrushes. Many valleys in Houston and Winona counties with permanently-flowing water are either grazed to the shoreline or have insufficient canopy cover along the streams to support Louisiana waterthrushes.

Cerulean warbler. Cerulean warblers were found at two locations in the Park, both of which were on the forested slopes west of the main campground. An additional Cerulean Warbler was found by J. Hathaway Stucker along Trout Run Creek. Cerulean warblers are most commonly associated with mature floodplain or lowland hardwood forests and less frequently in mature upland deciduous forests. This species spends most of its time in the upper portions of the canopy, in forests of tall, mature trees.

Acadian flycatcher. One Acadian flycatcher was found by J. Hathaway Stucker in 1996 on Trout Run Creek. Like the Louisiana waterthrush, Acadian flycatchers are found in mature, closed-

canopy forest, usually along streams.

Least flycatcher. One regionally rare species, the Least flycatcher, was found in the Park. Least flycatchers are a common species in the forested portion of northern and central Minnesota, but rare south of the Minneapolis-St. Paul metropolitan area. In southeastern Minnesota, this species is usually associated with lowland hardwood forests.

Mammals

Six rare small- to medium-sized mammals have been documented from the Paleozoic Plateau Ecological Section and another has been reported, but not verified (Table 2). The Woodland vole, Northern myotis, and Eastern pipistrelle are the most likely of these rare mammals to be found in the Park and were the primary focus of the MCBS mammal surveys. Prior to MCBS, the two locations known for the Woodland vole in the state were from apple orchards. However, in Iowa, this species has been found in mature mesic forests, similar to those present at the Park. The two rare bat species, Northern myotis and Eastern pipistrelle, hibernate in caves in this region. Although there are no records of these species hibernating in the caves and rock crevices at Whitewater State Park, they may use these features as temporary shelters.

Grassland-associated mammals are less likely to be found in the Park because the bluff prairies are generally small, isolated, and overgrown. Larger grassland areas in the Park (excluding mowed lawns) are either highly disturbed or have been restored to native plant species in the relatively recent past. Therefore, it is unlikely that the Prairie vole would be found here, preferring larger tracts of relatively undisturbed dry prairie. The Least shrew and Western harvest mouse can be found in disturbed open habitats, including roadside ditches. However, the Least shrew is known from the Paleozoic Plateau by a single 1914 record, making it fairly unlikely to occur in the Park. Three records exist for the Western harvest mouse in Winona County and appropriate habitat in Whitewater State Park was sampled for this species.

The Eastern spotted skunk was not included in Park surveys because, while the species has been reported in the county, no verified records are known. Searches for spotted skunks elsewhere in the state suggest that the best strategy for documenting this species is to follow-up on sightings soon after they are reported. During the 1993 surveys, no reports for this species were obtained.

Two other rare mammals, not included in Table 2 but reported from the area, are Mountain lion (*Felis concolor*) and Mule deer (*Odocoileus hemionus*). Mule deer have been taken in this region during the hunting season, however, these individuals were thought to have been wanderers from the Dakotas and not part of a resident population. For that reason, this species was removed from the state list of endangered, threatened, and special concern species (Minnesota Department of Natural Resources 1995). Reports of Mountain lions continue to occur throughout the state, however, none have been undisputedly documented from the Paleozoic Plateau. Surveying for this large, special concern species was beyond the scope of MCBS.

Methods

Mammal survey methods employed at Whitewater State Park included small mammal trap grids, drift fences, foraging bat surveys, and incidental observations.

Small mammal trap grids: Three small mammal trap grids were set in the Park, two in old field habitats and one in maple-basswood forest along Trout Run Creek (refer to Figure 5 and Table 3 for locations of the grids). Locations of the grids were first approved by the DNR archaeologist to ensure that no cultural features would be disturbed. Each trap grid consisted of a 4x10 station array with one trap per station. Traps included 17 Sherman live traps, 17 Museum Special snap traps, 3 cone pitfall traps, and 3 Victor rat traps. All traps, except the pitfall traps, were baited with a mixture of peanut butter and oatmeal. The grids were run from 6 - 9 August (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. Other captures were taken back to the field station for additional measurements and some were prepared as permanent voucher specimens. Data obtained from each capture included species identification, sex, reproductive condition, age, weight, and molt. In addition to these data, standard measurements were recorded for voucher specimens. Voucher specimens are permanently stored at the Bell Museum of Natural History, University of Minnesota, St. Paul.

Drift fences: Small mammals were captured in the drift fences set to survey for amphibians and reptiles. Refer to the amphibian and reptile methods section for a description the habitats sampled and the drift fence technique. Captures were identified to species, sex, and age.

Foraging bats: At the time of the 1993 surveys, documenting the presence of bats was limited largely to winter cave searches for hibernating bats and summer mist-netting for foraging bats. Due to the time-intensive nature of these survey activities and the limited staff, these techniques were employed sparingly. No nets were set in Whitewater State Park. The caves near Coyote Point were investigated for their potential as bat hibernacula, however, they were not revisited during the winter.

Ultrasonic bat call detectors were purchased by MCBS after surveys were completed at the Park. When animal survey staff returned to the Paleozoic Plateau in 1996, Whitewater was revisited. Bat detectors were used to listen to the calls of foraging bats on nights when weather conditions were appropriate (i.e., little-to-no wind or rain, warm temperatures, and preferably when flying insects are abundant). On 1 August 1996, between 2045 and 2230 hours, eleven listening stops were made throughout the Park, using a Skye ultrasonic bat detector (Figure 5). All bats detected were identified to species, if possible, according to call frequencies and call characteristics. The Skye ultrasonic detector was able to identify the all bats, except the Eastern pipistrelle, Northern myotis, and Little brown myotis. Two bat detectors of the Skye type are needed to identify Eastern pipistrelles, who emit calls at two frequencies. The frequency range and call characteristics of the rare Northern myotis and the abundant Little brown myotis are so similar that these species can not be accurately separated with this instrument. Thus, recordings were identified to the genus (*Myotis* spp.) and may have included the rarer species.

A recently-developed ANABAT bat detector system improves upon 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, both the Eastern pipistrelle and the Northern myotis could be distinguished. After obtaining an ANABAT detector, MCBS returned again to Whitewater State Park. Foraging bats were recorded at four locations throughout the Park from 2200 to 2345 hours on 1 July 1996 (Figure 5).

Incidental observations: Observations of larger mammals or mammal sign were recorded when encountered. On 1 August 1996, most of the Park trails were traveled and all mammals observed, heard, or evidence of their presence were recorded.

Results

Twenty-three mammal species were documented in Whitewater State Park during MCBS surveys, including the special concern species, Eastern pipistrelle (Table 6). Other more common mammals certainly occur in the Park, but missed detection during MCBS surveys. Included among these are Virginia opossum, Woodchuck, Common gray fox, and Ermine.

Small mammal trap grids and drift fences: Six small mammal species were taken from the trap grids and drift fences (Table 7). A drift fence set in lowland hardwood forest in nearby Whitewater Wildlife Management Area (WMA) captured a Woodland vole and it was hoped that drift fences set in similar habitat at the Park might document the species here. Although drift fences are sometimes very effective in capturing small mammals, those set at Whitewater State Park had very low capture rates and no Woodland voles were found. Among the trap grids, the grid set in the old field across from the Visitor Center had the highest number of species and the grid set in maple-basswood forest had the lowest number of species but the highest total abundance (Table 7). Typical of forests elsewhere, the overwhelming majority of small mammals captured in the forest grid were White-footed mice.

Foraging bat surveys: From the two foraging bat surveys, five bats were confirmed in the Park and another was tentatively identified (Figure 7). Those confirmed included Little brown myotis, Big brown bat, Eastern pipistrelle, Red bat, and Hoary bat. The Silver-haired bat was tentatively identified but only a single, incomplete call was obtained that could be attributed to this species. No calls from Northern myotis were recorded.

During both the 1996 and 1998 surveys, a possible maternity colony of Little brown myotis was located at the head of Trout Run Creek Trail (Figure 6, Appendix 6). Shortly after dusk, a large number of bats were seen and heard foraging in the open space over Trout Run Creek and within a half hour, they had dispersed. This is consistent with evening emergence from a maternity colony. The exact location of the colony was not determined, however a large, hollow snag at the creek edge appeared to be the most likely location. Fortunately, this snag survived the 1998 windstorm that toppled many of the trees in this area.

Little brown myotis were clearly the most numerous bat foraging in Whitewater State Park and

were detected at nearly all stops (Table 8). The Visitor Center was the most active area for bats and had the greatest number of species visiting the area. Undoubtedly the bright street lights attract a large number of insects, making this location highly attractive to bats. The Hoary bat was either a frequent or a persistent forager here, constituting the majority of calls recorded at that location. Whether this was a couple of individuals making repeated passes or a number of bats cannot be determined .

The Minnesota Speleological Survey identifies seven caves within the boundaries of Whitewater State Park (Table 9). Most of these caves probably are not suitable to bats as winter hibernacula, because they are small and/or exposed (D. Palmquist, personal communication). However, MCBS did not survey the caves during the winter to confirm the presence or absence of hibernating bats.

Rare mammals

Bats were the only rare mammal occurrences recorded in Whitewater State Park during MCBS animal surveys. This included foraging Eastern pipistrelles at the Group Camp bridge and the Visitor Center, and a maternity colony of Little brown myotis, located at the head of Trout Run Creek Trail. It is likely that Eastern pipistrelles forage throughout the Park where flying insects are abundant. Additional examination of the large trees along the banks of Trout Run Creek may reveal new maternity sites.

Despite the quality of the habitat along Trout Run Creek and adjacent slopes of mesic forest, no Woodland voles were found. The Meadow vole captured in the drift fence was positively identified, although the habitat was more suited to Woodland voles. Only two records were obtained for the Woodland vole during the 1993 surveys of Houston and Winona counties: one from mature maple-basswood forest in Whitewater WMA in Winona County and one from a lowland hardwood forest in Beaver Creek Valley State Park in Houston County. The lack of records for this species does not rule out its presence in the Park, particularly in forests along Trout Run Creek.

ECOLOGICALLY SIGNIFICANT AREAS IN WHITEWATER STATE PARK

Overall Protection of Natural Features and Rare Species

Whitewater State Park contains excellent examples of native plant communities and habitats suitable to a number of rare plant and animal species. Its connection to Whitewater Wildlife Management Area makes these state-owned lands among the most important areas of the Paleozoic Plateau in terms of biodiversity significance. The large, relatively unfragmented tracts of forest present in the Park are vital to many forest songbirds that are sensitive to forest fragmentation. The bluff prairies and cliffs provide important habitat for several rare snakes. The juxtaposition of streams, woodlands, and openings offer a diversity of habitats that serve as important feeding and roosting sites for bats during the summer. The rock outcrops and caves are not only features of geologic interest, but potentially may serve as hibernacula for snakes and bats.

A number of quality natural areas presently extend outside the Park boundaries (refer to maps of the Park and Winona County: Figures 1-3, Minnesota County Biological Survey 1996). The Park should seek opportunities to ensure the protection of these areas through easements, acquisitions, and education. The recent purchase of the adjacent Heim tract along Trout Run Creek, that contains rare species and quality native plant communities, is an excellent example such an opportunity. Management of lands within the statutory boundary of the Park, that are currently administered as a wildlife management area, should include provisions for the protection of ecologically significant areas. Protection of natural features on these lands, in conjunction with those currently managed at Whitewater State Park, will further ensure that the integrity of the native plant communities and critical habitat for rare species in this larger area are maintained.

Management alternatives for ecologically significant areas in Whitewater State Park are limited due to the topography, soils, and flooding history in the Park (Minnesota Department of Natural Resources 1979). Nevertheless, future development plans should carefully consider potential impacts to sensitive species and native plant communities. The "potential ecological protection zone" described in the 1979 Park Plan continues to be a good approximation of the areas of ecological significance.

Forest and Forest-edge Communities

Upland deciduous forests

The relatively undisturbed condition of large tracts of forest is an important natural component in Whitewater State Park. Physical alteration to the intact nature of the forests could significantly affect species, such as the Cerulean warbler and Acadian flycatcher, that rely on closed-canopy conditions. Some rare plants, such as Twinleaf and Golden-seal, appear to require the closed canopy and intact duff layer found in old forests. Development of trails or public use areas should seek to avoid opening the canopy to any significant extent. The majority of forested communities in the Park are located on extremely steep slopes where disturbance may lead to

soil erosion and disruption to the ground flora. Special consideration should be given to trail development in these especially fragile areas. The populations of American ginseng and Golden-seal at Whitewater State Park are particularly vulnerable to illegal harvesting. Trails should avoid the areas where these species occur and populations should be regularly monitored to assess their condition.

Oak forests and oak woodland-brushlands in the Park may eventually succeed to maple-basswood forests if fire is excluded from them. An assessment of the desired native plant communities in the Park should be made to determine whether the maintenance of some areas in oak-dominated communities is desirable. If so, controlled burning is a technique that may be considered, especially in areas adjacent to existing prairies. Where canopies are thick and there is little-to-no fuel on the ground, it may be desirable to do selective tree cutting in some areas that can promote the regeneration of oak trees and maintain or enhance the native plant communities.

Forests, such as those along Trout Run Creek, provide important summer habitat for snakes, as well as other forest species. Male and non-gravid female Timber rattlesnakes utilize forest and forest-edge habitats in search of prey, and move, on average, as much as 2.5 miles from their den site. Establishing a 1.5 mile buffer around den sites is minimal for protecting Timber rattlesnake populations (Brown 1993). Protection of such buffers may not be practical at Whitewater State Park because most of the Park would fall within these limits. Nevertheless, development of new campsites and trails in the Park should avoid forests adjacent to potential snake dens, whenever possible. Additional study on movement patterns of the Timber rattlesnakes inside and adjacent to the Park could reveal what specific forest stands or valley corridors are frequented by snakes. Acquisition of land adjacent to the Park that has been shown to be used by Timber rattlesnakes, would enhance protection of the Park's rattlesnake population. Timber rattlesnakes may use the forested land along the bluffs north of the Park. Acquisition of private lands within the statutory boundary of the Park would connect the Park with the Whitewater WMA, thereby joining these two ecologically significant areas and adding further to the protection of rare species and critical habitat.

Lowland hardwood forests and stream-side habitats

The lowland forests and stream-side habitats in the valley floors, in conjunction with clear streams, provide critical habitat for a number of plant and animal species. The distributions of rare animals such as the Louisiana waterthrush, Pickerel frog, and Woodland vole are closely associated with these habitats. Bats also use these areas as foraging and roosting sites.

Degradation of stream valleys elsewhere in the Paleozoic Plateau, involving removal of forests on the hillsides and valley floors and subsequent erosion and runoff into the streams and rivers, has greatly reduced the amount of quality forested stream habitat present in this region. The Whitewater River and Trout Run Creek possess ideal habitat for the Louisiana waterthrush. Any management activities that remove canopy cover over the water or alter the stream bank structure of small, exposed rocks, scattered leaf litter, and cut banks with exposed root masses will be

detrimental to habitat suitability for Louisiana waterthrushes in the Park. Increased siltation or pollution of the stream and river due to upstream activities will negatively impact Pickerel frogs, who, like trout, require cool, clear streams. Over-mature trees and snags along the streambanks are ideal structures for hole-nesting birds and bat maternity sites. These trees should be retained unless they pose safety hazards to trail users.

Algific talus slopes

Because algific talus slopes are dependent upon sinkholes and fissures that may be some distance away, efforts should be made to protect the slopes and surrounding areas from activities which may block or redirect cold air flow or contaminate the water that seeps into the native plant community. Small fissures (about 10 to 50 cm wide) in the Prairie du Chien formation need to be kept open to allow cold air and water to flow (Ostlie 1989). Bedrock fractures, allowing flow beneath the surface, can occur up to about 1/8 mile from the fissures. It is recommended that an area of at least 1/8 mile from each algific talus slope in all directions remain free from trails, logging, or other disturbance. Public use of any kind should be discouraged on the slopes, as the talus is extremely unstable.

Prairies, Grasslands, and Cliff Communities

Several small bluff prairies exist in Whitewater State Park. These prairies are not large enough to support rare species, such as Henslow's sparrow or Prairie vole. However, in association with rock outcrops, they provide important habitat for rare snakes, such as the Gopher snake and Timber rattlesnake. These areas serve as traditional den sites during the winter, as important basking surfaces during spring and early summer, and as rookeries for gravid females. Den sites should be identified and protected from human disturbance during spring emergence and the late summer birthing period.

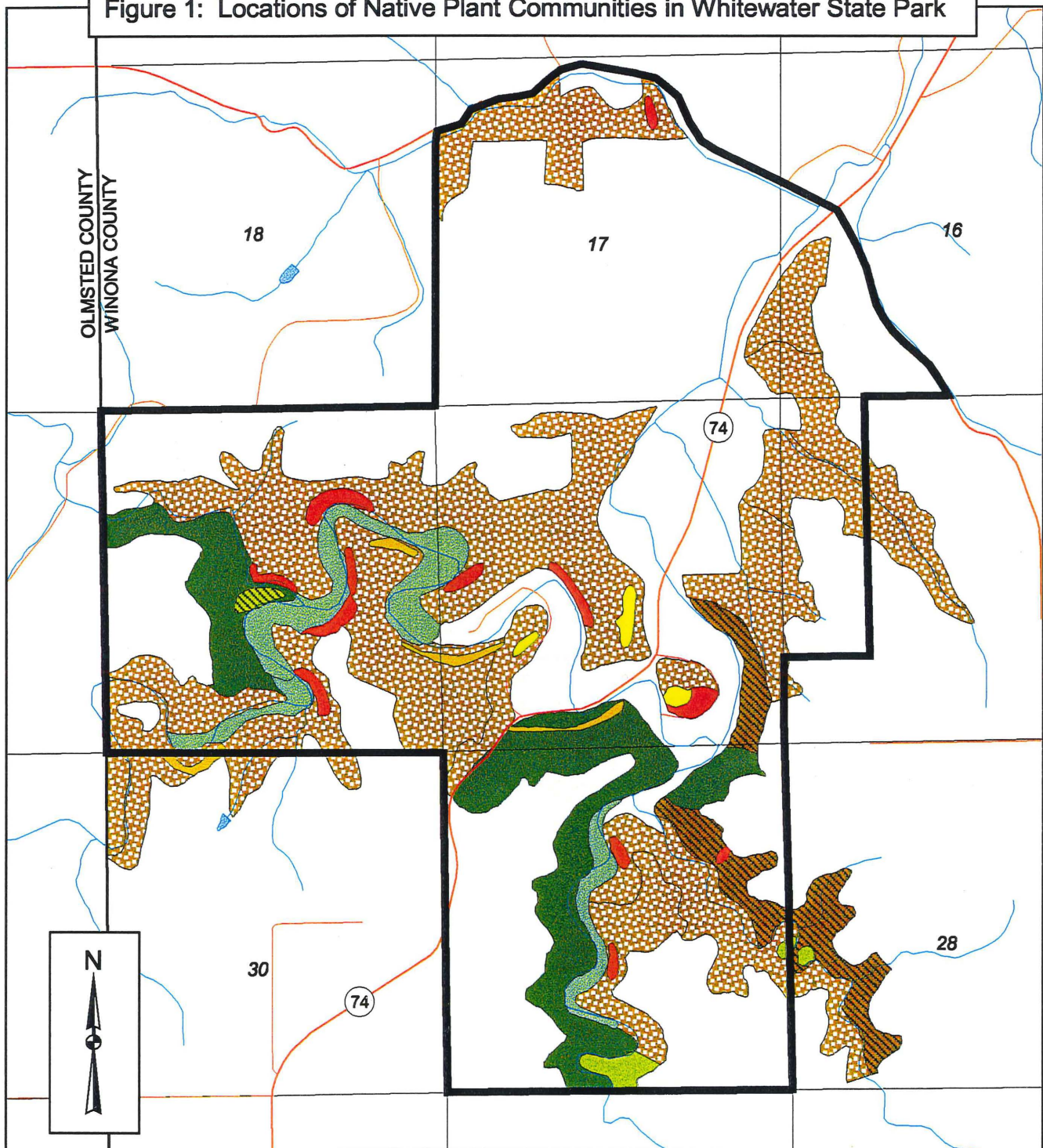
Habitat management that protects the integrity of the bluff prairie community also benefits Timber rattlesnakes and other reptiles that reside there. Although snakes use isolated red cedars on bluff prairies for shade and concealment, encroachment of woody vegetation generally discourages use of these bluff prairies by snakes. Prescribed burning and brush removal are recommended actions to maintain the bluff prairies in optimal condition. Brush removal of an overgrown bluff prairie located on the southwest-facing slope near Inspiration Point and another south-facing slope on the southern edge of the Park could be particularly beneficial to rattlesnakes. Based on observations of rattlesnakes in this region, they appear to be active from approximately mid-May through September. Burns should take place when reptiles are dormant, either before or after this active period, to ensure minimal impact to the snakes.

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Figure 1: Locations of Native Plant Communities in Whitewater State Park



Legend

Native Plant Community Types:

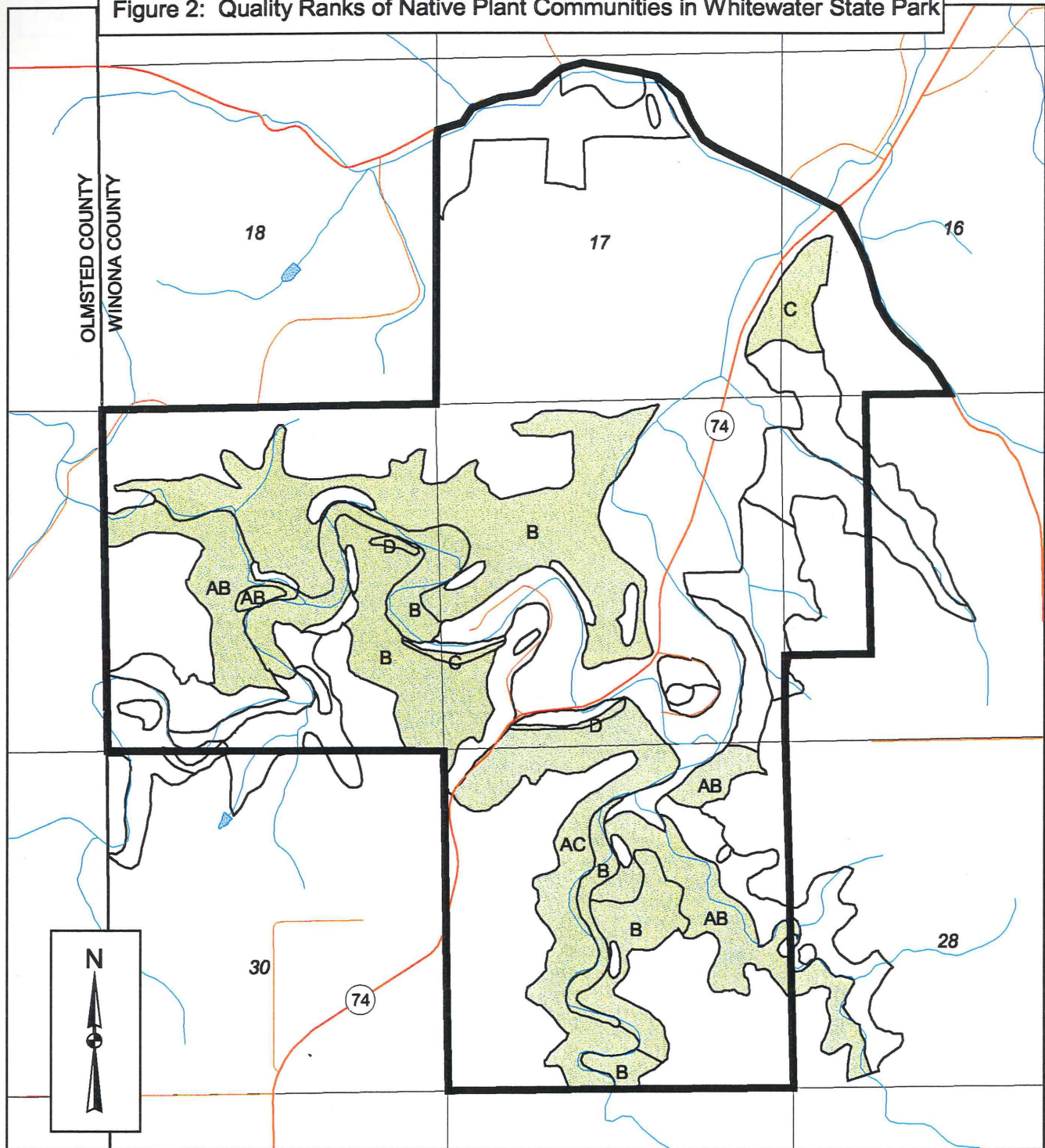
- Dry Prairie - bedrock bluff subtype
- Dry Cliff
- Lowland Hardwood Forest
- Maple-Basswood Forest
- Oak Forest - mesic subtype
- Oak Woodland-Brushland
- Talus Slope - algific subtype
- White Pine-Hardwood Forest
- White Pine-Hardwood Forest - mesic subtype

Other Mapped Features:

- Whitewater State Park - Statutory Boundary
- Highways and Local Roads
- Rivers, Streams, Ditches
- Water Bodies
- Public Land Survey Sections

0 0.5 1 Miles

Figure 2: Quality Ranks of Native Plant Communities in Whitewater State Park



Legend

Native Plant Communities:

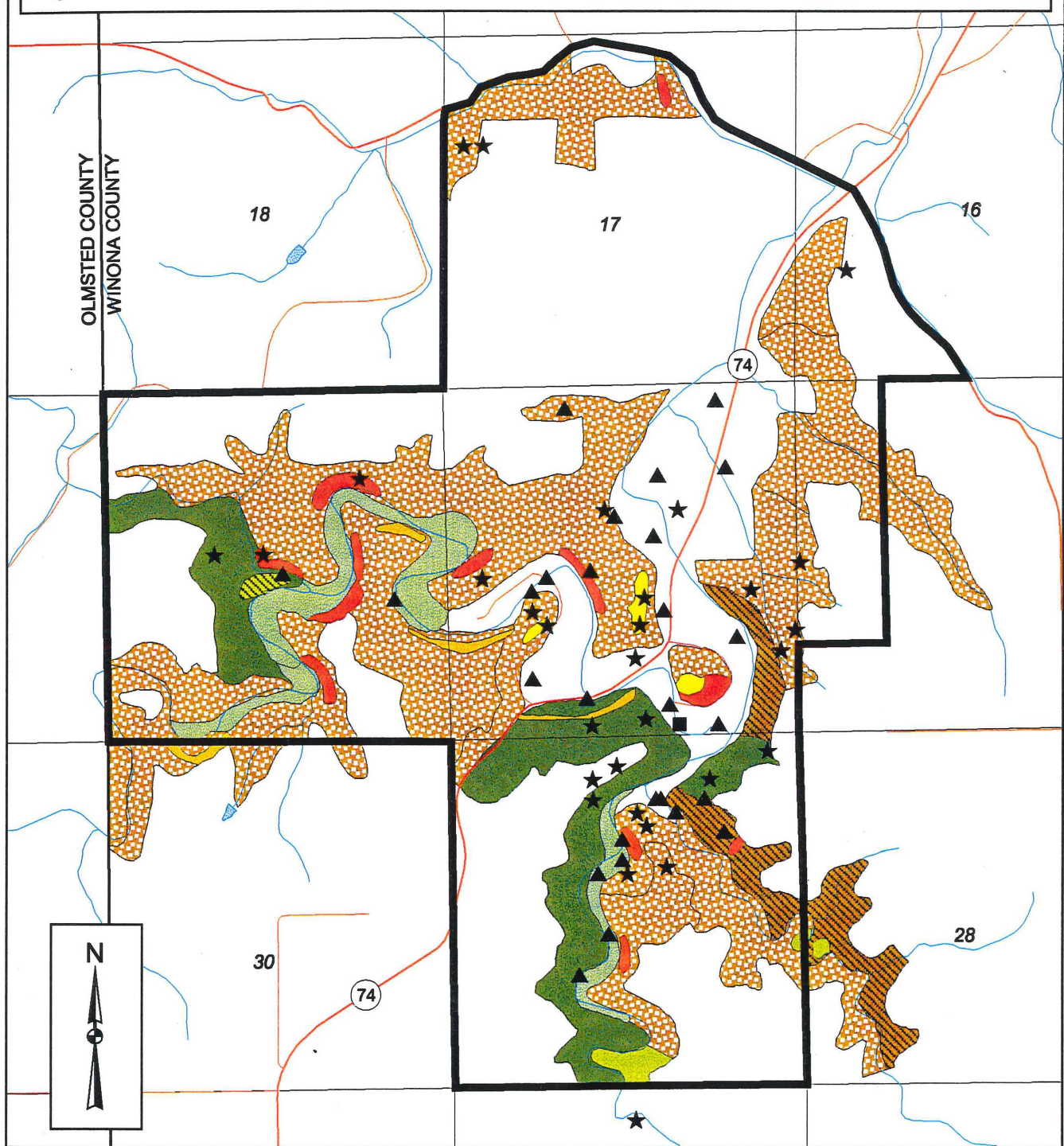
- A Native Plant Communities with Quality Ranks
- Native Plant Communities Not Ranked

Other Mapped Features:

- Whitewater State Park - Statutory Boundary
- Highways and Local Roads
- Rivers, Streams, Ditches
- Water Bodies
- Public Land Survey Sections

0 0.5 1 Miles

Figure 3: Locations of Native Plant Communities and Rare Features in Whitewater State Park



Legend

Native Plant Community Types:

- Dry Prairie - bedrock bluff subtype
- Dry Cliff
- Lowland Hardwood Forest
- Maple-Basswood Forest
- Oak Forest - mesic subtype
- Oak Woodland-Brushland
- Talus Slope - algific subtype
- White Pine-Hardwood Forest
- White Pine-Hardwood Forest - mesic subtype

Other Mapped Features:

- Rare Plants
- Rare Animals
- Animal Aggregations
- Whitewater State Park - Statutory Boundary
- Highways and Local Roads
- Rivers, Streams, Ditches
- Water Bodies
- Public Land Survey Sections

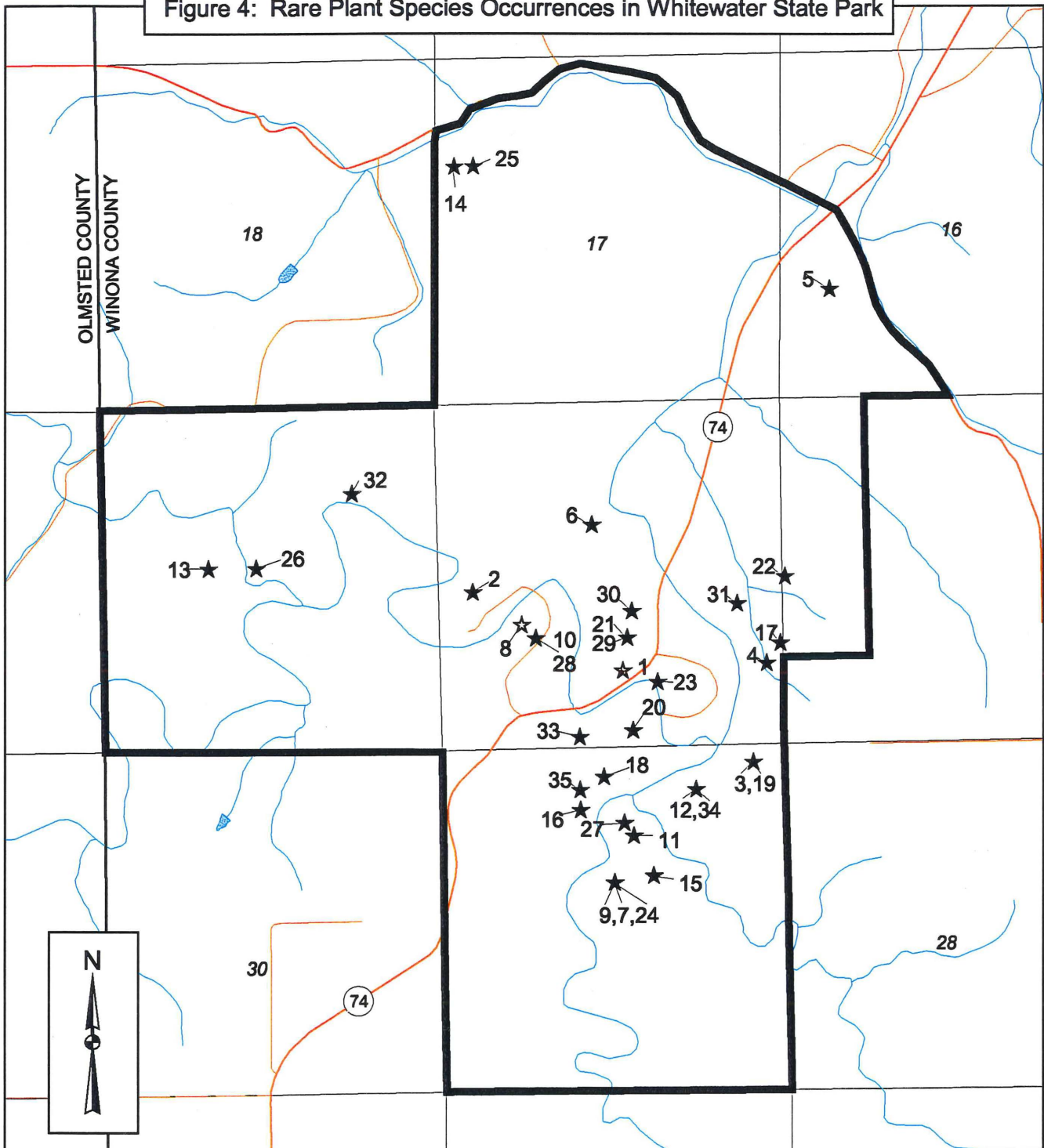
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Legend for Figure 4. Rare Plant Species Occurrences in Whitewater State Park.

