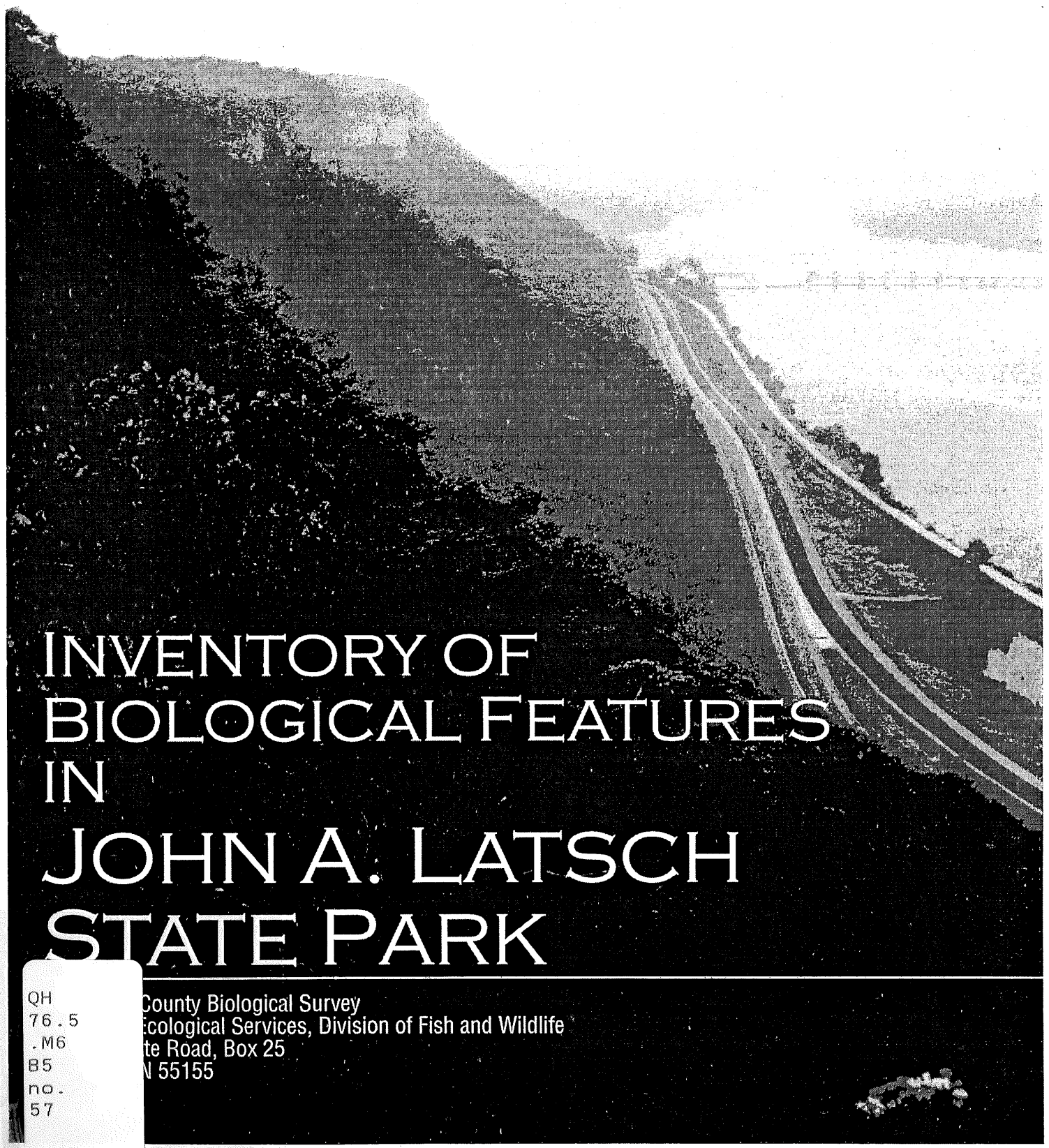


Inventory of Biological Features in John A. Latsch State Park

County Biological Survey
Ecological Services, Division of Fish and Wildlife
te Road, Box 25
N 55155

Minnesota County Biological Survey
Carmen Converse, MCBS Supervisor

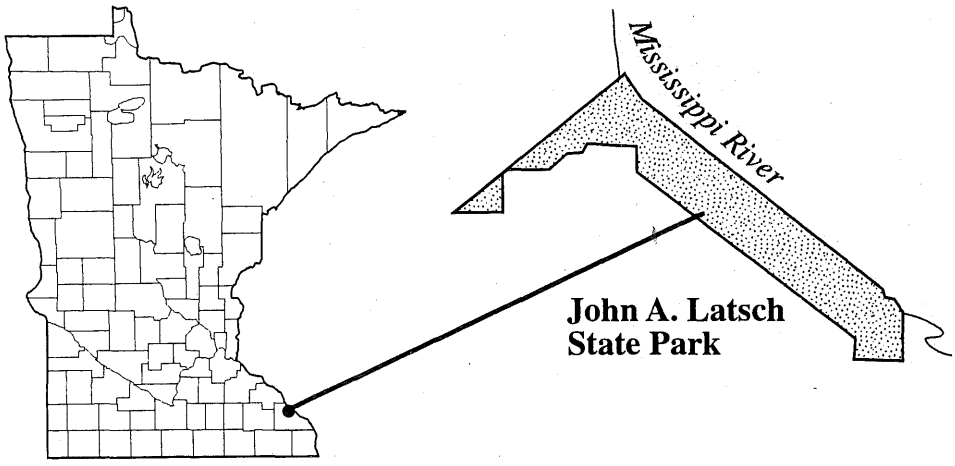
Park Survey Staff
Hannah Dunevitz, Plant Ecologist/Botanist
Gerda Nordquist, Animal Survey Coordinator/Mammalogist
Steve Stucker, Ornithologist
Carol Dorff Hall, Herpetologist

Field Survey Assitants
Elizabeth Baness, Amphibians and Reptiles
Karl Bardon, Birds
Jeffrey Davis, Amphibians and Reptiles
Mark Lizowski, Mammals
Joseph Whittaker, Mammals

Data Management and Graphics Staff
Mary Miller, Natural Heritage and Nongame Research Program Data Manager
Sharron Nelson, Natural Heritage and Nongame Research Program Assistant Data Manager
Al Epp, Natural Heritage and Nongame Research Program Information Systems Manager
Tom Klein, Minnesota County Biological Survey Graphic Artist

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

Biological Report No. 57



INVENTORY OF BIOLOGICAL FEATURES IN JOHN A. LATSCH 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. 57
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A number of individuals contributed invaluable assistance to this project. Special thanks are due to Kathy Bolin, regional parks resource specialist, who provided expertise concerning potential rare features in the park and vicinity, and monetarily supported the additional animal surveys that were conducted at John A. Latsch. Harold Becker, Whitewater State Park manager, provided access information, and Dave Palmquist, Whitewater State Park naturalist, offered valuable information on the history of the park. Dave Radford, archaeologist for Parks, evaluated survey activities for their potential impact on cultural areas in the park. Dave Svien, district forester, 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. It is a systematic, county-by-county survey of Minnesota's rare biological features. MCBS identifies significant natural areas and collects and interprets data on the distribution and ecology of natural 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 1991-1993 field seasons, with some follow-up surveys in 1996. Through a cooperative agreement between MCBS and the Division of Parks and Recreation, surveys for rare animal species were expanded at John A. Latsch State Park beyond the normal MCBS coverage of Winona County. Plant ecological data from the Winona County survey were summarized and portions were included in this report as maps of natural communities and rare plant species in the park, with a brief discussion of their importance.

During the interval between field surveys and completion of this report, the state list of endangered, threatened, and special concern species has been 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 county summary, *Natural communities and rare species of Winona County* (Minnesota County Biological Survey 1994b), the map that shows the results of the completed inventory of the county, entitled *Natural communities and rare species of Winona County* (Minnesota County Biological Survey 1996a), and *Minnesota's endangered flora and fauna* (Coffin and Pfannmuller 1988). Additional information about natural resources in John A. Latsch State Park not included in the MCBS inventory is stored in the Parks Resource Management database at the DNR Regional Office in Rochester.

The use of scientific and common names of plants and animals in this report is according to the following conventions: where scientific names are listed in tables, figure legends, or printouts, only

common names are used in the text. For the remaining species, the scientific name is given the first time the species is mentioned and common names are used thereafter.

A word of caution concerning sensitive material presented in this report: The purpose of this report is to provide detailed information and recommendations concerning the rare features present in John A. Latsch State Park, in order to assist park managers and planners make informed management decisions. Thus, the location of ginseng has been included on the maps and the database printouts. The presence of ginseng in the park could be threatened by potential harvesters. For this reason, we ask that caution be exercised when distributing copies of this report to others outside the department or that detailed location information be removed from copies available to the general public.

INTRODUCTION

The eastern border of Winona County is terminated by a succession of rugged bluffs along the Mississippi River. This area is found within a larger region known as the Paleozoic Plateau or Blufflands, a highly dissected, loess-capped landscape that extends into adjacent Wisconsin, Iowa, and Illinois (Albert 1997). Three prominent bluffs, given the names Mount Faith, Mount Hope, and Mount Charity due to their height and distinctive appearance, once marked the site of a thriving logging town. Today, these bluffs mark the present-day extent of John A. Latsch State Park. Named for a former landowner and active conservationist, the park comprises approximately 400 acres of upland forest, rock cliffs, and small bluff prairies.

John A. Latsch State Park protects an important component of the existing biological diversity in Winona County. Today, less than 8 percent, or 31,000 acres, of the land area in Winona County supports natural communities (Minnesota County Biological Survey 1996a). In an evaluation of significant areas of biological diversity within this region, the Minnesota County Biological Survey ranked John A. Latsch State Park as a medium priority site, based on the presence of natural communities in relatively undisturbed condition and the occurrence of rare plant and animal species. Sites that were ranked high in this region were generally larger than John A. Latsch and contained higher concentrations of rare species.

Details about these natural communities and rare species are included in this report and are meant to serve as baseline information for natural history interpretation, management, monitoring, and research related to the natural resources of this park. The first section, *Inventories of natural communities and rare plants*, summarizes the pre-Euroamerican settlement vegetation in the area that is now John A. Latsch State Park and briefly describes the natural communities and rare plants found in the park today. The next section, *Inventories of rare animals*, describes the survey work conducted for rare animal species and lists the animals documented in the park during MCBS surveys. The last section, *General management recommendations*, summarizes some important considerations for management of the natural communities and rare species that occur in the park.

INVENTORIES OF NATURAL COMMUNITIES AND RARE PLANTS IN JOHN A. LATSCH STATE PARK

Hannah Dunevitz, Plant Ecologist/Botanist

Natural Communities

Natural communities are defined as "groups of native plants and 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 1996a). Natural communities are classified and described on the basis of vegetation, hydrology, landforms, soils, and natural disturbance regimes (including wildfires, windstorms, normal flood cycles, and the effects of pathogens, insects, and microorganisms). The Natural Heritage and Nongame Research Program (NHNRP) has developed a classification of natural communities (Minnesota Natural Heritage Program 1993) that is used by MCBS in the evaluation of potential natural areas.

Natural communities have no legal protection in Minnesota. However, the NHNRP considers the identification, protection, and management of natural communities and ecosystems a high priority. NHNRP has evaluated natural community types for their relative rarity and endangerment throughout their range. Natural community types have been assigned a state endangerment rank on a scale of 1 to 5. Those ranked "1" are considered critically endangered in Minnesota, while communities ranked "5" are considered secure under present conditions.

Methods

Natural 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 natural communities included Cooperative Stand Assessment (CSA) data from MNDNR Division of Forestry, the Winona County soil survey (Lueth 1994), the Minnesota soil atlas (University of Minnesota 1973), and geologic maps of Winona County (Balaban and Olsen 1984). Using all these sources, initial boundaries of natural communities and disturbed areas in the park were transcribed onto 7.5-minute topographic maps.

Site visits were made by the plant ecologist in June and August 1991, August 1993, and August 1996. Natural 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 the lowest, or highly disturbed. The regional parks resource specialist accompanied the plant ecologist on several occasions and assisted with inventories and evaluations.

Two releve plots were made in two natural communities in the park, mesic oak forest and bedrock bluff prairie (both in T108N, R8W, NWSW7). Releve sampling is a method of describing

vegetation in a semi-quantitative manner. The methodology (described in Almendinger 1987) is used statewide by MCBS and all releve data are entered into the Natural Heritage Information System (NHIS), a computerized database 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, natural community boundaries were corrected on the topographic maps. The final boundaries were recorded digitally using the ARC/INFO Geographic Information System. Locations and descriptions of each natural community, known as "element occurrences", are stored in the NHIS (see Appendix 3 for these descriptions).

Results

A comparison of present-day natural communities in the park to vegetation prior to Euroamerican settlement indicates that portions of the vegetation in John A. Latsch today are similar to that described in the 1850s (U.S. Surveyor General 1853-1855). The current vegetation cover maps of the park identify seven natural community types within the statutory boundaries of the park (Figures 1 and 2). Where natural communities continue outside the park boundaries, the complete polygon is shown. Each natural community with an occurrence of C rank or better is listed in Table 1, together with its state endangerment rank, the number of occurrences in the park, and total acreage. Printouts of element occurrence records for all natural community occurrences in the park are included in Appendix 3 (also refer to Appendix 1 for a listing of all rare features recorded at John A. Latsch State Park and Appendix 2 for an explanation of the printout fields). The natural community records include quality ranks and descriptive information about each occurrence.

Important factors determining where the natural 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. On dry knobs on south- to southwest-facing slopes, bedrock bluff prairies occur in association with frequent rock outcrops. Oak woodland-brushland communities occupy dry slopes with some soil development. These areas may have burned more frequently than the nearby oak forests or were more heavily grazed in the past. The moist, north- to east-facing slopes are covered by mesic oak forest and maple-basswood forest. Fires would have occurred less frequently in these sites and the cool, moist environment was more conducive to rapid plant growth. Lowland hardwood forest and emergent marsh communities are found in ravines associated with narrow streams.