Map No.	MN Status	Occur ¹ #	Scientific Name	Common Name
1	END	4	<i>Agalinis gattereri</i>	Round-stemmed false foxglove
2	NON	18	<i>Arabis laevigata</i>	Smooth rock-cress
3	NON	16	<i>Arabis laevigata</i>	Smooth rock-cress
4	NON	17	<i>Arabis laevigata</i>	Smooth rock-cress
5	SPC	14	<i>Baptisia bracteata</i> var. <i>leucophaea</i>	Plains wild indigo
6	THR	6	<i>Carex laxiculmis</i>	Spreading sedge
7	END	6	<i>Hydrastis canadensis</i>	Golden-seal
8	SPC	3	<i>Jeffersonia diphylla</i>	Twinleaf
9	SPC	6	<i>Jeffersonia diphylla</i>	Twinleaf
10	SPC	11	<i>Juniperus horizontalis</i>	Creeping juniper
11	NON	48	<i>Liparis lilifolia</i>	Lilia-leaved twayblade
12	SPC	102	<i>Panax quinquefolius</i>	American ginseng
13	SPC	100	<i>Panax quinquefolius</i>	American ginseng
14	SPC	136	<i>Panax quinquefolius</i>	American ginseng
15	SPC	101	<i>Panax quinquefolius</i>	American ginseng
16	SPC	103	<i>Panax quinquefolius</i>	American ginseng
17	NON	5	<i>Poa sylvestris</i>	Woodland bluegrass
18	NON	6	<i>Poa sylvestris</i>	Woodland bluegrass
19	NON	8	<i>Poa sylvestris</i>	Woodland bluegrass
20	NON	7	<i>Poa sylvestris</i>	Woodland bluegrass
21	SPC	10	<i>Poa wolfii</i>	Wolf's bluegrass
22	SPC	11	<i>Poa wolfii</i>	Wolf's bluegrass
23	SPC	7	<i>Poa wolfii</i>	Wolf's bluegrass
24	SPC	9	<i>Sanicula trifoliata</i>	Beaked snakeroot
25	SPC	21	<i>Sanicula trifoliata</i>	Beaked snakeroot
26	SPC	20	<i>Solidago sciaphila</i>	Cliff goldenrod
27	SPC	73	<i>Solidago sciaphila</i>	Cliff goldenrod
28	SPC	69	<i>Solidago sciaphila</i>	Cliff goldenrod
29	SPC	68	<i>Solidago sciaphila</i>	Cliff goldenrod
30	SPC	21	<i>Solidago sciaphila</i>	Cliff goldenrod
31	SPC	13	<i>Solidago sciaphila</i>	Cliff goldenrod
32	SPC	19	<i>Solidago sciaphila</i>	Cliff goldenrod
33	SPC	72	<i>Solidago sciaphila</i>	Cliff goldenrod
34	SPC	22	<i>Solidago sciaphila</i>	Cliff goldenrod
35	NON	21	<i>Taenidia integerrima</i>	Yellow pimpernel

¹ Occurrence number identifies the element record in the Natural Heritage Information System (see Appendix 5 for additional information on particular rare plant occurrences).

Figure 4: Rare Plant Species Occurrences in Whitewater State Park



Rare Plant Species Occurrences:

- ★ Rare Plant Location (1970 - present) and map number
- ☆ Rare Plant Location (pre - 1970) and map number

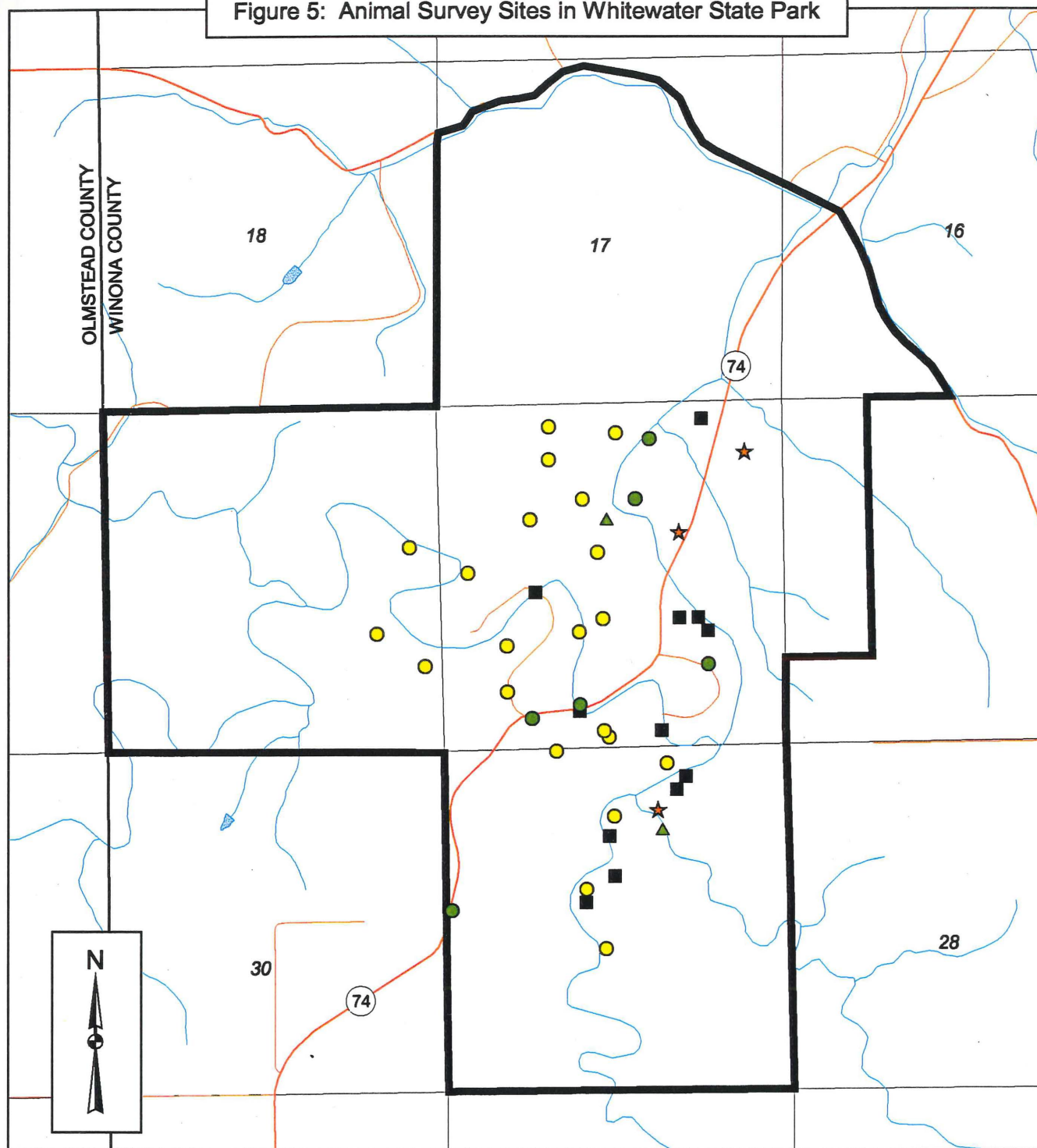
Legend

Other Mapped Features:

- Whitewater State Park - Statutory Boundary
- Highways and Local Roads
- Rivers, Streams, Ditches
- Water Bodies
- Public Land Survey Sections

0 0.5 1 Miles

Figure 5: Animal Survey Sites in Whitewater State Park



Legend

Animal Survey Sites:

- Anuran Survey
- ▲ Drift Fence
- Bird Point Count
- ★ Mammal Trap Grids
- Bat Survey

Other Mapped Features:

- ▬ Whitewater State Park - Statutory Boundary
- Highways and Local Roads
- Rivers, Streams, Ditches
- Water Bodies
- 10 Public Land Survey Sections

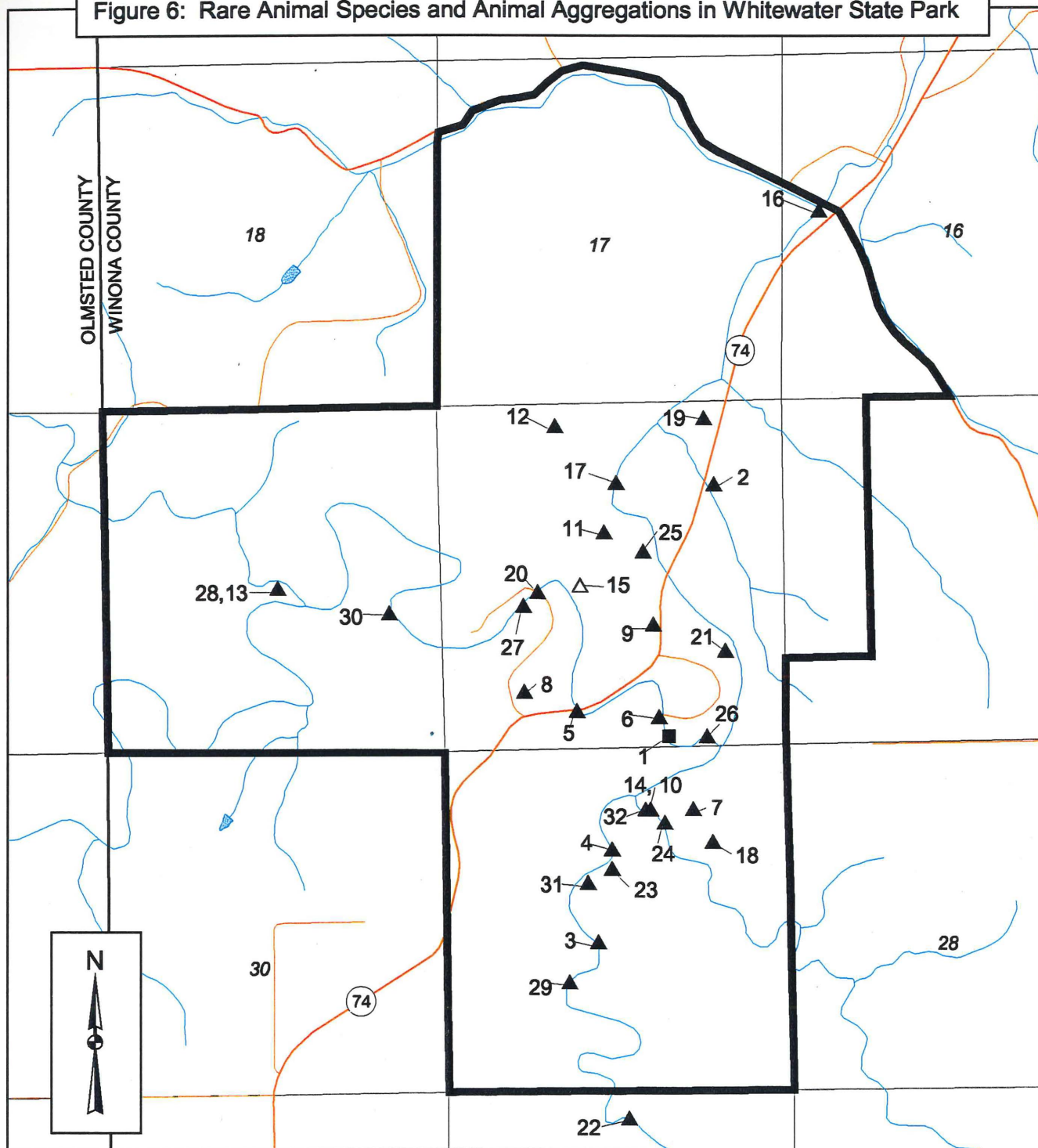
0 0.5 1 Miles

Legend for Figure 6. Rare Animal Species Occurrences in Whitewater State Park

Map No.	MN Status	Occur ¹ #	Scientific Name	Common Name
1		37		Bat concentration
2	THR	69	<i>Crotalus horridus</i>	Timber rattlesnake
3	THR	51	<i>Crotalus horridus</i>	Timber rattlesnake
4	THR	59	<i>Crotalus horridus</i>	Timber rattlesnake
5	THR	65	<i>Crotalus horridus</i>	Timber rattlesnake
6	THR	102	<i>Crotalus horridus</i>	Timber rattlesnake
7	THR	9	<i>Crotalus horridus</i>	Timber rattlesnake
8	THR	56	<i>Crotalus horridus</i>	Timber rattlesnake
9	THR	54	<i>Crotalus horridus</i>	Timber rattlesnake
10	SPC	58	<i>Dendroica cerulea</i>	Cerulean warbler
11	SPC	22	<i>Dendroica cerulea</i>	Cerulean warbler
12	SPC	21	<i>Dendroica cerulea</i>	Cerulean warbler
13	SPC	59	<i>Dendroica cerulea</i>	Cerulean warbler
14	SPC	37	<i>Empidonax virescens</i>	Acadian flycatcher
15	THR	45	<i>Falco peregrinus</i>	Peregrine falcon
16	NON	58	<i>Lampetra appendix</i>	American brook lamprey
17	NON	59	<i>Lampetra appendix</i>	American brook lamprey
18	NON	39	<i>Lampropeltis triangulum</i>	Milk snake
19	SPC	26	<i>Pipistrellus subflavus</i>	Eastern pipistrelle
20	SPC	25	<i>Pipistrellus subflavus</i>	Eastern pipistrelle
21	NON	11	<i>Rana palustris</i>	Pickerel frog
22	NON	63	<i>Rana palustris</i>	Pickerel frog
23	NON	28	<i>Rana palustris</i>	Pickerel frog
24	NON	27	<i>Rana palustris</i>	Pickerel frog
25	NON	9	<i>Rana palustris</i>	Pickerel frog
26	SPC	75	<i>Seiurus motacilla</i>	Louisiana waterthrush
27	SPC	76	<i>Seiurus motacilla</i>	Louisiana waterthrush
28	SPC	73	<i>Seiurus motacilla</i>	Louisiana waterthrush
29	SPC	50	<i>Seiurus motacilla</i>	Louisiana waterthrush
30	SPC	33	<i>Seiurus motacilla</i>	Louisiana waterthrush
31	SPC	74	<i>Seiurus motacilla</i>	Louisiana waterthrush
32	SPC	34	<i>Seiurus motacilla</i>	Louisiana waterthrush
no #	SPC	8	<i>Heterodon platirhinos</i>	Eastern hognose snake

¹ Occurrence number identifies the element record in the Natural Heritage Information System (see Appendix 6 for additional information on particular rare animal and animal aggregation occurrences).

Figure 6: Rare Animal Species and Animal Aggregations in Whitewater State Park



Legend

Rare Animal Species Occurrences:

- ▲ Rare Animal Location (1970 - present) and map number
- △ Rare Animal Location (pre - 1970) and map number
- Rare Animal Aggregation Location (1970 - present) and map number

Other Mapped Features:

- ▭ Whitewater State Park - Statutory Boundary
- Highways and Local Roads
- Rivers, Streams, Ditches
- Water Bodies
- 10 Public Land Survey Sections

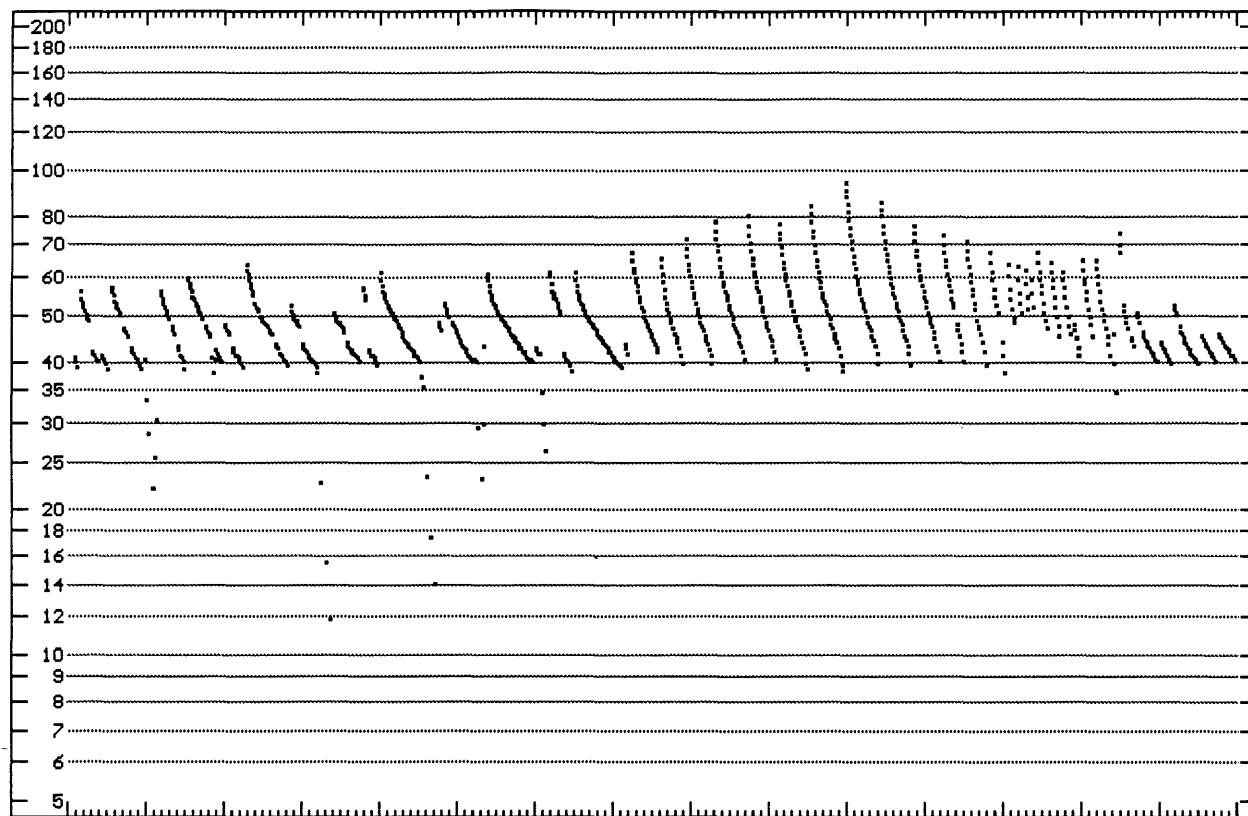
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Figure 7. Representative call sequences from foraging bats at Whitewater State Park.

Description of ANABAT screens:

- a. Little brown myotis foraging over Oxbow Lake.
Search phase (segment 0 - 7), pursuit phase (segment 7 - b),
capture phase or "feeding buzz" (segment b - d).
- b. Little brown myotis (first segment) and Big brown bat (second segment)
foraging over Oxbow Lake.
- c. Big brown bat foraging at the Visitor Center lights.
Search (segment 0 - 5), pursuit (segment 5 - 6), feeding buzz
(segment 6 - 7), search (segment 7 - a) phases.
- d. Hoary bat foraging at Visitor Center lights.
Search (segment 0 - 5), pursuit (segment 5 - 9), feeding buzz
(segment 9 - a) phases.
- e. Hoary bat (first segment) and Red bat (second segment) foraging at Visitor
Center lights.
- f. Eastern pipistrelle (first segment) and Hoary bat (second segment)
foraging at Visitor Center lights.

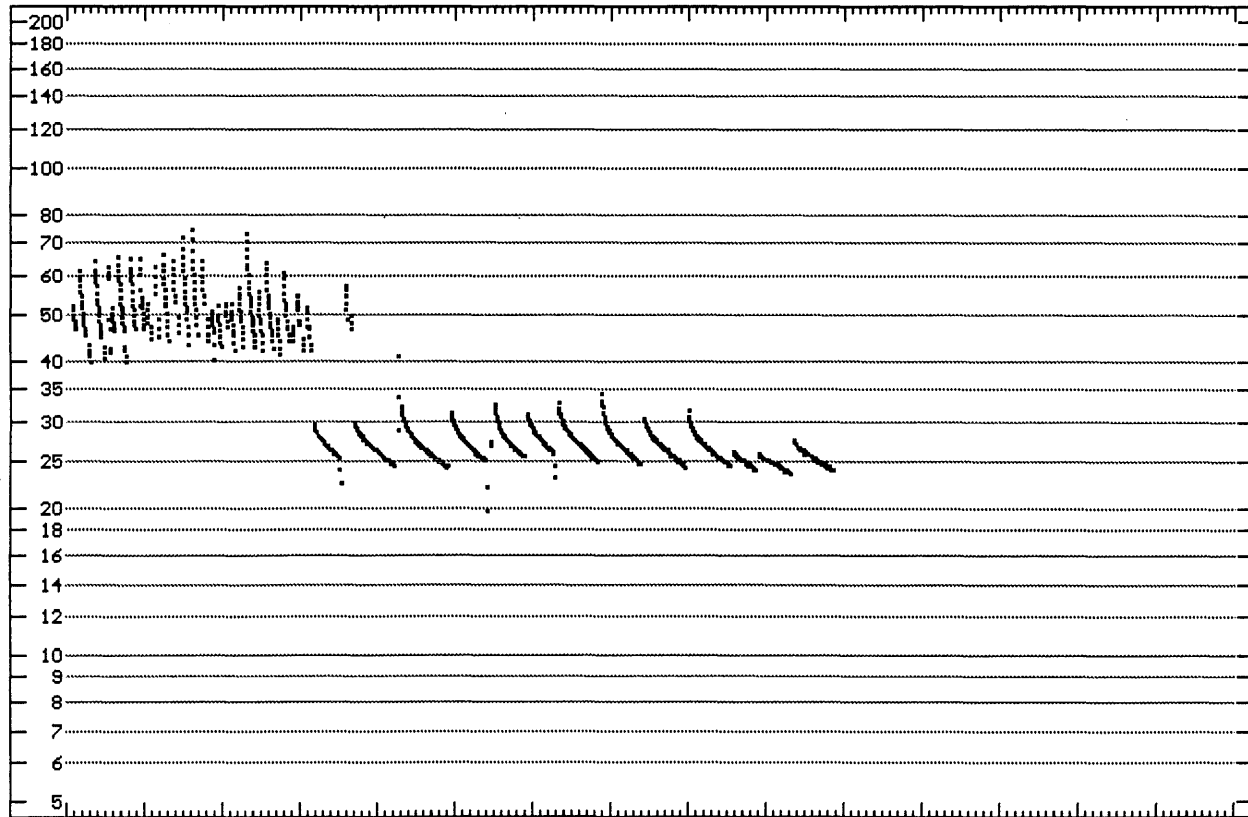
7a.



Tape: Computer Date: 1 Jul 98 Loc: Whitewater State Park, Winona Co., MN
 Sp: Little brown myotis (foraging and feeding calls) Spec: G. Nordquist
 Note: MCBS bat surveys, bridge over Oxbow Lake.

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 TOT 150ms IK 10ms f7 COMP St 2 FILT 1
 ANALOOK 2.6 January 1996

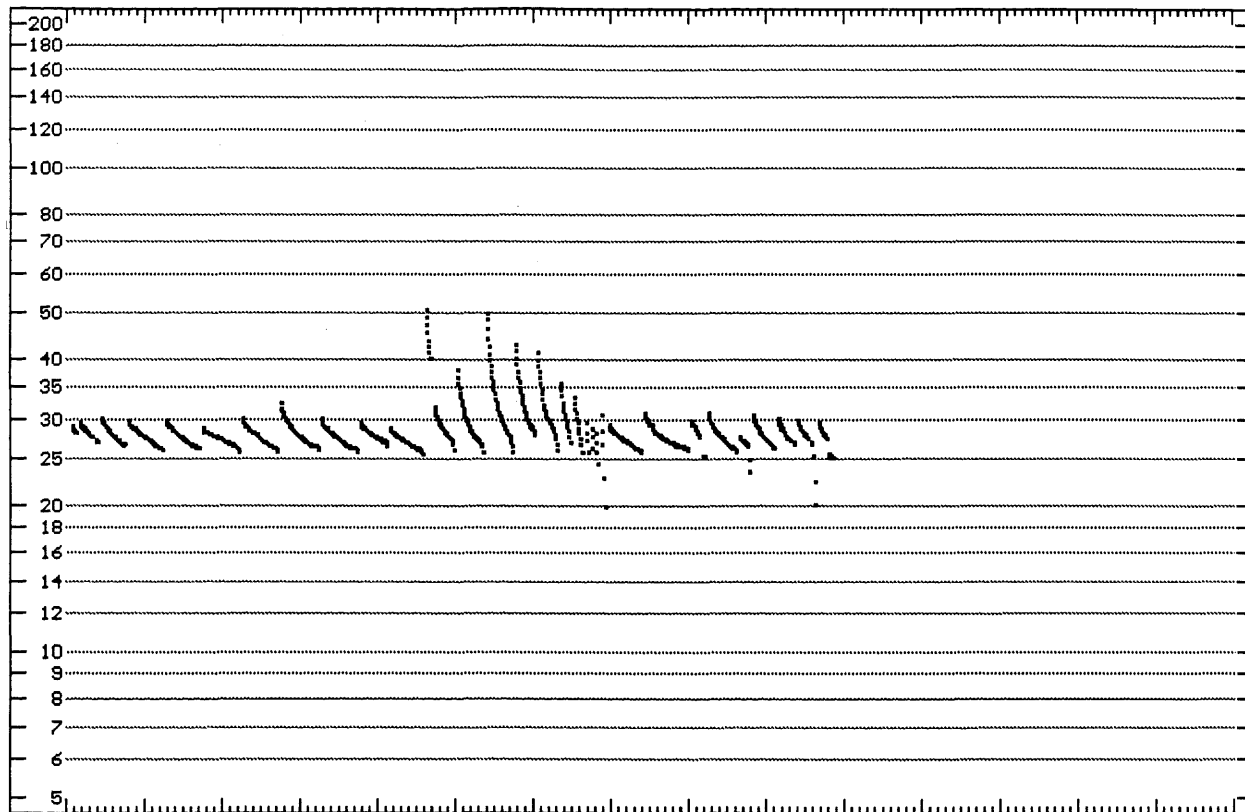
7b.