Figure 3 illustrates the ecological quality ranks of all natural 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 important, high quality natural 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 natural communities. A rank of CD indicates a highly disturbed area, 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 releves in mesic oak forest and bedrock bluff prairie are found in Appendix 4, along with a summary of all plant species recorded from the releves. The areas mapped as natural communities in Figures 1-3 that are on private lands were determined using aerial photography and were not field checked.

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 John A. Latsch State Park was on those species listed at the time of the survey (1991 through 1993). 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 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 natural community inventory work in 1992 and 1993 were documented by the plant ecologist. New occurrences were recorded in the NHIS and locations were digitally recorded using ARC/INFO geographic information system.

Results

Two rare plant species were documented in John A. Latsch State Park (Figures 2 and 4, Appendix 5). A small population of ginseng, considered special concern in Minnesota, was found in mesic oak forest in the park. Jewelled shooting star, which has no state rarity status but is tracked by the NHIS, occurs on and adjacent to a dry cliff. There were no comprehensive inventories of the park for these and other rare plant species, thus it is likely that other populations of these two species may exist in similar habitat in other portions of the park.

INVENTORIES OF RARE ANIMALS IN JOHN A. LATSCH 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 John A. Latsch State Park from April through August 1993, focusing on rare species that were likely to be found in the park. The rare species targeted for searches were determined by historical records and the presence of appropriate habitat within the park. These included species that were federally-listed as endangered or threatened, species that were state-listed as endangered, threatened, or of special concern in 1993, as well as species that were added to the state list in 1996. Also included were a number of non-listed species that are tracked by the Rare Features database of the Natural Heritage Information System (NHIS) due to uncertainty of their rarity status (Table 2). Prior to the MCBS surveys, the Rare Features database contained a single record for nesting Peregrine falcons within the park. Following completion of MCBS animal surveys, a total of eight new locations for three rare reptiles and one rare bird were added (Figure 6, Appendix 6; see also Appendix 1 for a list of all rare features recorded from the park and Appendix 2 for an explanation of printout fields).

Amphibians and Reptiles

Based on the habitat present within John A. Latsch State Park, ten rare amphibians and reptiles were identified as potentially occurring in the park. These included one frog, one skink, one turtle, and seven snakes (Table 2).

Methods

Survey techniques for amphibians and reptiles included anuran surveys, drift fences, herp searches, and turtle trapping. Figure 5 and Table 3 identify the locations of these survey activities.

Anuran surveys. Recent concern over the decline of amphibians due to environmental degradation has prompted the establishment of anuran (frog and toad) monitoring programs to track population changes over time. Because parks are ideal areas to conduct long-term monitoring of this type, an anuran survey route was established that included stops in the park and nearby areas. A total of ten survey stops, three within the park, were selected adjacent to aquatic habitats where anurans were likely to breed. Sites sampled in the park included forested lowland habitats associated with intermittent streams and backwaters of the Mississippi River. Because monitoring protocol requires that survey stops be accessible by road, potential breeding locations in the park that were some distance from roads were not sampled.

Anuran surveys were conducted twice during the breeding season, 28 April and 6 July 1993. At each stop, all species heard calling during a three-minute interval were recorded and their corresponding

call intensity (an index of the number of calling individuals) was estimated. Surveys were conducted at night under suitable weather conditions (i.e. little-to-no wind or rain). Surveys began after dark, at approximately 2130 hours, and continued to 0100 hours or until the route was completed.

Drift fence. A drift fence was installed to capture more secretive herpetofauna, such as salamanders. Although no salamanders were listed as rare in the state at the time of this survey, their distribution and abundance are poorly known in southeastern Minnesota. A fifty-foot length of aluminum flashing was set in the ground, with eight 5-gallon buckets buried flush with the ground on either side of the flashing. The fence was installed adjacent to an intermittent stream near the base of a forested, southeast-facing slope (Figure 5, Table 3). The Parks archaeologist reviewed the planned location for the drift fence to ensure that no cultural features were disturbed. The drift fence was installed in 24 April and run continuously until 8 June, for a total of 46 trap days. Buckets were checked two to three times per week and all herpetofauna and small mammals were removed and identified.

Herp searches. Terrestrial herp searches involved actively searching an area and hand-capturing herpetofauna. Rocks and ground debris were turned over to check for concealed herps and then replaced in their original position. Basking surfaces and rock crevices were also examined. Herp searches were conducted on 21 April, 8 May, and 10 June, for a total of 10 person-hours. Habitats surveyed included bluff prairie, oak forest, and lowland hardwood forest. Herp searches also were conducted along the railroad tracks adjacent to the Mississippi River and in the portion of the park east of the highway.

Turtle trapping. A hoop-net trap was set for turtles in the intermittent stream at the north end of the park. The trap was baited with pieces of minnow and was checked every other day between 23 May and 8 June.

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

Results

Nine species, four amphibians and five reptiles, were documented in the park during MCBS surveys (Table 4). These included three targeted species, Snapping turtle, Gopher snake, and Fox snake. Herp surveys conducted in floodplain forest, emergent marsh, and grassland habitats in the vicinity of John A. Latsch documented an additional three species, Milk snake, Painted turtle, and Common map turtle, which may occur in the park, as well. Refer to Appendix 6 for additional information on the Gopher and Fox snakes. Although Snapping turtles are state-listed as special concern, NHIS does not maintain records for this species. Additional information on the turtle is provided under *Herp searches*, below.

Anuran surveys. Three species of frogs were recorded during the anuran surveys. Chorus frogs and Spring peepers were recorded at John A. Latsch during the first survey run, while Eastern gray

treefrogs were the only species heard calling in the park during the second run. The paucity of shallow wetlands within the park likely influenced the low species diversity and low calling rates recorded here.

Drift fence. The American toad was the only herp species captured in the drift fence. The low diversity of herpetofauna documented by this technique was comparable to drift fence results at other forested sites in Winona County. Species with adhering toepads, such as Spring peepers and Eastern gray treefrogs, could escape from the drift fence buckets and probably were under represented by this type of sampling. The drift fences were effective in capturing small mammals, however. These results are discussed in the section on mammals.

Herp searches. Spring peepers and a Snapping turtle were found during an early spring herp search of riparian habitat. The Snapping turtle was found on 21 April in an intermittent stream on the northwest side of a ravine. It was buried in mud with only three inches of its tail exposed. This location was probably a hibernaculum site. The carapace length measured 12 inches. A photo voucher was taken and the turtle was released. Herp searches of the bluff prairies and rock outcrops located one Gopher snake in early May. Although the stream beds were dry by mid-June, American toads were found at the park where water was present.

Turtle trapping. No herpetofauna were collected from the hoop net, although Brown bullhead *(Ictalurus nebulosus)* were captured regularly.

Several herp species were found associated with Highway 61 near John A. Latsch State Park. A Fox snake, Milk snake, Snapping turtle, and Painted turtle were found as road-kills. The turtles, both found in mid-June, were likely females moving to or from nesting areas. A Northern water snake and Eastern garter snake were documented moving along the shoulder of the highway. Common map turtles were observed laying eggs on the railroad grade south of the park.

Rare amphibians and reptiles

The three targeted herp species found at John A. Latsch State Park were associated with the range of habitats represented here (Figure 2, Table 4). Forest and forest-edge habitat, where the Fox snake was found, covers most of the park. The Gopher snake was located on a rocky ledge in an overgrown bluff prairie, surrounded by oak forest. This species likely overwinters in these rock outcrops and disperses into adjacent grassland and agricultural fields to feed during the summer. The Snapping turtle was associated with the small intermittent stream in the park and most likely is present in the Mississippi River adjacent to the park. Management recommendations for the conservation of these rare herp species are discussed in *General Management Recommendations.*

Breeding Birds

Of the fifteen rare bird species potentially occurring in southeastern Minnesota, four species associated with upland forest and forest edge habitats were targeted for surveys at John A. Latsch State Park (Table 2). These were the Red-shouldered hawk, Acadian flycatcher, Cerulean warbler,

and Bell's vireo. Prior to the survey, the only rare bird documented from the park was Peregrine falcon, based on historical nest records from Mt. Hope and reports of nesting attempts in the late-1980s (Appendix 6). Rare bird species associated with wetland or grassland habitats were not expected to occur in the park. Although these habitats are present at John A. Latsch, they are quite small and overgrown, or isolated from larger tracts of similar habitat in the vicinity.

Methods

Point counts. Bird point count surveys were conducted during the breeding season on 23 and 24 June 1993. At each point within a given habitat, all birds heard or seen during a five-minute interval were identified and evidence of breeding behavior or nesting was recorded. The number of individual birds within a 50-meter radius was counted. Birds detected outside the 50-meter radius (but within the habitat being surveyed) were recorded but not enumerated. Birds flying over a point were counted if they were "using" the habitat (e.g. foraging swallows). Species detected outside of the habitat being surveyed were also recorded for use in generating a species lists for the park. Points were spaced a minimum of 300 meters apart and at least 150 meters from the edge of the habitat, when possible. Point counts were conducted from approximately 15 minutes before sunrise to about four hours after sunrise, during suitable weather conditions (i.e. wind less than 10 mph, precipitation no greater than a light rain). A total of 12 point counts were made in the park, all located within oak forest (refer to Figure. 5 for a map and Table 3 for a list of survey locations in the park).

Playbacks. Playback of taped conspecific calls was used to survey for territorial Red-shouldered hawks. Stops were made along Highway 61 within the park boundaries at two areas of suitable lowland hardwood forest. At each stop, calls were played for approximately 30 seconds, followed by 1-2 minutes of silence, then another set of calls. Response to the playback by nearby hawks was recorded over a five-minute interval following completion of the playbacks. Surveys were conducted during the early morning.

Incidental records. Incidental records of birds observed at or near John A. Latsch State Park also were recorded.

Results

MCBS bird surveys resulted in the detection of 39 species in the park during the breeding season (Table 5). This included one rare species, the Cerulean warbler, which is currently listed as state special concern and is being considered for federal listing.

The total number of bird species found at John A. Latsch State Park was lower than that found in other state parks in the region. This is due, in part, to the relatively smaller size of the park, as well as the lower habitat diversity. Large areas of bluff prairies, old fields, and permanent streams found in the other state parks in southeastern Minnesota were not well represented here. Nevertheless, the park's forest avifauna was comparable to that of other good quality forests surveyed in Winona and Houston counties. This included many neotropical migrants, such as Eastern wood-pewee, Wood thrush, Yellow-throated vireo, American redstart, and Scarlet tanager. Most edge species, such as

the Gray catbird, Brown-headed cowbird, and American goldfinch, occurred in low numbers, reflecting the relatively unfragmented condition of the park's forests.

Rare birds

Cerulean warblers were relatively numerous at John A. Latsch State Park, where five singing males were evenly spaced along the wooded slopes adjacent to Highway 61. This was one the highest densities of this species found in Houston and Winona counties. Outside the park, this species was found at six locations in Winona County and at four locations in Houston County. In southeastern Minnesota, Cerulean warblers are associated primarily with mature floodplain or lowland hardwood forests. However, this species also can be found in mature upland deciduous forests, such as those at John A. Latsch. The presence of a closed canopy of tall, mature trees is one of the most important habitat components for Cerulean warblers, where they spend most of their time in the upper portions of the canopy.

No Red-shouldered hawks were found in the park. This species is most often found in mature floodplain or lowland hardwood forests, usually near wetland openings. While the park does have extensive and mature forest cover, the lack of suitable open wetlands nearby may explain the absence of nesting Red-shouldered hawks in the park. Potentially suitable floodplain forest habitat exists long the Mississippi River south of the park, however, playbacks conducted in this area failed to locate any Red-shouldered hawks.

Mammals

Six rare mammals have been recorded from southeastern Minnesota, but only one, the Woodland vole, was targeted for small mammal surveys at John A. Latsch State Park (Table 2). Prior to MCBS surveys, the two locations known for the Woodland vole in the state were from apple orchards. In Iowa, this species has been found in mature, mesic forests, similar to those present at the park. Two rare bat species, the Northern myotis *(Myotis septentrionalis)* and Eastern pipistrelle *(Pipistrellus subflavus)*, may use the park for foraging and summer day roosts, however the specialized survey techniques required to identify these species during the summer were not available at the time of this survey. The majority of state records for these bats have been obtained from caves and mines during the winter. A cave is present in the park on Chimney Rock, but is not sufficiently protected from temperature variation or large enough to be a significant hibernaculum for bats (personal communication from Dave Palmquist)..

Methods

One small mammal trap grid was set in mesic oak forest and run between 6 and 9 July 1993 (refer to Figure 5 and Table 3 for the location of the grid). The trap grid consisted of a four-by-ten 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. Location of the grid was first approved by the DNR archaeologist to ensure that no cultural features would be disturbed by installing pitfall traps. All traps, except the pitfall traps, were baited with a mixture of peanut butter and oatmeal. The grids were set for four 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. These specimens are permanently stored at the Bell Museum of Natural History, University of Minnesota in St. Paul.

Small mammals were also taken in the drift fence as part of the amphibian and reptile surveys. Refer to the amphibian and reptile methods section for a description of the drift fence technique. These captures were identified to species, sex, and age.

Incidental observations of larger mammals or mammal sign were recorded when encountered.

Results

A total of nine mammal species were documented in the park during MCBS surveys, however, no rare mammals were recorded (Table 6). The subsurface tunnels of Eastern moles were abundant throughout the park. Some common species, such as Raccoon *(Procyon lotor),* Virginia opossum *(Didelphis virginiana)*, and Gray fox *(Urocyon cinereoargenteus)*, likely occur at John A. Latsch, however, the limited survey effort revealed no evidence of their presence.

The White-footed mouse dominated the trap-grid site, comprising 93 percent of total captures. By contrast, it made up only 22 percent of the drift-fence captures (Table 7). The Northern short-tailed shrew and Meadow jumping mouse were the most frequently taken species in the drift fence, comprising 35 and 26 percent, respectively. The differences observed in the captures from the trap grid and drift fence were due, in part, to the techniques used, but also reflected differences in the species associated with the two habitats sampled. White-footed mice may have been equally common at both locations, but were able to escape from the drift fence buckets. The placement of the drift fence at the base of the slope next to a stream resulted in the capture of species generally associated with wet habitats, such as the shrews and Meadow jumping mouse.