Tape: Computer Date: 1 Jul 98 Loc: Whitewater State Park, Winona Co., MN
 Sp: Little brown myotis and Big brown bat. Spec: G. Nordquist
 Note: MCBS bat surveys, bridge over Oxbow Lake.

87012157.47# Div 16
 TOT 375ms IK 25ms f6 COMP St 2 FILT 1
 ANALOOK 2.6 January 1996

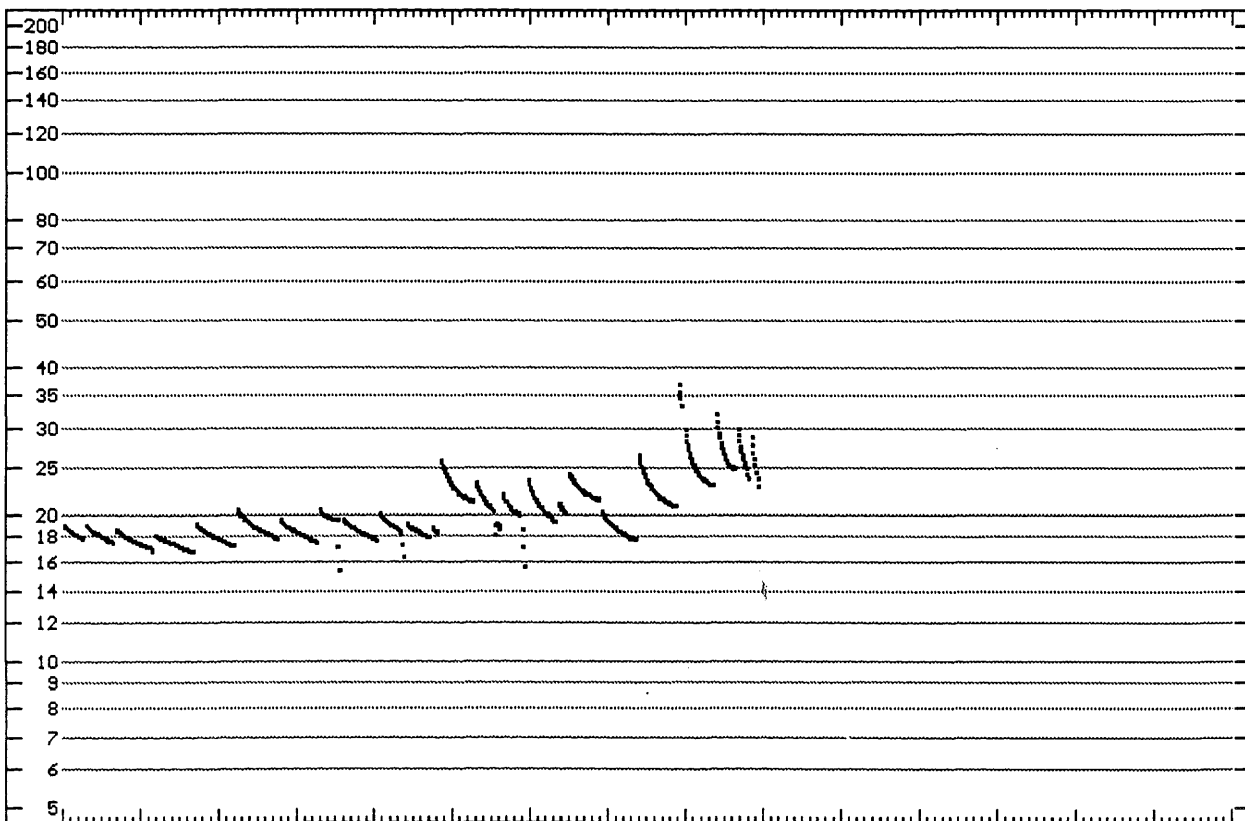
7c.



Tape: Computer Date: 1 Jul 98 Loc: Whitewater State Park, Winona Co., MN
 Sp: Big brown bat (includes feeding buzz) Spec: G. Nordquist
 Note: MCBS bat surveys, Visitor Center lights.

87012302.41# Div 16
 TOT 375ms TK 25ms f6 COMP St 2 FILT 1
 ANALOOK 2.6 January 1996

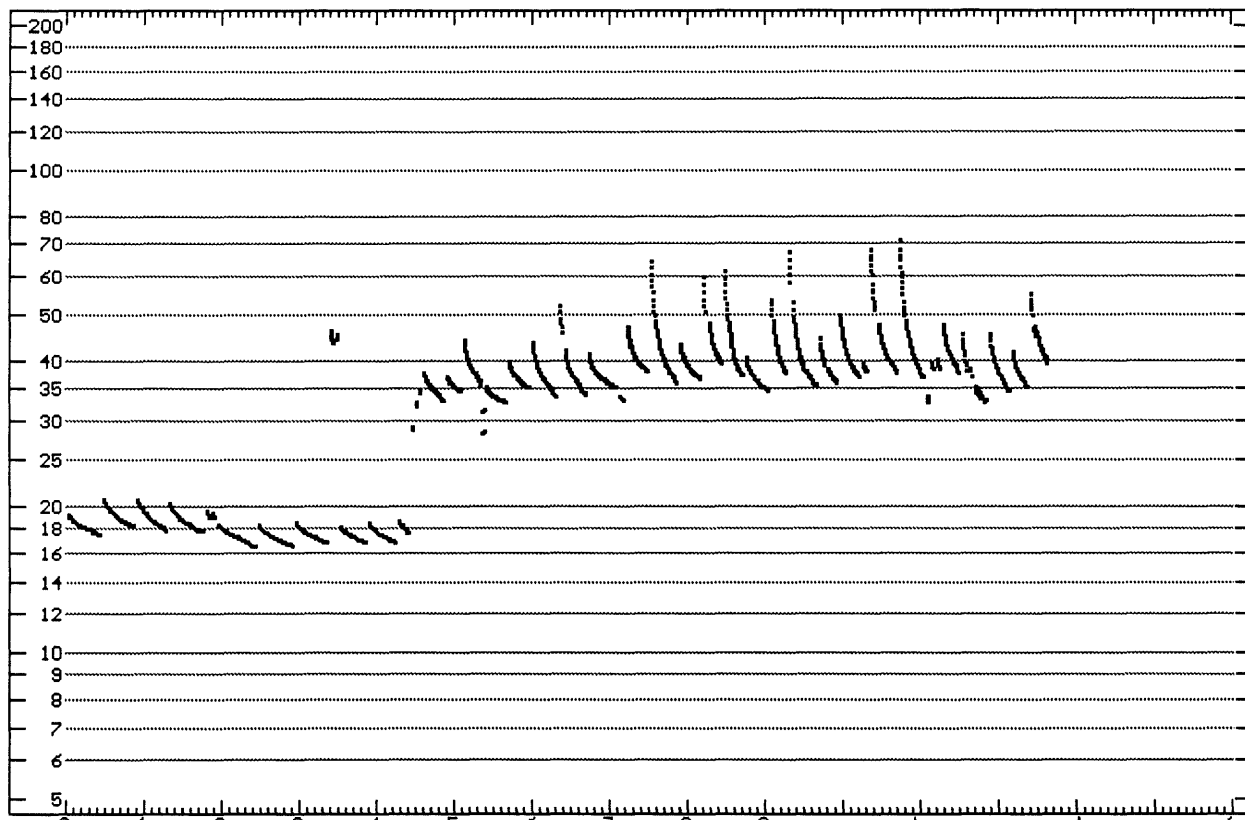
7d.



Tape: Computer Date: 1 Jul 98 Loc: Whitewater State Park, Winona Co., MN
 Sp: Hoary bat Spec: G. Nordquist
 Note: MCBS bat surveys, Visitor Center lights.

87012325.58# Div 16
 TOT 375ms TK 25ms f6 COMP St 2 FILT 1
 ANALOOK 2.6 January 1996

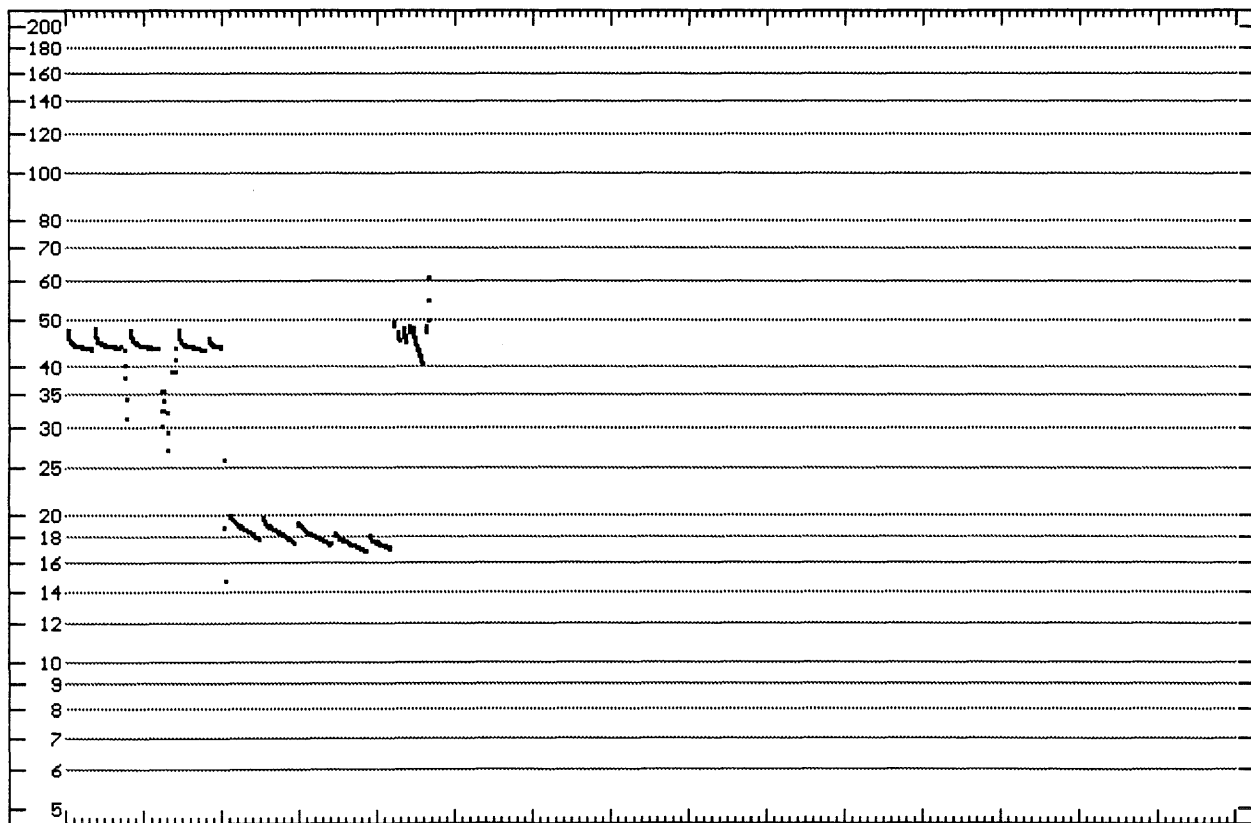
7e.



Tape: Computer Date: 1 Jul 98 Loc: Whitewater State Park, Winona Co., MN
 Sp: Hoary bat and Red bat Spec: G. Nordquist
 Note: MCBS bat surveys, Visitor Center lights.

87012328.39# Div 16
 TOT 375ms IK 25ms F6 COMP St 2 FILT 1
 ANALOOK 2.6 January 1996

7f.



Tape: Computer Date: 1 Jul 98 Loc: Whitewater State Park, Winona Co., MN
 Sp: Eastern pipistrelle and Hoary bat Spec: G. Nordquist
 Note: MCBS bat surveys, Visitor Center lights.

87012331.03# Div 16
 TOT 375ms IK 25ms F6 COMP St 2 FILT 1
 ANALOOK 2.6 January 1996

Table 1. Native plant communities present in Whitewater State Park, with associated number of occurrences, and total acreage.

Native Plant Community	Number of Occurrences	Total Acreage
Maple-basswood Forest (Southeast)	5	208.6
Oak Forest (Southeast)	4	141.0
Oak Forest (Southeast) Mesic subtype	11	714.4
Talus Slope Algific subtype	5	12.89
White Pine - Hardwood Forest (Southeast)	2	11.2
White Pine - Hardwood Forest (Southeast) Mesic subtype	1	4.12
Dry Cliff (Southeast) ¹	12	35.2
Dry Prairie (Southeast) Bedrock Bluff subtype ¹	3	8.0
Lowland Hardwood Forest	3	93.7

¹ Native plant communities that were not recorded in the element database because of small size or lack of thorough inventory.

Table 2. Rare animals and animal aggregations potentially occurring in Whitewater State Park. (Species are associated with their primary habitats. State statuses reflect changes as of July 1996. Species identified as an "element" are unlisted species that are tracked by the NHIS Rare Features database.)

Species	Status (F: federal, S: state)
UPLAND DECIDUOUS FORESTS, FOREST OPENINGS, AND BRUSHLANDS	
Reptiles:	Black rat snake (<i>Elaphe obsoleta</i>) S: Special Concern
	Fox snake (<i>Elaphe vulpina</i>) S: Element (1993: Special Concern)
Birds:	Acadian flycatcher (<i>Empidonax virescens</i>) S: Special Concern
	Cerulean warbler (<i>Dendroica cerulea</i>) S: Special Concern
	Louisiana waterthrush (<i>Seiurus motacilla</i>) S: Special Concern
	Hooded warbler (<i>Wilsonia citrina</i>) S: Special Concern
Mammals:	Northern myotis (<i>Myotis septentrionalis</i>) S: Special Concern
	Eastern pipistrelle (<i>Pipistrellus subflavus</i>) S: Special Concern
	Bat maternity colonies and hibernacula S: Element
	Woodland vole (<i>Microtus pinetorum</i>) S: Special Concern
BLUFF PRAIRIES AND OLD FIELDS	
Reptiles:	Five-lined skink (<i>Eumeces fasciatus</i>) S: Special Concern (1993: Endangered)
	Blue racer (<i>Coluber constrictor</i>) S: Special Concern
	Milk snake (<i>Lampropeltis triangulum</i>) S: Element (1993: Special Concern)
	Eastern hognose snake (<i>Heterodon platirhinos</i>) S: Element (1993: Special Concern)
	Western hognose snake (<i>Heterodon nasicus</i>) S: Special Concern
	Gopher snake (<i>Pituophis catenifer</i>) S: Special Concern
	Timber rattlesnake (<i>Crotalus horridus</i>) S: Threatened (1993: Special Concern)
Birds:	Bell's vireo (<i>Vireo bellii</i>) S: Element
	Henslow's sparrow (<i>Ammodramus henslowii</i>) S: Endangered (1993: Special Concern)
Mammals:	Least shrew (<i>Cryptotis parva</i>) S: Special Concern
	W. harvest mouse (<i>Reithrodontomys megalotis</i>) S: Element
	Prairie vole (<i>Microtus ochrogaster</i>) S: Special Concern
	Eastern spotted skunk (<i>Spilogale putorius</i>) S: Threatened (1993: Special Concern)
AQUATIC HABITATS	
Amphibians:	Northern cricket frog (<i>Acris crepitans</i>) S: Endangered (1993: Special Concern)
	Pickerel frog (<i>Rana palustris</i>) S: Element (1993: Special Concern)
Reptiles:	Common snapping turtle (<i>Chelydra serpentina</i>) S: Special Concern

Table 3. Locations and habitats of MCBS animal surveys in Whitewater State Park.
(Refer to Figure 5 for a map of these locations.)

Amphibian and Reptile Surveys

Drift fences (2 total)

T107N R10W SENW20	Hardwood forest
T107N R10W NWNE29	Lowland hardwood forest

Anuran surveys (6 within park)

T107N R10W NWNE20	Old field/stream
T107N R10W SWNE20	Deciduous forest/stream
T107N R10W SWSW20	Deciduous forest/stream
T107N R10W SESW20	Deciduous forest/old field/stream
T107N R10W SWSE20	Deciduous forest/pond
T107N R10W SWNW29	Deciduous forest/stream

Bird Surveys

Point counts (21 total)

T107N R10W SENE19	Oak forest
T107N R10W NESE19	Maple-basswood forest
T107N R10W SESE19	Maple-basswood forest
T107N R10W NENW20	Oak forest
T107N R10W NENW20	Old field
T107N R10W SWNW20	Oak forest
T107N R10W SWNW20	Oak forest
T107N R10W SENW20	Oak forest
T107N R10W SENW20	Oak forest
T107N R10W NWNE20	Oak forest
T107N R10W NWSW20	Maple-basswood forest
T107N R10W NESW20	Old field/forest edge
T107N R10W NESW20	Oak forest
T107N R10W SWSW20	Oak forest
T107N R10W SESW20	Maple-basswood forest
T107N R10W SESW20	Maple-basswood forest
T107N R10W SWSE20	Maple-basswood forest
T107N R10W NENW29	Lowland hardwood forest
T107N R10W SENW29	Lowland hardwood forest
T107N R10W NWNE29	Lowland hardwood forest
T107N R10W NESW29	Lowland hardwood forest

Table 3. continued.

Mammal Surveys

Trap grids (3 total)

T107N R10W SWNE20	Old field
T107N R10W NENE20	Old field
T107N R10W NWNE29	Deciduous forest

Foraging bat listening stops (15 total)

ANABAT	T107N R10W NENE20	Open (parking lot) near river
	T107N R10W NESW20	Deciduous forest opening/river
	T107N R10W NWSE20	Deciduous forest/lawn/oxbow
	T107N R10W SWSE20	Deciduous forest/lawn/creek
SKYE	T107N R10W NENE20	Open (parking lot) near river
	T107N R10W NESW20	Deciduous forest opening/river
	T107N R10W SESW20	Open river edge
	T107N R10W NESE20	Open lawn/trail/oxbow
	T107N R10W NESE20	Open parking lot in deciduous forest
	T107N R10W SWSE20	Deciduous forest opening/creek
	T107N R10W NENW29	Steambank in deciduous forest
	T107N R10W SENW29	Steambank in deciduous forest
	T107N R10W SENW29	Open meadow by stream
	T107N R10W NWNE29	Steambank in deciduous forest
	T107N R10W NWNE29	Steambank in deciduous forest

Table 4. Amphibians and reptiles recorded in or near Whitewater State Park.
(List includes all species likely to occur in the Paleozoic Plateau.)

Habitat descriptions

Forest: All upland and lowland forests and woodlands.
Grassland: Prairies, old fields, pastures, and lawns.
Wetland: Shrub swamps and emergent marshes.
Lake: Lakes, ponds, and adjacent beaches.
Riparian: Rivers, streams, and adjacent shorelines.

●	Recorded by MCBS
○	Other records

<div>Vicinity of Park</div> <div>Recorded in Park</div> <div>Common name</div> <div>Scientific name</div>				Associated habitats in the Paleozoic Plateau					
				Forest	Grassland	Wetland	Lake	Riparian	Comment
Salamanders									
●		Tiger salamander	<i>Ambystoma tigrinum</i>	●	●	●			Breeds in fishless wetlands
Frogs and Toads									
●		American toad	<i>Bufo americanus</i>	●		●			Abundant throughout Park
●		Gray treefrog	<i>Hyla versicolor</i>	●		●			Breeds in fishless wetlands
●		Spring peeper	<i>Pseudacris crucifer</i>	●		●			Breeds in fishless wetlands
●		Western chorus frog	<i>Pseudacris triseriata</i>		●	●			Breeds in fishless wetlands
●		Green frog	<i>Rana clamitans</i>			●		●	Should be present within Park, often associated with streams and ditches
●		Pickerel frog	<i>Rana palustris</i>	●		●	●	●	Associated with cool rivers and streams
●		Northern leopard frog	<i>Rana pipiens</i>	●	●	●			Should be present in the Park where suitable habitat is present
●		Wood frog	<i>Rana sylvatica</i>	●		●			At southern edge of range
Turtles									
		Common map turtle	<i>Graptemys geographica</i>					●	Common in the Mississippi River and may inhabit Whitewater River
●		Snapping turtle	<i>Chelydra serpentina</i>			●	●	●	Present in wide variety of aquatic habitats, nests in openings near water
●		Painted turtle	<i>Chrysemys picta</i>			●	●		Park has limited suitable habitat
●		Blanding's turtle	<i>Emydoidea blandingii</i>		●	●			Limited aquatic and nesting habitat in Park (nests in sandy openings)
		Wood turtle	<i>Clemmys insculpta</i>	●				●	Limited nesting habitat in Park (exposed sandbars and s-facing cutbanks)
Lizards									
●		Six-lined racerunner	<i>Cnemidophorus sexlineatus</i>		●				May be present among rock outcrops on south-facing slopes

Vicinity of Park Recorded in Park Common nameScientific name				Associated habitats in the Paleozoic Plateau					
				Forest	Grassland	Wetland	Lake	Riparian	Comment
Snakes									
●		Racer	<i>Coluber constrictor</i>		●				Located near Elba, Park has limited suitable habitat
●	○	Timber rattlesnake	<i>Crotalus horridus</i>	●					Dens are associated with rock outcrops
●		Ringneck snake	<i>Diadophis punctatus</i>	●					Should be present in the Park, often associated with rock outcrops
●		Fox snake	<i>Elaphe vulpina</i>	●					Often associated with forest edges
		Western hognose snake	<i>Heterodon nasicus</i>		●				Its presence in the Park and vicinity is questionable
●	○	Eastern hognose snake	<i>Heterodon platirhinos</i>	●					Often associated with forest openings and edges
●	○	Milk snake	<i>Lampropeltis triangulum</i>	●					Often associated with forest edges
	●	Northern water snake	<i>Nerodia sipedon</i>	●		●	●	●	
●		Gopher (Bull) snake	<i>Pituophis catenifer</i>		●				Park has limited suitable habitat, Whitewater WMA has suitable habitat
		Brown snake	<i>Storeria dekayi</i>	●					Not documented in or near Park but may be present
	●	Redbelly snake	<i>Storeria occipitomaculata</i>	●					
		Plains garter snake	<i>Thamnophis radix</i>		●				Park has limited suitable habitat
●		Common garter snake	<i>Thamnophis sirtalis</i>	●					

Table 5. Breeding-season birds recorded in or near Whitewater State Park.
(List includes all species likely to occur in the Paleozoic Plateau during the breeding season.)

Habitat descriptions

Wetland: Lakes, streams, rivers, beaches, and marshes.
Grass/open: Prairies, old fields, pastures, hayfields, and cultivated fields.
Shrub/edge: Forest-shrub edge, shrubby openings, savannas, and developed areas.
Deciduous: Upland and lowland deciduous forests, overgrown woodlands and savannas.
Widespread: Widespread or wide-ranging, including aerial foragers and a wide variety of habitats.

★ Recorded by J. H. Stucker while conducting research at Whitewater State Park, 1996-97.

<div>Vicinity of Park</div> <div>Recorded in Park</div> <div>Common name</div>		Associated habitats in the Paleozoic Plateau					Comments
		Wetland	Grass/open	Shrub/edge	Deciduous	Widespread	
							Limited suitable habitat in Park
		●					Limited suitable habitat in Park
●	●	●					Probably does not nest in Park
●		●					Limited suitable habitat in Park
		●					May occur in Park
		●					Limited suitable habitat in Park
	★					●	
	●	●					
	★	●					
	★	●					
●		●					Limited suitable habitat in Park
●		●					Limited suitable habitat in Park
		●					Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
							Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
				●			May occur in Park
●				●			Limited suitable habitat in Park
	●			●			
	●		●				
			●				May occur in Park
			●				Non-native species, limited suitable habitat in Park

<div>Vicinity of Park</div> <div>Recorded in Park</div> <div>Common name</div>			Associated habitats in the Paleozoic Plateau					Comments
			Wetland	Grass/open	Shrub/edge	Deciduous	Widespread	
●		Ring-necked Pheasant		●				Non-native species, may occur in Park
	●	Ruffed Grouse				●		
	●	Wild Turkey				●		
		Northern Bobwhite		●				Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
		Virginia Rail	●					Limited suitable habitat in Park
		Sora	●					Limited suitable habitat in Park
●		Killdeer		●				Limited suitable habitat in Park
●		Spotted Sandpiper	●					Limited suitable habitat in Park
		Common Snipe						Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
	●	American Woodcock				●		
●		Rock Dove (I)					●	May occur in Park
	●	Mourning Dove					●	
	●	Black-billed Cuckoo				●		
		Yellow-billed Cuckoo				●		Probably occurs in Park
		Eastern Screech-Owl				●		Probably occurs in Park
●		Great Horned Owl					●	Probably occurs in Park
	★	Barred Owl				●		
		Long-eared Owl						Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
		Northern Saw-whet Owl						Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
		Common Nighthawk					●	Probably occurs in Park
		Whip-poor-will				●		Probably occurs in Park
●		Chimney Swift					●	Probably occurs in Park
	●	Ruby-throated Hummingbird					●	
●		Belted Kingfisher	●					Probably occurs in Park
●		Red-headed Woodpecker					●	Probably occurs in Park
	●	Red-bellied Woodpecker				●		
	●	Yellow-bellied Sapsucker				●		
	●	Downy Woodpecker					●	
	●	Hairy Woodpecker					●	
	●	Northern Flicker					●	
	●	Pileated Woodpecker				●		

<div>Vicinity of Park</div> <div>Recorded in Park</div> <div>Common name</div>			Associated habitats in the Paleozoic Plateau					Comments
			Wetland	Grass/open	Shrub/edge	Deciduous	Widespread	
	●	Eastern Wood-Pewee				●		
	★	Acadian Flycatcher				●		
		Alder Flycatcher			●			Rare, shrub/savanna specialist, limited suitable habitat in Park
●		Willow Flycatcher			●			Shrub/savanna specialist, limited suitable habitat in Park
	●	Least Flycatcher				●		
	●	Eastern Phoebe					●	
	●	Great Crested Flycatcher				●		
		Eastern Kingbird		●				May occur in Park
		Bell's Vireo			●			Rare, shrub/savanna specialist, limited suitable habitat in Park
	●	Yellow-throated Vireo				●		
	●	Warbling Vireo				●		
	●	Red-eyed Vireo				●		
	●	Blue Jay					●	
	●	American Crow					●	
		Horned Lark		●				Limited suitable habitat in Park
		Purple Martin					●	May occur in Park
	●	Tree Swallow					●	
	●	Northern Rough-winged Swallow					●	
	★	Bank Swallow					●	
	●	Barn Swallow					●	
		Cliff Swallow					●	May occur in Park
	●	Black-capped Chickadee					●	
●		Tufted Titmouse				●		Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
●		Red-breasted Nuthatch						Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
	●	White-breasted Nuthatch				●		
		Brown Creeper				●		May occur in Park
	●	House Wren					●	
		Winter Wren						Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
●		Sedge Wren		●				Limited suitable habitat in Park
●		Marsh Wren	●					Limited suitable habitat in Park
	●	Blue-gray Gnatcatcher				●		
	●	Eastern Bluebird		●				

<div>Vicinity of Park</div> <div>Recorded in Park</div> <div>Common name</div>			Associated habitats in the Paleozoic Plateau					Comments
			Wetland	Grass/open	Shrub/edge	Deciduous	Widespread	
		Veery				●		Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
	●	Wood Thrush				●		
	●	American Robin					●	
	●	Gray Catbird			●			
	●	Brown Thrasher			●			
		European Starling					●	Non-native species, probably occurs in Park
	●	Cedar Waxwing					●	
	●	Blue-winged Warbler			●			
	●	Yellow Warbler			●			
	●	Cerulean Flycatcher				●		
	●	American Redstart				●		
	●	Ovenbird				●		
	●	Louisiana Waterthrush				●		
		Mourning Warbler				●		Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
	●	Common Yellowthroat			●			
		Yellow-breasted Chat						Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
	●	Scarlet Tanager				●		
●		Eastern Towhee			●			Shrub/savanna specialist, probably occurs in Park
	●	Chipping Sparrow					●	
	●	Field Sparrow			●			
●		Vesper Sparrow		●				May occur in Park
●		Savannah Sparrow		●				Limited suitable habitat in Park
		Grasshopper Sparrow		●				Limited suitable habitat in Park
		Henslow's Sparrow		●				Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
	●	Song Sparrow					●	
●		Swamp Sparrow	●					Limited suitable habitat in Park
	●	Northern Cardinal					●	
	●	Rose-breasted Grosbeak					●	
	●	Indigo Bunting					●	

<div> <div>Vicinity of Park</div> <div>Recorded in Park</div> <div>Common name</div> </div>			Associated habitats in the Paleozoic Plateau					Comments
			Wetland	Grass/open	Shrub/edge	Deciduous	Widespread	
		Dickcissel		●				Limited suitable habitat in Park
		Bobolink		●				Limited suitable habitat in Park
	●	Red-winged Blackbird						
●		Eastern Meadowlark		●				May occur in Park
●		Western Meadowlark		●				May occur in Park
	●	Common Grackle					●	
	●	Brown-headed Cowbird					●	
		Orchard Oriole			●			Shrub/savanna specialist,probably occurs in Park
	●	Baltimore Oriole				●		
		House Finch					●	Probably occurs in Park
		Pine Siskin						Rare, recorded in Paleozoic Plateau, limited suitable habitat in Park
	●	American Goldfinch					●	
		House Sparrow					●	Non-native species, probably occurs in Park

Table 6. Mammals recorded in or near Whitewater State Park.
(List includes all species likely to occur in the Paleozoic Plateau.)