Rare mammals

No rare mammal species were documented in the park. The Meadow vole captured in the drift fence was positively identified, although the habitat was more suited to the Woodland vole. 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 (Minnesota County Biological Survey 1994a).

GENERAL MANAGEMENT RECOMMENDATIONS

Overall Protection of Natural Features and Rare Species

Although John A. Latsch State Park is relatively small, compared to other parks in the region, it nevertheless contains significant examples of pre-Euroamerican settlement vegetation and habitat suitable to a number of rare species. It ranks among the more important areas of the Paleozoic Plateau in terms of biodiversity significance. The large, relatively unfragmented tract of forest present in the park is vital to many forest songbirds that are sensitive to forest fragmentation. The bluff prairies and cliffs provide important habitat for several rare snakes, and the smaller openings in the cliffs once served as nest sites for Peregrine falcons.

MCBS staff prepared the following general recommendations for sustaining and enhancing natural features in John A. Latsch State Park based on their assessment of these features in the park. While there are several options for protection of ecologically significant areas and species, the most appropriate for this park would be to seek opportunities to acquire lands within or adjacent to the statutory boundary of the park. As shown in Figure 1 and the MCBS map of Winona County (Minnesota County Biological Survey 1996a), significant areas of quality natural communities and rare species exist outside the present park boundaries. Protection of these natural features, in conjunction with those currently managed at John A. Latsch, would further ensure that the integrity of the natural communities and critical habitat for rare species in this area are maintained.

Development options within the park are relatively limited due to topography and the present extent of the park. However, future development plans should carefully consider potential impacts to sensitive species and ecologically significant areas. More specific recommendations for management and protection of natural communities and rare species in the park are provided below.

Forested communities

The relatively large size of intact, continuous forest is the most important natural component in John A. Latch State Park. Physical alteration to the intact nature of the forests could significantly affect species, such as the Cerulean warbler, that rely on closed-canopy conditions. Development of trails or public use areas should seek to avoid opening the canopy to any significant extent. The majority of forested natural 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 population of American ginseng at John A. Latsch is particularly vulnerable to illegal harvesting. Comprehensive searches for additional populations of American ginseng in the park should be completed, trails should avoid the areas where this species occurs, and the populations should be regularly monitored to assess their condition.

Dry prairie and cliff communities

Several small bluff prairies exist in John A. Latsch that, in association with rock outcrops, provide important habitat for rare snakes, such as the Gopher snake. The snakes move between the prairies

and adjacent forests to thermoregulate and forage for the abundant small mammal prey present in the forest. Rock outcrops and cliffs in the park likely serve as important overwintering sites and basking surfaces for these snakes. Brush removal would enhance the open character of the dry prairies to the benefit of rare snake species. Although the prairies are not large enough to support rare species such as the Henslow's sparrow or Prairie vole, they may be suitable to Timber rattlesnakes. This state-threatened species has not been documented in John A. Latch, however, it could inhabit the prairies and associated rock out-crops. Additional searches for this species are merited, and if found, protective measures should be taken (refer to management recommendations for rare snakes in Minnesota County Biological Survey 1996b).

Prescribed burning should be done on all bluff prairies to maintain their openness. When possible, these fires should be allowed to burn into the forest edges around them, thereby helping to maintain areas of open oak forest, oak woodland-brushland, and oak savanna habitats.

The dry cliffs are significant features in the park. Once the site of nesting Peregrine falcons, recent nesting attempts by this species suggest that they could be used again. The historic sites should be regularly checked during the nesting period for the presence of Peregrine falcons and park visitors should be prohibited from this area during the nesting season if birds are present.

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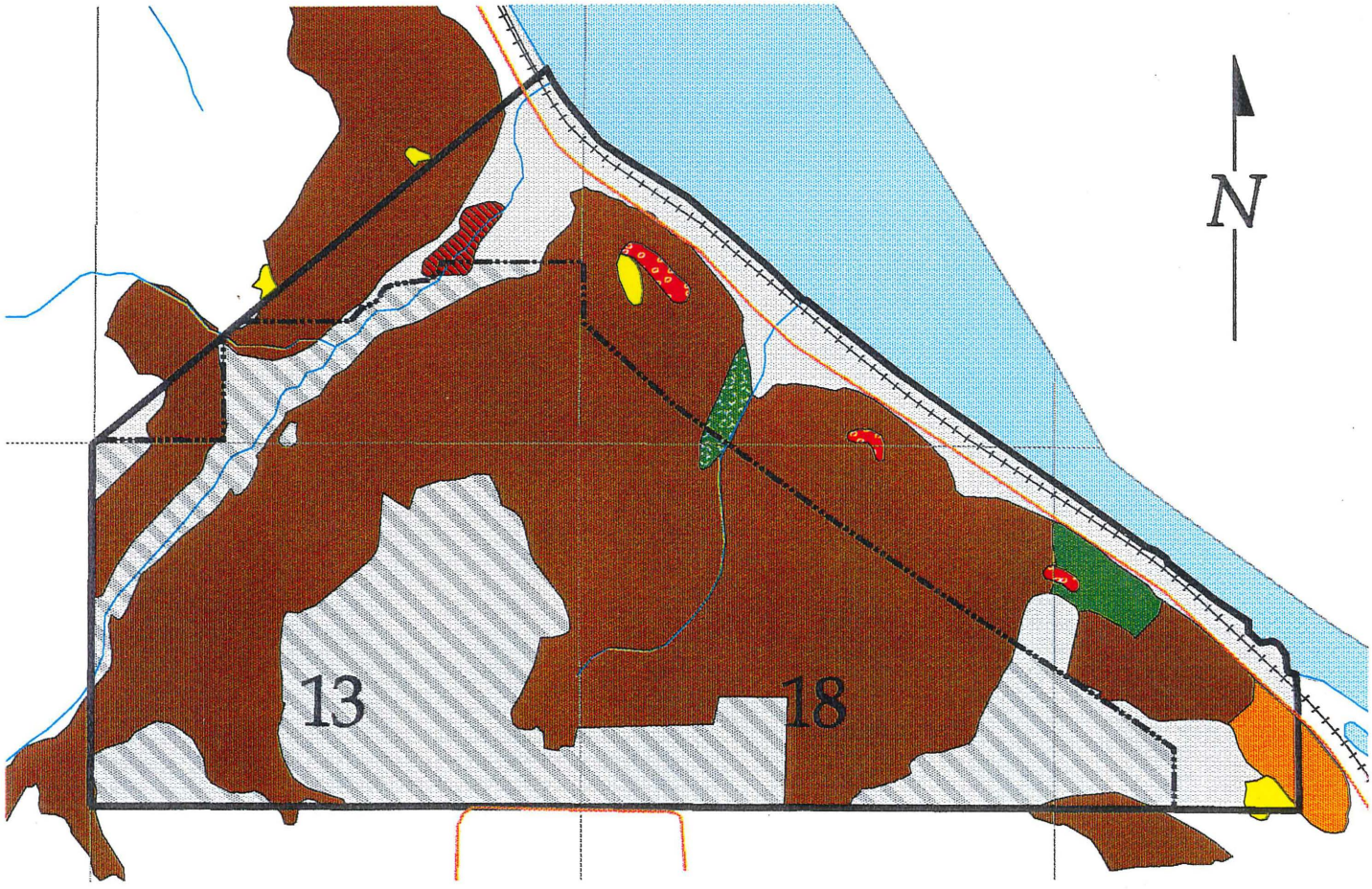
Figure 1. Locations of natural communities and disturbed areas in John A. Latsch State Park

- Oak Forest - mesic subtype
- Maple-Basswood Forest
- Lowland Hardwood Forest
- Oak Woodland/Brushland
- Dry Prairie - bedrock bluff subtype
- Mixed Emergent Marsh
- Dry Cliff
- Disturbed land in public ownership within statutory boundaries of managed areas
- Disturbed land in private ownership within statutory boundaries of managed areas

- Present state park boundary
- State park statutory boundary
- Natural community polygon boundaries
- Section lines
- Roads
- Railroads
- Rivers and streams
- Open water

Note: privately owned lands were not field surveyed.



Scale: 1:24,000

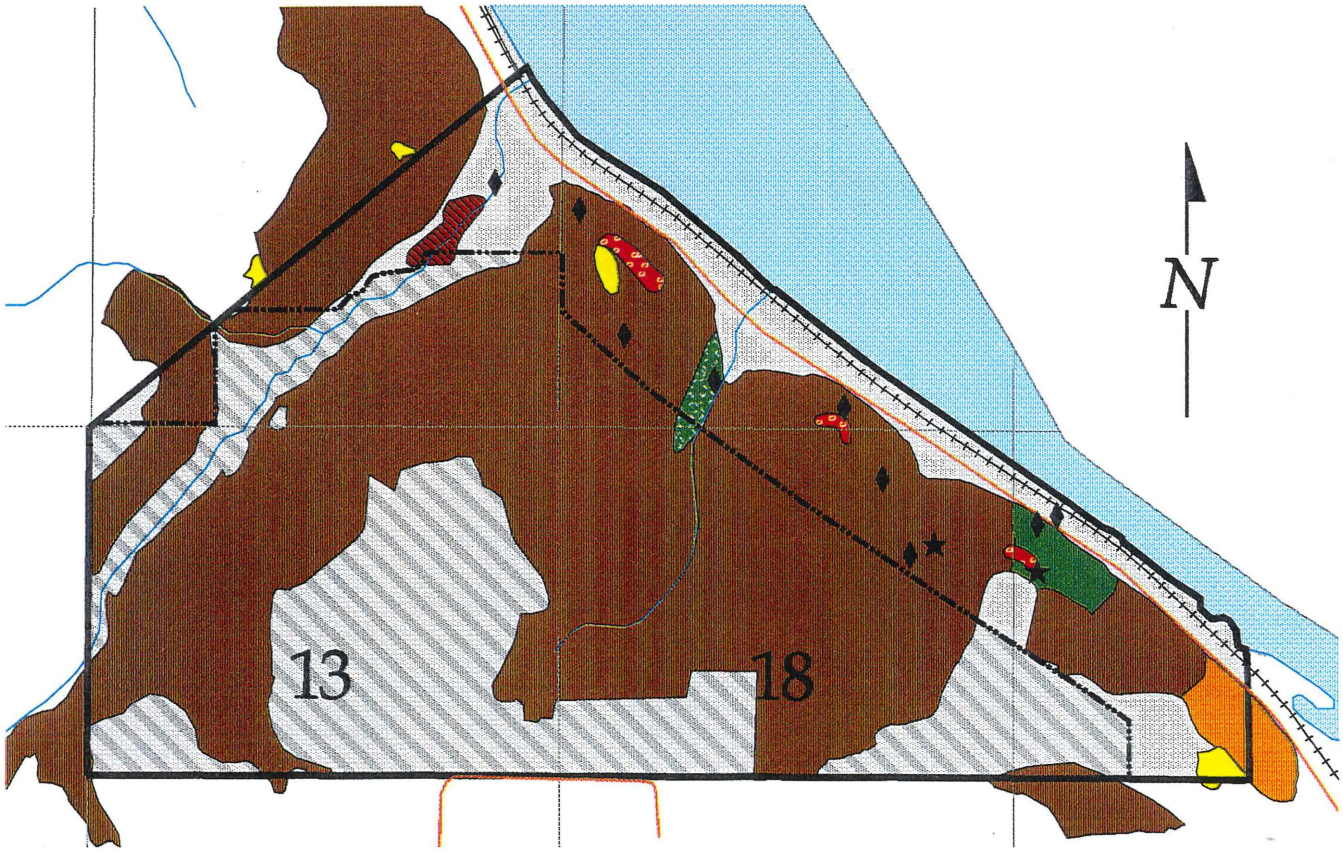
Source: MN County Biological Survey, 1997

Figure 2. Locations of natural communities, disturbed areas, and rare features in John A. Latsch State Park

- Oak Forest - mesic subtype
- Maple-Basswood Forest
- Lowland Hardwood Forest
- Oak Woodland/Brushland
- Dry Prairie - bedrock bluff subtype
- Mixed Emergent Marsh
- Dry Cliff
- Disturbed land in public ownership within statutory boundaries of managed areas
- Disturbed land in private ownership within statutory boundaries of managed areas

Note: privately owned lands were not field surveyed.

- Rare plant records (1970 and later)
- Rare animal records (1970 and later)
- Present state park boundary
- State park statutory boundary
- Natural community polygon boundaries
- Section lines
- Roads
- Railroads
- Rivers and streams
- Open water



Scale: 1:24,000

Source: MN County Biological Survey, 1997

Figure 3. Quality ranks of natural communities in John A. Latsch State Park

A Natural communities with quality ranks

Natural communities (not ranked) and disturbed areas

Present state park boundary

State park statutory boundary

Natural community polygon boundaries

Section lines

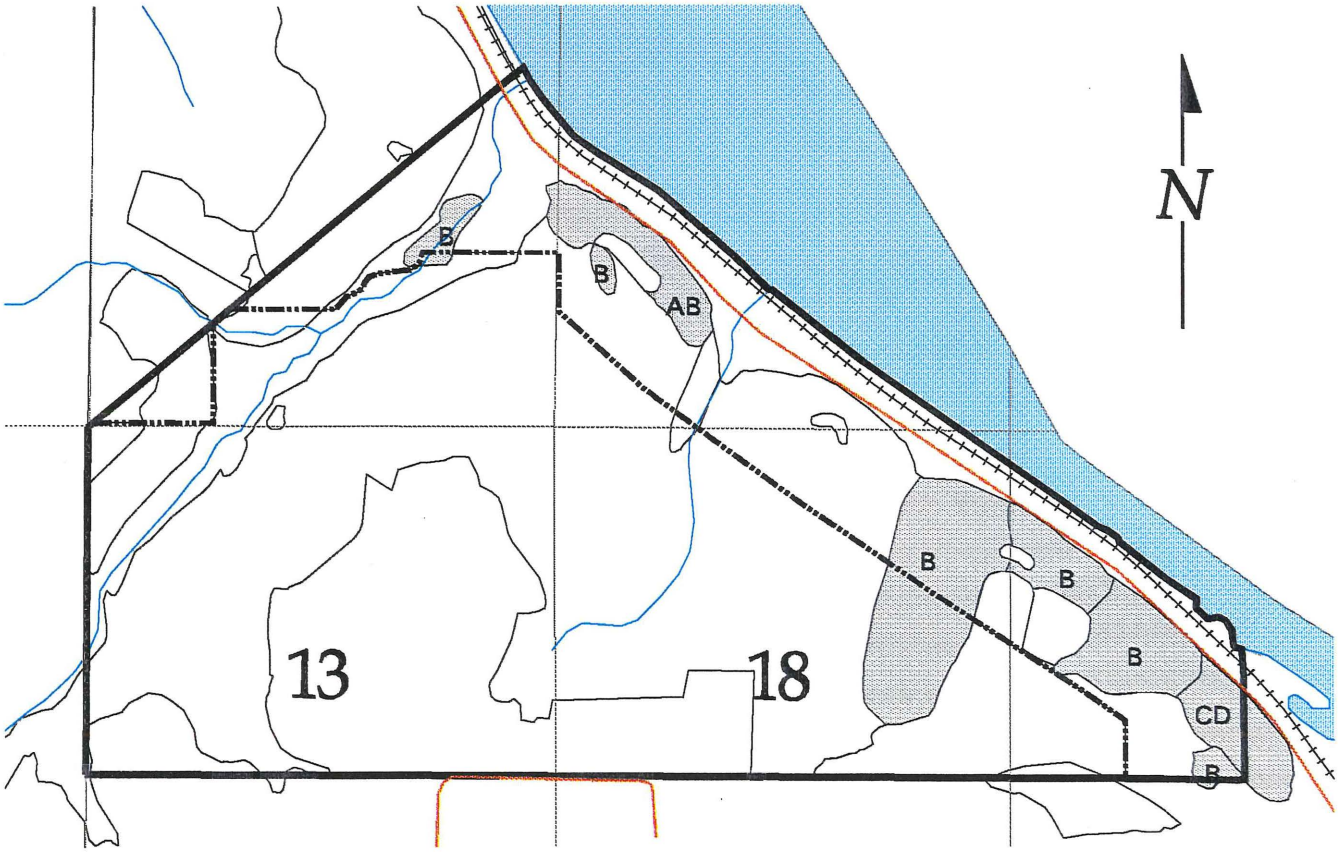
Roads

Railroads

Rivers and streams

Open water

Note: privately owned lands were not field surveyed.



Scale: 1:24,000

Source: MN County Biological Survey, 1997

Figure 4. Rare plant species occurrences in John A. Latsch State Park

Map #	* MN Status prior to July 1996	Current * MN Status	Occur. #	Scientific name	Common name
1	NON	NON	25	*Dodecatheon amethystinum*	Jewelled shooting star
2	SPC	SPC	87	*Panax quinquefolius*	American ginseng

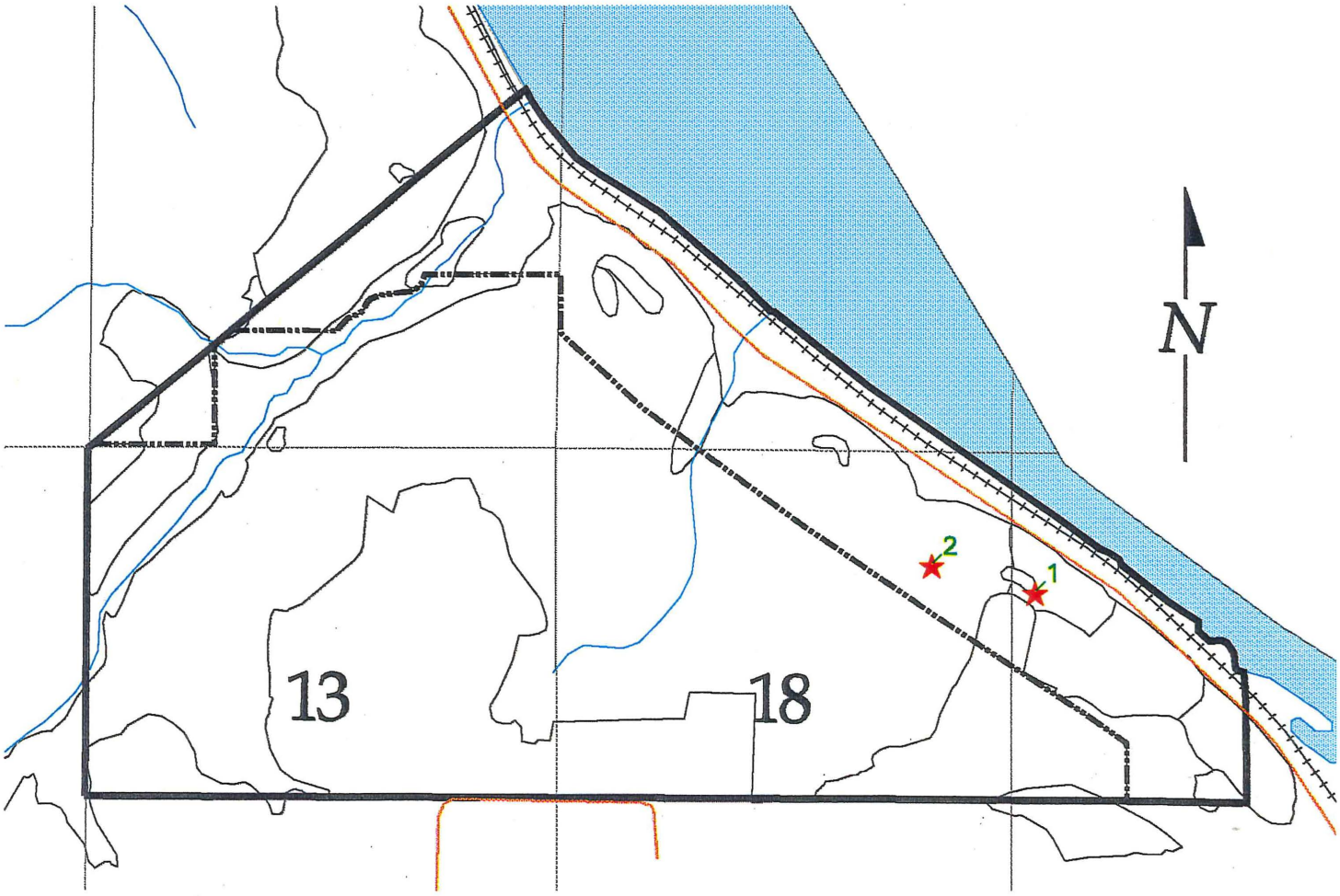
* MN Status
SPC = Special Concern
NON = No legal status

★ - 1 Rare plant location (1970-present) and map number

Present state park boundary
State park statutory boundary
Natural community polygon boundaries

Section lines
Roads
Railroads
Rivers and streams
Open water

Note: privately owned lands were not field surveyed.



Scale: 1:24,000

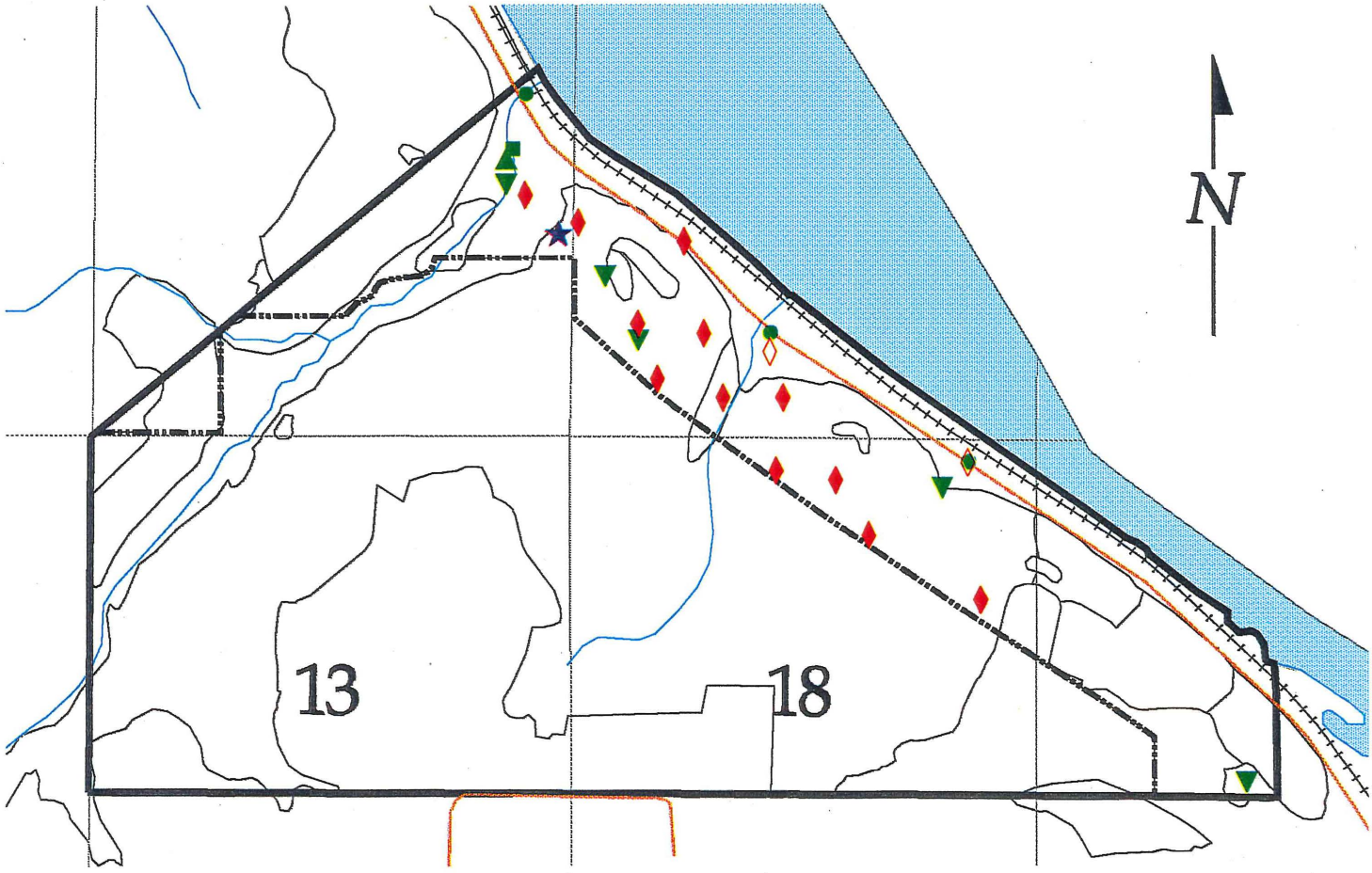
Source: MN County Biological Survey, 1997

Figure 5. Animal sampling sites in John A. Latsch State Park during 1993 field surveys

- Anuran survey
- Drift fence
- Herp search
- Turtle trap
- Bird point count
- Bird playback
- Mammal trap grid

- Present state park boundary
- State park statutory boundary
- Natural community polygon boundaries
- Section lines
- Roads
- Railroads
- Rivers and streams
- Open water

Note: privately owned lands were not field surveyed.



Scale: 1:24,000

Source: MN County Biological Survey, 1997

Legend for Figure 6. Rare animal species occurrences in John A. Latsch State Park

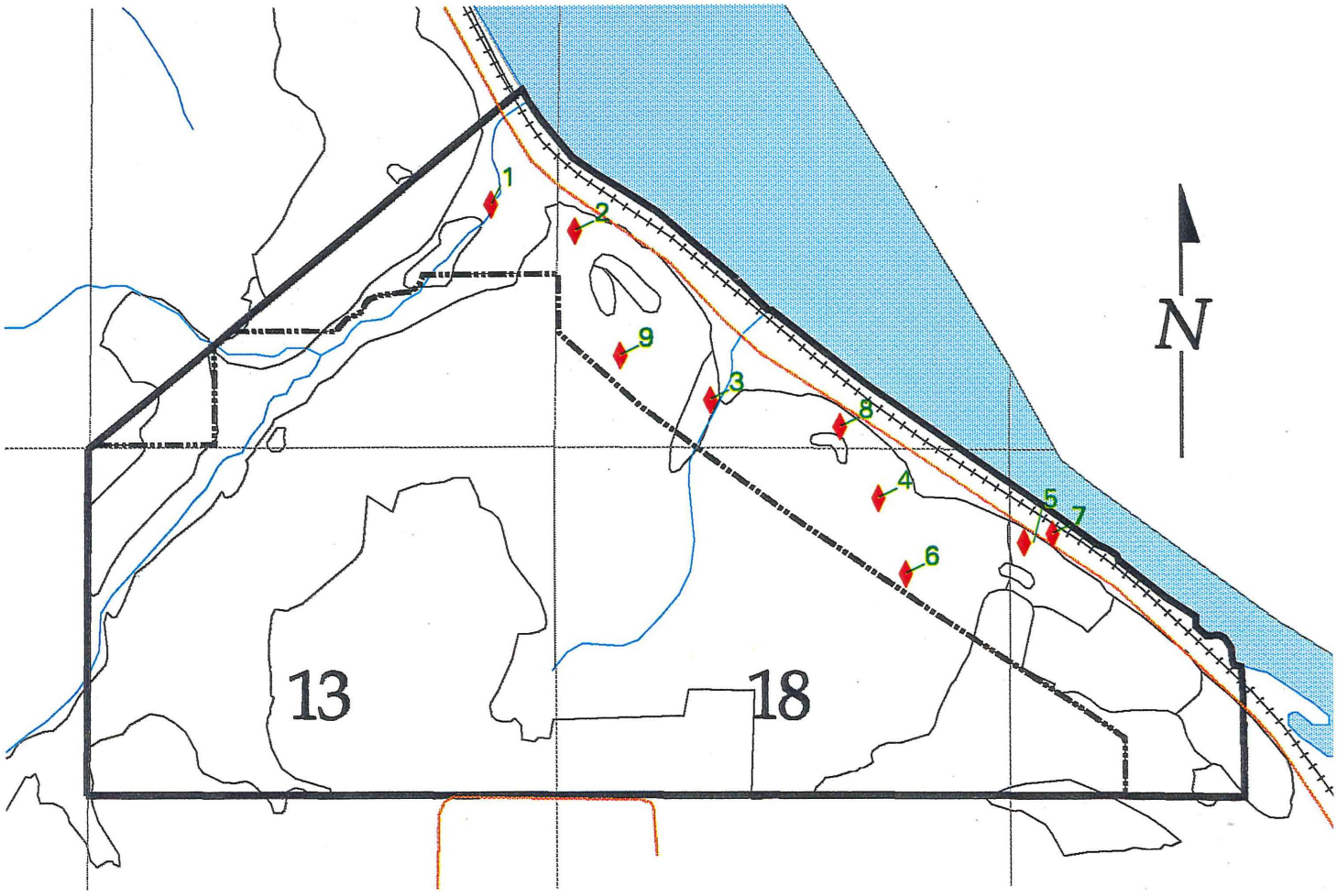
Map #	* MN Status prior to July 1996	Current * MN Status	Occur. #	Scientific name	Common name
1	SPC	SPC	0	*Chelydra serpentina*	Snapping turtle
2	NON	SPC	23	*Dendroica cerulea*	Cerulean warbler
3	NON	SPC	24	*Dendroica cerulea*	Cerulean warbler
4	NON	SPC	25	*Dendroica cerulea*	Cerulean warbler
5	NON	SPC	26	*Dendroica cerulea*	Cerulean warbler
6	NON	SPC	27	*Dendroica cerulea*	Cerulean warbler
7	SPC	NON	84	*Elaphe vulpina*	Fox snake
8	END	THR	26	*Falco peregrinus*	Peregrine falcon
9	SPC	SPC	63	*Pituophis catenifer*	Gopher snake