Habitat descriptions

Upland - forest: Includes maple-basswood, oak, white cedar, and pine forests.

Upland - edge: Ecotone between upland forests and open habitats, savannas, overgrown prairies, upland brushlands.

Upland - open: Prairies, old fields, pastures, agricultural fields, and lawns.

Lowland - forest: Includes lowland hardwood and floodplain forests.

Lowland - edge: Ecotone between lowland forests and open lowland habitats, shrub swamps.

Lowland - open: Wetlands and marshes.

Subterranean: Underground cavities.

Vicinity of Park Recorded in Park Common nameScientific name				Associated habitats in the Paleozoic Plateau							
				Upland - forest	Upland - edge	Upland - open	Lowland - forest	Lowland - edge	Lowland - open	Subterranean	Comments
●		Virginia opossum	<i>Didelphis virginiana</i>		●	●		●	●		
●	●	Masked shrew	<i>Sorex cinereus</i>	●	●	●	●	●	●		Common in a variety of habitats
		Hayden's shrew	<i>Sorex haydeni</i>			●					Uncommon in Paleozoic Plateau
●	●	Northern short-tailed shrew	<i>Blarina brevicauda</i>	●	●	●	●	●	●		Common, especially in open habitats
		Least shrew	<i>Cryptotis parva</i>		●	●					Rare, recorded from Paleozoic Plateau
●	●	Eastern mole	<i>Scalopus aquaticus</i>	●	●	●					
●	●	Little brown myotis	<i>Myotis lucifugus</i>	●	●	●	●	●	●	●	Common in Paleozoic Plateau
●		Northern myotis	<i>Myotis septentrionalis</i>	●	●	●	●	●	●	●	Rare, recorded from Paleozoic Plateau
●	●	Eastern red bat	<i>Lasiurus borealis</i>	●	●	●	●	●	●		Summer resident in Paleozoic Plateau
●	●	Hoary bat	<i>Lasiurus cinereus</i>	●	●	●	●	●	●		Summer resident in Paleozoic Plateau
●		Silver-haired bat	<i>Lasionycteris noctivagans</i>	●	●	●	●	●	●		
●	●	Eastern pipistelle	<i>Pipistrellus subflavus</i>	●	●	●	●	●	●	●	Rare
●	●	Big brown bat	<i>Eptesicus fuscus</i>	●	●	●	●	●	●	●	
●	●	Eastern cottontail	<i>Sylvilagus floridanus</i>		●	●					
		White-tailed jackrabbit	<i>Lepus townsendii</i>			●					Uncommon in Paleozoic Plateau
●	●	Eastern chipmunk	<i>Tamias striatus</i>	●	●						
●		Woodchuck	<i>Marmota monax</i>	●	●	●					
		Franklin's ground squirrel	<i>Spermophilus franklinii</i>			●		●	●		Uncommon in Paleozoic Plateau
●	●	Thirteen-lined ground squirrel	<i>Spermophilus tridecemlineatus</i>		●	●		●	●		Common in open habitats
●	●	Eastern gray squirrel	<i>Sciurus carolinensis</i>	●	●						
●		Eastern fox squirrel	<i>Sciurus niger</i>		●	●					

<div>Vicinity of Park</div> <div>Recorded in Park</div>		Common name	Scientific name	Associated habitats in the Paleozoic Plateau							Comments
				Upland - forest	Upland - edge	Upland - open	Lowland - forest	Lowland - edge	Lowland - open	Subterranean	
●	●	Red squirrel	<i>Tamiasciurus hudsonicus</i>	●	●		●	●			
		Southern flying squirrel	<i>Glaucomys volans</i>	●							Likely occurs in forested areas in Park
●	●	Plains pocket gopher	<i>Geomys bursarius</i>		●	●					Common in open habitats
		Plains pocket mouse	<i>Perognathus flavescens</i>			●					Rare, recorded in Paleozoic Plateau
●	●	American beaver	<i>Castor canadensis</i>				●	●			Associated with aquatic habitats and adjacent forests
		Western harvest mouse	<i>Reithrodontomys megalotis</i>			●					Rare, recorded in Paleozoic Plateau
●	●	White-footed mouse	<i>Peromyscus leucopus</i>	●	●	●	●	●			Common in habitats with woody vegetation
●		Prairie deer mouse	<i>Peromyscus maniculatus bairdii</i>			●					
		Southern red-backed vole	<i>Clethrionomys gapperi</i>				●				Uncommon in Paleozoic Plateau
		Prairie vole	<i>Microtus ochrogaster</i>			●					Rare, recorded in Paleozoic Plateau
●	●	Meadow vole	<i>Microtus pennsylvanicus</i>		●	●		●	●		Common in open and semi-open habitats
●		Woodland vole	<i>Microtus pinetorum</i>	●		●	●				Rare, suitable habitat exists in Park
●		Common muskrat	<i>Ondatra zibethicus</i>					●			Associated with aquatic and marsh habitats
●	●	Meadow jumping mouse	<i>Zapus hudsonius</i>			●		●			
		Norway rat	<i>Rattus norvegicus</i>			●					Non-native species, associated with human habitation
●		House mouse	<i>Mus musculus</i>			●					Non-native species, associated with human habitation
●	●	Coyote	<i>Canis latrans</i>	●	●	●					Common in Paleozoic Plateau
●	●	Red fox	<i>Vulpes vulpes</i>		●	●		●	●		
		Common gray fox	<i>Urocyon cinereoargenteus</i>	●	●						
●	●	Common raccoon	<i>Procyon lotor</i>	●	●	●	●	●	●	●	Commonly dens in area caves
		Ermine	<i>Mustela erminea</i>	●	●	●	●	●	●		
		Long-tailed weasel	<i>Mustela frenata</i>			●	●	●			Uncommon in Paleozoic Plateau
		Least weasel	<i>Mustela nivalis</i>		●	●					Rare, recorded from Paleozoic Plateau
●		Mink	<i>Mustela vison</i>	●	●	●	●	●	●		Widespread, associated with habitats adjacent to water
		American badger	<i>Taxidea taxus</i>		●	●					
		Eastern spotted skunk	<i>Spilogale putorius</i>		●	●					Rare, recorded from Paleozoic Plateau
●	●	Striped skunk	<i>Mephitis mephitis</i>		●	●		●	●		
●		Northern river otter	<i>Lutra canadensis</i>	●	●	●	●	●	●		Uncommon, associated with habitats adjacent to water
		Mountain lion	<i>Felis concolor</i>	●	●	●	●	●	●		Rare, reported from Paleozoic Plateau
		Bobcat	<i>Lynx rufus</i>		●	●		●	●		
		Mule deer	<i>Odocoileus hemionus</i>	●	●	●					Rare, recorded from Paleozoic Plateau
●	●	White-tailed deer	<i>Odocoileus virginianus</i>	●	●	●	●	●	●		

Table 7. Percent relative abundance of small mammals captured from trap grids and drift fences at Whitewater State Park.

Species	Trap grids			Drift fences	
	Old field	Old field	Upland Forest	Lowland forest	Wetland
Masked shrew		15			38
Northern short-tailed shrew	18	5	5	71	
Eastern chipmunk			3		
White-footed mouse	27	35	91	29	25
Meadow vole	55	30			6
Meadow jumping mouse		15	2		31
Captures/trapnight (x100)	9	17	53	2	2

44

Table 8. Summary of foraging bat activity at Whitewater State Park, recorded 1 July 1998 with ANABAT detector.
(see Figure 7 for sonographs of representative calls)

Location	Trout Run Creek	Oxbow Trail bridge	Group Camp bridge	Visitor Center
Hours	2119 - 2131	2144 - 2200	2215 - 2234	2302 - 2342
Calls/minute	2.5	1.2	1.7	4.1

Species	Proportion of total calls			
Little brown myotis	0.97	0.94	0.84	0.42
Big brown bat	0.03	0.04	0.03	0.02
Eastern pipistrelle			0.13	0.02
Silver-haired bat				0.04
Red bat				
Hoary bat		0.01		0.49

Table 9. Caves in Whitewater State Park and their suitability as bat hibernacula.
(cave information from files of Minnesota Speleological Survey, Fetvedt 1984)

Cave name	Location	Description and suitability as hibernaculum
Chimney Rock Hole	T107N, R10W, SE 20	Length 6.1 meters, remnants of a larger system. Too exposed for bats.
Coyote Point Cave	T107N, R10W, SW 20	Length 7.6 meters, small phreatic cave. Potential roosting area in rear of cave for a few Big brown bats. Probably too cold for other species.
Hawk Cove	T107N, R10W, SW 20	Length 7.6 meters, rock shelter near Coyote Point. Too exposed for bats.
Nineteenth Hole	T107N, R10W, SE 20	Length 15.2 meters, located at top of cliff. Hibernaculum suitability unknown.
Whitewater Ice Cave	T107N, R10W, SE 20	Entrance seasonally covered with ice. Hibernaculum suitability unknown.
Trout Run Cave	T107N, R10W, SE 29	Length 13.6 meters, maze cave located at top of ridge. Attempted to locate during MCBS surveys, suitability as hibernaculum unknown.
Arrowhead Cave	T107N, R10W, SE 29	Length 15.2 meters. Hibernaculum suitability unknown.

Appendix 1. Summary of rare features in Whitewater State Park tracked by the Natural Heritage Information System. ("*") Indicates native plant communities that were not recorded in the element database because of small size or lack of thorough inventory.)

Federal Status	MN (legal) Status	Old MN (legal) Status (pre-96)	Last Observed	Number of Occurrences	Element Name (Common Name) or Native Plant Community (Type) Subtype
<u>NATIVE PLANT COMMUNITIES</u>					
			1992	12	*Dry Cliff
			1992	3	Dry Prairie (Southeast) Bedrock Bluff subtype
			1992	2	Lowland Hardwood Forest
			1992	5	Maple-Basswood Forest (Southeast)
			1994	6	Oak Forest (Southeast) Mesic subtype
			1994	1	Oak Woodland-Brushland
			1989	5	Talus Slope Algific subtype
			1992	1	*White Pine-Hardwood Forest (Southeast)
			1992	2	White Pine-Hardwood Forest (Southeast) Mesic subtype
<u>RARE PLANTS</u>					
	END	END	1945	1	<i>Agalinis gattereri</i> (Round-stemmed false foxglove)
	NON	PSC	1981	3	<i>Arabis laevigata</i> (Smooth rock-cress)
	SPC	SPC	1979	1	<i>Baptisia bracteata</i> var. <i>leucophaea</i> (Plains wild indigo)
	THR	SPC	1979	1	<i>Carex laxiculmis</i> (Spreading sedge)
	END	END	1992	1	<i>Hydrastis canadensis</i> (Golden-seal)
	SPC	THR	1992	2	<i>Jeffersonia diphylla</i> (Twinleaf)
	SPC	PTR	1982	1	<i>Juniperus horizontalis</i> (Creeping juniper)
	NON	NON	1982	1	<i>Liparis lilifolia</i> (Lilia-leaved twayblade)
	SPC	SPC	1993	5	<i>Panax quinquefolius</i> (American ginseng)
	NON	NON	1981	4	<i>Poa silvestris</i> (Woodland bluegrass)
	SPC	SPC	1981	3	<i>Poa wolfii</i> (Wolf's bluegrass)
	SPC	SPC	1993	2	<i>Sanicula trifoliata</i> (Beaked snakeroot)
	SPC	SPC	1992	9	<i>Solidago sciaphila</i> (Cliff goldenrod)
	NON	NON	1981	1	<i>Taenidia integerrima</i> (Yellow pimpernel)
<u>RARE ANIMALS</u>					
	THR	SPC	1995	9	<i>Crotalus horridus</i> (Timber rattlesnake)
	SPC	NON	1996	3	<i>Dendroica cerulea</i> (Cerulean warbler)
	SPC	NON	1996	1	<i>Empidonax virescens</i> (Acadian flycatcher)
LE	THR	END	1962	1	<i>Falco peregrinus</i> (Peregrine falcon)
	SPC	SPC	1985	1	<i>Heterodon nasicus</i> (Western hognose snake)
	NON	SPC	1985	1	<i>Heterodon platirhinos</i> (Eastern hognose snake)
	NON	SPC	1990	2	<i>Lampetra appendix</i> (American brook lamprey)
	NON	SPC	1990	2	<i>Lampropeltis triangulum</i> (Milk snake)
	SPC	SPC	1998	2	<i>Pipistrellus subflavus</i> (Eastern pipistrelle)
	NON	SPC	1998	5	<i>Rana palustris</i> (Pickerel frog)
	SPC	SPC	1996	6	<i>Seiurus motacilla</i> (Louisiana waterthrush)

Federal Status: Status of species under the Federal Endangered Species Law. Codes are LE=endangered, LT=threatened, C=species which have been proposed for federal listing due to sufficient information on biological vulnerability and threat(s), but which have not yet been officially designated as endangered or threatened.

MN (legal) Status: Minnesota legal status of plant and animal species under the state endangered species law. Codes for status are as follows: END=endangered, THR=threatened, SPC=special concern. Additional species are tracked that have no legal status, because they have been removed from the state list since the last revision or that they are rare and may become listed if they decline further; the code for these is NON. 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.

Old MN (legal) Status (pre-96): Minnesota legal status of plant and animal species prior to the 1996 list revision.

Last Observed: Indicates the date of the most recent record. This field can be used as an indicator of the likelihood that the element still exists in the area searched.

Number of Occurrences: The number of element occurrence records existent in the Minnesota Natural Heritage database for each element within the area searched.

Element Name (Common Name): For plant and animal species this is the scientific name with the common name in parentheses; for all other elements it is the feature name.

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).

*****Please note that the print-outs are copyrighted and may not be reproduced without permission*****

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 651/296-8319.

APPENDIX 3: NATIVE PLANT COMMUNITIES WITHIN WHITEWATER STATE PARK

Minnesota Natural Heritage Database
Element Occurrence Records

MAY 1999

MnDNR, Natural Heritage and Nongame Research Program

15:45 Wednesday, MAY 12, 1999

Copyright 1999 State of Minnesota DNR

Element: DRY CLIFF (SOUTHEAST) #9

S Rank: S3

EO Size:

EO Rank:

Current Status: 1

Intended Status: 1

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER WMA WHITEWATER STATE PARK

Source: DUNEVITZ, H. (CO BIOL SURVEY 1992)

AT LEAST 7 WELL-DEVELOPED CLIFFS ALONG THE MIDDLE FORK OF THE WHITEWATER RIVER, APPROX 100 FT HT. PRIMARILY PRAIRIE DU CHIEN GROUP, ONEOTA DOLOMITE MOST COMMON, IN SOME AREAS WITH OVERLYING SHAKOPEE FORMATION. VASCULAR PLANT COVER SPARSE; SPECIES INCLUDE SOLIDAGO SCIAPHILA, CHEILANTHES FEEI, CAMPANULA ROTUNDIFOLIA, ELYMUS CANADENSIS, PELLAEA GLABELLA. SHADED AREAS WITH CYSTOPTERIS BULBIFERA, CAMPTOSURUS. LICHENS GENERALLY PRESENT, SPARSE. PINUS STROBUS FREQUENT ABOVE.

Location: WINONA COUNTY, MN

Legal : T107N R10W 0W2019

Quad Map: ELBA (V21D)

Latitude: 44 3' 35" Long: 92 3' 56"

Precision: approx. boundaries have been determined

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 29 September 1992

Voucher:

Verification: verified

Element: LOWLAND HARDWOOD FOREST #43

S Rank: S4

EO Size:

EO Rank: B

Current Status: 1

Intended Status: 1

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (CO BIOL SURVEY 1992)

CANOPY INCLUDES ACER SACCHARUM, FRAXINUS PENNSYLVANICA, F. AMERICANA, CELTIS OCCIDENTALIS, ACER NEGUNDO. SPRING HERBACEOUS LAYER SPECIES-RICH, LUSH, INCLUDES ISOPYRUM BITERNATUM (DOM), EQUISETUM HYEMALE, DICENTRA CUCULLARIA, HYDROPHYLLUM APPENDICULATUM, H. VIRGINIANUM, ERYTHRONIUM AMERICANUM. TERRACE ALONG TROUT RUN CREEK, SOUTH OF MIDDLE FORK WHITEWATER RIVER. BRIEF VISIT ONLY. RED WING-LACRESCENT UPLANDS GEOMORPHIC AREA.

Location: WINONA COUNTY, MN

Legal : T107N R10W 29

Quad Map: ELBA (V21D)

Latitude: 44 2' 48" Long: 92 2' 57"

Precision: approx. boundaries have been determined

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 05 May 1992

Voucher:

Verification: verified

Element: LOWLAND HARDWOOD FOREST #44

S Rank: S4

EO Size:

EO Rank: B

Current Status: 1

Intended Status: 1

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (CO BIOL SURVEY 1992)

IMMATURE FOREST. CANOPY HEIGHT 25 M, COVER 50-75%, DOM BY QUERCUS MACROCARPA (DBH ABOUT 30 CM); POPULUS TREMULOIDES, FRAXINUS PENNSYLVANICA, TILIA UNCOMMON. TALL SUBCANOPY DOM BY ACER SACCHARUM, WITH FRAXINUS AMERICANA, OSTRYA, ULMUS AMERICANA, CELTIS, TILIA. FEW SHRUBS. SPECIES-RICH GROUND LAYER OF MESIC FOREST SPECIES. SOME AREAS LOWER, WITH FLOODPLAIN SPECIES; OCCASIONAL DRIER AREAS WITH BETULA PAP, JUNIPERUS VIRG. FLOODPLAIN & TERRACES, MIDDLE FORK WHITEWATER RIV.

Location: WINONA COUNTY, MN

Legal : T107N R10W 19

Quad Map: ELBA (V21D)

Latitude: 44 3' 27" Long: 92 3' 33"

Precision: approx. boundaries have been determined

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 10 July 1992

Voucher: RELEVÉ 1992

Verification: verified

Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #59

S Rank: S2

EO Size:

EO Rank: AB

Current Status: 1

Intended Status: 6

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. & ZAGER, S. (CO BIOL SURVEY 1992)

FOREST DOM BY QUERCUS RUBRA & ACER SACCHARUM (TO 44 CM DBH), WITH TILIA & CARYA CORDIFORMIS COMMON IN CANOPY, QUERCUS ALBA & ULMUS RUBRA UNCOMMON. SUBCANOPY DOM BY ACER SACCHARUM. TREES TALL W CLEAR STRAIGHT BOLES. SHRUB LAYER PATCHY, INCL. STAPHYLEA TRIFOLIA. EXCELLENT GROUND LAYER SPECIES RICHNESS, INCL. LARGE POP. JEFFERSONIA DIPHYLLA. COARSE WOODY DEBRIS COMMON FOREST FLOOR. ON 70% EAST FACING SLOPES W OCC. LIMESTONE OUTCROPS. RED WING-LA CRESCENT UPLANDS GEOM. AREA

Location: WINONA COUNTY, MN

Legal : T107N R10W 0E0W29

Quad Map: ELBA (V21D)

Latitude: 44 2' 25" Long: 92 3' 6"

Precision: approx. boundaries have been determined

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 20 May 1992

Voucher: RELEVÉ 1992

Verification: verified

APPENDIX 3: NATIVE PLANT COMMUNITIES WITHIN WHITEWATER STATE PARK

Minnesota Natural Heritage Database
Element Occurrence Records

MAY 1999

MnDNR, Natural Heritage and Nongame Research Program

15:45 Wednesday, MAY 12, 1999
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Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #76

S Rank: S2

EO Size: 15 acres approx EO Rank: AB Current Status: 1 Intended Status: 69

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (CO BIOL SURVEY 1992)

OLD MAPLE BASSWOOD FOREST, EXCELLENT QUALITY (DID NOT AGE OR MEASURE TREES). CANOPY >90% COVER, DOM BY ACER SACCHARUM, WITH TILIA, QUERCUS RUBRA COMMON.

SUBCANOPY OF OSTRYA, ACER SACCHARUM, CARYA CORDIFORMIS. PATCHY SHRUB LAYER: STAPHYLEA TRIFOLIATA, CORNUS ALT, CARPINUS. RICH GROUND LAYER INCL 4 RARE

SPECIES. GRADES TO 8 M TALL DOLOMITE CLIFF TOP OF SLOPE. SOIL LOAM. LITTLE TO NO PAST EROSION. NORTHWEST FACING STEEP SLOPE, EAST SIDE TROUT RUN CREEK.

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W SWNE29

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 2' 37" Long: 92 2' 56"

Last Obs.: 01 October 1992

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #77

S Rank: S2

EO Size: 50 acres approx EO Rank: BC Current Status: 1 Intended Status: 1

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (CO BIOL SURVEY 1992)

FOREST DOM BY QUERCUS RUBRA (TO 45 CM DBH) & ACER SACCHARUM WITH TILIA COMMON, QUERCUS ALBA UNCOMMON. SUBCANOPY DOM BY A. SACCHARUM, INCL OSTRYA & TILIA.

PATCHY SHRUB LAYER: STAPHYLEA TRIFOLIATA, PRUNUS VIRG, RIBES CYNOSBATI. MOD RICH MESIC GROUND LAYER. OCCASIONAL SNAGS. PORTION OF AREA DISTURBED, POSSIBLY FORMER

PASTURE. ON EAST END, GRADES TO MESIC OAK FOREST WITH PINUS STROBUS UNCOMMON IN CANOPY. LACRESCENT SILT LOAM, NW TO NE FACING BLUFFS MIDDLE FORK WHITEWATER RIV.

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W NW290S0S20

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 2' 56" Long: 92 3' 14"

Last Obs.: 20 May 1992

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #78

S Rank: S2

EO Size: 70 acres approx EO Rank: AB Current Status: 1 Intended Status: 6

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Wildlife (Wildlife Management Area)

Managed Area(s): WHITEWATER STATE PARK WHITEWATER WMA

Source: DUNEVITZ, H. (CO BIOL SURVEY 1992); RELEVÉ

POSSIBLY OLD-GROWTH. SLOPES: CANOPY DOM BY TILIA WITH QUERCUS RUBRA & ACER SACCHARUM (TO 70 CM DBH) COMMON, Q. ALBA UNCOMMON. SUBCANOPY DOM BY ACER, WITH

OSTRYA, TILIA, CARYA CORD. PATCHY SHRUB LAYER. RICH MESIC GROUND LAYER. FREQ CANOPY GAPS. GRADES TO TERRACE DOM BY QUERCUS MACROCARPA, JUGLANS CINEREA

(DYING) COMMON. NORTH TO EAST FACING STEEP SLOPES & TERRACES, FREQ ROCK OUTCROPS, CLIFFS; INCLUSIONS OF MESIC OAK FOREST. MIDDLE FORK WHITEWATER RIVER.

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W OW19

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 3' 31" Long: 92 4' 19"

Last Obs.: 23 July 1992

Precision: approx. boundaries have been determined

Voucher: RELEVÉS

Verification: verified

Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #103

S Rank: S2

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (CO BIOL SURVEY 1992)

CANOPY DOM BY ACER SACCHARUM (TO 50 CM DBH) & TILIA; QUERCUS MACROCARPA & Q. RUBRA COMMON; PINUS STROBUS UNCOMMON. SUBCANOPY A. SACCHARUM, TILIA, OSTRYA.

DRIER UPPER SLOPE WITH BETULA Papyrifera, JUNIPERUS VIRGINIANA COMMON. PATCHY NATIVE SHRUB LAYER INCLUDES STAPHYLEA, CARPINUS. MESIC GROUND LAYER INCLUDES

MITELLA DIPHYLLA, ASARUM, CYSTOPTERIS BULB, CAMPTOSURUS. VERY STEEP ROCKY NW-FACING SLOPE ABOVE TROUT RUN CREEK. GRADES TO OAK WOODLAND ON SLOPES TO N & S.

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W ONNE29

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 2' 52" Long: 92 2' 33"

Last Obs.: 01 October 1992

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Minnesota Natural Heritage Database
Element Occurrence Records

APPENDIX 3: NATIVE PLANT COMMUNITIES WITHIN WHITEWATER STATE PARK
MAY 1999
MnDNR, Natural Heritage and Nongame Research Program

15:45 Wednesday, MAY 12, 1999
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Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #68

S Rank: S2
EO Size: 40 acres approx EO Rank: B Current Status: 1 Intended Status: 6
Site: TROUT RUN VALLEY CBS Site #: 59
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: DUNEVITZ, H. (CO BIOL SURVEY 1992)
FOREST DOM BY QUERCUS ALBA & Q. RUBRA (AVG 35-40 CM DBH). CANOPY COVER 85%, ALSO INCLUDES QUERCUS MACROCARPA. SUBCANOPY 60% COVER AT 8-20 M HT, DOM BY ACER SACCHARUM, WITH OSTRYA, PRUNUS SEROTINA, BETULA Papyrifera. SHRUB LAYER 35% COVER, MOST UNARMED. GROUND LAYER TYP OAK FOREST INCL DESMODIUM GLUTINOSUM, SOLIDAGO FLEXICAULIS, PANAX QUINQUEFOLIUM. MOD SPECIES RICHNESS. ON LOAMY SAND, MODERATE TO STEEP WEST FACING SLOPES ON EAST SIDE OF TROUT RUN CREEK.

Location: WINONA COUNTY, MN DNR Region: 5
Legal : T107N R10W SWNE29 Wildlife Area: 510
Quad Map: ELBA (V21D) Forestry District: 531
Latitude: 44 2' 33" Long: 92 2' 51" Last Obs.: 01 October 1992
Precision: approx. boundaries have been determined

Voucher: Verification: verified

Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #69

S Rank: S2
EO Size: 240 acres approx EO Rank: B Current Status: 1 Intended Status: 6
Site: WHITEWATER PARK WEST CBS Site #: 60
Ownership: MN DNR Wildlife (Wildlife Management Area)
Managed Area(s): WHITEWATER STATE PARK WHITEWATER WMA
Source: DUNEVITZ, H. (CO BIOL SURVEY 1992); RELEVÉ
DOM BY QUERCUS RUBRA (TO 46 CM DBH). CANOPY COVER 75-85%, INCLUDES Q. ELLIPS, Q. ALBA, Q. MACROCARPA COMMON; TILIA, BETULA Papyrifera, JUGLANS CINEREA, J. NIGRA, PINUS STROBUS (TO 73 CM DBH) UNCOMMON. SUBCANOPY DOM BY ACER SACCHARUM. SPARSE SHRUB LAYER. SPARSE GROUND LAYER, MODERATE SPECIES RICHNESS. PORTIONS PROBABLY GRAZED IN PAST (WITH ZANTHOXYLUM), OTHER AREAS LOOK UNGRAZED. SILT LOAM, STEEP TO MODERATE SLOPES, FREQUENT OUTCROPS. BLUFFS ABOVE MIDDLE FORK WHITEWATER RIVER.

Location: WINONA COUNTY, MN DNR Region: 5
Legal : T107N R10W ON1920 Wildlife Area: 510
Quad Map: ELBA (V21D) Forestry District: 531
Latitude: 44 3' 35" Long: 92 3' 33" Last Obs.: 10 July 1992
Precision: approx. boundaries have been determined

Voucher: RELEVÉ 1992 Verification: verified

Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #113

S Rank: S2
EO Size: EO Rank: C Current Status: 1 Intended Status: 1
Site: ELBA 21 CBS Site #: 58
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: DUNEVITZ, H. (CO BIOL SURVEY 1993)
MOST OF AREA (SW16, SE17, NW21) IMMATURE OAK FOREST: CANOPY QUERCUS RUBRA, Q. ALBA, Q. MACROCARPA, ACER SACCHARUM. OCCASIONAL LARGE TREES (55 CM DBH), MOST 20-40 CM DBH. SUBCANOPY 50-75% COVER, SHRUBS DENSE, INCLUDING MUCH ZANTHOXYLUM, RUBUS, RIBES. GROUND LAYER DRY-MESIC. PROBABLY GRAZED, SEL CUT IN PAST. PORTION IN 0E0E20: WOODLAND 60% CANOPY COVER DOM BY QUERCUS VELUTINA, Q. MACROCARPA, Q. ELLIPS, SUCCEEDING TO FOREST. MOSTLY W-FACING STEEP SLOPES, NO FORK WHITEWATER.

Location: WINONA COUNTY, MN DNR Region: 5
Legal : T107N R10W 16172021 Wildlife Area: 721
Quad Map: ELBA (V21D) Forestry District: 531
Latitude: 44 3' 58" Long: 92 2' 18" Last Obs.: 28 September 1993
Precision: approx. boundaries have been determined

Voucher: Verification: verified

Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #115

S Rank: S2
EO Size: EO Rank: B Current Status: 1 Intended Status: 1
Site: WHITEWATER PARK WEST CBS Site #: 60
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: DUNEVITZ, H. (CO BIOL SURVEY 1992); RELEVÉ
IMMATURE BUT RELATIVELY UNDISTURBED. CANOPY DOMINATED BY QUERCUS RUBRA, WITH Q. ALBA COMMON; AVERAGE DBH 40 CM; CANOPY COVER 90%. SUBCANOPY DOM BY OSTRYA, ACER SACCHARUM. SHRUBS GENERALLY SPARSE, GROUND LAYER TYPICAL DRY-MESIC SPECIES (COMMON: OSMUNDA CLAYTONI, ATHYRIUM ANGUSTUM, DESMODIUM GLUTINOSUM, GALIUM CONCINNUM). SUCCEEDING TO MAPLE-BASSWOOD FOREST. HIKING TRAILS. SILT LOAM, MODERATE TO STEEP SLOPES, SOUTH SIDE MIDDLE FORK WHITEWATER RIVER.