* MN Status
END = Endangered
THR = Threatened
SPC = Special Concern
NON = No legal status

Figure 6. Rare animal species occurrences in John A. Latsch State Park

- ♦ - 1 Rare animal location (1970-present) and map number
- Present state park boundary
- State park statutory boundary
- Natural community polygon boundaries
- Section lines
- Roads
- Railroads
- Rivers and streams
- Open water

Note: privately owned lands were not field surveyed.



Scale: 1:24,000

Source: MN County Biological Survey, 1997

Table 1. Natural communities present in John A. Latsch State Park, with associated state endangerment rank[1], number of occurrences, and total acreage.

Natural Community	Endangerment Rank[1]	Number of Occurrences	Total Acreage
Dry Prairie (Southeast) Bedrock Bluff subtype	3	2	6.1
Mixed Emergent Marsh (Prairie)	2	1	7.5
Oak Forest (Southeast) Mesic subtype	2	4	884.7
Dry Cliff[2]	3	3	7.2
Lowland Hardwood Forest[2]	4	1	8.2
Maple-Basswood Forest[2]	2	1	16.4
Oak Woodland-Brushland[2]	4	1	12.8

[1] State endangerment ranks for natural communities range from 1 to 5, with those ranked "1" considered critically endangered in Minnesota and those ranked "5" considered secure under present conditions.

[2] Natural communities that were not recorded in the element database because of small size or lack of thorough inventory.

Table 2. Rare animals targeted for MCBS surveys at John A. Latsch State Park. (Species are associated with their primary habitats. State statuses reflect changes as of July 1996. Species identified as an "element" are non-listed species tracked by the NHIS Rare Features database.)

	Species	Status (F: federal, S: state)
	UPLAND DECIDUOUS FORESTS, FOREST OPENINGS, AND BRUSHLANDS	
Herps:	Eastern hognose snake *(Heterodon platirhinos)*	S: Element (1993: Special Concern)
	Rat snake *(Elaphe obsoleta)*	S: Special Concern
	Fox snake *(Elaphe vulpina)*	S: Element (1993: Special Concern)
Birds:	Red-shouldered hawk *(Buteo lineatus)*	S: Special Concern
	Peregrine falcon *(Falco peregrinus)*	S: Threatened
	Acadian flycatcher *(Empidonax virescens)*	S: Special Concern
	Cerulean warbler *(Dendroica cerulea)*	S: Special Concern
	Bell's vireo *(Vireo bellii)*	S: Element
Mammals:	Woodland vole *(Microtus pinetorum)*	S: Special Concern
	BLUFF PRAIRIES AND OLD FIELDS	
Herps:	Five-lined skink *(Eumeces fasciatus)*	S: Special Concern
	Racer *(Coluber constrictor)*	S: Special Concern
	Gopher snake *(Pituophis catenifer)*	S: Special Concern
	Milk snake *(Lampropeltis triangulum)*	S: Element (1993: Special Concern)
	Timber rattlesnake *(Crotalus horridus)*	S: Threatened
	WETLANDS AND AQUATIC HABITATS	
Herps:	Pickerel frog *(Rana palustris)*	S: Element (1993: Special Concern)
	Snapping turtle *(Chelydra serpentina)*	S: Special Concern

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

Amphibian and Reptile Surveys		
Anuran surveys (3 within park)		
	T108N R08W SESW07	Deciduous forest/stream/pond
	T108N R08W NENE18	Deciduous forest/stream
	T108N R09W SENE12	Deciduous forest/stream
Herp searches (5 total)		
	T108N R08W NWSW07	Oak forest/dry prairie
	T108N R08W SWSW07	Oak forest/dry prairie
	T108N R08W NESW17	Oak woodland/dry prairie
	T108N R08W NENE18	Oak forest
	T108N R09W SENE12	Lowland hardwood forest/wetland
Drift fence (1 total)		
	T108N R09W SENE12	Deciduous forest/stream
Turtle trap (1 total)		
	T108N R09W SENE12	Wooded stream
Bird Surveys		
Point counts (12 total)		
	T108N R08W NWSW07	Oak forest
	T108N R08W NWSW07	Oak forest
	T108N R08W SWSW07	Oak forest
	T108N R08W SWSW07	Oak forest
	T108N R08W SESW07	Oak forest
	T108N R08W SESW07	Lowland hardwood forest
	T108N R08W SESW07	Oak forest
	T108N R08W NENW18	Oak forest
	T108N R08W NWNE18	Oak forest
	T108N R08W NWNE18	Oak forest
	T108N R08W SENE18	Oak forest
	T108N R09W SENE12	Oak forest
Playbacks (2 total)		
	T108N R08W SESW07	Lowland hardwood forest
	T108N R08W NENE18	Lowland hardwood forest
Mammal Surveys		
Trap grid (1 total)		
	T108N R09W NESE12	Oak forest

Table 4. Amphibians and reptiles documented at or near John A. Latsch State Park during MCBS surveys. (Species are associated with their primary habitats.)

Species	Within park	Near park
UPLAND DECIDUOUS FORESTS, FOREST OPENINGS, AND BRUSHLANDS		
Fox snake (*Elaphe vulpina*)	✔	
PRAIRIES AND OLD FIELDS		
Gopher snake (*Pituophis catenifer*)	✔	
Milk snake *(Lampropeltis triangulum)*		✔
WETLANDS AND AQUATIC HABITATS		
Spring peeper *(Pseudacris crucifer)*	✔	
Western chorus frog *(Pseudacris triseriata)*	✔	
Snapping turtle (*Chelydra serpentina*)	✔	
Painted turtle *(Chrysemys picta)*		✔
Common map turtle *(Graptemys geographica)*		✔
Northern watersnake *(Nerodia sipedon)*	✔	
HABITAT GENERALISTS		
American toad *(Bufo americanus)*	✔	
Eastern gray treefrog *(Hyla versicolor)*	✔	
Common garter snake *(Thamnophis sirtalis)*	✔	

Table 5. Breeding-season birds documented at or near John A. Latsch State Park during MCBS surveys. (Species are associated with their primary habitats)

Species	Within park	Near park
UPLAND DECIDUOUS FORESTS, FOREST OPENINGS, AND BRUSHLANDS		
Red-bellied woodpecker *(Melanerpes carolinus)*	✔	
Yellow-bellied sapsucker *(Sphyrapicus varius)*	✔	
Downy woodpecker *(Picoides pubescens)*	✔	
Hairy woodpecker *(Picoides villosus)*	✔	
Northern flicker *(Colaptes auratus)*	✔	
Pileated woodpecker *(Dryocopus pileatus)*	✔	
Eastern wood-pewee *(Contopus virens)*	✔	
Eastern phoebe *(Sayornis phoebe)*	✔	
Great crested flycatcher *(Myiarchus crinitus)*	✔	
White-breasted nuthatch *(Sitta carolinensis)*	✔	
House wren *(Troglodytes aedon)*	✔	
Winter wren *(Troglodytes troglodytes)*		✔
Blue-gray gnatcatcher *(Polioptila caerulea)*	✔	
Wood thrush *(Hylocichla mustelina)*	✔	
Gray catbird *(Dumetella carolinensis)*	✔	
Yellow-throated vireo *(Vireo flavifrons)*	✔	
Warbling vireo *(Vireo gilvus)*	✔	
Red-eyed vireo *(Vireo olivaceus)*	✔	
Blue-winged warbler *(Vermivora pinus)*	✔	
Cerulean warbler *(Dendroica cerulea)*	✔	
American redstart *(Setophaga ruticilla)*	✔	
Ovenbird *(Seiurus aurocapillus)*	✔	
Scarlet tanager *(Piranga olivacea)*	✔	
Northern cardinal *(Cardinalis cardinalis)*	✔	
Rose-breasted grosbeak *(Pheucticus ludovicianus)*	✔	
Song sparrow *(Melospiza melodia)*	✔	
White-throated sparrow *(Zonotrichia albicollis)*		✔
Brown-headed cowbird *(Molothrus ater)*	✔	
Baltimore oriole *(Icterus galbula)*	✔	

Table 5. Continued.

PRAIRIES AND OLD FIELDS		
Mourning dove *(Zenaida macroura)*	✔	
Sedge wren *(Cistothorus platensis)*		✔
Eastern bluebird *(Sialia sialis)*		✔
N. rough-winged swallow *(Stelgidopteryx serripennis)*	✔	
Indigo bunting (*Passerina cyanea)*	✔	
Chipping sparrow (*Spizella passerina)*	✔	
Field sparrow *(Spizella pusilla)*		✔
Vesper sparrow *(Pooecetes gramineus)*		✔
Henslow's sparrow *(Ammodramus henslowii)*		✔
Bobolink *(Dolichonyx oryzivorous)*		✔
Eastern meadowlark *(Sturnella magna)*		✔
American goldfinch *(Carduelis tristis)*	✔	
WETLANDS AND AQUATIC HABITATS		
Prothonotary warbler *(Protonotaria citrea)*		✔
Common yellowthroat *(Geothlypis trichas)*	✔	
Red-winged blackbird *(Agelaius phoeniceus)*	✔	
HABITAT GENERALISTS		
Blue jay *(Cyanocitta cristata)*	✔	
American crow *(Corvus brachyrhynchos)*	✔	
Black-capped chickadee *(Parus atricapillus)*	✔	
American robin *(Turdus migratorius)*	✔	
Cedar waxwing *(Bombycilla cedrorum)*	✔	

Table 6. Mammals documented at or near John A. Latsch State Park during MCBS surveys. (Species are associated with their primary habitats)

Species	Within Park	Near Park
UPLAND DECIDUOUS FORESTS, FOREST OPENINGS AND BRUSHLANDS		
Eastern mole *(Scalopus aquaticus)*	✔	
Eastern chipmunk *(Tamias striatus)*	✔	
Red squirrel (*Tamiasciurus hudsonicus*)	✔	
White-footed mouse *(Peromyscus leucopus)*	✔	
PRAIRIES AND OLD FIELDS		
13-lined ground squirrel *(Spermophilus tridecemlineatus)*		✔
Plains pocket gopher *(Geomys bursarius)*		✔
Meadow vole *(Microtus pennsylvanicus)*	✔	
WETLANDS AND AQUATIC HABITATS		
Meadow jumping mouse *(Zapus hudsonius)*	✔	
HABITAT GENERALISTS		
Masked shrew *(Sorex cinereus)*	✔	
N. short-tailed shrew *(Blarina brevicauda)*	✔	
White-tailed deer *(Odocoileus virginianus)*	✔	

Table 7. Percent relative abundance of small mammals captured at two sites in John A. Latsch State Park during MCBS animals surveys (refer to text for habitat descriptions).

Species	Percent abundance	
	trap grid	drift fence
Masked shrew *(Sorex cinereus)*	--	13
N. short-tailed shrew *(Blarina brevicauda)*	2	35
Red squirrel *(Tamiasciurus hudsonicus)*	2	--
White-footed mouse *(Peromyscus leucopus)*	96	22
Meadow vole *(Microtus pennsylvanicus)*	--	4
Meadow jumping mouse *(Zapus hudsonius)*	--	26

Appendix 1. Summary of rare features in John A. Latsch State Park tracked by the Natural Heritage Information System. ("*" Indicates natural 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 Natural Community (Type) Subtype
					NATURAL COMMUNITIES
			1991	2	Dry Prairie (Southeast) Bedrock Bluff subtype
			1991	1	Mixed Emergent Marsh (Prairie)
			1993	3	Oak Forest (Southeast) Mesic subtype
			1996	3	*Dry Cliff
			1993	1	*Lowland Hardwood Forest
			1993	1	*Maple-Basswood Forest
			1991	1	*Oak Woodland-Brushland
					RARE PLANTS
	NON	NON	1993	1	*Arabis laevigata* (Smooth rock-cress)
	NON	PSC	1991	1	*Dodecatheon amethystinum* (Jewelled shooting star)
	SPC	SPC	1991	1	*Panax quinquefolius* (American ginseng)
					RARE ANIMALS
	SPC	---	1993	5	*Dendroica cerulea* (Cerulean warbler)
	NON	SPC	1993	1	*Elaphe vulpina* (Fox snake)
END	THR	END	1987	1	*Falco peregrinus* (Peregrine falcon)
	SPC	SPC	1993	1	*Pituophis catenifer*

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, but they are rare and may become listed if they decline further; the code for these is NON. The code OFF is used for species not tracked on the database at that time (either presently or prior to July 1996). 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.