Location: WINONA COUNTY, MN DNR Region: 5
Legal : T107N R10W SW200E19 Wildlife Area: 510
Quad Map: ELBA (V21D) Forestry District: 531
Latitude: 44 3' 5" Long: 92 3' 27" Last Obs.: 29 September 1992
Precision: approx. boundaries have been determined

Voucher: RELEVÉ 1994 Verification: verified

APPENDIX 3: NATIVE PLANT COMMUNITIES WITHIN WHITEWATER STATE PARK
MAY 1999

Minnesota Natural Heritage Database
Element Occurrence Records

MnDNR, Natural Heritage and Nongame Research Program

15:45 Wednesday, MAY 12, 1999
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Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #133

S Rank: S2

EO Size:

EO Rank:

Current Status:

Intended Status:

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. & BOLIN, K. (CO BIOL SURVEY 1994)

IMMATURE FOREST; SPARSE CANOPY INCLUDES QUERCUS RUBRA, Q. MACROCARPA, Q. ALBA. OCCASIONAL GROVES PINUS STROBUS ON UPPER SLOPES NEAR CLIFFS. SUBCANOPY INCLUDES ACER SACCHARUM, OSTRYA. BRIEF VISIT ONLY; TOO LATE IN SEASON TO EVALUATE GROUND LAYER. STEEP NORTHEAST-FACING SLOPES ALONG DRY RUN CREEK. GRADES TO NARROW STRIP LOWLAND HARDWOOD FOREST (WITH CELTIS, ULMUS SPP., OAKS) ON VALLEY FLOOR. SPRING-FED SMALL STREAM AT BASE OF BLUFF TOWARD NORTH END OF VALLEY.

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W 0WSW280E29

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 2' 27" Long: 92 2' 33"

Last Obs.: 29 December 1994

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Element: OAK WOODLAND-BRUSHLAND (SOUTHEAST) #32

S Rank: S4

EO Size: 89 acres approx

EO Rank:

Current Status:

Intended Status:

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: Private

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. & BOLIN, K. (CO BIOL SURVEY 1992, 1994)

DOM BY QUERCUS MACROCARPA, MODERATELY OPEN-GROWN, ABOUT 50% COVER. UPPER SLOPE: POPULUS GRAND, TILIA & BETULA Papyrifera COMMON. LOWER SLOPE: SOME SUBCANOPY DEVELOPMENT INCLUDING OSTRYA, CARPINUS. SHRUBS DENSE, ABOUT 70% COVER, JUNIPERUS VIRGINIANA ABUNDANT; ZANTHOXYLUM, CORYLUS, OTHERS. GROUND LAYER INCLUDES SOME PRAIRIE SPECIES. OCCASIONAL DRY CLIFFS WITH PINUS STROBUS AT TOP. VERY STEEP SW-FACING SLOPE ABOVE DRY RUN CREEK, WITH THIN SOIL & FREQUENT ROCK OUTCROPS.

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W 0WSW28NE29

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 2' 31" Long: 92 2' 13"

Last Obs.: 29 December 1994

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Element: TALUS SLOPE ALGIFIC SUBTYPE #15

S Rank: S2

EO Size:

EO Rank: D

Current Status:

Intended Status:

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: OSTLIE, W.

A FAIRLY LARGE ALGIFIC SLOPE LOCATED SOUTH OF MINN HWY 74. UNSURVEYED FOR PLANTS OR SNAILS.

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W SESW20

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 3' 12" Long: 92 3' 4"

Last Obs.: 1989

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Element: TALUS SLOPE ALGIFIC SUBTYPE #16

S Rank: S2

EO Size:

EO Rank: C

Current Status:

Intended Status:

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: OSTLIE, W.

LARGE, IMPRESSIVE-LOOKING ALGIFIC SLOPE LOCATED ON NORTH-FACING CLIFF SOUTH OF GROUP CAMP AREA. COMMUNITY INCLUDES ACER SPICATUM, VIBURNUM AMERICANUM, RIBES HUDSONIANUM, PINUS STROBUS AND BETULA LUTEA. WEAKLY ALGIFIC.

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W NESE19SW20

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 3' 12" Long: 92 3' 33"

Last Obs.: 1989

Precision: approx. boundaries have been determined

Voucher:

Verification: verified

Minnesota Natural Heritage Database
Element Occurrence Records

APPENDIX 3: NATIVE PLANT COMMUNITIES WITHIN WHITEWATER STATE PARK
MAY 1999
MnDNR, Natural Heritage and Nongame Research Program

15:45 Wednesday, MAY 12, 1999
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Element: TALUS SLOPE ALGIFIC SUBTYPE #17

S Rank: S2

EO Size:

EO Rank: D

Current Status:

Intended Status:

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: OSTLIE, W.

MODERATELY SIZED ALGIFIC SLOPE LOCATED .5 MILE UPSTREAM FROM GROUP CAMP. PLANT SPECIES OCCURRING AT SITE INCLUDE ACER SPICATUM, PINUS STROBUS, RIBES HUDSONIANUM, VIBURNUM AMERICANUM, AND BETULA LUTEA.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENE19

Quad Map: ELBA (V21D)

Latitude: 44 3' 28" Long: 92 3' 42"

Precision: approx. boundaries have been determined

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 1989

Voucher:

Verification: verified

Element: WHITE PINE-HARDWOOD FOREST (SOUTHEAST) MESIC SUBTYPE #7

S Rank: S2

EO Size: 10 acres approx

EO Rank: B

Current Status: 1

Intended Status: 6

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (CO BIOL SURVEY 1992)

UPPER SLOPE DOM BY PINUS STROBUS (TO 53 CM DBH), CANOPY ALSO WITH TILIA, POPULUS GRANDIDENTATA, ACER SACCHARUM, QUERCUS RUBRA; LOWER SLOPE DOM BY ACER SACCHARUM. SUBCANOPY: P. STROBUS, CARPINUS, OSTRYA, A. SACCHARUM, BETULA PAP. SPARSE SHRUB LAYER. DRY-MESIC GROUND LAYER INCL PYROLA ELLIPTICA, CHIMAPHILA UMBELLATA. ALL SIZE CLASSES P. STROBUS WELL-REPRESENTED. FREQ ROCK OUTCROPS. LAMOILLE-DORERTON SILT LOAM. VERY STEEP NW FACING BLUFFS ABOVE TROUT RUN CREEK. ALSO SESEW SEC 29

Location: WINONA COUNTY, MN

Legal : T107N R10W SWSWSE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 8" Long: 92 2' 56"

Precision: approx. boundaries have been determined

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 01 October 1992

Voucher:

Verification: verified

Appendix 4. Relevés and a summary of plant species recorded in Whitewater State Park.

Explanation

This appendix contains information on seven relevés conducted in the Park. For detailed explanations about the contents of these printouts, refer to the unpublished document entitled *A handbook for collecting releve data in Minnesota*, available from the DNR Natural Heritage Program.

All plant species recorded from the releve plots are summarized in a separate list following the releve information. The first column lists the number of relevés in which each species occurs. The total number of plant records and the total number of species identified in the relevés are given at the end of the list.

17:29 Wednesday, FEBRUARY 17, 1999

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

GENERAL INFORMATION

Surveyor's Relevé #: WI-59-1

EO Rec #: 13803

*Surveyor's ID Code: HLD (Hannah L. Dunevitz)

Date: 20 Month: MAY Year: 1992 (e.g. 04 JUL 1993)

CBS Site #: 59 or Site Name: TROUT RUN VALLEY, CBS 59

DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)

*NC Code: MBSEXX (Maple-Basswood Forest (Southeast))

Commun. Ranking in Relevé: AB Stand typical of Commun. Type: _ Relevé typical of Stand: _

LOCATIONAL INFORMATION

State Code: MN *County Code: 85 (Winona)

Quad Codes DNR: V21D Universal: 44092A1 (Elba)

Township: 107N (e.g. 143N) Range: 10W (e.g. 32W)

QORT: SE QRT: NW of Section 29

Latitude: 44 degrees, 2 minutes, 43 seconds

LL/GPS registration:

Longitude: 92 degrees, 3 minutes, 5 seconds

*Accuracy: _ Marker: _

RELEVÉ INFORMATION

Relevé Size (sq. m.): 400 Elev. (ft.): 1010 Slope: 26NE

Slope Position: _

*ECS Subsection: 24 (Blufflands)

Minnesota Soil Atlas Mapping Unit: SSR

*Geomorphic Unit: 40 (Red Wing-La Crescent Uplands)

Remarks: INFREQUENT LOW LIMESTONE OUTCROPS THROUGHOUT. COARSE WOODY DEBRIS
COMMON ON FOREST FLOOR. SEEPS & TROUT RUN CREEK OCCUR JUST BELOW
SLOPE.

OTHER DATA COLLECTED

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

* = Variables with computerized code dictionaries (See Relevé Handbook)

Woody Broadleaf Deciduous, Height: 20-35m, Cover interrupted

- 2.1 Acer saccharum (Sugar maple)
- 2.1 Carya cordiformis (Bitternut hickory)
- 2.1 Quercus rubra (Northern red oak)
- 2.1 Ulmus rubra (Red elm, slippery elm)
- 1.1 Ulmus americana (American elm)
- +1 Tilia americana (Basswood)
- SPC R.1 Juglans cinerea DD (Butternut)
- R.1 Quercus alba (White oak)

Woody Broadleaf Deciduous, Height: 10-20m, Cover continuous

- 3.1 Acer saccharum (Sugar maple)
- 2.1 Carpinus caroliniana (American hornbeam, blue beech)
- 2.1 Ulmus rubra (Red elm, slippery elm)
- +1 Ostrya virginiana (Ironwood, hop hornbeam)

----- EXAMPLE RECORD -----

! Cover.Sociability Genus Species Author Variety Author Remark !
! +.2 Epigaea repens L. var. glab. Fern. fl # # !
----- FOR CODES, SEE RELEVÉ CODE SHEET OR RELEVÉ MANUAL -----

Woody Broadleaf Deciduous, Height: 2-10m, Cover interrupted

- 2.1 *Acer saccharum* (Sugar maple)
- 2.1 *Ulmus rubra* (Red elm, slippery elm)
- +1.1 *Carpinus caroliniana* (American hornbeam, blue beech)
- +1.1 *Carya cordiformis* (Bitternut hickory)
- +1.1 *Fraxinus cf. americana* ## (White ash)
- +1.1 *Ostrya virginiana* (Ironwood, hop hornbeam)
- R.1 *Tilia americana* (Basswood)

Woody Broadleaf Deciduous, Height: .5-2m, Cover rare

- 2.1 *Acer saccharum* (Sugar maple)
- +1.1 *Fraxinus cf. pennsylvanica* (Green ash)
- +1.1 *Prunus virginiana* (Chokecherry)
- +1.1 *Staphylea trifolia* (Bladdernut)
- +1.1 *Tilia americana* (Basswood)

Woody Broadleaf Deciduous, Height: .0-.5m, Cover almost absent

- +1.1 *Acer saccharum* (Sugar maple)
- +1.1 *Carpinus caroliniana* (American hornbeam, blue beech)
- +1.1 *Carya cordiformis* (Bitternut hickory)
- +1.1 *Cornus alternifolia* (Pagoda dogwood)
- +1.1 *Prunus virginiana* (Chokecherry)
- +1.1 *Ribes cynosbati* (Prickly gooseberry, dogberry)
- +1.1 *Tilia americana* (Basswood)
- R.1 *Fraxinus* (Ash)

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

- +1.1 *Carex blanda* ##
- +1.1 *Oryzopsis racemosa* ## (Black-fruited rice-grass)
- R.1 *Carex hirtifolia*

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

- 2.1 *Asarum canadense* (Wild ginger)
- SPC 2.1 *Jeffersonia diphylla* (Twin-leaf)
- 1.1 *Erythronium cf. albidum* (White trout-lily)
- 1.1 *Hepatica acutiloba* (Sharp-lobed hepatica)
- 1.1 *Podophyllum peltatum* (May-apple, mandrake)
- +1.1 *Actaea rubra* (Red baneberry)
- +1.1 *Adiantum pedatum* (Maidenhair fern)
- +1.1 *Allium tricoccum* (Wild leek)
- +1.1 *Anemone quinquefolia*
- +1.1 *Aralia nudicaulis* (Wild sarsaparilla)
- +1.1 *Arisaema triphyllum* (Jack-in-the-pulpit)
- +1.1 *Botrychium virginianum* (Rattlesnake-fern)
- +1.1 *Caulophyllum thalictroides* (Blue cohosh)
- +1.1 *Dentaria laciniata* (Cut-leaved toothwort)
- +1.1 *Dicentra cucullaria* (Dutchman's-breeches)
- +1.1 *Galium concinnum*
- +1.1 *Geranium maculatum* (Wild geranium)
- +1.1 *Hydrophyllum virginianum* (Virginia waterleaf)

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+2		<i>Epigaea repens</i>	L. var. glab.		Fern.	fl # #	!

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

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

- +1 Isopyrum biternatum (False rue-anemone)
- +1 Menispermum canadense (Canada moonseed)
- +1 Mitella diphylla (Miterwort)
- +1 Osmorhiza claytonii (Sweet cicely)
- SPC +1 Panax quinquefolium (American ginseng)
- +1 Parthenocissus quinquefolia (Virginia creeper)
- +1 Prenanthes alba ## (White rattlesnake-root)
- +1 Ranunculus abortivus (Kidney-leaf buttercup)
- +1 Sanguinaria canadensis (Bloodroot)
- +1 Sanicula (Sanicle; Black Snakeroot)
- +1 Smilax cf. herbacea (Carrion-flower)
- +1 Smilacina racemosa (False Solomon's-seal)
- +1 Solidago flexicaulis (Zig-zag goldenrod)
- +1 Thalictrum dioicum (Early meadow rue)
- +1 Unknown or Indeterminable Plant ##
- +1 Uvularia grandiflora (Yellow bellwort)
- +1 Viola pubescens (Smooth yellow violet)
- +1 Viola sororia ## (Common blue violet)
- R.1 Athyrium angustum (Lady fern)
- R.1 Galearis spectabilis (Showy orchis)
- R.1 Ranunculus cf. hispidus ## (Hispid buttercup)
- R.1 Trillium flexipes (Declining trillium)
- R.1 Triosteum perfoliatum ## (Horse-gentian)
- NON R.1 Vitis riparia (Wild grape)

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

- 2.4 Unknown or Indeterminable Plant

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+2	Epigaea	repens	L. var.	glab.	Fern.	fl # #	!

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

MINNESOTA NATURAL HERITAGE PROGRAM
Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4007
(612) 296-2835

DNR RELEVÉ #:0979

17:29 Wednesday, FEBRUARY 17, 1999

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

GENERAL INFORMATION

Surveyor's Relevé #: WI-60-1 EO Rec #: 20004
*Surveyor's ID Code: HLD (Hannah L. Dunevitz)
Date: 10 Month: JUL Year: 1992 (e.g. 04 JUL 1993)
CBS Site #: 60 or Site Name: WHITEWATER PARK WEST, CBS 60
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)
*NC Code: LHXXXX (Lowland Hardwood Forest)
Commun. Ranking in Relevé: B Stand typical of Commun. Type: _ Relevé typical of Stand: _

LOCATIONAL INFORMATION

State Code: MN *County Code: 85 (Winona)
Quad Codes DNR: V21D Universal: 44092A1 (Elba)
Township: 107N (e.g. 143N) Range: 10W (e.g. 32W)
QORT: NE QRT: SE of Section 19
Latitude: 44 degrees, 3 minutes, 15 seconds LL/GPS registration:
Longitude: 92 degrees, 3 minutes, 37 seconds *Accuracy: _ Marker: _

RELEVÉ INFORMATION

Relevé Size (sq. m.): 400 Elev. (ft.): 900 Slope: 00LV Slope Position: _
*ECS Subsection: 24 (Blufflands)
Minnesota Soil Atlas Mapping Unit: A
*Geomorphic Unit: 40 (Red Wing-La Crescent Uplands)

Remarks: ON TERRACE ABOVE WHITEWATER RIVER. DOMINATED BY QUERCUS MACROCARPA
AVERAGING 30 CM DBH. MODERATE AMOUNT COARSE WOODY DEBRIS. ALLUVIAL
SOIL: LOAMY SAND.

OTHER DATA COLLECTED

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

* = Variables with computerized code dictionaries (See Relevé Handbook)

Woody Broadleaf Deciduous, Height: 20-35m, Cover interrupted

4.1 Quercus macrocarpa (Bur oak)
+1 Fraxinus pennsylvanica (Green ash)
+1 Tilia americana (Basswood)

Woody Broadleaf Deciduous, Height: 10-20m, Cover interrupted

3.1 Acer saccharum (Sugar maple)
2.1 Fraxinus americana (White ash)
1.1 Celtis occidentalis (Hackberry)
+1 Ostrya virginiana (Ironwood, hop hornbeam)
+1 Tilia americana (Basswood)
+1 Ulmus americana (American elm)

----- EXAMPLE RECORD -----

! Cover.Sociability Genus Species Author Variety Author Remark !
! +.2 Epigaea repens L. var. glab. Fern. fl # # !
----- FOR CODES, SEE RELEVÉ CODE SHEET OR RELEVÉ MANUAL -----

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

- 2.1 *Acer saccharum* (Sugar maple)
- 2.1 *Carpinus caroliniana* (American hornbeam, blue beech)
- 2.1 *Ostrya virginiana* (Ironwood, hop hornbeam)
- 2.1 *Tilia americana* (Basswood)
- 2.1 *Ulmus americana* (American elm)
- 1.1 *Carya cordiformis* (Bitternut hickory)
- 1.1 *Celtis occidentalis* (Hackberry)
- 1.1 *Fraxinus americana* (White ash)
- +1.1 *Prunus serotina* (Black cherry)
- +1.1 *Staphylea trifolia* (Bladdernut)

Woody Broadleaf Deciduous, Height: .5-2m, Cover rare

- 1.1 *Carpinus caroliniana* (American hornbeam, blue beech)
- +1.1 *Acer saccharum* (Sugar maple)
- +1.1 *Fraxinus americana* (White ash)
- +1.1 *Ribes cynosbati* (Prickly gooseberry, dogberry)
- +2.1 *Staphylea trifolia* (Bladdernut)
- +1.1 *Zanthoxylum americanum* (Prickly-ash)

Woody Broadleaf Deciduous, Height: .0-.5m, Cover almost absent

- 1.1 *Zanthoxylum americanum* (Prickly-ash)
- +1.1 *Acer saccharum* (Sugar maple)
- +1.1 *Carpinus caroliniana* (American hornbeam, blue beech)
- +1.1 *Fraxinus cf. americana* (White ash)
- +1.1 *Ostrya virginiana* (Ironwood, hop hornbeam)
- +1.1 *Prunus virginiana* (Chokecherry)
- +1.1 *Ribes* (Prickly gooseberry, dogberry)
- +1.1 *Tilia americana* (Basswood)
- +1.1 *Ulmus americana* (American elm)
- R.1 *Carya cordiformis* (Bitternut hickory)
- R.1 *Cornus alternifolia* (Pagoda dogwood)
- R.1 *Rubus strigosus* (Red raspberry)
- R.1 Unknown or Indeterminable Plant

Climber, Height: .0-10m, Cover almost absent

- +1.1 *Dioscorea villosa* (Wild yam)
- NON +1.1 *Vitis riparia* (Wild grape)

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

- 2.1 *Carex* ## (Sedge)
- 1.1 *Carex* ## (Sedge)

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

- 4.4 *Asarum canadense* (Wild ginger)
- 1.1 *Allium tricoccum* (Wild leek)
- 1.1 *Caulophyllum thalictroides* (Blue cohosh)
- 1.1 *Galium concinnum*
- 1.1 *Geranium maculatum* (Wild geranium)
- 1.1 *Hepatica acutiloba* (Sharp-lobed hepatica)

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+2		<i>Epigaea repens</i>	L. var. glab.		Fern.	fl # #	!

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

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

- 1.1 *Hydrophyllum virginianum* (Virginia waterleaf)
- 1.1 *Mitella diphylla* (Miterwort)
- 1.1 *Osmorhiza longistylis* (Anise-root)
- 1.1 *Viola* (Violet)
- +1.1 *Amphicarpaea bracteata* (Hog-peanut)
- +1.1 *Arisaema triphyllum* (Jack-in-the-pulpit)
- +1.1 *Clematis virginiana* (Virgin's bower)
- NON +1.1 *Geum laciniatum* (White avens)
- +1.1 *Laportea canadensis* (Wood nettle)
- +1.1 *Lilium michiganense* (Michigan lily)
- +1.1 *Parthenocissus inserta* (Virginia creeper)
- +1.1 *Polemonium reptans* (Jacob's ladder)
- +1.1 *Ranunculus abortivus* (Kidney-leaf buttercup)
- +1.1 *Sanguinaria canadensis* (Bloodroot)
- +1.1 *Sanicula marilandica* (Black snakeroot)
- +1.1 *Smilax ecirrata* (Carrion-flower)
- +1.1 *Smilacina racemosa* (False Solomon's-seal)
- +1.1 *Solidago flexicaulis* (Zig-zag goldenrod)
- +1.1 *Thalictrum dioicum* (Early meadow rue)
- +1.1 Unknown or Indeterminable Plant
- R.1 *Actaea rubra* (Red baneberry)
- R.1 *Agrimonia gryposepala* (Agrimony)
- R.1 *Botrychium virginianum* (Rattlesnake-fern)
- R.1 *Cryptotaenia canadensis* (Honestwort)
- R.1 *Menispermum canadense* (Canada moonseed)
- R.1 *Rhus radicans*
- R.1 *Smilacina stellata* (Starry false Solomon's-seal)
- R.1 *Taraxacum officinale* (Common dandelion)

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

- +1.1 Unknown or Indeterminable Plant

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+1.2		<i>Epigaea repens</i>	L. var. glab.		Fern.	fl # #	!

----- FOR CODES, SEE RELEVÉ CODE SHEET OR RELEVÉ MANUAL -----

17:29 Wednesday, FEBRUARY 17, 1999

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

GENERAL INFORMATION

Surveyor's Relve #: 40 EO Rec #: 20018
*Surveyor's ID Code: CMH (Cindy M. Hale)
Date: 21 Month: JUL Year: 1994 (e.g. 04 JUL 1993)
CBS Site #: 60 or Site Name: Signal Point
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)
*NC Code: OASEME (Oak Forest (Southeast) Mesic Subtype)
Commun. Ranking in Relve:BC Stand typical of Commun. Type:_ Relve typical of Stand:_

LOCATIONAL INFORMATION

State Code: MN *County Code: 85 (Winona)
Quad Codes DNR: V21D Universal: 44092A1 (Elba)
Township: 107N (e.g. 143N) Range: 10W (e.g. 32W)
QORT: NE QRT: SE of Section 19
Latitude: 44 degrees, 3 minutes, 19 seconds LL/GPS registration:
Longitude: 92 degrees, 3 minutes, 50 seconds *Accuracy: _ Marker: _

RELEVE INFORMATION

Relve Size (sq. m.): 400 Elev. (ft.): 1060 Slope: 09NE Slope Position: _
*ECS Subsection: 24 (Blufflands)
Minnesota Soil Atlas Mapping Unit: SSR
*Geomorphic Unit: 40 (Red Wing-La Crescent Uplands)

Remarks: Select logged Oak/MB woods-Oak logged out;Diverse tree and herb layer
w/shade& open species present-converting to M/B, no oak regen. Numer-
ous other species seen greater than 2m but nearly OP(more)

OTHER DATA COLLECTED

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

* = Variables with computerized code dictionaries (See Relve Handbook)

Woody Broadleaf Deciduous, Height: 10-20m, Cover continuous

- 4.1 Tilia americana (Basswood)
- 3.1 Quercus rubra (Northern red oak)
- 1.1 Betula papyrifera (Paper birch)
- R.1 Fraxinus cf. pennsylvanica (Green ash)
- R.1 Quercus alba (White oak)
- R.1 Ulmus rubra (Red elm, slippery elm)

Woody Broadleaf Deciduous, Height: 2-10m, Cover interrupted

- 3.2 Ulmus americana 1 (American elm)
- 2.1 Ostrya virginiana (Ironwood, hop hornbeam)
- 1.1 Acer saccharum (Sugar maple)
- 1.1 Tilia americana (Basswood)
- R.1 Acer negundo (Box elder)
- R.1 Celtis occidentalis (Hackberry)
- R.1 Fraxinus pennsylvanica (Green ash)

----- EXAMPLE RECORD -----

! Cover.Sociability Genus Species Author Variety Author Remark !
! +.2 Epigaea repens L. var. glab. Fern. fl # # !
----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

Woody Broadleaf Deciduous, Height: 2-10m, Cover interrupted (continued)

- R.1 *Quercus alba* (White oak)
- R.1 *Ulmus rubra* (Red elm, slippery elm)
- R.1 *Zanthoxylum americanum* (Prickly-ash)

Woody Broadleaf Deciduous, Height: .0-2m, Cover interrupted

- 2.1 *Zanthoxylum americanum* (Prickly-ash)
- 1.2 *Ribes cf. cynosbati* (Prickly gooseberry, dogberry)
- 1.1 *Ulmus rubra* (Red elm, slippery elm)
- +1.1 *Acer negundo* (Box elder)
- +1.1 *Carya cordiformis* (Bitternut hickory)
- +1.1 *Cornus alternifolia* (Pagoda dogwood)
- +1.1 *Fraxinus cf. pennsylvanica* (Green ash)
- +1.1 *Ostrya virginiana* (Ironwood, hop hornbeam)
- +1.1 *Prunus serotina* (Black cherry)
- +1.1 *Prunus virginiana* (Chokecherry)
- +1.1 *Rhamnus cathartica* (Common buckthorn)
- +2.2 *Rubus cf. occidentalis* (Black raspberry)
- R.1 *Acer saccharum* (Sugar maple)
- R.1 *Ulmus cf. americana* (American elm)

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

- 1.1 *Parthenocissus quinquefolia* (Virginia creeper)
- NON +1.1 *Vitis riparia* (Wild grape)

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

- THR +2.2 *Carex festucacea* ##
- +2.2 *Carex cf. leptoneura* ##
- +2.2 *Carex cf. rosea*
- +2.2 *Poa compressa* (Canada bluegrass)
- +2.2 Unknown or Indeterminable Plant ##

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

- 2.2 *Amphicarpaea bracteata* (Hog-peanut)
- 2.2 *Athyrium angustum* (Lady fern)
- 2.1 *Desmodium glutinosum* (Pointed-leaved tick-trefoil)
- 2.1 *Osmunda claytoniana* (Interrupted fern)
- 1.1 *Circaea lutetiana* ssp. *canadensis* (Enchanter's nightshade)
- 1.1 *Eupatorium maculatum* ## (Spotted Joe-pye weed)
- 1.1 *Laportea canadensis* (Wood nettle)
- 1.1 *Osmorhiza longistylis* (Anise-root)
- 1.1 *Sanicula gregaria* (Black snakeroot)
- 1.1 *Smilax herbacea* (Carrion-flower)
- +1.1 *Actaea cf. rubra* (Red baneberry)
- +1.1 *Adiantum pedatum* (Maidenhair fern)
- NON +1.1 *Arabis laevigata* ## (Smooth rock-cress)
- +1.1 *Aralia nudicaulis* (Wild sarsaparilla)
- +1.1 *Arisaema triphyllum* (Jack-in-the-pulpit)
- +1.1 *Aster cf. cordifolius* (Heart-leaved aster)
- +1.1 cf. *Aster* ##

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+2		<i>Epigaea repens</i>	L. var. glab.		Fern.	fl # #	!

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

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

- +1 *Cryptotaenia canadensis* (Honestwort)
- +1 *Eupatorium rugosum* (Common snakeroot)
- +1 *Galium triflorum* (Three-flowered bedstraw)
- +1 *Geranium* (Cranesbill)
- +1 *Geum canadense* (White avens)
- +1 *Mitella diphylla* (Miterwort)
- +1 *Phryma leptostachya* (Lopseed)
- +1 *Ranunculus recurvatus* (Hooked crowfoot)
- +1 *Sanicula marilandica* ## (Black snakeroot)
- +1 *Scrophularia lanceolata* (Lance-leaved figwort)
- +1 *Smilax ecirrata* (Carrion-flower)
- +1 *Solidago* ## (Goldenrod)
- +1 *Solidago flexicaulis* (Zig-zag goldenrod)
- +1 *Thalictrum dioicum* (Early meadow rue)
- +1 *Veronicastrum virginicum* ## (Culver's root)
- +1 *Viola* ## (Violet)
- R.1 *Podophyllum peltatum* (May-apple, mandrake)
- R.1 *Polemonium reptans* (Jacob's ladder)
- R.1 *Taraxacum* (Dandelion)

Lichen/Moss, Height: .0-.5m, Cover almost absent

- +2 Unknown or Indeterminable Plant ##
- +2 Unknown or Indeterminable Plant ##
- +2 Unknown or Indeterminable Plant ##
- +2 Unknown or Indeterminable Plant ##
- +2 Unknown or Indeterminable Plant ##

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+2		<i>Epigaea repens</i>	L.	var.	glab.	Fern.	fl # # !