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.

Appendix 2. Natural Heritage Database Print-outs: An Explanation of Selected Fields

The Natural Heritage database is maintained by the Natural Heritage and Nongame Research Program, a unit within the Section of Ecological Services, Department of Natural Resources. It is the most complete source of data on Minnesota's rare, endangered, or otherwise significant plant and animal species, plant communities, and other natural features, and is used in fostering better understanding and protection of these rare features. The information in the database is drawn from many parts of Minnesota, and is constantly being updated, but it is not based on a comprehensive survey of the state. Therefore, there are currently many significant natural features present in the state which are not represented by the database. We are in the process of addressing this problem via the Minnesota County Biological Survey, a county-by-county inventory of rare natural features, which is now underway.

Full Record Printout (compressed version)

In the full record printout, the first line of each record contains the element name, the common name for plants and animals, and the occurrence number. The records are arranged by class (geologic processes; natural communities; other elements such as waterbird colonies, bat hibernacula, prairie chicken booming grounds; animals; plants), then alphabetically by element name, and finally by occurrence number. Additional fields are defined below. Some fields may not appear on your printout; not every field is displayed for all classes.

DNR Region: References the 6 DNR regions in the state.

State Status: Minnesota legal status of plant and animal species under the State Endangered Species Law. Status categories include Endangered, Threatened, Special Concern and No Legal Status (rare but not listed in the state). 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.

Federal Status: This field appears only for plant and animal species that have legal status under the federal Endangered Species Law - Endangered, Threatened and Candidate species (species that have been proposed for listing but have not yet been officially listed).

S Rank: The S (state) Rank assigned to natural community types and subtypes is intended to reflect the known extent and condition of the natural communities in Minnesota. Community types are ranked on a scale from 1 to 5; those ranked "1" are considered in greatest need of conservation action in the state, while

community types ranked "5" are considered secure under present conditions. A "?" following a rank (e.g. "S2?") is used in cases where only limited information is available on 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 perodically updated as inventory information becomes available.

Legal: This field contains the township, range and section numbers. Records have varying degrees of precision; some are listed only to the nearest section or sections, others are listed to the nearest 40 acres (e.g., SWNW32 means the SW1/4 of the NW1/4 of section 32). "0" is used as a place holder when a 1/2 section is specified (e.g., 0N03=north 1/2 of section 3). When a community overlaps section boundaries, both sections will be listed in the section field without punctuation (e.g., NE19NW20=NE1/4 of section 19 and NW1/4 of section 20). Often only the section number will be listed to protect exact locations.

Wildlife Area: The Section of Wildlife administrative number.

EO Size: The size in acres (often estimated) of natural communities.

EO Rank: An evaluation of the quality and condition of natural communities from A (highest) to D (lowest).

Current Status: Present protection status of a site from 0 (owner is not aware of record) to 9 (dedication as a Scientific and Natural Area).

Intended Status: Desired protection status. If a complete list of protection status codes is needed, please contact the Natural Heritage Program.

Quad Map: The U.S. Geologic topographic maps maintained by the Heritage Program.

Forestry District: The Division of Forestry's district number.

Site: The sitename allows the database to group occurrences that are located near each other. Usually this name refers to a county biological survey site; in other instances it is the name of a managed area, sometimes it is a more generic name that encompasses several managed areas and/or private land (e.g., sitename Felton Prairie pulls together occurrences on Felton Prairie SNA, Felton WMA and private lands), occasionally it is a colloquial name (Katinanta Bog); often it is a township name and section number.

CBS Site #: A number assigned to each county biological survey site. In each county, the numbering system begins with the number 1.

Latitude/longitude: The lat-long references the dots which are placed manually on the quad map files. There are various levels of precision in the original information, but this is not reflected in the lat-long data. For some of the data, particularly historical records, it was not possible to determine exactly where the original observation was made. Examples of this type of locational information would be "Fort Snelling", or "the south shore of Lake Owasso". During the manual mapping process for the least precise observations, the dot is placed in the center of the 7.5 minute quad map, and the lat-long coordinates are determined for the center of the dot. In cases where the occurrence is known within a quarter mile, the lat-long reflects the nearly exact location of the record.

Last Obs.: This records the date of the most recent information.

Ownership: Indicates whether the site is privately owned; for publicly owned land the agency with management responsibility is listed here.

Precision: This field indicates how precise the locational information is. There are six levels of precision: 1) occurrence is known within 1/4 mile radius (most precise level), 2) occurrence is known within 1/2 mile radius (usually within a section), 3) occurrence is known within one mile radius, 4) occurrence is known to exist within the quad map or general region, 5) occurrence is unmappable (often known only to the county level), 6) occurrence no longer exists at former location.

Managed Area(s): These are lands owned or managed by either a public agency or a private conservation organization such as The Nature Conservancy. If "(STATUTORY BOUNDARY)" occurs after the name of a managed area, the location is usually a private inholding within the statutory boundary of a state forest or state park. For many large managed areas such as national forests and most state forests, ownership information is often unknown.

Source: The collector or observer of the feature.

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.

Verification: This, in general, reflects the reliability of information. In the case of old plant

collections, the date of the collection determines whether the record is verified or unverified; collections before 1970 are unverified. The highest level of reliability is "verified" which usually indicates a collection was made or, as in the case of bird records, nesting was observed.

Remarks at end of records: The last 1-3 lines of each record contain more detailed notes about the occurrence, such as the number of individuals, descriptive information about habitat, associated species, etc.

Data Security

The 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. The most sensitive information is the locations of species of wildflowers, including orchids, endangered species such as the Dwarf trout lily, and economically valuable plants such as Ginseng, because these are vulnerable to exploitation by collectors. Bald eagle nesting sites are also considered to be sensitive to disturbance by curious on-lookers. For this reason, information from the Natural Heritage database should not be reproduced or published without permission from the Natural Heritage and Nongame Research Program. We are concerned that any publication for public distribution not identify the precise locations of the vulnerable plant species referred to above. One way to handle this would be to list only the sections in which the sensitive species occur. If this is not acceptable for your purposes, please call and discuss this issue with the Environmental Review Specialist for the Natural Heritage and Nongame Wildlife Research Program at 612/296-8279.

Another issue is the disturbance or eradication of a rare feature by development projects. If a threat to any of the features on your printout comes to your attention, please call the Environmental Review Specialist for the Heritage and Nongame Research Program.

Data Requests.

The Heritage Database is updated continuously. Of particular significance is the body of new records being generated by the Minnesota County Biological Survey. For this reason, it is important to forward data requests to the Natural Heritage and Nongame Wildlife Research Program. In addition, printouts can be organized by the data management staff to meet the particular needs of requesters. Requests for rare features data should be forwarded to Mary Miller at 612/296-8319 or Ellen Heneghan at 612/296-8279.

APPENDIX 3. NATURAL COMMUNITY RECORDS WITHIN JOHN A. LATSCH STATE PARK

Minnesota Natural Heritage Database — MARCH 1997 — 23:42 Monday, MARCH 17, 1997
Element Occurrence Records — MnDNR, Natural Heritage and Nongame Research Program — Copyright 1997 State of Minnesota DNR

T108N R08W SWNWSW07 WINONA COUNTY, MN
Element: DRY PRAIRIE (SOUTHEAST) BEDROCK BLUFF SUBTYPE #210 — Last Observed Date: 21 June 1991 — DNR Region: 5
S Rank: S3 — Wildlife Area: 510
EO Size: 3 acres approx. EO Rank: B — Current Status: — Intended Status: — Quad Map: COCHRANE (V22A) — Forestry District: 531
Site: JOHN A. LATSCH — CBS Site #: 16 — Latitude: 44 10' 10" Long: 91 50' 10"
Ownership: MN DNR Parks and Recreation — Precision: approx. boundaries have been determined
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DUNEVITZ,H.(CO BIOL SURVEY 1991) — Voucher: RELEVE 1991 Verification: verified
SMALL SIZE, BUT NATIVE DOMINATED. UPPER SLOPE DOM BY STIPA SPARTEA, LOWER SLOPE BY ANDROPOGON GERARDII. COMMON NATIVES: PANICUM LEIBERGII, SCHIZACHYRIUM SCOP, GALIUM BOREALE, AMORPHA CANESCENS, CAMPANULA ROTUNDIFOLIA, COREOPSIS PALMATA. POA PRATENSIS COMMON; SOME BRUSH ENCROACHMENT & THATCH BUILD-UP. SURROUNDED BY OAK FOREST, & ON NORTH-FACING BLUFF, LIMESTONE CLIFF. STEEP SOUTHWEST-FACING BLUFF ABOVE MISSISSIPPI RIVER. HIKING TRAIL ALONG EDGE OF PRAIRIE.

T108N R08W SENESW17 WINONA COUNTY, MN
Element: DRY PRAIRIE (SOUTHEAST) BEDROCK BLUFF SUBTYPE #211 — Last Observed Date: 14 August 1991 — DNR Region: 5
S Rank: S3 — Wildlife Area: 510
EO Size: 10 acres approx EO Rank: B — Current Status: — Intended Status: — Quad Map: COCHRANE (V22A) — Forestry District: 531
Site: JOHN A. LATSCH — CBS Site #: 16 — Latitude: 44 9' 15" Long: 91 48' 45"
Ownership: MN DNR Parks and Recreation — Precision: approx. boundaries have been determined
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DUNEVITZ,H.,CONVERSE,C.,BOLIN,K.(CO BIOL SURVEY 1991) — Voucher: Verification: verified
NATIVE-DOMINATED PRAIRIE, MODERATE NATIVE SPECIES RICHNESS, WOODY COVER ABOUT 20% (RHUS GLABRA, JUGLANS NIGRA, QUERCUS MACROCARPA). DOMINATED BY ANDROPOGON GERARDII & SORGHASTRUM NUTANS; BOUTELOUA CURTIPENDULA ABUNDANT; MUHLENBERGIA CUSP & SCHIZACHYRIUM SCOP COMMON; PASPALUM CILIATIFOLIUM DENSE ON EDGES. NOTED 16 FORB SPECIES. HEAVY THATCH BUILD-UP; NEEDS BURNING. SOUTH TO SE-FACING 33% SLOPE. MAPLE-BASSWOOD FOREST TO NORTH, PASTURE ABOVE, BRUSHY PRAIRIE TO WEST.

T108N R09W NWNESE12 WINONA COUNTY, MN
Element: MIXED EMERGENT MARSH (PRAIRIE) #22 — Last Observed Date: 14 August 1991 — DNR Region: 5
S Rank: S2 — Wildlife Area: 510
EO Size: 10 acres approx EO Rank: B — Current Status: — Intended Status: — Quad Map: COCHRANE (V22A) — Forestry District: 531
Site: JOHN A. LATSCH — CBS Site #: 16 — Latitude: 44 10' 15" Long: 91 50' 40"
Ownership: Private — Precision: approx. boundaries have been determined
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DUNEVITZ,H.,CONVERSE,C.,BOLIN,K.(CO BIOL SURVEY 1991) — Voucher: Verification: verified
TWO SMALL MARSHES SURROUNDED BY DISTURBED LOWLAND HARDWOOD FOREST. MARSH WITH PRIMARILY NATIVE SPECIES, BETTER SPECIES RICHNESS THAN MOST OTHER MARSHES IN COUNTY. COMMON SPP: ACORUS CALAMUS, TYPHA ANGUSTIFOLIA, CAREX CF LACUSTRIS, EUPATORIUM MACULATUM, E. PERFOLIATUM. EDGES WITH SOME SALIX NIGRA, SALIX DISCOLOR, OTHERWISE OPEN. SOIL NEWALBIN SILT LOAM. SMALL STREAM FLOWS THROUGH MARSH & INTO MISSISSIPPI RIVER. NARROW VALLEY BETWEEN 2 BLUFFS.

T108N R08W NWSW07 WINONA COUNTY, MN
Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #182 — Last Observed Date: 21 June 1991 — DNR Region: 5
S Rank: S2S3 — Wildlife Area: 510
EO Size: 30 acres approx EO Rank: AB — Current Status: — Intended Status: — Quad Map: COCHRANE (V22A) — Forestry District: 531
Site: JOHN A. LATSCH — CBS Site #: 16 — Latitude: 44 10' 10" Long: 91 50' 10"
Ownership: MN DNR Parks and Recreation — Precision: approx. boundaries have been determined
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DUNEVITZ,H.(CO BIOL SURVEY 1991) — Voucher: Verification: verified
FOREST DOM BY QUERCUS RUBRA; CANOPY INCLUDES TILIA, BETULA PAPYRIFERA. SUBCANOPY OF OSTRYA, TILIA. SHRUBS PATCHY, LOWER SLOPE WITH 50-60% COVER: PRUNUS VIRGIN, CORNUS ALT, RIBES, RUBUS. GROUNDLAYER DRY-MESIC, GOOD SPECIES RICHNESS, INCLUDES MAIANTHEMUM CAN, ADIANTUM PEDATUM, OTHERS. OCCASIONAL SNAGS. MODERATE AMOUNT WOODY LITTER. VERY STEEP N-FACING SLOPE ABOVE MISSISSIPPI RIVER WITH FREQUENT LIMESTONE & SANDSTONE OUTCROPS; MOSS & FERN-COVERED. HIKING TRAIL LOWER SLOPE.

APPENDIX 3. NATURAL COMMUNITY RECORDS WITHIN JOHN A. LATSCH STATE PARK

Minnesota Natural Heritage Database — MARCH 1997 — 23:42 Monday, MARCH 17, 1997
Element Occurrence Records — MnDNR, Natural Heritage and Nongame Research Program — Copyright 1997 State of Minnesota DNR

T108N R08W NW17NE18 WINONA COUNTY, MN
Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #183 — Last Observed Date: 14 August 1991 — DNR Region: 5
S Rank: S2S3 — Wildlife Area: 510
EO Size: 120 acres appro EO Rank: B Current Status: Intended Status: — Quad Map: COCHRANE (V22A) — Forestry District: 531
Site: JOHN A. LATSCH — CBS Site #: 16 — Latitude: 44 9' 45" Long: 91 49' 15"
Ownership: MN DNR Parks and Recreation — Precision: approx. boundaries have been determined
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DUNEVITZ,H.,CONVERSE,C.,BOLIN,K.(CO BIOL SURVEY 1991) — Voucher: — Verification: verified
OAK FOREST DOM BY QUERCUS RUBRA; CANOPY WITH Q. ALBA, Q. ELLIPSOIDALIS, Q. MACROCARPA, TILIA, CARYA OVATA. SUBCANOPY WITH OSTRYA, ULMUS SP. CANOPY COVER 90%, CANOPY TREES AVG 25 CM DBH, OCCAS OAKS TO 50 CM. SHRUB COVER 15%, UNARMED. GROUND LAYER DRY-MESIC. INCLUDES ABOUT 20 ACRES OF FOREST DOM BY ACER SACCHARUM WITH TILIA, BETULA PAP, Q. RUBRA, Q. ALBA, JUGLANS NIGRA. ON STEEP NE TO NW-FACING SLOPES ABOVE MISSISSIPPI RIVER. SURROUNDED BY MORE DISTURBED OAK FOREST.

T108N R09W 1213 WINONA COUNTY, MN
Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #185 — Last Observed Date: 06 August 1993 — DNR Region: 5
S Rank: S2S3 — Wildlife Area: 510
EO Size: 600 acres appro EO Rank: Current Status: Intended Status: — Quad Map: COCHRANE (V22A) — Forestry District: 531
Site: JOHN A. LATSCH — CBS Site #: 16 — Latitude: 44 10' 10" Long: 91 50' 45"
Ownership: MN DNR Parks and Recreation — Precision: approx. boundaries have been determined
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DUNEVITZ,H. & BOLIN,K.(CO BIOL SURVEY 1991) — Voucher: — Verification: verified
LARGE EXPANSE OF OAK FOREST ON SLOPES & FLAT UPLANDS ABVE MISSISSIPPI RIVER. BRIEFLY VISITED SEV PORTIONS: GENERALLY BC-C RANK. CANOPY DOM BY QUERCUS RUBRA & Q. MACROCARPA; Q. ALBA, JUGLANS CINEREA (DISEASED), J. NIGRA, BETULA PAPYRIFERA, CARYA CORDIFORMIS ALSO IN CANOPY. SUBCANOPY INCL TILIA, CELTIS, ULMUS SP, POPULUS TREM, QUERCUS SPP. OCCAS LARGE OAKS TO 80CM DBH. SOME GRAZING & SELECT LOGGING IN PORTIONS. NEEDS DETAILED HERITAGE SURV. ALSO IN T108N R8W SEC 7 & 18.

Appendix 4. Releves and a summary of plant species recorded in John A. Latsch State Park.

Explanation

This appendix contains information on two releves 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 releves in which each species occurs. The total number of plant records and the total number of species identified in the releves are given at the end of the list.

MINNESOTA NATURAL HERITAGE PROGRAM DNR RELEVE #:**0970**
Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4007
(612) 296-2835 **16:01 Monday, JANUARY 13, 1997**

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

GENERAL INFORMATION
Surveyor's Releve #: **1** EO Rec #: **0**
*Surveyor's ID Code: **WMA (S. Wieseler, C. Mickow, and W. Amberg)**
Date: **31** Month: **JUL** Year: **1991** (e.g. 04 JUL 1993)
CBS Site #: **16** or Site Name: **JOHN LATSCH SP, CBS 16**
DNR Ownership Code: **40 (Mn Dnr Parks and Recreation)**
*NC Code: **DPSEBB (Dry Prairie (Southeast) Bedrock Bluff Subtype)**
Commun. Ranking in Releve: Stand typical of Commun. Type:_ Releve typical of Stand:_

LOCATIONAL INFORMATION
State Code: **MN** *County Code: **85 (Winona)**
Quad Codes DNR: **V22A** Universal: **44091B7 (Cochrane)**
Township: **108N** (e.g. 143N) Range: **08W** (e.g. 32W)
QQRT: **NW** QRT: **SW** of Section **7**
Latitude: **44 degrees, 10 minutes, 12 seconds** LL/GPS registration:
Longitude: **91 degrees, 50 minutes, 13 seconds** *Accuracy: _ Marker: _

RELEVE INFORMATION
Releve Size (sq. m.): **80** Elev. (ft.): **1100** Slope: **50W** Slope Position: _
*ECS Subsection: **24 (Blufflands)**
Minnesota Soil Atlas Mapping Unit: **SSR**
*Geomorphic Unit: **40 (Red Wing-La Crescent Uplands)**

Remarks: **PRAIRIE TOO NARROW FOR 10 X 10 M RELEVE PLOT.**

OTHER DATA COLLECTED
Soils: **N** Forestry: **N** o=old growth y=forestry Water Chemistry: **N** Publication: **N**

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

Woody Needleleaf Evergreen, Height: .1-.5m, Cover almost absent
+.1 Juniperus communis (Bush juniper)

Woody Broadleaf Deciduous, Height: .1-2m, Cover almost absent
+.1 Quercus alba (White oak)
+.1 Rhus glabra (Smooth sumac)
+.2 Rubus parviflorus (Thimbleberry)

Graminoid, Height: .1-2m, Cover continuous
4.4 Bouteloua curtipendula (Side-oats grama)
3.4 Schizachyrium scoparium (Little Bluestem)
1.2 Andropogon gerardii (Big bluestem)
+.2 Elymus canadensis (Nodding wild-rye)
+.2 Muhlenbergia cuspidata ## 11 (Plains muhly)
+.2 Poa pratensis (Kentucky bluegrass)

---------- 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 ----------

DNR RELEVE #: **0970** continued

Forb, Height: .1-2m, Cover patchy

2.3 Galium boreale (Northern bedstraw)
1.1 Amorpha canescens (Lead-plant)
1.1 Coreopsis palmata (Stiff tickseed)
1.1 Helianthus rigidus ## 04 (Stiff sunflower)
1.1 Liatris cylindracea (Cylindric blazing-star)
1.1 Pulsatilla nuttalliana (Pasque-flower)
1.1 Solidago nemoralis (Gray goldenrod)
1.1 Solidago rigida (Stiff goldenrod)
+.1 Ambrosia artemisiifolia (Common ragweed)
+.1 Anemone virginiana (Thimbleweed)
+.1 Aquilegia canadensis (Columbine)
+.1 Aster sericeus (Silky aster)
+.1 Aster umbellatus ## 04 (Flat-topped aster)
+.1 Campanula rotundifolia (Harebell)
+.1 Euphorbia corollata (Flowering spurge)
+.1 Helianthus strumosus ## 04 (Woodland sunflower)
+.1 Monarda fistulosa (Wild bergamot)
+.1 Oenothera biennis (Common evening-primrose)
+.1 Petalostemon purpureum (Purple prairie-clover)
+.1 Ratibida pinnata (Gray-headed coneflower)
+.1 Tragopogon dubius (Yellow goat's-beard)

---------- 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 DNR RELEVE #:**6122**
Department of Natural Resources
500 Lafayette Road
St. Paul, Minnesota 55155-4007
(612) 296-2835 **16:10 Monday, JANUARY 13, 1997**

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

GENERAL INFORMATION
Surveyor's Releve #: EO Rec #: **0**
*Surveyor's ID Code: **HLD (Hannah L. Dunevitz)**
Date: **23** Month: **AUG** Year: **1996** (e.g. 04 JUL 1993)
CBS Site #: **0** or Site Name: **John Latsch State Park**
DNR Ownership Code: **40 (Mn Dnr Parks and Recreation)**
*NC Code: **OASEME (Oak Forest (Southeast) Mesic Subtype)**
Commun. Ranking in Releve:**AB** Stand typical of Commun. Type:_ Releve typical of Stand:_

LOCATIONAL INFORMATION
State Code: **MN** *County Code: **85 (Winona)**
Quad Codes DNR: **V22A** Universal: **44091B7 (Cochrane)**
Township: **108N** (e.g. 143N) Range: **08W** (e.g. 32W)
QQRT: **NW** QRT: **SW** of Section 7
Latitude: **44 degrees, 10 minutes, 10 seconds** LL/GPS registration:
Longitude: **91 degrees, 50 minutes, 17 seconds** *Accuracy: _ Marker: _

RELEVE INFORMATION
Releve Size (sq. m.): **400** Elev. (ft.): **900** Slope: **70N** Slope Position: _
*ECS Subsection: **0**
Minnesota Soil Atlas Mapping Unit: **SSR**
*Geomorphic Unit: **40 (Red Wing-La Crescent Uplands)**

Remarks: **Bluff in state park above Miss river. Occasional old snags. Plot just E of constructed trail, wooden steps. Soil sandy loam. Moderate amt coarse woody debris. Quercus rubra all sizes.**

OTHER DATA COLLECTED
Soils: **N** Forestry: **N** o=old growth y=forestry Water Chemistry: **N** Publication: **N**

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

Woody Broadleaf Deciduous, Height: 35->35m, Cover interrupted
4. Quercus rubra (Northern red oak)

Woody Broadleaf Deciduous, Height: 20-35m, Cover patchy
3. Quercus rubra (Northern red oak)
2. Tilia americana (Basswood)
R. Betula papyrifera OP (Paper birch)

Woody Broadleaf Deciduous, Height: 10-20m, Cover patchy
2. Prunus serotina (Black cherry)
2. Quercus rubra (Northern red oak)
1. Ulmus cf. americana (American elm)

---------- 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 ----------

DNR RELEVE #: **6122** continued

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

	2.	Cornus alternifolia	(Pagoda dogwood)
	2.	Prunus serotina	(Black cherry)
	2.	Tilia americana	(Basswood)
	2.	Ulmus cf. americana	(American elm)
	1.	Acer negundo	(Box elder)
	1.	Acer saccharum	(Sugar maple)
	1.	Cornus rugosa	(Round-leaved dogwood)
	1.	Fraxinus pennsylvanica	(Green ash)
	1.	Quercus rubra	(Northern red oak)
	R.	Quercus rubra DD	(Northern red oak)

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

	2.	Cornus alternifolia	(Pagoda dogwood)
	2.	Cornus rugosa	(Round-leaved dogwood)
	2.	Corylus americana	(American hazelnut)
	2.	Ribes	(Currant; Gooseberry)
	2.	Rubus cf. strigosus	(Red raspberry)
	1.	Cornus alternifolia	(Pagoda dogwood)
	1.	Fraxinus pennsylvanica	(Green ash)
	1.	Tilia americana	(Basswood)
	1.	Ulmus cf. americana	(American elm)
	+.	Cornus foemina	(Gray dogwood)
SPC	+.	Juglans cinerea	(Butternut)
	+.	Prunus virginiana	(Chokecherry)
	+.	Quercus rubra	(Northern red oak)
	+.	Sambucus canadensis	(Common Elder)

Climber, Height: .0-10m, Cover rare

	2.	Amphicarpaea bracteata	(Hog-peanut)
	2.	Parthenocissus quinquefolia	(Virginia creeper)
NON	2.	Vitis riparia	(Wild grape)
	+.	Rhus radicans	
	+.	Smilax hispida	(Green-briar)

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

	+.	Carex	(Sedge)
	R.	Unknown or Indeterminable Plant	

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

	2.	Aralia nudicaulis	(Wild sarsaparilla)
	2.	Desmodium glutinosum	(Pointed-leaved tick-trefoil)
	2.	Solidago flexicaulis	(Zig-zag goldenrod)
	1.	Aquilegia canadensis	(Columbine)
	1.	Aster cf. urophyllus	
	1.	Athyrium angustum	(Lady fern)
	1.	Circaea lutetiana	(Enchanter's nightshade)
	1.	Geranium maculatum	(Wild geranium)
	1.	Maianthemum canadense	(Canada mayflower)
	1.	Osmorhiza claytonii	(Sweet cicely)

---------- 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 ----------

DNR RELEVE #: **6122** continued

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

1. Phryma leptostachya (Lopseed)
1. Smilacina racemosa (False Solomon's-seal)
+. Adiantum pedatum (Maidenhair fern)
+. Anemone quinquefolia
+. Arisaema triphyllum (Jack-in-the-pulpit)
+. Equisetum hyemale (Tall scouring-rush)
+. Eupatorium rugosum (Common snakeroot)
+. Galium boreale (Northern bedstraw)
+. Hackelia virginiana (Virginia stickseed)
+. Ranunculus abortivus (Kidney-leaf buttercup)
+. Smilacina stellata (Starry false Solomon's-seal)
+. Solidago cf. speciosa (Showy goldenrod)
R. Cirsium (Common Thistle; Plumed Thistle)

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

+. 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 ----------

Summary of plant species for 2 selected releves.