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

MINNESOTA NATURAL HERITAGE PROGRAM
Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4007
(612) 296-2835

DNR RELEVÉ #:4765

17:29 Wednesday, FEBRUARY 17, 1999

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

GENERAL INFORMATION

Surveyor's Relevé #: 41 EO Rec #: 15273
*Surveyor's ID Code: CMH (Cindy M. Hale)
Date: 20 Month: JUL Year: 1994 (e.g. 04 JUL 1993)
CBS Site #: 60 or Site Name: White Water Park West
DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)
*NC Code: OASEME (Oak Forest (Southeast) Mesic Subtype)
Commun. Ranking in Relevé: B Stand typical of Commun. Type: _ Relevé typical of Stand: _

LOCATIONAL INFORMATION

State Code: MN *County Code: 85 (Winona)
Quad Codes DNR: V21D Universal: 44092A1 (Elba)
Township: 107N (e.g. 143N) Range: 10W (e.g. 32W)
QORT: NE QRT: SW of Section 19
Latitude: 44 degrees, 3 minutes, 12 seconds LL/GPS registration:
Longitude: 92 degrees, 4 minutes, 17 seconds *Accuracy: _ Marker: _

RELEVÉ INFORMATION

Relevé Size (sq. m.): 400 Elev. (ft.): 1060 Slope: 10NE Slope Position: _
*ECS Subsection: 24 (Blufflands)
Minnesota Soil Atlas Mapping Unit: SSR
*Geomorphic Unit: 40 (Red Wing-La Crescent Uplands)

Remarks: Supposedly OG but doesn't look like it; Dom. by younger age classes
& no really old trees; QA w/QR and TA dom. w/CC & AS in understory
w/OV; Herb layer diverse; FN present in canopy rarely (more)

OTHER DATA COLLECTED

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

* = Variables with computerized code dictionaries (See Relevé Handbook)

Woody Broadleaf Deciduous, Height: 10-20m, Cover continuous

- 4.1 Tilia americana (Basswood)
- 3.1 Quercus alba (White oak)
- 2.1 Celtis occidentalis (Hackberry)
- 2.1 Quercus rubra (Northern red oak)
- 1.1 Ulmus rubra (Red elm, slippery elm)

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

- 4.1 Carya cordiformis (Bitternut hickory)
- 2.1 Fraxinus nigra (Black ash)
- 2.1 Ostrya virginiana (Ironwood, hop hornbeam)
- 2.1 Quercus alba (White oak)
- 1.1 Celtis occidentalis (Hackberry)
- 1.1 Tilia americana (Basswood)
- 1.1 Ulmus rubra (Red elm, slippery elm)
- R.1 Acer saccharum (Sugar maple)

----- EXAMPLE RECORD -----

!	Cover.Sociability	Genus	Species	Author	Variety	Author	Remark	!
!	+.2	Epigaea	repens	L.	var.	glab.	Fern. fl # #	!
----- FOR CODES, SEE RELEVÉ CODE SHEET OR RELEVÉ MANUAL -----								

Woody Broadleaf Deciduous, Height: 2-10m, Cover continuous (continued)

- R.1 Prunus serotina (Black cherry)
- R.1 Prunus virginiana (Chokecherry)
- R.1 Pyrus malus ## (Apple)

Woody Broadleaf Deciduous, Height: .0-2m, Cover rare

- 2.1 Ribes cf. cynosbati (Prickly gooseberry, dogberry)
- 1.1 Carya cordiformis (Bitternut hickory)
- 1.1 Prunus virginiana (Chokecherry)
- 1.1 Ulmus rubra (Red elm, slippery elm)
- +1.1 Acer negundo (Box elder)
- +1.1 Celtis occidentalis (Hackberry)
- +1.1 Cornus alternifolia (Pagoda dogwood)
- +1.1 Corylus americana (American hazelnut)
- +1.1 Fraxinus cf. nigra ## (Black ash)
- +1.1 Ostrya virginiana (Ironwood, hop hornbeam)
- +1.1 Prunus serotina (Black cherry)
- +1.1 Quercus rubra (Northern red oak)
- +2.1 Rhamnus cathartica (Common buckthorn)
- +1.1 Rubus cf. occidentalis (Black raspberry)
- +1.1 Tilia americana (Basswood)
- +1.1 Viburnum lentago (Nannyberry)
- R.1 Unknown or Indeterminable Plant ## (Juneberry; Serviceberry; Saska)
- R.1 Zanthoxylum americanum (Prickly-ash)

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

- 2.1 Parthenocissus (Virginia Creeper; Woodbine)
- NON +1.1 Vitis riparia (Wild grape)

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

- THR +2.1 Carex laxiculmis var. copulata ##
- +1.1 Carex leptoneura ##
- +2.1 Carex rosea ##
- +2.1 Carex sparganioides ##
- +2.1 Poa compressa (Canada bluegrass)
- +2.1 Unknown or Indeterminable Plant
- +2.1 Unknown or Indeterminable Plant ##

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

- 3.1 Osmorhiza longistylis (Anise-root)
- 2.1 Desmodium glutinosum (Pointed-leaved tick-trefoil)
- 2.1 Sanicula gregaria (Black snakeroot)
- 1.1 Amphicarpaea bracteata (Hog-peanut)
- 1.1 Athyrium angustum (Lady fern)
- 1.1 Caulophyllum thalictroides (Blue cohosh)
- 1.1 Circaea lutetiana ssp. canadensis (Enchanter's nightshade)
- 1.1 Cryptotaenia canadensis (Honestwort)
- 1.1 Geranium (Cranesbill)
- 1.1 Impatiens (Balsam; Jewelweed)
- 1.1 Osmorhiza claytonii (Sweet cicely)

----- EXAMPLE RECORD -----
 ! Cover.Sociability Genus Species Author Variety Author Remark !
 ! +2.1 Epigaea repens L. var. glab. Fern. fl # # !
 ----- FOR CODES, SEE RELEVÉ CODE SHEET OR RELEVÉ MANUAL -----

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

- 1.1 *Osmunda claytoniana* (Interrupted fern)
- +1.1 *Actaea rubra* (Red baneberry)
- +1.1 *Adiantum pedatum* (Maidenhair fern)
- +1.1 *Allium tricoccum* OP (Wild leek)
- +1.1 *Aralia nudicaulis* (Wild sarsaparilla)
- +1.1 *Arisaema triphyllum* (Jack-in-the-pulpit)
- +1.1 *Botrychium virginianum* (Rattlesnake-fern)
- +1.1 *Cirsium altissimum* ## (Tall thistle)
- +1.1 *Eupatorium cf. maculatum* ## (Spotted Joe-pye weed)
- +1.1 *Eupatorium rugosum* (Common snakeroot)
- +1.1 *Fragaria cf. virginiana* (Common strawberry)
- +1.1 *Galium boreale* ssp. *septentrionale* (Northern bedstraw)
- +1.1 *Galium triflorum* ## (Three-flowered bedstraw)
- +1.1 *Geum canadense* (White avens)
- +1.1 *Hydrophyllum virginianum* (Virginia waterleaf)
- +1.1 *Laportea canadensis* (Wood nettle)
- +1.1 *Mitella diphylla* (Miterwort)
- +1.1 *Pilea pumila* (Clearweed)
- +1.1 *Polemonium reptans* (Jacob's ladder)
- +1.1 *Polymnia canadensis* ## (Leaf-cup)
- +1.1 *Pteridium aquilinum* var. *latiusculum* (Bracken)
- +1.1 *Ranunculus recurvatus* (Hooked crowfoot)
- +1.1 *Rudbeckia laciniata* ## (Goldenglow)
- +1.1 *Sanguinaria canadensis* (Bloodroot)
- +1.1 *Scrophularia lanceolata* (Lance-leaved figwort)
- +1.1 *Smilax ecirrata* (Carrion-flower)
- +1.1 *Smilacina racemosa* (False Solomon's-seal)
- +1.1 *Solidago* ## (Goldenrod)
- +1.1 *Solidago flexicaulis* (Zig-zag goldenrod)
- +1.1 *Uvularia grandiflora* (Yellow bellwort)
- +1.1 *Viola* ## (Violet)
- R.1 cf. *Lactuca* ## (Lettuce)
- R.1 cf. *Phryma* (Lopseed)
- R.1 *Prenanthes alba* ## (White rattlesnake-root)
- R.1 *Thalictrum dioicum* (Early meadow rue)

Lichen/Moss, Height: .0-.5m, Cover almost absent

- +2 Unknown or Indeterminable Plant ##
- +2 Unknown or Indeterminable Plant ##
- +2 Unknown or Indeterminable Plant ##

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+2		<i>Epigaea repens</i>	L. var. <i>glab.</i>		Fern.	fl # #	!

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

MINNESOTA NATURAL HERITAGE PROGRAM
Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4007
(612) 296-2835

DNR RELEVE #:5015

17:29 Wednesday, FEBRUARY 17, 1999

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

GENERAL INFORMATION

Surveyor's Relève #: MDLW09 EO Rec #: 15292
*Surveyor's ID Code: MDL (Michael D. Lee)
Date: 29 Month: AUG Year: 1994 (e.g. 04 JUL 1993)
CBS Site #: 60 or Site Name: Whitewater WMA
DNR Ownership Code: 30 (Mn Dnr Wildlife (Wildlife Management Area))
*NC Code: WHSEME (White Pine-Hardwood Forest (Southeast) Mesic Subtype)
Commun. Ranking in Relève: AB Stand typical of Commun. Type: _ Relève typical of Stand: _

LOCATIONAL INFORMATION

State Code: MN *County Code: 85 (Winona)
Quad Codes DNR: V21D Universal: 44092A1 (Elba)
Township: 107N (e.g. 143N) Range: 10W (e.g. 32W)
QORT: NE QRT: SW of Section 19
Latitude: 44 degrees, 3 minutes, 21 seconds LL/GPS registration:
Longitude: 92 degrees, 4 minutes, 8 seconds *Accuracy: _ Marker: _

RELEVE INFORMATION

Relève Size (sq. m.): 400 Elev. (ft.): 1020 Slope: 32NE Slope Position: _
*ECS Subsection: 24 (Blufflands)
Minnesota Soil Atlas Mapping Unit: SSR
*Geomorphic Unit: 40 (Red Wing-La Crescent Uplands)

Remarks: Sm stand of W pine on narrow ridge along Middle Fork Whitewater River
Mat pines to 80cm dbh. Snags occ. decaying wood freq. various sizes.
Lower 1/2 of slope steeper supporting Maple-basswood forest

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 Needleleaf Evergreen, Height: 20->35m, Cover patchy
3. Pinus strobus (White pine)

Woody Needleleaf Evergreen, Height: 5-20m, Cover barely present
1. Pinus strobus (White pine)

Woody Needleleaf Evergreen, Height: .0-.5m, Cover almost absent
+. Juniperus communis (Bush juniper)
+. Pinus strobus (White pine)

Woody Broadleaf Deciduous, Height: 20-35m, Cover patchy
3. Quercus rubra (Northern red oak)
1. Quercus alba (White oak)
1. Tilia americana (Basswood)

----- EXAMPLE RECORD -----

! Cover.Sociability Genus Species Author Variety Author Remark !
! +.2 Epigaea repens L. var. glab. Fern. fl # # !
----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

Woody Broadleaf Deciduous, Height: 5-20m, Cover interrupted

- 3. *Acer saccharum* (Sugar maple)
- 2. *Ostrya virginiana* (Ironwood, hop hornbeam)
- 1. *Betula papyrifera* (Paper birch)
- 1. *Quercus alba* (White oak)
- 1. *Tilia americana* (Basswood)

Woody Broadleaf Deciduous, Height: .5-5m, Cover rare

- 2. *Acer saccharum* (Sugar maple)
- 1. *Carpinus caroliniana* (American hornbeam, blue beech)
- 1. *Ostrya virginiana* (Ironwood, hop hornbeam)
- 1. *Zanthoxylum americanum* (Prickly-ash)
- +. *Cornus rugosa* (Round-leaved dogwood)
- +. *Fraxinus pennsylvanica* (Green ash)
- +. *Staphylea trifolia* (Bladdernut)
- +. *Viburnum rafinesquianum* (Downy arrowwood)
- R. *Sambucus pubens* (Red-berried Elder)

Woody Broadleaf Deciduous, Height: .0-.5m, Cover patchy

- 1. *Acer saccharum* (Sugar maple)
- 1. *Ribes missouriense*
- +. *Carya cordiformis* (Bitternut hickory)
- +. *Cornus foemina* ssp. *racemosa* (Gray dogwood)
- +. *Corylus americana* (American hazelnut)
- +. *Diervilla lonicera* (Bush honeysuckle)
- +. *Dirca palustris* (Leatherwood)
- +. *Ostrya virginiana* (Ironwood, hop hornbeam)
- +. *Quercus rubra* (Northern red oak)
- +. *Rhus radicans*
- +. *Tilia americana* (Basswood)
- +. *Viburnum lentago* (Nannyberry)
- +. *Viburnum rafinesquianum* (Downy arrowwood)

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

- 2. *Oryzopsis asperifolia* (Mountain rice-grass)
- 1. *Carex pedunculata*
- 1. *Carex pensylvanica*
- +. *Festuca obtusa* (Nodding fescue)

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

- 1. *Aralia nudicaulis* (Wild sarsaparilla)
- 1. *Asarum canadense* (Wild ginger)
- 1. *Mitella diphylla* (Miterwort)
- 1. *Parthenocissus* cf. *quinquefolia* (Virginia creeper)
- 1. *Solidago flexicaulis* (Zig-zag goldenrod)
- 1. *Thalictrum dioicum* (Early meadow rue)
- +. *Actaea rubra* (Red baneberry)
- +. *Adiantum pedatum* (Maidenhair fern)
- +. *Allium tricoccum* (Wild leek)
- +. *Apocynum androsaemifolium* (Spreading dogbane)

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+.2		<i>Epigaea repens</i>	L. var. <i>glab.</i>		Fern.	fl # #	!

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

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

- + . Aralia racemosa (American spikenard)
- + . Aster
- + . Athyrium angustum (Lady fern)
- + . Botrychium virginianum (Rattlesnake-fern)
- + . Camptosorus rhizophyllus (Walking fern)
- + . Cryptotaenia canadensis (Honestwort)
- + . Desmodium glutinosum (Pointed-leaved tick-trefoil)
- + . Erigeron pulchellus (Fleabane)
- + . Fragaria virginiana (Common strawberry)
- + . Galium boreale (Northern bedstraw)
- + . Galium concinnum
- + . Geranium maculatum (Wild geranium)
- + . Geum canadense (White avens)
- + . Hepatica acutiloba (Sharp-lobed hepatica)
- + . Maianthemum canadense (Canada mayflower)
- + . Monotropa uniflora (Indian pipe)
- + . Osmorhiza claytonii (Sweet cicely)
- + . Pedicularis canadensis (Wood-betony)
- + . Polygonatum commutatum (Giant Solomon's-seal)
- + . Pteridium aquilinum (Bracken)
- + . Rubus strigosus (Red raspberry)
- + . Sanguinaria canadensis (Bloodroot)
- + . Sanicula gregaria (Black snakeroot)
- + . Smilax (Greenbrier; Catbrier)
- + . Uvularia grandiflora (Yellow bellwort)
- NON + . Vitis riparia (Wild grape)
- + . Zizia aurea (Golden alexanders)
- R. Caulophyllum thalictroides (Blue cohosh)
- R. Silene (Starry campion)

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+ .2	Epigaea	repens	L. var.	glab.	Fern.	fl # #	!
----- FOR CODES, SEE RELVE CODE SHEET OR RELVE MANUAL -----									

MINNESOTA NATURAL HERITAGE PROGRAM
Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4007
(612) 296-2835

DNR RELEVE #:5016

17:29 Wednesday, FEBRUARY 17, 1999

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

GENERAL INFORMATION

Surveyor's Relve #: MDLW08 EO Rec #: 15273
*Surveyor's ID Code: MDL (Michael D. Lee)
Date: 29 Month: AUG Year: 1994 (e.g. 04 JUL 1993)
CBS Site #: 60 or Site Name: Whitewater WMA
DNR Ownership Code: 30 (Mn Dnr Wildlife (Wildlife Management Area))
*NC Code: OASEME (Oak Forest (Southeast) Mesic Subtype)
Commun. Ranking in Relve:B Stand typical of Commun. Type:_ Relve typical of Stand:_

LOCATIONAL INFORMATION

State Code: MN *County Code: 85 (Winona)
Quad Codes DNR: V21D Universal: 44092A1 (Elba)
Township: 107N (e.g. 143N) Range: 10W (e.g. 32W)
QORT: NE QRT: SW of Section 19
Latitude: 44 degrees, 3 minutes, 23 seconds LL/GPS registration:
Longitude: 92 degrees, 4 minutes, 21 seconds *Accuracy: _ Marker: _

RELEVE INFORMATION

Relve Size (sq. m.): 400 Elev. (ft.): 1010 Slope: 33E Slope Position: _
*ECS Subsection: 24 (Blufflands)
Minnesota Soil Atlas Mapping Unit: SSR
*Geomorphic Unit: 40 (Red Wing-La Crescent Uplands)

Remarks: 200 ft slope along Middle Fork Whitewater River. Occ dolomite outcrops
Soil a compacted silty clay. Canopy trees 25-55cm dbh mode 30-40cm
Decaying wood occas. mostly small, not stumps, snags rare

OTHER DATA COLLECTED

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

* = Variables with computerized code dictionaries (See Relve Handbook)

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

- 4. Quercus rubra (Northern red oak)
- 2. Quercus alba (White oak)
- 1. Acer saccharum (Sugar maple)
- 1. Tilia americana (Basswood)

Woody Broadleaf Deciduous, Height: 10-20m, Cover rare

- 1. Acer saccharum (Sugar maple)
- 1. Quercus rubra (Northern red oak)
- 1. Tilia americana (Basswood)
- +. Betula papyrifera (Paper birch)
- +. Carya cordiformis (Bitternut hickory)
- +. Celtis occidentalis (Hackberry)
- +. Fraxinus pennsylvanica (Green ash)
- +. Quercus alba (White oak)

----- EXAMPLE RECORD -----

! Cover.Sociability Genus Species Author Variety Author Remark !
! +.2 Epigaea repens L. var. glab. Fern. fl # # !
----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

Woody Broadleaf Deciduous, Height: 2-10m, Cover interrupted

- 3. Acer saccharum (Sugar maple)
- 2. Ostrya virginiana (Ironwood, hop hornbeam)
- +. Carya cordiformis (Bitternut hickory)
- +. Celtis occidentalis (Hackberry)
- +. Cornus alternifolia (Pagoda dogwood)
- +. Viburnum lentago (Nannyberry)

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

- +. Acer saccharum (Sugar maple)
- +. Fraxinus pennsylvanica (Green ash)
- +. Ostrya virginiana (Ironwood, hop hornbeam)
- +. Prunus virginiana (Chokecherry)
- +. Ribes cynosbati (Prickly gooseberry, dogberry)
- +. Tilia americana (Basswood)
- R. Acer negundo (Box elder)
- R. Sambucus (Elder)

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

- +. Acer saccharum (Sugar maple)
- +. Carya cordiformis (Bitternut hickory)
- +. Rhus radicans
- +. Ribes cynosbati (Prickly gooseberry, dogberry)
- +. Tilia americana (Basswood)
- +. Ulmus americana (American elm)
- R. Quercus rubra (Northern red oak)

Graminoid, Height: .0-.5m, Cover almost absent

- +. Carex pedunculata
- +. Carex pensylvanica
- +. Festuca obtusa (Nodding fescue)

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

- 1. Asarum canadense (Wild ginger)
- 1. Parthenocissus cf. quinquefolia (Virginia creeper)
- +. Actaea rubra (Red baneberry)
- +. Adiantum pedatum (Maidenhair fern)
- +. Allium tricoccum (Wild leek)
- +. Aralia nudicaulis (Wild sarsaparilla)
- +. Arisaema triphyllum (Jack-in-the-pulpit)
- +. Aster
- +. Athyrium angustum (Lady fern)
- +. Cryptotaenia canadensis (Honewort)
- +. Cystopteris bulbifera (Bulblet fern)
- +. Geranium maculatum (Wild geranium)
- +. Hepatica acutiloba (Sharp-lobed hepatica)
- +. Hydrophyllum virginianum (Virginia waterleaf)
- +. Mitella diphylla (Miterwort)
- +. Osmorhiza claytonii (Sweet cicely)
- +. Phryma leptostachya (Lopseed)

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+ .2		Epigaea repens	L. var. glab.		Fern.	fl # #	!

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

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

- +. Polemonium reptans (Jacob's ladder)
- +. Polygonatum commutatum (Giant Solomon's-seal)
- +. Sanguinaria canadensis (Bloodroot)
- +. Sanicula gregaria (Black snakeroot)
- +. Solidago flexicaulis (Zig-zag goldenrod)
- +. Thalictrum dioicum (Early meadow rue)
- +. Trillium flexipes (Declining trillium)
- +. Uvularia grandiflora (Yellow bellwort)
- R. Aralia racemosa (American spikenard)
- R. Botrychium virginianum (Rattlesnake-fern)
- R. Corallorhiza maculata (Spotted coral-root)
- R. Dryopteris carthusiana (Spinulose shield fern)
- R. Monotropa uniflora (Indian pipe)
- R. Smilax (Greenbrier; Catbrier)

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!	+.2		Epigaea	repens	L.	var. glab.	Fern.	fl # #	!
----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----									

MINNESOTA NATURAL HERITAGE PROGRAM
Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4007
(612) 296-2835

DNR RELEVÉ #:5017

17:29 Wednesday, FEBRUARY 17, 1999

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

GENERAL INFORMATION

Surveyor's Relevé #: MDLW07

EO Rec #: 15291

*Surveyor's ID Code: MDL (Michael D. Lee)

Date: 29 Month: AUG Year: 1994 (e.g. 04 JUL 1993)

CBS Site #: 60 or Site Name: Whitewater State Park

DNR Ownership Code: 40 (Mn Dnr Parks and Recreation)

*NC Code: OASEME (Oak Forest (Southeast) Mesic Subtype)

Commun. Ranking in Relevé:BC Stand typical of Commun. Type:_ Relevé typical of Stand:_

LOCATIONAL INFORMATION

State Code: MN *County Code: 85 (Winona)

Quad Codes DNR: V21D Universal: 44092A1 (Elba)

Township: 107N (e.g. 143N) Range: 10W (e.g. 32W)

QORT: SE QRT: NE of Section 19

Latitude: 44 degrees, 3 minutes, 35 seconds

LL/GPS registration:

Longitude: 92 degrees, 3 minutes, 41 seconds

*Accuracy: _ Marker: _

RELEVÉ INFORMATION

Relevé Size (sq. m.): 400 Elev. (ft.): 980 Slope: 25E

Slope Position: _

*ECS Subsection: 24 (Blufflands)

Minnesota Soil Atlas Mapping Unit: SSR

*Geomorphic Unit: 40 (Red Wing-La Crescent Uplands)

Remarks: Deep ravine running N-S thru 200 ft S facing slope along Whitewater R.
Surrounding forest much drier. Scattered small dolomite outcrops.
Decaying wood freq. mostly small, snags occas. little humus

OTHER DATA COLLECTED

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

* = Variables with computerized code dictionaries (See Relevé Handbook)

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

- 5. Quercus rubra (Northern red oak)
- +. Fraxinus pennsylvanica (Green ash)
- +. Quercus alba (White oak)

Woody Broadleaf Deciduous, Height: 5-20m, Cover interrupted

- 3. Ostrya virginiana (Ironwood, hop hornbeam)
- 2. Acer saccharum (Sugar maple)
- 1. Quercus alba (White oak)
- 1. Ulmus americana (American elm)
- +. Acer negundo (Box elder)
- +. Betula papyrifera (Paper birch)
- +. Carya cordiformis (Bitternut hickory)
- +. Tilia americana (Basswood)

----- EXAMPLE RECORD -----

! Cover.Sociability Genus Species Author Variety Author Remark !
! +.2 Epigaea repens L. var. glab. Fern. fl # # !
----- FOR CODES, SEE RELEVÉ CODE SHEET OR RELEVÉ MANUAL -----

Woody Broadleaf Deciduous, Height: 2-5m, Cover rare

- 2. Acer saccharum (Sugar maple)
- 1. Ostrya virginiana (Ironwood, hop hornbeam)
- +. Fraxinus pennsylvanica (Green ash)
- +. Staphylea trifolia (Bladdernut)
- +. Tilia americana (Basswood)

Woody Broadleaf Deciduous, Height: .5-2m, Cover rare

- 1. Acer saccharum (Sugar maple)
- 1. Ribes cynosbati (Prickly gooseberry, dogberry)
- +. Celtis occidentalis (Hackberry)
- +. Fraxinus pennsylvanica (Green ash)
- +. Ostrya virginiana (Ironwood, hop hornbeam)
- +. Rubus cf. strigosus (Red raspberry)
- +. Staphylea trifolia (Bladdernut)
- R. Prunus virginiana (Chokecherry)

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

- +. Acer saccharum (Sugar maple)
- +. Rhus radicans
- +. Staphylea trifolia (Bladdernut)
- +. Tilia americana (Basswood)
- +. Ulmus americana (American elm)
- NON +. Vitis riparia (Wild grape)
- R. Acer negundo (Box elder)
- R. Quercus alba (White oak)
- R. Quercus rubra (Northern red oak)

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

- 1. Carex convoluta
- +. Bromus (Brome-Grass)
- +. Carex cf. amphibola
- +. Elymus hystrix (Bottlebrush grass)
- +. Festuca obtusa (Nodding fescue)

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

- 1. Amphicarpaea bracteata (Hog-peanut)
- 1. Aralia nudicaulis (Wild sarsaparilla)
- 1. Asarum canadense (Wild ginger)
- 1. Cryptotaenia canadensis (Honestwort)
- 1. Desmodium glutinosum (Pointed-leaved tick-trefoil)
- 1. Sanicula cf. gregaria (Black snakeroot)
- +. Adiantum pedatum (Maidenhair fern)
- +. Aquilegia canadensis (Columbine)
- +. Asclepias exaltata (Poke milkweed)
- +. Aster cf. cordifolius (Heart-leaved aster)
- +. Aster cf. lanceolatus (Panicled aster)
- +. Athyrium angustum (Lady fern)
- +. Caulophyllum thalictroides (Blue cohosh)
- +. Circaea lutetiana (Enchanter's nightshade)

----- EXAMPLE RECORD -----

!	Cover.	Sociability	Genus	Species	Author	Variety	Author	Remark	!
!		+ .2	Epigaea	repens	L. var.	glab.	Fern.	fl # #	!

----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----

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

- +. Cystopteris bulbifera (Bulblet fern)
- +. Eupatorium rugosum (Common snakeroot)
- +. Geum canadense (White avens)
- +. Hackelia (Stickseed; Beggar's Lice)
- +. Hydrophyllum virginianum (Virginia waterleaf)
- +. Laportea canadensis (Wood nettle)
- +. Osmorhiza claytonii (Sweet cicely)
- +. Parthenocissus cf. quinquefolia (Virginia creeper)
- +. Phryma leptostachya (Lopseed)
- +. Polemonium reptans (Jacob's ladder)
- +. Polymnia canadensis (Leaf-cup)
- +. Pteridium aquilinum (Bracken)
- +. Rudbeckia laciniata (Goldenglow)
- +. Sanguinaria canadensis (Bloodroot)
- +. Sanicula marilandica (Black snakeroot)
- +. Smilax (Greenbrier; Catbrier)
- +. Solidago flexicaulis (Zig-zag goldenrod)
- +. Uvularia grandiflora (Yellow bellwort)
- R. Arctium minus (Common burdock)
- R. Arisaema triphyllum (Jack-in-the-pulpit)
- R. Erigeron philadelphicus (Philadelphia fleabane)
- R. Plantago cf. major (Common plantain)

----- EXAMPLE RECORD -----

!	Cover.Sociability	Genus	Species	Author	Variety	Author	Remark	!
!	+.2	Epigaea	repens	L.	var. glab.	Fern.	fl # #	!
----- FOR CODES, SEE RELEVE CODE SHEET OR RELEVE MANUAL -----								

Summary of plant species for 7 selected releves.