#	SpCode	Species Name
1	ACERNEGU	Acer negundo (Box elder)
1	ACERSAC2	Acer saccharum (Sugar maple)
1	ADIAPEDA	Adiantum pedatum (Maidenhair fern)
1	AMBRARTE	Ambrosia artemisiifolia (Common ragweed)
1	AMORCANE	Amorpha canescens (Lead-plant)
1	AMPHBRAC	Amphicarpaea bracteata (Hog-peanut)
1	ANDRGERA	Andropogon gerardii (Big bluestem)
1	ANEMQUIN	Anemone quinquefolia var. bifolia
1	ANEMVIRG	Anemone virginiana (Thimbleweed)
2	AQUICANA	Aquilegia canadensis (Columbine)
1	ARALNUDI	Aralia nudicaulis (Wild sarsaparilla)
1	ARISTRIP	Arisaema triphyllum (Jack-in-the-pulpit)
1	ASTESERI	Aster sericeus (Silky aster)
1	ASTEUMBE	Aster umbellatus (Flat-topped aster)
1	ASTEUROP	Aster urophyllus
1	ATHYANGU	Athyrium angustum (Lady fern)
1	BETUPAPY	Betula papyrifera (Paper birch)
1	BOUTCURT	Bouteloua curtipendula (Side-oats grama)
1	CAMPROTU	Campanula rotundifolia (Harebell)
1	CAREX	Carex (Sedge)
1	CIRCLUTE	Circaea lutetiana ssp. canadensis (Enchanter's nightshade)
1	CIRSIUM	Cirsium (Common Thistle; Plumed Thistle)
1	COREPALM	Coreopsis palmata (Stiff tickseed)
1	CORNALTE	Cornus alternifolia (Pagoda dogwood)
1	CORNFOEM	Cornus foemina ssp. racemosa (Gray dogwood)
1	CORNRUGO	Cornus rugosa (Round-leaved dogwood)
1	CORYAMER	Corylus americana (American hazelnut)
1	DESMGLUT	Desmodium glutinosum (Pointed-leaved tick-trefoil)
1	ELYMCANA	Elymus canadensis (Nodding wild-rye)
1	EQUIHYEM	Equisetum hyemale var. affine (Tall scouring-rush)
1	EUPARUGO	Eupatorium rugosum (Common snakeroot)
1	EUPHCORO	Euphorbia corollata (Flowering spurge)
1	FRAXPENN	Fraxinus pennsylvanica (Green ash)
2-	GALIBORE	Galium boreale ssp. septentrionale (Northern bedstraw)
1	GERAMACU	Geranium maculatum (Wild geranium)
1	HACKVIRG	Hackelia virginiana (Virginia stickseed)
1	HELIRIGI	Helianthus rigidus (Stiff sunflower)
1	HELISTRU	Helianthus strumosus (Woodland sunflower)
1	JUGLCINE	Juglans cinerea (Butternut)
1	JUNICOMM	Juniperus communis var. depressa (Bush juniper)
1	LIATCYLI	Liatris cylindracea (Cylindric blazing-star)
1	MAIACANA	Maianthemum canadense (Canada mayflower)
1	MONAFIST	Monarda fistulosa (Wild bergamot)
1	MUHLCUSP	Muhlenbergia cuspidata (Plains muhly)
1	OENOBIEN	Oenothera biennis (Common evening-primrose)
1	OSMOCLAY	Osmorhiza claytonii (Sweet cicely)
1	PARTQUIN	Parthenocissus quinquefolia (Virginia creeper)
1	PETAPURP	Petalostemon purpureum (Purple prairie-clover)
1	PHRYLEPT	Phryma leptostachya (Lopseed)
1	POA PRAT	Poa pratensis (Kentucky bluegrass)
1	PRUNSERO	Prunus serotina (Black cherry)
1	PRUNVIRG	Prunus virginiana (Chokecherry)
1	PULSNUTT	Pulsatilla nuttalliana (Pasque-flower)
1	QUERALBA	Quercus alba (White oak)
1	QUERRUBR	Quercus rubra (Northern red oak)
1	RANUABOR	Ranunculus abortivus (Kidney-leaf buttercup)
1	RATIPINN	Ratibida pinnata (Gray-headed coneflower)
1	RHUSGLAB	Rhus glabra (Smooth sumac)
1	RHUSRADI	Rhus radicans
1	RIBES	Ribes (Currant; Gooseberry)
1	RUBUPARV	Rubus parviflorus (Thimbleberry)
1	RUBUSTRI	Rubus strigosus (Red raspberry)
1	SAMBCANA	Sambucus canadensis (Common Elder)
1	SCHISCOP	Schizachyrium scoparium (Little Bluestem)
1	SMILHISP	Smilax hispida (Green-briar)
1	SMILRACE	Smilacina racemosa (False Solomon's-seal)
1	SMILSTEL	Smilacina stellata (Starry false Solomon's-seal)
1	SOLIFLEX	Solidago flexicaulis (Zig-zag goldenrod)
1	SOLINEMO	Solidago nemoralis (Gray goldenrod)
1	SOLIRIGI	Solidago rigida (Stiff goldenrod)
1	SOLISPEC	Solidago speciosa (Showy goldenrod)

Summary of plant species for 2 selected releves.

#	SpCode	Species Name
1	TILIAMER	Tilia americana (Basswood)
1	TRAGDUBI	Tragopogon dubius (Yellow goat's-beard)
1	ULMUAMER	Ulmus americana (American elm)
1	UNKNOWN	UNKNOWN

77 total plant records, 76 species from 2 releves.

Releve Numbers included

0970	6122

Element: DODECATHEON AMETHYSTINUM (JEWELLED SHOOTING STAR) #25
State Status: No Legal Status
EO Size: EO Rank: B Current Status: 1 Intended Status: 6
Site: JOHN A. LATSCH CBS Site #: 16
Ownership: MN DNR Parks and Recreation
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DUNEVITZ,H.(519)

Location: WINONA COUNTY, MN
Legal : T108N R08W NWSWNW17
Quad Map: COCHRANE (V22A)
Latitude: 44 9' 37" Long: 91 49' 6"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 14 August 1991

Voucher: MIN Verification: verified

LEDGE ABOVE NORTHEAST FACING BLUFF ABOVE THE MISSISSIPPI RIVER 1/2 MILE NW OF WHITMAN. IN PARTIAL SHADE AT EDGE OF MIXED OAK FOREST ON THIN SOIL, ABOUT 1 M FROM EDGE OF LEDGE. BETWEEN 50 AND 75 PLANTS IN 5 SQUARE METER AREA, MANY WITH CAPSULES. ASSOCIATED SPECIES INCLUDE: GALIUM BOREALE, MAIANTHEMUM CANADENSE, SYMPHORICARPOS ALBA.

Element: PANAX QUINQUEFOLIUS (AMERICAN GINSENG) #87
State Status: SPECIAL CONCERN
EO Size: EO Rank: C Current Status: 1 Intended Status: 6
Site: JOHN A. LATSCH CBS Site #: 16
Ownership: MN DNR Parks and Recreation
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DUNEVITZ,H.(520)

Location: WINONA COUNTY, MN
Legal : T108N R08W SWNENE18
Quad Map: COCHRANE (V22A)
Latitude: 44 9' 40" Long: 91 49' 22"
Precision: within 0.25 mile, confirmed

DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 14 August 1991

Voucher: MIN Verification: verified

ON STEEP NORTHWEST FACING SLOPE ABOVE INTERMITTENT STREAM, 1/4 MI SOUTH OF MISSISSIPPI RIVER AND 1 MI NORTHWEST OF WHITMAN. IN MESIC MIXED OAK FOREST DOMINATED BY QUERCUS RUBRA. TWO PLANTS SEEN DURING BRIEF VISIT, ONE MID-SLOPE AND ONE ON LOWER SLOPE. BOTH WITH 3 LEAVES, WITH FRUIT. ASSOCIATED SPECIES INCLUDE: SOLIDAGO FLEXICAULIS, GALIUM BOREALE, RHUS RADICANS.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #23 Location: WINONA COUNTY, MN DNR Region: 5
State Status: SPECIAL CONCERN Legal : T108N R08W NWSW07 Wildlife Area: 510
EO Size: EO Rank: Current Status: Intended Status: Quad Map: COCHRANE (V22A) Forestry District: 531
Site: JOHN A. LATSCH CBS Site #: 16 Latitude: 44 10' 17" Long: 91 50' 17" Last Obs.: 23 June 1993
Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: STUCKER,S.(CO BIOL SURVEY 1993) Voucher: Verification: sight or sound rec.
BREEDING SEASON OBSERVATION. TWO SINGING MALES HEARD. HABITAT WAS OAK AND MAPLE-BASSWOOD FOREST AT/NEAR PARK PICNIC AREA. NUMEROUS LARGE TREES.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #24 Location: WINONA COUNTY, MN DNR Region: 5
State Status: SPECIAL CONCERN Legal : T108N R08W SESW07 Wildlife Area: 510
EO Size: EO Rank: Current Status: Intended Status: Quad Map: COCHRANE (V22A) Forestry District: 531
Site: JOHN A. LATSCH CBS Site #: 16 Latitude: 44 9' 58" Long: 91 49' 56" Last Obs.: 23 June 1993
Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: STUCKER,S.(CO BIOL SURVEY 1993) Voucher: Verification: sight or sound rec.
BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD. HABITAT WAS DIVERSE LOWLAND HARDWOOD FOREST, WITH PAPER BIRCH, OAK, WALNUT, ASH, ELM & BOXELDER. OAK FOREST ON ADJACENT SLOPES.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #25 Location: WINONA COUNTY, MN DNR Region: 5
State Status: SPECIAL CONCERN Legal : T108N R08W NWNE18 Wildlife Area: 510
EO Size: EO Rank: Current Status: Intended Status: Quad Map: COCHRANE (V22A) Forestry District: 531
Site: JOHN A. LATSCH CBS Site #: 16 Latitude: 44 9' 47" Long: 91 49' 30" Last Obs.: 24 June 1993
Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: STUCKER,S. & BARDON,K.(CO BIOL SURVEY 1993) Voucher: Verification: sight or sound rec.
BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD. HABITAT WAS OAK FOREST ON SLOPES/VALLEY.

Element: DENDROICA CERULEA (CERULEAN WARBLER) #26 Location: WINONA COUNTY, MN DNR Region: 5
State Status: SPECIAL CONCERN Legal : T108N R08W NWNW17 Wildlife Area: 510
EO Size: EO Rank: Current Status: Intended Status: Quad Map: COCHRANE (V22A) Forestry District: 531
Site: JOHN A. LATSCH CBS Site #: 16 Latitude: 44 9' 42" Long: 91 49' 6" Last Obs.: 24 June 1993
Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: STUCKER,S. & BARDON,K.(CO BIOL SURVEY 1993) Voucher: Verification: sight or sound rec.
BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD HABITAT WAS OAK FOREST ON STEEP SLOPE ADJACENT TO MISSISSIPPI RIVER.

APPENDIX 6. RARE ANIMAL SPECIES OCCURRENCES WITHIN JOHN A. LATSCH STATE PARK

Minnesota Natural Heritage Database — 14:22 Wednesday, JUNE 18, 1997
Element Occurrence Records — MnDNR, Natural Heritage and Nongame Research Program — Copyright 1997 State of Minnesota DNR

Element: DENDROICA CERULEA (CERULEAN WARBLER) #27
State Status: SPECIAL CONCERN
EO Size: EO Rank: Current Status: Intended Status:
Site: JOHN A. LATSCH CBS Site #: 16
Ownership: MN DNR Parks and Recreation
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: STUCKER,S. & BARDON,K.(CO BIOL SURVEY 1993)
Location: WINONA COUNTY, MN
Legal : T108N R08W SWNE18
Quad Map: COCHRANE (V22A)
Latitude: 44 9' 33" Long: 91 49' 30"
Precision: within 0.25 mile, confirmed
Voucher: Verification: sight or sound rec.
DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 24 June 1993
BREEDING SEASON OBSERVATION. ONE SINGING MALE HEARD. HABITAT WAS OAK FOREST IN DRY STREAM VALLEY, W/ADJACENT FORESTED SLOPES. NEAR JOHN LATSCH STATE WAYSIDE.

Element: ELAPHE VULPINA (FOX SNAKE) #84
State Status: No Legal Status
EO Size: EO Rank: Current Status: Intended Status:
Site: JOHN A. LATSCH CBS Site #: 16
Ownership: MN DNR Parks and Recreation
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DAVIS,J. (CO BIOL SURVEY 1993)
Location: WINONA COUNTY, MN
Legal : T108N R08W NWNW17
Quad Map: COCHRANE (V22A)
Latitude: 44 9' 43" Long: 91 49' 3"
Precision: within 0.25 mile, confirmed
Voucher: Verification: verified
DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 07 May 1993
ONE FOX SNAKE FOUND DEAD ON SOUTHBOUND LANE OF HWY 61. FORRESTED HILLS AND BLUFF PRAIRIE TO THE WEST. MISSISSIPPI RIVER TO THE EAST. COLLECTED AS SPECIMEN.

Element: FALCO PEREGRINUS (PEREGRINE FALCON) #26
State Status: THREATENED Federal Status: ENDANGERED
EO Size: EO Rank: A Current Status: 1 Intended Status: 6
Site: JOHN A. LATSCH CBS Site #: 16
Ownership: MN DNR Parks and Recreation
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: FULLER,M.R., STRUTHERS,D.R. AND REDIG,P.T.
Location: WINONA COUNTY, MN
Legal : T108N R08W 0S07
Quad Map: COCHRANE (V22A)
Latitude: 44 9' 55" Long: 91 49' 36"
Precision: within 0.50 mile
Voucher: Verification: verified
DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 1987
NESTING AREA. JOHN LATSCH STATE PARK. FAITH, HOPE AND CHARITY CLIFFS, 13.6 MI NW
WINONA, 100 FT CLIFFS FACE NE, 2.4 MI LONG, INTERRUPTED. BIRDS NESTED ON HOPE, PRE AND POST WAR. SURVEYED 8/23/75. NESTING ATTEMPTS IN 1986 AND 1987!

Element: PITUOPHIS CATENIFER (GOPHER SNAKE) #63
State Status: SPECIAL CONCERN
EO Size: EO Rank: Current Status: Intended Status:
Site: JOHN A. LATSCH CBS Site #: 16
Ownership: MN DNR Parks and Recreation
Managed Area(s): JOHN A. LATSCH STATE PARK
Source: DAVIS,J. (CO BIOL SURVEY 1993)
Location: WINONA COUNTY, MN
Legal : T108N R08W SWSW07
Quad Map: COCHRANE (V22A)
Latitude: 44 9' 58" Long: 91 50' 12"
Precision: within 0.25 mile, confirmed
Voucher: Verification: photo rec.
DNR Region: 5
Wildlife Area: 510
Forestry District: 531
Last Obs.: 08 May 1993
ONE BULLSNAKE CAPTURED WHILE IT BASKED BETWEEN ROCKS IN GRASSY OPENING OF OAK FOREST. EXPOSED ROCK LEDGE SURROUNDED BY SHRUBS, GRASSES, MAMMAL BURROWS AND OAK TREES. PHOTOGRAPHED AND RELEASED.

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