#	SpCode	Species Name
4	ACERNEGU	Acer negundo (Box elder)
7	ACERSAC2	Acer saccharum (Sugar maple)
6	ACTARUBR	Actaea rubra (Red baneberry)
6	ADIAPEDA	Adiantum pedatum (Maidenhair fern)
1	AGRIGRYP	Agrimonia gryposepala (Agrimony)
5	ALLITRIC	Allium tricoccum (Wild leek)
1	AMELANCH	Amelanchier (Juneberry; Serviceberry; Saskia)
4	AMPHBRAC	Amphicarpaea bracteata (Hog-peanut)
1	ANEMQUIN	Anemone quinquefolia var. bifolia
1	APOCANDR	Apocynum androsaemifolium (Spreading dogbane)
1	AQUICANA	Aquilegia canadensis (Columbine)
1	ARABLAEV	Arabis laevigata (Smooth rock-cress)
6	ARALNUDI	Aralia nudicaulis (Wild sarsaparilla)
2	ARALRACE	Aralia racemosa (American spikenard)
1	ARCTMINU	Arctium minus (Common burdock)
6	ARISTRIP	Arisaema triphyllum (Jack-in-the-pulpit)
5	ASARCANA	Asarum canadense (Wild ginger)
1	ASCLEXAL	Asclepias exaltata (Poke milkweed)
2	ASTECORD	Aster cordifolius (Heart-leaved aster)
1	ASTELANC	Aster lanceolatus (Panicled aster)
3	ASTER	Aster
6	ATHYANGU	Athyrium angustum (Lady fern)
4	BETUPAPY	Betula papyrifera (Paper birch)
5	BOTRVIRG	Botrychium virginianum (Rattlesnake-fern)
1	BROMUS	Bromus (Brome-Grass)
1	CAMPRHIZ	Camptosorus rhizophyllus (Walking fern)
1	CAREAMPH	Carex amphibola var. turgida
1	CAREBLAN	Carex blanda
1	CARECONV	Carex convoluta
1	CAREFEST	Carex festucacea
1	CAREHIRT	Carex hirtifolia
1	CARELAXI	Carex laxiculmis var. copulata
2	CARELEP2	Carex leptoneuria
2	CAREPEDU	Carex pedunculata
2	CAREPENS	Carex pensylvanica
2	CAREROSE	Carex rosea
1	CARESPAR	Carex sparganioides
1	CAREX	Carex (Sedge)
3	CARPCARO	Carpinus caroliniana ssp. virginiana (American hornbeam, blue beech)
7	CARYCORD	Carya cordiformis (Bitternut hickory)
5	CAULTHAL	Caulophyllum thalictroides (Blue cohosh)
5	CELTOCCI	Celtis occidentalis (Hackberry)
3	CIRCLUTE	Circaea lutetiana ssp. canadensis (Enchanter's nightshade)
1	CIRSALTI	Cirsium altissimum (Tall thistle)
1	CLEMVIRG	Clematis virginiana (Virgin's bower)
1	CORAMACU	Corallorhiza maculata (Spotted coral-root)
5	CORNALTE	Cornus alternifolia (Pagoda dogwood)
1	CORNFOEM	Cornus foemina ssp. racemosa (Gray dogwood)
1	CORNUGO	Cornus rugosa (Round-leaved dogwood)
2	CORYAMER	Corylus americana (American hazelnut)
6	CRYPCANA	Cryptotaenia canadensis (Honestwort)
2	CYSTBULB	Cystopteris bulbifera (Bulblet fern)
1	DENTLACI	Dentaria laciniata (Cut-leaved toothwort)
4	DESMGLUT	Desmodium glutinosum (Pointed-leaved tick-trefoil)
1	DICECUCU	Dicentra cucullaria (Dutchman's-breeches)
1	DIERLONI	Diervilla lonicera (Bush honeysuckle)
1	DIOSVILL	Dioscorea villosa (Wild yam)
1	DIRCPALU	Dirca palustris (Leatherwood)
1	DRYOCART	Dryopteris carthusiana (Spinulose shield fern)
1	ELYMHYST	Elymus hystrix (Bottlebrush grass)
1	ERIGPHIL	Erigeron philadelphicus (Philadelphia fleabane)
1	ERIGPULC	Erigeron pulchellus (Fleabane)
1	ERYTALBI	Erythronium albidum (White trout-lily)
2	EUPAMACU	Eupatorium maculatum (Spotted Joe-pye weed)
3	EUPARUGO	Eupatorium rugosum (Common snakeroot)
3	FESTOBTU	Festuca obtusa (Nodding fescue)
2	FRAGVIRG	Fragaria virginiana (Common strawberry)
2	FRAXAMER	Fraxinus americana (White ash)
1	FRAXINUS	Fraxinus (Ash)
1	FRAXNIGR	Fraxinus nigra (Black ash)
6	FRAXPENN	Fraxinus pennsylvanica (Green ash)

Summary of plant species for 7 selected releves.

#	SpCode	Species Name
1	GALESPEC	Galearis spectabilis (Showy orchis)
2	GALIBORE	Galium boreale ssp. septentrionale (Northern bedstraw)
3	GALICONC	Galium concinnum
2	GALITRI2	Galium triflorum (Three-flowered bedstraw)
4	GERAMACU	Geranium maculatum (Wild geranium)
2	GERANIUM	Geranium (Cranesbill)
4	GEUMCANA	Geum canadense (White avens)
1	GEUMLACI	Geum laciniatum var. trichocarpum (White avens)
1	HACKELIA	Hackelia (Stickseed; Beggar's Lice)
4	HEPAACUT	Hepatica acutiloba (Sharp-lobed hepatica)
5	HYDRVIRG	Hydrophyllum virginianum (Virginia waterleaf)
1	IMPATIE	Impatiens (Balsam; Jewelweed)
1	ISOPBITE	Isopyrum biternatum (False rue-anemone)
1	JEFFDIPH	Jeffersonia diphylla (Twin-leaf)
1	JUGLCINE	Juglans cinerea (Butternut)
1	JUNICOMM	Juniperus communis var. depressa (Bush juniper)
1	LACTUCA	Lactuca (Lettuce)
4	LAPOCANA	Laportea canadensis (Wood nettle)
1	LILIMICH	Lilium michiganense (Michigan lily)
1	MAIACANA	Maianthemum canadense (Canada mayflower)
2	MENICANA	Menispermum canadense (Canada moonseed)
6	MITEDIPH	Mitella diphylla (Miterwort)
2	MONOUNIF	Monotropa uniflora (Indian pipe)
1	ORYZASPE	Oryzopsis asperifolia (Mountain rice-grass)
1	ORYZRACE	Oryzopsis racemosa (Black-fruited rice-grass)
5	OSMOCLAY	Osmorhiza claytonii (Sweet cicely)
3	OSMOLONG	Osmorhiza longistylis (Anise-root)
2	OSMUCLAY	Osmunda claytoniana (Interrupted fern)
7	OSTRVIRG	Ostrya virginiana (Ironwood, hop hornbeam)
1	PANAQUIN	Panax quinquefolium (American ginseng)
1	PARTHENO	Parthenocissus (Virginia Creeper; Woodbine)
1	PARTINSE	Parthenocissus inserta (Virginia creeper)
5	PARTQUIN	Parthenocissus quinquefolia (Virginia creeper)
1	PEDICANA	Pedicularis canadensis (Wood-betony)
4	PHRYLEPT	Phryma leptostachya (Lopseed)
1	PILEPUMI	Pilea pumila (Clearweed)
1	PINUSTRO	Pinus strobus (White pine)
1	PLANMAJO	Plantago major (Common plantain)
2	POA COMP	Poa compressa (Canada bluegrass)
2	PODOPELT	Podophyllum peltatum (May-apple, mandrake)
5	POLEREPT	Polemonium reptans (Jacob's ladder)
2	POLYCANA	Polymnia canadensis (Leaf-cup)
2	POLYCOMM	Polygonatum commutatum (Giant Solomon's-seal)
2	PRENALBA	Prenanthes alba (White rattlesnake-root)
3	PRUNGERO	Prunus serotina (Black cherry)
6	PRUNVIRG	Prunus virginiana (Chokecherry)
3	PTERAQUI	Pteridium aquilinum var. latiusculum (Bracken)
1	PYRUMALU	Pyrus malus (Apple)
6	QUERALBA	Quercus alba (White oak)
1	QUERMACR	Quercus macrocarpa (Bur oak)
6	QUERRUBR	Quercus rubra (Northern red oak)
2	RANUABOR	Ranunculus abortivus (Kidney-leaf buttercup)
1	RANUHISP	Ranunculus hispidus (Hispid buttercup)
2	RANURECU	Ranunculus recurvatus (Hooked crowfoot)
2	RHAMCATH	Rhamnus cathartica (Common buckthorn)
4	RHUSRADI	Rhus radicans
6	RIBECYNO	Ribes cynosbati (Prickly gooseberry, dogberry)
1	RIBEMISS	Ribes missouriense
2	RUBUOCCI	Rubus occidentalis (Black raspberry)
3	RUBUSTRI	Rubus strigosus (Red raspberry)
2	RUDBLACI	Rudbeckia laciniata (Goldenglow)
1	SAMBPUBE	Sambucus pubens (Red-berried Elder)
1	SAMBUCUS	Sambucus (Elder)
6	SANGCANA	Sanguinaria canadensis (Bloodroot)
1	SANICULA	Sanicula (Sanicle; Black Snakeroot)
5	SANIGREG	Sanicula gregaria (Black snakeroot)
3	SANIMARI	Sanicula marilandica (Black snakeroot)
2	SCROLANC	Scrophularia lanceolata (Lance-leaved figwort)
1	SILESTEL	Silene stellata (Starry campion)
3	SMILAX	Smilax (Greenbrier; Catbrier)
3	SMILECIR	Smilax ecirrata (Carrion-flower)

Summary of plant species for 7 selected releves.

#	SpCode	Species Name
2	SMILHERB	Smilax herbacea (Carrion-flower)
3	SMILRACE	Smilacina racemosa (False Solomon's-seal)
1	SMILSTEL	Smilacina stellata (Starry false Solomon's-seal)
2	SOLIDAGO	Solidago (Goldenrod)
7	SOLIFLEX	Solidago flexicaulis (Zig-zag goldenrod)
4	STAPTRIF	Staphylea trifolia (Bladdernut)
1	TARAOFFI	Taraxacum officinale (Common dandelion)
1	TARAXACU	Taraxacum (Dandelion)
6	THALDIOI	Thalictrum dioicum (Early meadow rue)
7	TILIAMER	Tilia americana (Basswood)
2	TRILFLEX	Trillium flexipes (Declining trillium)
1	TRIOPER2	Triosteum perfoliatum (Horse-gentian)
5	ULMUAMER	Ulmus americana (American elm)
3	ULMURUBR	Ulmus rubra (Red elm, slippery elm)
4	UNKNOWN	UNKNOWN
5	UVULGRAN	Uvularia grandiflora (Yellow bellwort)
1	VEROVIRG	Veronicastrum virginicum (Culver's root)
3	VIBULENT	Viburnum lentago (Nannyberry)
1	VIBURAFI	Viburnum rafinesquianum (Downy arrowwood)
3	VIOLA	Viola (Violet)
1	VIOLPUBE	Viola pubescens (Smooth yellow violet)
1	VIOLSORO	Viola sororia (Common blue violet)
6	VITIRIPA	Vitis riparia (Wild grape)
4	ZANTAMER	Zanthoxylum americanum (Prickly-ash)

427 total plant records, 167 species from 7 releves.

Releve Numbers included

0978 0979 4764 4765 5015 5016 5017

Minnesota Natural Heritage Database
Element Occurrence Records

APPENDIX 5: RARE PLANT SPECIES RECORDS WITHIN WHITEWATER STATE PARK
MAY 1999
MnDNR, Natural Heritage and Nongame Research Program

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Element: AGALINIS GATTINGERI (ROUND-STEMMED FALSE FOXGLOVE) #4

State Status: ENDANGERED

EO Size: EO Rank: B Current Status: 1 Intended Status: 6

Site: WHITEWATER STATE PARK

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: MOORE, J.W. AND HUFF, N.L. (18174)

IN SANDY SOIL ALONG TRAILS, WHITEWATER STATE PARK.

Location: WINONA COUNTY, MN

Legal : T107N R10W 20

Quad Map: ELBA (V21D)

Latitude: 44 3' 9" Long: 92 2' 56"

Precision: within one mile

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: August 1945

Voucher: 441893 MIN Verification: verified

Element: ARABIS LAEVIGATA (SMOOTH ROCK-CRESS) #16

State Status: No Legal Status

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT) (10

Location: WINONA COUNTY, MN

Legal : T107N R10W NENENE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 55" Long: 92 2' 29"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 20 July 1981

Voucher: MIN Verification: verified

WHITEWATER STATE PARK. NORTH OF INSPIRATION POINT, ON PARTIALLY-SHADED RIDGETOP. GENERAL DESCRIPTION FOR 3 LOCALITIES IN THE PARK: NEAR EXTENSIVE, OPEN WOODS ON OR NEAR BLUFFTOPS, ON ROCKY OUTCROPS OR IN OPENINGS. USUALLY ONLY 1 OR 2 INDIVIDUALS IN ANY GIVEN LOCALE; SPORADIC. ASSOCIATED SPECIES INCLUDE: QUERCUS SPP., CELTIS OCCIDENTALIS, CYSTOPTERIS BULBIFERA, MOSSES, ERIGERON, RIBES, CAMPANULA.

Element: ARABIS LAEVIGATA (SMOOTH ROCK-CRESS) #17

State Status: No Legal Status

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT)

Location: WINONA COUNTY, MN

Legal : T107N R10W NESESE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 10" Long: 92 2' 26"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 20 July 1981

Voucher: Verification: sight or sound rec.

GENERAL DESCRIPTION FOR 3 LOCALITIES IN PARK: NEAR EXTENSIVE, OPEN WOODS ON OR NEAR BLUFFTOPS, ON ROCKY OUTCROPS OR OPENINGS. USUALLY ONLY 1 OR 2 INDIVIDUALS IN ANY GIVEN LOCALE; SPORADIC. ASSOCIATED SPECIES INCLUDE: QUERCUS SPP., CELTIS OCCIDENTALIS, CYSTOPTERIS BULBIFERA, MOSSES, ERIGERON, RIBES, CAMPANULA. VOUCHER SPECIMEN FOR PARK (HEIDEL #108) FROM NENENE SEC 29.

Element: ARABIS LAEVIGATA (SMOOTH ROCK-CRESS) #18

State Status: No Legal Status

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

Site: TROUT RUN VALLEY

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT)

Location: WINONA COUNTY, MN

Legal : T107N R10W NENWNWSW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 21" Long: 92 3' 27"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 20 July 1981

Voucher: Verification: sight or sound rec.

SOUTHEAST FACING STEEP SLOPE. GENERAL DESCRIPTION FOR 3 LOCALITIES IN PARK: EXTENSIVE, OPEN WOODS ON OR NEAR BLUFFTOPS, ON ROCKY OUTCROPS OR IN OPENINGS. OFTEN NEAR RIDGECREST. USUALLY ONLY 1 OR 2 INDIVIDUALS IN ANY GIVEN LOCALE; SPORADIC. ASSOCIATED SPECIES INCLUDE: QUERCUS SPP., CELTIS OCCIDENTALIS, CYSTOPTERIS BULBIFERA, MOSSES, ERIGERON, RIBES, CAMPANULA. VOUCHER SPECIMEN FOR PARK (HEIDEL #108) FROM NENENE SEC 29.

APPENDIX 5: RARE PLANT SPECIES RECORDS WITHIN WHITEWATER STATE PARK

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Element: CAREX LAXICULMIS (SPREADING SEDGE) #6

State Status: THREATENED

EO Size: EO Rank: Current Status: 1 Intended Status: 1
Site: WHITEWATER PARK WEST CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: WHEELER, G.A. (3646)

WHITEWATER SP. CA 3 MI SW OF ELBA ON HWY 74. GROWING ON STEEP E-FACING BLUFF OF MIDDLE FORK WHITEWATER RIVER IN MOIST SOIL. T107N R10W SECTION 20.

Location: WINONA COUNTY, MN

Legal : T107N R10W 20

Quad Map: ELBA (V21D)

Latitude: 44 3' 31" Long: 92 3' 2"

Precision: within one mile

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: June 1979

Voucher: 708659 MIN Verification: verified

Element: HYDRASTIS CANADENSIS (GOLDEN-SEAL) #6

State Status: ENDANGERED

EO Size: EO Rank: B Current Status: 1 Intended Status: 69
Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (642)

EAST SIDE OF TROUT RUN CREEK, 1/2 MILE SOUTH OF CONFLUENCE OF CREEK WITH MIDDLE FORK WHITEWATER RIVER. ON NORTHWEST FACING SLOPE IN RICH OLDER MAPLE BASSWOOD FOREST. TWO GROUPS OF PLANTS, ONE WITH 20 PLANTS, ONE WITH 9 PLANTS. ASSOCIATED SPECIES INCLUDE: HEPATICA ACUTILOBA, MITELLA DIPHYLLA, ASARUM CANADENSE, SANGUINARIA CANADENSIS.

Location: WINONA COUNTY, MN

Legal : T107N R10W SESEW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 37" Long: 92 2' 58"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 01 October 1992

Voucher: MIN Verification: verified

Element: JEFFERSONIA DIPHYLLA (TWINLEAF) #3

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: 1 Intended Status: 6
Site: WHITEWATER PARK WEST CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: SCHUSTER, R.M. (A5023)

IN RICH WOODS AT EDGE OF WHITEWATER ON LEFT SIDE OF CREEK GOING UPSTREAM, AT BASE OF TALUS SLOPE, CA 0.5 MILE UP RIVER FROM ROAD THROUGH PARK; COMMON IN AREA CA 1000 SQ FT. (NOT FOUND HERE BY HEIDEL 7/81. SITE MAY BE AT SESE SEC 1.)

Location: WINONA COUNTY, MN

Legal : T107N R10W NWSW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 16" Long: 92 3' 17"

Precision: within 0.50 mile

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 29 May 1949

Voucher: 402879 MIN Verification: verified

Element: JEFFERSONIA DIPHYLLA (TWINLEAF) #6

State Status: SPECIAL CONCERN

EO Size: EO Rank: B Current Status: 1 Intended Status: 6
Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (643)

SLOPE ON E SIDE OF TROUT RUN CREEK, 1/2 MI S OF CONFLUENCE OF CREEK WITH MIDDLE FORK WHITEWATER RVR. ON NE FACING MODERATE SLOPE IN RICH OLDER MAPLE BASSWOOD FOREST. 15 PLANTS, ALL MULTIPLE-STEMMED, MID-SLOPE. ASSOC. SPP INCLUDE: ASARUM CANADENSIS, SOLIDAGO FLEXICAULIS, UVULARIA GRANDIFLORA. (PREV COLL; HEIDEL, B. (81-78) SENW SEC 29, VOUCHER 732767 MIN). WHITEWATER SP. LOWER MESIC HILLSIDE, ALONG TROUT RUN CRK AT FORK, ON W SIDE W/ACER, OSTRYA, TILIA, ASARUM, LOCALLY OC

Location: WINONA COUNTY, MN

Legal : T107N R10W SENW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 37" Long: 92 2' 58"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 01 October 1992

Voucher: MIN Verification: verified

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Element: JUNIPERUS HORIZONTALIS (CREEPING JUNIPER) #11

State Status: SPECIAL CONCERN

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

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: TENNEY, M. (568)

WHITEWATER STATE PARK. DRY RIDGE, TOP OF BLUFF WITH BETULA Papyrifera, QUERCUS sp, Solidago sp, Cedar.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENWSW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 14" Long: 92 3' 14"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 25 August 1982

Voucher: MIN

Verification: verified

Element: LIPARIS LILIFOLIA (LILIA-LEAVED TWAYBLADE) #48

State Status: No Legal Status

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: TENNEY, M. (187)

WHITEWATER STATE PARK. TOP OF SANDY AND SHADED BLUFF, SLIGHT NORTHEAST SLOPE.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWSWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 44" Long: 92 2' 54"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 08 June 1982

Voucher: MIN

Verification: verified

Element: PANAX QUINQUEFOLIUS (AMERICAN GINSENG) #101

State Status: SPECIAL CONCERN

EO Size: EO Rank: C Current Status: 1 Intended Status: 6

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (PHOTO RECORD)

EAST SIDE OF TROUT RUN CREEK, 1/2 MILE SOUTH OF CONFLUENCE OF CREEK WITH MIDDLE FORK WHITEWATER RIVER. ON STEEP NORTHEAST FACING SLOPES IN MAPLE BASSWOOD FOREST & ON GENTLE WEST FACING SLOPES IN MESIC OAK FOREST. UNCOMMON; SAW 12 PLANTS IN SEARCH OF AREA. ASSOCIATED SPECIES IN MAPLE BASSWOOD FOREST: OSMORHIZA CLAYTONI, ARALIA RACEMOSA; IN OAK FOREST: DESMODIUM GLUTINOSUM, ACER SACCHARUM SEEDLINGS.

Location: WINONA COUNTY, MN

Legal : T107N R10W SWSWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 38" Long: 92 2' 50"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 01 October 1992

Voucher:

Verification: photo rec.

Element: PANAX QUINQUEFOLIUS (AMERICAN GINSENG) #102

State Status: SPECIAL CONCERN

EO Size: EO Rank: C Current Status: 1 Intended Status: 6

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (SIGHT RECORD)

SLOPE ON EAST SIDE OF AREA WHERE TROUT RUN CREEK JOINS MIDDLE FORK WHITEWATER RIVER. STEEP NORTHEAST FACING SLOPE IN RICH MAPLE BASSWOOD FOREST. UNCOMMON; SAW ONLY 2 PLANTS, BOTH WITH FRUIT. ASSOCIATED SPECIES INCLUDE: CYSTOPTERIS BULBIFERA, HEPATICA ACUTILOBA, MITELLA DIPHYLLA, CAULOPHYLLUM THALICTROIDES.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 51" Long: 92 2' 41"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 01 October 1992

Voucher:

Verification: sight or sound rec.

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Element: PANAX QUINQUEFOLIUS (AMERICAN GINSENG) #103

State Status: SPECIAL CONCERN

EO Size: EO Rank: C Current Status: 1 Intended Status: 6
Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (646)

WEST SLOPE ABOVE TROUT RUN CREEK, 1/2 MILE SOUTH OF CONFLUENCE OF CREEK WITH MIDDLE FORK WHITEWATER RIVER. IN RICH MAPLE BASSWOOD FOREST ON STEEP EAST FACING SLOPE. UNCOMMON. 4 PLANTS IN 20 X 20 M RELEVÉ PLOT. ASSOCIATED SPECIES INCLUDE: ASARUM CANADENSE, PODOPHYLLUM PELTATUM, HEPATICA ACUTILOBA.

Location: WINONA COUNTY, MN

Legal : T107N R10W N56NW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 48" Long: 92 3' 5"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 20 May 1992

Voucher: MIN

Verification: verified

Element: POA SYLVESTRIS (WOODLAND BLUEGRASS) #5

State Status: No Legal Status

EO Size: EO Rank: Current Status: Intended Status:
Site: ELBA 21 CBS Site #: 58

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK. (UNPUB REPORT)

GENERAL DESCRIPTION FOR 4 LOCALITIES IN PARK: "OPEN WOODS ON SLOPES AND ON BLUFFTOPS, PARTIALLY-SHADED, NEAR-LEVEL TO MODERATE SLOPE, USUALLY UPPER HALF OF HILL. BLUFFTOP POPULATIONS SPARSE; THOSE NEXT TO HILLSIDE FOOTPATHS COMMON. ASSOCIATED SPECIES: QUERCUS SPP., CORNUS RACEMOSA, ULMUS AMERICANA, BETULA PAP, ZANTHOXYLUM, FRAXINUS, ASARUM, VIOLA, HEPATICA." VOUCHER SPECIMEN FOR PARK (HEIDEL #134), UNKNOWN WHICH OF 4 LOCALITIES VOUCHER COLLECTED FROM.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENESE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 13" Long: 92 2' 23"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 19 September 1981

Voucher: MIN

Verification: verified

Element: POA SYLVESTRIS (WOODLAND BLUEGRASS) #6

State Status: No Legal Status

EO Size: EO Rank: Current Status: Intended Status:
Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT)

GENERAL DESCRIPTION FOR 4 LOCALITIES IN PARK: "OPEN WOODS ON SLOPES AND ON BLUFFTOPS, PARTIALLY-SHADED, NEAR-LEVEL TO MODERATE SLOPE, USUALLY UPPER HALF OF HILL. BLUFFTOP POPULATIONS SPARSE; THOSE NEXT TO HILLSIDE FOOTPATHS COMMON. ASSOCIATED SPECIES: QUERCUS SPP., CORNUS RACEMOSA, ULMUS AMERICANA, BETULA PAP, ZANTHOXYLUM, FRAXINUS, ASARUM, VIOLA, HEPATICA". VOUCHER SPECIMEN FOR PARK (HEIDEL #134), UNKNOWN WHICH OF 4 LOCALITIES VOUCHER COLLECTED FROM.

Location: WINONA COUNTY, MN

Legal : T107N R10W N56NW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 53" Long: 92 3' 0"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 19 September 1981

Voucher: MIN

Verification: verified

Element: POA SYLVESTRIS (WOODLAND BLUEGRASS) #7

State Status: No Legal Status

EO Size: EO Rank: Current Status: Intended Status:
Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT)

GENERAL DESCRIPTION FOR 4 LOCALITIES IN PARK: "OPEN WOODS ON SLOPES AND ON BLUFFTOPS, PARTIALLY-SHADED, NEAR-LEVEL TO MODERATE SLOPE, USUALLY UPPER HALF OF HILL. BLUFFTOP POPULATIONS SPARSE; THOSE NEXT TO HILLSIDE FOOTPATHS COMMON. ASSOCIATED SPECIES: QUERCUS SPP., CORNUS RACEMOSA, ULMUS AMERICANA, BETULA PAP, ZANTHOXYLUM, FRAXINUS, ASARUM, VIOLA, HEPATICA". VOUCHER SPECIMEN FOR PARK (HEIDEL #134), UNKNOWN WHICH OF 4 LOCALITIES VOUCHER COLLECTED FROM.

Location: WINONA COUNTY, MN

Legal : T107N R10W SWSWSE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 0" Long: 92 2' 54"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 19 September 1981

Voucher: MIN

Verification: verified

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Element: POA SYLVESTRIS (WOODLAND BLUEGRASS) #8

State Status: No Legal Status

EO Size: EO Rank:

Current Status: Intended Status:

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT)

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W NENENE29

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 2' 55" Long: 92 2' 29"

Last Obs.: 19 September 1981

Precision: within 0.25 mile, confirmed

Voucher: MIN

Verification: verified

GENERAL DESCRIPTION FOR 4 LOCALITIES IN PARK: "OPEN WOODS ON SLOPES AND ON BLUFFTOPS, PARTIALLY-SHADED, NEAR-LEVEL TO MODERATE SLOPE, USUALLY UPPER HALF OF HILL. BLUFFTOP POPULATIONS SPARSE; THOSE NEXT TO HILLSIDE FOOTPATHS COMMON. ASSOCIATED SPECIES: QUERCUS SPP., CORNUS RACEMOSA, ULMUS AMERICANA, BETULA PAP, ZANTHOXYLUM, FRAXINUS, ASARUM, VIOLA, HEPATICA". VOUCHER SPECIMEN FOR PARK (HEIDEL #134), UNKNOWN WHICH OF 4 LOCALITIES VOUCHER COLLECTED FROM.

Element: POA WOLFII (WOLF'S BLUEGRASS) #7

State Status: SPECIAL CONCERN

EO Size: EO Rank:

Current Status: Intended Status:

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (129)

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W SWSE20

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 3' 9" Long: 92 2' 46"

Last Obs.: 18 September 1981

Precision: within 0.25 mile, confirmed

Voucher: 732719 MIN

Verification: verified

WHITEWATER STATE PARK. T107N, R10W, SEC. 20. NW-FACING CLIFF ON TOP OF PRECIPICE BLUFF. IN CREVICES. BELOW VIBURNUM RAFINESQUIANUM.

Element: POA WOLFII (WOLF'S BLUEGRASS) #10

State Status: SPECIAL CONCERN

EO Size: EO Rank:

Current Status: Intended Status:

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT)

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W SWNWSE20

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 3' 14" Long: 92 2' 55"

Last Obs.: 18 September 1981

Precision: within 0.25 mile, confirmed

Voucher:

Verification: sight or sound rec.

GENERAL DESCRIPTION FOR 3 LOCALITIES IN PARK: "CLIFFS, USUALLY WITHIN 20 SQUARE METER AREA. USUALLY NEAR-LEVEL CLIFF FACE OR CREVICE. IN PARTIAL OR CONTINUOUS SHADE. ON W, NW & N ASPECTS. LOCALLY UNCOMMON. ASSOCIATED SPECIES: CAMPANULA ROTUNDIFOLIA, PILEA PUMILA, CYSTOPTERIS BULBIFERA, SOLIDAGO SCIAPHILA, DANTHONIA SPICATA, CHEILANTHES FEEI". VOUCHER SPECIMEN FROM PARK (HEIDEL #129) COLLECTED NESWSE SEC 20.

Element: POA WOLFII (WOLF'S BLUEGRASS) #11

State Status: SPECIAL CONCERN

EO Size: EO Rank:

Current Status: Intended Status:

Site: ELBA 21

CBS Site #: 58

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT)

Location: WINONA COUNTY, MN

DNR Region: 5

Legal : T107N R10W NENESE20

Wildlife Area: 510

Quad Map: ELBA (V21D)

Forestry District: 531

Latitude: 44 3' 23" Long: 92 2' 22"

Last Obs.: 18 September 1981

Precision: within 0.25 mile, confirmed

Voucher:

Verification: sight or sound rec.

CHIMNEY ROCK. GENERAL DESCRIPTION FOR 3 LOCALITIES IN PARK: "CLIFFS, USUALLY WITHIN 20 SQUARE METER AREA. USUALLY NEAR-LEVEL CLIFF FACE OR CREVICE. IN PARTIAL OR CONTINUOUS SHADE. ON 2, NW & N ASPECTS. LOCALLY UNCOMMON. ASSOCIATED SPECIES: CAMPANULA ROTUNDIFOLIA, PILIA PUMILA, CYSTOPTERIS BULBIFERA, SOLIDAGO SCIAPHILA, DANTHONIA SPICATA, CHEILANTHES FEEI". VOUCHER SPECIMEN FROM PARK (HEIDEL #129) COLLECTED NESWSE SEC 20.

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16:35 Wednesday, MAY 12, 1999

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Element: SANICULA TRIFOLIATA (BEAKED SNAKEROOT) #9

State Status: SPECIAL CONCERN

EO Size: EO Rank: B Current Status: 1 Intended Status: 69

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (612)

ON EAST SIDE OF TROUT RUN CREEK, 1/2 MILE SOUTH OF CONFLUENCE OF CREEK WITH MIDDLE FORK WHITEWATER RIVER. ON NORTHWEST FACING SLOPE IN RICH OLDER MAPLE BASSWOOD FOREST. UNCOMMON ON MID-SLOPE. ASSOCIATED SPECIES INCLUDE: HEPATICA ACUTILOBA, ASARUM CANADENSE, SANGUINARIA CANADENSIS.

Location: WINONA COUNTY, MN

Legal : T107N R10W SESEW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 37" Long: 92 2' 58"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 01 October 1992

Voucher: MIN

Verification: verified

Element: SOLIDAGO SCIAPHILA (CLIFF GOLDENROD) #13

State Status: SPECIAL CONCERN

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

Site: ELBA 21

CBS Site #: 58

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (117)

WHITEWATER STATE PARK. T107N, R10W. DRY ROCKY OAK WOODS. COMMON. (PREV. COLL. IN PARK: HEIDEL (90), JULY 21, 1981. "BLUFF N. OF CHIMNEY ROCK. ON LEDGES, COMMON").

Location: WINONA COUNTY, MN

Legal : T107N R10W NESE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 19" Long: 92 2' 32"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 22 August 1981

Voucher: 732744 MIN

Verification: verified

Element: SOLIDAGO SCIAPHILA (CLIFF GOLDENROD) #19

State Status: SPECIAL CONCERN

EO Size: EO Rank: B Current Status: 1 Intended Status: 6

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (628)

TALL DRY CLIFF ON THE NORTH SIDE OF THE MIDDLE FORK WHITEWATER RIVER IN WHITEWATER STATE PARK. SOUTH FACING LIMESTONE CLIFF WITH LITTLE VASCULAR VEGETATION. COMMON, MANY PLANTS WITH FLOWERS. ASSOCIATED SPECIES INCLUDE: ELYMUS CANADENSIS, CAMPANULA ROTUNDIFOLIA.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENWNE19

Quad Map: ELBA (V21D)

Latitude: 44 3' 36" Long: 92 3' 52"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 29 September 1992

Voucher: MIN

Verification: verified

Element: SOLIDAGO SCIAPHILA (CLIFF GOLDENROD) #21

State Status: SPECIAL CONCERN

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

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (624)

EAST FACING TALL DRY LIMESTONE CLIFF ON THE WEST BANK OF THE MIDDLE FORK WHITEWATER RVR IN WHITEWATER STATE PARK. CLIFF SUPPORTS VERY LITTLE VEGETATION. SEVERAL PLANTS VISIBLE. ASSOCIATED SPECIES INCLUDE: CHEILANTHES FEEI, PELLAEA GLABELLA, GALIUM BOREALE.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWNWSE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 18" Long: 92 2' 54"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 10 July 1992

Voucher: MIN

Verification: verified

APPENDIX 5: RARE PLANT SPECIES RECORDS WITHIN WHITEWATER STATE PARK

Minnesota Natural Heritage Database
Element Occurrence Records

MAY 1999
MnDNR, Natural Heritage and Nongame Research Program

16:35 Wednesday, MAY 12, 1999
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Element: SOLIDAGO SCIAPHILA (CLIFF GOLDENROD) #22

State Status: SPECIAL CONCERN

EO Size: EO Rank: B Current Status: 1 Intended Status: 6

Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DUNEVITZ, H. (SIGHT RECORD)

CLIFF ABOVE CONFLUENCE WITH TROUT RUN CREEK AND MIDDLE FORK WHITEWATER RIVER, ON EAST SIDE OF RIVER. CLIFF IS AT TOP OF NORTHWEST FACING SLOPE; DOLOMITE, ABOUT 8 M TALL. COMMON ON BOTH NORTH AND SOUTH FACES OF CLIFF. ASSOCIATED SPECIES INCLUDE: AQUILEGIA CANADENSIS, CAMPANULA ROTUNDIFOLIA.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 51" Long: 92 2' 41"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 01 October 1992

Voucher:

Verification: sight or sound rec.

Element: SOLIDAGO SCIAPHILA (CLIFF GOLDENROD) #68

State Status: SPECIAL CONCERN

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

Site: WHITEWATER PARK WEST CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (1981) INITIAL VEGETATION INVENTORY IN WHITEWATER SPK (UNPUB REPORT)

GENERAL DESCRIPTION FOR 3 LOCALITIES IN PARK: "CLIFFS, USUALLY WITHIN 20 SQUARE METER AREA. USUALLY NEAR-VERTICAL CLIFF FACE OR CREVICE, OFTEN ON 'LEDGES' OF ROCK. ASSOCIATED SPECIES: MOSSES, CAMPANULA ROTUNDIFOLIA, PILEA PUMILA, POA WOLFII, DANTHONIA SPICATA, CHEILANTHES FEEI, CYSTOPTERIS BULBIFERA, SOLIDAGO FLEXICAULIS". VOUCHER SPECIMEN FOR PARK COLLECTED NENESE SEC 20.

Location: WINONA COUNTY, MN

Legal : T107N R10W SWNWSE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 14" Long: 92 2' 55"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 19 September 1981

Voucher:

Verification: sight or sound rec.

Element: SOLIDAGO SCIAPHILA (CLIFF GOLDENROD) #69

State Status: SPECIAL CONCERN

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

Site: WHITEWATER PARK WEST CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: TENNEY, M. (570)

1982: VERY EDGE OF EAST FACING CLIFF, DRY & LITTLE SOIL; WITH CEDAR. 1981: OBS BY B. HEIDEL. COYOTE POINT. GEN DESC FOR 3 LOCALITIES IN PARK: "CLIFFS, USUALLY WITHIN 20 SQUARE METER AREA. USUALLY NEAR-VERTICAL CLIFF FACE OR CREVICE, OFTEN ON 'LEDGES' OF ROCK. ASSOCIATED SPECIES: MOSSES, CAMPANULA ROTUNDIFOLIA, PILEA PUMILA, POA WOLFII, DANTHONIA SPICATA, CHEILANTHES FEEI, CYSTOPTERIS BULBIFERA, SOLIDAGO FLEXICAULIS". VOUCHER SPECIMEN FOR PARK COLLECTED NENESE SEC 20.

Location: WINONA COUNTY, MN

Legal : T107N R10W SWNESW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 14" Long: 92 3' 14"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 25 August 1982

Voucher: MIN

Verification: verified

Element: SOLIDAGO SCIAPHILA (CLIFF GOLDENROD) #72

State Status: SPECIAL CONCERN

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

Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: TENNEY, M. (545)

WHITEWATER STATE PARK. TOP OF DRY NORTHWEST FACING CLIFF WITH RED CEDAR, NORTHERN BEDSTRAW, IRONWOOD, AND CORNUS SP.

Location: WINONA COUNTY, MN

Legal : T107N R10W SESESW20

Quad Map: ELBA (V21D)

Latitude: 44 2' 59" Long: 92 3' 5"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 17 August 1982

Voucher: MIN

Verification: verified

APPENDIX 5: RARE PLANT SPECIES RECORDS WITHIN WHITEWATER STATE PARK

MAY 1999

Minnesota Natural Heritage Database
Element Occurrence Records

MnDNR, Natural Heritage and Nongame Research Program

16:35 Wednesday, MAY 12, 1999
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Element: SOLIDAGO SCIAPHILA (CLIFF GOLDENROD) #73

State Status: SPECIAL CONCERN

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

Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: TENNEY, M. (539)

Location: WINONA COUNTY, MN

Legal : T107N R10W NWSWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 46" Long: 92 2' 56"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 16 August 1982

Voucher: MIN

Verification: verified

WHITEWATER STATE PARK. TOP OF DRY OPEN BLUFF WITH GRASSES, GALIUM SP., RED CEDAR, AND RED OAK.

Element: TAENIDIA INTEGERRIMA (YELLOW PIMPERNEL) #21

State Status: No Legal Status

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

Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HEIDEL, B. (77)

Location: WINONA COUNTY, MN

Legal : T107N R10W NENW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 51" Long: 92 3' 5"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 22 July 1981

Voucher: MIN

Verification: verified

WHITEWATER STATE PARK. ABOVE RIDGECREST WEST OF TROUT RUN CREEK. LOCALLY COMMON. ASSOCIATED SPECIES INCLUDE: QUERCUS, ZANTHOXYLUM, PARTHENOCISSUS, RUBUS.

ADDITIONAL INFORMATION FROM 1981 REPORT: HEIDEL, B. INITIAL VEGETATION INVENTORY OF WHITEWATER STATE PARK: "POPULATION SIZE ABOUT 1/4 ACRE, IN 3 SQUARE METER PATCHES BETWEEN TREES & BRUSH, ABOVE RIDGE CREST, SE-FACING, IN SANDY FOREST SOIL NEAR PRAIRIE RELICT VEGETATION. ABUNDANT ON A LOCAL SCALE."

Minnesota Natural Heritage Database
Element Occurrence Records

APPENDIX 6: RARE ANIMAL SPECIES AND ANIMAL AGGREGATIONS WITHIN
WHITEWATER STATE PARK MAY 1999
MnDNR, Natural Heritage and Nongame Research Program

16:46 Wednesday, MAY 12, 1999
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Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #9

State Status: THREATENED

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DEL GRECO, D. (DNR GREEN SLIP)

1981: TIMBER RATTLESNAKE. 1 OBSERVED BY D. PALMQUIST SUNNING NEAR INSPIRATION POINT. 1993: SNAKE OBSERVED UNDER LOGS ON FIELD EDGE WEST OF TROUT RUN CREEK ABOVE VALLEY.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 48" Long: 92 2' 42"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 25 August 1993

Voucher: Verification: sight or sound rec.

Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #51

State Status: THREATENED

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: PALMQUIST, D. (DNR PARKS)

ONE TIMBER RATTLESNAKE FOUND ALONG TROUT RUN IN WHITEWATER STATE PARK.

Location: WINONA COUNTY, MN

Legal : T107N R10W NESW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 28" Long: 92 3' 2"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 1995

Voucher: Verification: sight or sound rec.

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Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #54

State Status: THREATENED

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

Site: WHITEWATER STATE PARK

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: KEYLER, D. & OLDFIELD, B.

ON JULY 11, 1 FEMALE RATTLESNAKE FOUND JUST OFF GRAVEL SHOULDER OF HWY 74 IN PARK MANAGER'S FRONT YARD BY J. MCINTYRE & D. PALMQUIST (DNR GREEN SLIP); RELEASED IN DRY RUN OF TROUT RUN CREEK VALLEY ON JULY 17. DURING THE TIMBER RATTLESNAKE FIELD SURVEY BY KEYLER & OLDFIELD, 2 SNAKES WERE CAPTURED & RELEASED BY PARK STAFF, 1 ON JULY 12 & 1 ON JULY 14. BOTH WERE CAUGHT ON STATE PARK ROAD BETWEEN & BELOW SE & W-NW FACING CLIFFS.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWSE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 16" Long: 92 2' 50"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 14 July 1991

Voucher: Verification: sight or sound rec.

Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #56

State Status: THREATENED

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

Site: ELBA 19

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: SHAW, D. AND D. PALMQUIST (DNR GREEN SLIP)

ONE PREGNANT, LETHARGIC RATTLESNAKE CAUGHT JUST OFF HWY 74 ON GROUP CAMP ROAD AT WHITEWATER STATE PARK. DIED OVERNIGHT AND WAS PUT IN FREEZER AT PARK.

Location: WINONA COUNTY, MN

Legal : T107N R10W SWSW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 6" Long: 92 3' 17"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 15 July 1991

Voucher: Verification: verified

APPENDIX 6: RARE ANIMAL SPECIES AND ANIMAL AGGREGATIONS WITHIN

Minnesota Natural Heritage Database
Element Occurrence Records

WHITEWATER STATE PARK MAY 1999
MnDNR, Natural Heritage and Nongame Research Program

16:46 Wednesday, MAY 12, 1999
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Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #59

State Status: THREATENED

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

Site: TROUT RUN VALLEY

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: PALMQUIST, D. (DNR PARKS)

ONE TIMBER RATTLESNAKE FOUND ALONG TROUT RUN IN WHITEWATER STATE PARK.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 42" Long: 92 2' 59"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 1995

Voucher: Verification: sight or sound rec.

Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #65

State Status: THREATENED

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

Site: TROUT RUN VALLEY

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: PALMQUIST, D. (DNR PARKS)

TWO TIMBER RATTLESNAKES FOUND AT THIS LOCATION DURING SUMMER OF 1995.

Location: WINONA COUNTY, MN

Legal : T107N R10W SESW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 3" Long: 92 3' 6"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 1995

Voucher: Verification: sight or sound rec.

Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #69

State Status: THREATENED

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

Site: WHITEWATER STATE PARK

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DNR PARK STAFF

TWO SNAKES WERE CAPTURED BY PARK STAFF ON PARK ROAD BETWEEN AND BELOW SE AND WNW-FACING CLIFFS. 1 SNAKE CAPTURED 12 JULY, THE OTHER ON 14 JULY. MOST AREAS IN PARK WHICH MAY HAVE ONCE BEEN FAVORABLE HABITAT ARE NOW GROWN OVER AND COVERED BY FOREST CANOPY. REPORTED IN D. KEYLER & B. OLDFIELD'S REPORT ON TIMBER RATTLESNAKE FIELD SURVEY ON SE MINN STATE LANDS.

Location: WINONA COUNTY, MN

Legal : T107N R10W NE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 37" Long: 92 2' 37"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 14 July 1991

Voucher: Verification: sight or sound rec.

Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #102

State Status: THREATENED

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

Site: TROUT RUN VALLEY

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: PALMQUIST, D. (DNR PARKS)

1 TIMBER RATTLESNAKE WAS FOUND AT SOUTH PICNIC AREA IN WHITEWATER STATE PARK IN SUMMER OF 1995.

Location: WINONA COUNTY, MN

Legal : T107N R10W SWSE20

Quad Map: ELBA (V21D)

Latitude: 44 3' 2" Long: 92 2' 49"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 1995

Voucher: Verification: sight or sound rec.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #21

State Status: SPECIAL CONCERN

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

Site: WHITEWATER STATE PARK WEST CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: STUCKER, S. & PAGE, P. (CO BIOL SURVEY 1993)

BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD. HABITAT WAS OAK FOREST IN RAVINE NEAR MIDDLE FORK WHITEWATER RIVER.

Location: WINONA COUNTY, MN

Legal : T107N R10W NENW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 46" Long: 92 3' 10"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 04 June 1993

Voucher: Verification: sight or sound rec.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #22

State Status: SPECIAL CONCERN

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

Site: WHITEWATER STATE PARK WEST CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: STUCKER, S. & K. BARDON (CO BIOL SURVEY 1993)

BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD. HABITAT WAS OAK FOREST ON SLOPE ADJACENT TO MIDDLE FORK WHITEWATER RIVER.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 30" Long: 92 3' 0"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 04 June 1993

Voucher: Verification: sight or sound rec.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #58

State Status: SPECIAL CONCERN

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

Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HATHAWAY, J. (BIODIVERSITY OF SE MN FORESTED STREAMS)

BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD ALONG TROUT RUN CREEK. HABITAT WAS LOWLAND HARDWOODS IN VALLEY BOTTOM, WITH MAPLE-BASSWOOD AND OAK FOREST ON ADJACENT SLOPES.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 48" Long: 92 2' 51"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 29 May 1996

Voucher: Verification: sight or sound rec.

Element: EMPIDONAX VIRESCENS (ACADIAN FLYCATCHER) #37

State Status: SPECIAL CONCERN

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

Site: TROUT RUN VALLEY CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HATHAWAY, J. (BIODIVERSITY OF SE MN FORESTED STREAMS)

BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD ALONG TROUT RUN CREEK. HABITAT WAS LOWLAND HARDWOODS IN VALLEY BOTTOM, WITH MAPLE-BASSWOOD & OAK FOREST ON ADJACENT SLOPES.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 48" Long: 92 2' 51"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 29 May 1996

Voucher: Verification: sight or sound rec.

Element: FALCO PEREGRINUS (PEREGRINE FALCON) #45

State Status: THREATENED Federal Status: ENDANGERED
EO Size: EO Rank: Current Status: Intended Status:
Site: WHITEWATER PARK WEST CBS Site #: 60

Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: JOHNSON, C. AND T.; STRNAD, F.

NESTING AREA. WHITEWATER. FORMER NESTING SITE IN DOLOMITE CLIFF FACING WSW ABOVE MIDDLE FORK OF THE WHITEWATER RIVER. PEREGRINES LAST NESTED AT THIS SITE IN THE EARLY 1960'S (PROBABLY 1962); SUCCESSFULLY FLEDGED YOUNG WERE Banded. SITE IS EASILY ACCESSIBLE TO GREAT HORNED OWLS. A PAIR OF GREAT HORNED OWLS NESTED AT THIS SITE IN 1988.

Location: WINONA COUNTY, MN

Legal : T107N R10W NENESW20
Quad Map: ELBA (V21D)
Latitude: 44 3' 22" Long: 92 3' 5"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 1962

Voucher: Verification: verified

Element: LAMPETRA APPENDIX (AMERICAN BROOK LAMPREY) #58

State Status: No Legal Status
EO Size: EO Rank: Current Status: Intended Status:

Site: WHITEWATER STATE PARK
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: MDNR FISHERIES

NUMBER OF SPECIMENS NOT PROVIDED. SAMPLED DURING STREAM SURVEY OF THE MIDDLE BRANCH OF WHITEWATER RIVER AT RIVER MILE 1.5. FIRST SAMPLE 1 APRIL 1988.
DISTANCE CALCULATED BY MAP WHEEL.

Location: WINONA COUNTY, MN

Legal : T107N R10W NW16
Quad Map: ELBA (V21D)
Latitude: 44 4' 22" Long: 92 2' 9"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 561
Forestry District: 531
Last Obs.: 02 October 1990

Voucher: Verification: sight or sound rec.

Element: LAMPETRA APPENDIX (AMERICAN BROOK LAMPREY) #59

State Status: No Legal Status
EO Size: EO Rank: Current Status: Intended Status:

Site: WHITEWATER STATE PARK
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: MDNR FISHERIES

NUMBER OF SPECIMENS NOT PROVIDED. SAMPLED DURING STREAM SURVEY OF THE MIDDLE BRANCH OF THE WHITEWATER RIVER AT RIVER MILE 2.4. FIRST SAMPLE 3 APRIL 1985.
DISTANCE CALCULATED BY MAP WHEEL.

Location: WINONA COUNTY, MN

Legal : T107N R10W NE20
Quad Map: ELBA (V21D)
Latitude: 44 3' 36" Long: 92 2' 51"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 05 April 1989

Voucher: Verification: sight or sound rec.

Element: LAMPROPELTIS TRIANGULUM (MILK SNAKE) #39

State Status: No Legal Status
EO Size: EO Rank: Current Status: Intended Status:

Site: WHITEWATER STATE PARK
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: KEYLER, D. & OLDFIELD, B. (TIMBER RATTLESNAKE FIELD SURVEY IN SE MN) (PHOTO RECORD)

LOCATED ON LIMESTONE BAND WHICH WRAPS AROUND LEAF-LITTERED PLATEAU WITH CEDARS, BIRCH, AND OAK FOREST. STREAM ON VALLEY FLOOR BELOW.

Location: WINONA COUNTY, MN

Legal : T107N R10W NE29
Quad Map: ELBA (V21D)
Latitude: 44 2' 43" Long: 92 2' 38"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 16 June 1990

Voucher: Verification: photo rec.

Element: PIPISTRELLUS SUBFLAVUS (EASTERN PIPISTRELLE) #25
State Status: SPECIAL CONCERN
EO Size: EO Rank: Current Status: Intended Status:
Site: WHITEWATER PARK WEST CBS Site #: 60
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: NORDQUIST, G. (CO BIOL SURVEY 1998)
PIPISTRELLE RECORDED WITH ANABAT DETECTOR (FILES 9807012221.55, *2221.58, *2222.03, *2222.20). BAT FORAGING ALONG WHITEWATER RIVER AND FOREST OPENING
IN ASSOCIATION WITH MYOTIS LUCIFUGUS AND EPTESICUS FUSCUS. CALLS RECORDED BETWEEN 2215 AND 2235 HOURS.

Location: WINONA COUNTY, MN
Legal : T107N R10W NESW20
Quad Map: ELBA (V21D)
Latitude: 44 3' 21" Long: 92 3' 14"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 01 July 1998

Voucher: Verification: photo rec.

Element: PIPISTRELLUS SUBFLAVUS (EASTERN PIPISTRELLE) #26
State Status: SPECIAL CONCERN
EO Size: EO Rank: Current Status: Intended Status:
Site: WHITEWATER PARK WEST CBS Site #: 60
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: NORDQUIST, G. (CO BIOL SURVEY 1998)
PIPISTRELLE RECORDED BY ANABAT DETECTOR (FILES 9807012328.30, *2331.03, *2331.59, *2338.19). FORAGING ABOVE LIGHTS OUTSIDE VISITOR CENTER IN
ASSOCIATION WITH EPTESICUS FUSCUS, MYOTIS LUCIFUGUS, LASIURUS CINEREUS, LASIURUS BOREALIS, AND POSSIBLY LASIONYCTERIS NOCTIVAGANS. RECORDINGS MADE
BETWEEN 2302 AND 2342 HOURS.

Location: WINONA COUNTY, MN
Legal : T107N R10W NENE20
Quad Map: ELBA (V21D)
Latitude: 44 3' 47" Long: 92 2' 39"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 01 July 1998

Voucher: Verification: photo rec.

Element: RANA PALUSTRIS (PICKEREL FROG) #9
State Status: No Legal Status
EO Size: EO Rank: Current Status: Intended Status:
Site: WHITEWATER STATE PARK
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: DNR PALMQUIST, D.J.
PICKEREL FROG. 1 FOUND IN VEGETATION NEAR SPRING RIGHT BY THE PARK'S INTERPRETIVE CENTER. A LEOPARD FROG WAS ALSO CAUGHT WHICH ALLOWED COMPARISON.

Location: WINONA COUNTY, MN
Legal : T107N R10W 20
Quad Map: ELBA (V21D)
Latitude: 44 3' 27" Long: 92 2' 52"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: August 1981

Voucher: Verification: sight or sound rec.

Element: RANA PALUSTRIS (PICKEREL FROG) #11
State Status: No Legal Status
EO Size: EO Rank: Current Status: 1 Intended Status: 1
Site: TROUT RUN VALLEY CBS Site #: 59
Ownership: MN DNR Parks and Recreation
Managed Area(s): WHITEWATER STATE PARK
Source: MORIARTY, J. 1985 REPORT TO DNR NONGAME
OBSERVED DURING 1985 HERP SOCIETY SURVEY OF SE MINNESOTA.

Location: WINONA COUNTY, MN
Legal : T107N R10W SE20
Quad Map: ELBA (V21D)
Latitude: 44 3' 12" Long: 92 2' 35"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 19 May 1985

Voucher: JFBM-P-87 Verification: verified

Element: RANA PALUSTRIS (PICKEREL FROG) #27

State Status: No Legal Status

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: DAVIS, J. (CO BIOL SURVEY 1993)

ONE PICKEREL FROG CAPTURED IN DRIFT FENCE BUCKET. TWO ADDITIONAL PICKEREL FROGS WERE CAPTURED IN NEARBY VERNAL POOL. TWO AMERICAN TOADS WERE ALSO CAPTURED IN BUCKETS. DRIFT FENCE WAS LOCATED AT BASE OF NORTH-FACING FORESTED SLOPE NEAR INTERMITTENT STREAM.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 46" Long: 92 2' 48"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 10 May 1993

Voucher:

Verification: photo rec.

Element: RANA PALUSTRIS (PICKEREL FROG) #28

State Status: No Legal Status

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: PAGE, P. (CO BIOL SURVEY 1993)

4 PICKEREL FROGS FOUND ALONG GRASSY EDGE OF TROUT RUN CREEK. THEY WERE CAPTURED, IDENTIFIED & RELEASED. THE YELLOW ON THEIR HIND LEGS WAS EVIDENT.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 39" Long: 92 2' 59"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 05 June 1993

Voucher:

Verification: sight or sound rec.

Element: RANA PALUSTRIS (PICKEREL FROG) #63

State Status: No Legal Status

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

Site: TROUT RUN VALLEY

CBS Site #: 59

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HALL, C., G. NORDQUIST, AND D. PALMQUIST (CO BIOL SURVEY 1998)

SIX PICKEREL FROGS WERE OBSERVED IN FORESTED VALLEY OF TROUT RUN CREEK. SUBSTRATE OF THE CREEK CONSISTED OF GRAVEL WITH SCATTERED BOULDERS; SEDGES AND GRASSES WERE PRESENT ALONG THE EDGE OF THE CREEK.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWNE32

Quad Map: ELBA (V21D)

Latitude: 44 2' 1" Long: 92 2' 53"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 02 July 1998

Voucher:

Verification: sight or sound rec.

Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #33

State Status: SPECIAL CONCERN

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

Site: WHITEWATER PARK WEST

CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: PAGE, P. (CO BIOL SURVEY 1993)

1965: INFERRED NESTING. 2 ADULTS FEEDING YOUNG COWBIRDS. EXACT LOCATION WITHIN PARK UNKNOWN. (B. LITKEY, MOU FILES). 1977: ADULTS CARRYING FOOD. EXACT LOCATION UNKNOWN. (J. FOWLER, MOU FILES). 1993: BREEDING SEASON OBSERVATION. 1 MALE HEARD SINGING DURING SYSTEMATIC POINT COUNT SURVEY. HABITAT WAS DECIDUOUS FOREST ALONG WHITEWATER RIVER; FAST-FLOWING WATER WITH STEEP, UNDERCUT BANKS.

Location: WINONA COUNTY, MN

Legal : T107N R10W NESE19

Quad Map: ELBA (V21D)

Latitude: 44 3' 18" Long: 92 3' 45"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 06 June 1993

Voucher:

Verification: reclassified

Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #34

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:
CBS Site #: 59

Site: TROUT RUN VALLEY

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: PAGE, P. (CO BIOL SURVEY 1993)

BREEDING SEASON OBSERVATION. SINGING MALE HEARD DURING SYSTEMATIC POINT COUNT SURVEY. DECIDUOUS FOREST WITH CLOSED CANOPY ALONG SMALL, RAPIDLY-FLOWING STREAM (TROUT RUN CREEK).

Location: WINONA COUNTY, MN

Legal : T107N R10W NWNE29

Quad Map: ELBA (V21D)

Latitude: 44 2' 48" Long: 92 2' 52"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 05 June 1993

Voucher:

Verification: sight or sound rec.

Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #50

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:
CBS Site #: 59

Site: TROUT RUN VALLEY

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: PAGE, P. (CO BIOL SURVEY 1993)

BREEDING SEASON OBSERVATION. SINGING MALE HEARD DURING WATERTHRUSH SURVEY. DECIDUOUS FOREST ALONG TROUT RUN CREEK.

Location: WINONA COUNTY, MN

Legal : T107N R10W NESW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 22" Long: 92 3' 8"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 05 June 1993

Voucher:

Verification: sight or sound rec.

Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #74

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:
CBS Site #: 59

Site: TROUT RUN VALLEY

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HATHAWAY, J. (BIODIVERSITY OF SE MN FORESTED STREAMS)

POSITIVE NESTING. NEST FOUND ALONG TROUT RUN CREEK. HABITAT WAS LOWLAND HARDWOOD FOREST IN VALLEY BOTTOM, WITH MAPLE-BASSWOOD AND OAK FOREST ON ADJACENT SLOPES.

Location: WINONA COUNTY, MN

Legal : T107N R10W SENW29

Quad Map: ELBA (V21D)

Latitude: 44 2' 37" Long: 92 3' 4"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 07 June 1996

Voucher:

Verification: verified

Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #75

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:
CBS Site #: 59

Site: TROUT RUN VALLEY

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HATHAWAY, J. (BIODIVERSITY OF SE MN FORESTED STREAMS)

INFERRED BREEDING. PAIR OF ADULTS OBSERVED ON SEVERAL OCCASIONS NEAR CONFLUENCE OF MIDDLE FORK WHITEWATER RIVER & TROUT RUN CREEK. HABITAT WAS LOWLAND HARDWOOD FOREST IN VALLEY BOTTOM, WITH OAK AND MAPLE-BASSWOOD FOREST ON ADJACENT SLOPES.

Location: WINONA COUNTY, MN

Legal : T107N R10W SESE20

Quad Map: ELBA (V21D)

Latitude: 44 2' 59" Long: 92 2' 39"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 29 May 1996

Voucher:

Verification: inferred breeding

APPENDIX 6: RARE ANIMAL SPECIES AND ANIMAL AGGREGATIONS WITHIN
WHITEWATER STATE PARK MAY 1999
MnDNR, Natural Heritage and Nongame Research Program

Minnesota Natural Heritage Database
Element Occurrence Records

16:46 Wednesday, MAY 12, 1999
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Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #76

State Status: SPECIAL CONCERN

EO Size: EO Rank: Current Status: Intended Status:
Site: WHITEWATER PARK WEST CBS Site #: 60

Ownership: MN DNR Parks and Recreation

Managed Area(s): WHITEWATER STATE PARK

Source: HATHAWAY, J. (BIODIVERSITY OF SE MN FORESTED STREAMS)

INFERRED NESTING. PAIR OF ADULTS OBSERVED CARRYING FOOD TO SAME LOCATION ALONG MIDDLE FORK OF WHITEWATER RIVER. HABITAT WAS MAPLE-BASSWOOD FOREST ON SLOPES
ADJACENT TO STREAM.

Location: WINONA COUNTY, MN

Legal : T107N R10W NWSW20

Quad Map: ELBA (V21D)

Latitude: 44 3' 19" Long: 92 3' 17"

Precision: within 0.25 mile, confirmed

DNR Region: 5

Wildlife Area: 510

Forestry District: 531

Last Obs.: 07 June 1996

Voucher:

Verification: verified

Biological Report No. 60

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