

# Inventory of Biological Features in Beaver Creek Valley State Park Houston County, Minnesota

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# INVENTORY OF BIOLOGICAL FEATURES IN BEAVER CREEK VALLEY STATE PARK HOUSTON COUNTY, MINNESOTA

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#### INTRODUCTION

Beaver Creek Valley State Park (BCV) is an excellent example of a natural area within the Paleozoic Plateau, a landform region in southeast Minnesota defined by its geology (Hargrave et.al. 1992; Sloan and Austin 1966). The Paleozoic Plateau, also known as the Blufflands Biocultural Region (MN DNR 1980), is a rugged landscape dominated by bedrock exposures of dolomitic limestone, sandstone and shale. These sedimentary rocks were deposited by ancient seas during the Cambrian and Ordovician ages of the Paleozoic era. The region was formerly called the "driftless area" because it was thought to be unglaciated during the pleistocene; however, recent evidence suggests that the area was repeatedly glaciated more than 500,000 years ago (Hallberg et.al. 1984). After the glaciers receded, streams eroded a dendritic network of steep valleys into the bedrock leaving narrow bluffs whose mesa-like crests rise 600 feet above the floodplain of the Mississippi River. The natural communities found within the dissected topography of the Paleozoic Plateau harbor some of Minnesota's rarest plant and animal species.

Since 1990, the Minnesota County Biological Survey (MCBS) has been collecting biological information on the distribution and status of rare animals, rare plants and natural communities within the Paleozoic Plateau. The MCBS was established in 1987 in recognition of the need to assess the status of the state's biological diversity and its unique natural resources. It is a county-by-county survey housed within the Minnesota Department of Natural Resources (MN DNR), Division of Fish and Wildlife, Section of Wildlife. The fundamental objective of the MCBS is to systematically identify locations of Minnesota's natural areas, their component natural communities and rare species. Location information and associated ecological data on all natural areas, natural communities and rare species are entered into the Natural Heritage Information System (NHIS). Natural area and community boundaries are digitized into an ARC/INFO GIS, and all point locations of rare species are digitally recorded as geographic coordinates. Information from the NHIS Rare Features Database is available as printed abstracts describing the characteristics of each rare features location (e.g. observer, date of information, number of plants, eggs per nest, condition of prairie due to grazing, etc.)

During 1992-93, MCBS conducted biological surveys in Houston County. In 1993, MCBS and the Division of Parks and Recreation prepared a cooperative agreement whereby the latter provided additional funds to intensify survey efforts within BCV and to establish permanent vegetation plots. In addition, a detailed map of the park's vegetation was produced.

This report is an assessment by the MCBS of the rare natural features within BCV and includes data collected prior to the MCBS inventory. It documents the location of the park's rare features and sensitive habitats and provides baseline information for natural history interpretation, future management, monitoring and research of the park's natural resources.

Part 1. Survey of natural communities and plants in Beaver Creek Valley State Park by the Minnesota County Biological Survey

prepared by Scott Zager, plant ecologist

### NATURAL COMMUNITY INVENTORY

Natural areas are remnants of native vegetation that have escaped significant human alteration. They represent the Minnesota landscape prior to European settlement in the 1850's. Such areas are made up of natural communities which are distinct assemblages of native plants and animals living together under similar environmental conditions. Natural communities are classified and described by considering vegetation, successional status, topography, hydrology, landforms, substrates, soils and natural disturbance regimes (e.g., wild fires, wind storms, normal flood cycles, and normal infestation by native insects and micro-organisms). The Natural Heritage Program has developed the classification of natural communities used by MCBS to evaluate potential natural areas (Minnesota Natural Heritage Program 1992).

With the exception of certain wetlands, natural communities have no legal protection in Minnesota. However, the Natural Heritage Program (NHP) considers the identification, protection and management of natural communities and ecosystems a high priority. NHP has evaluated community types for their relative rarity and endangerment throughout their range. 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 communities in BCV were initially delineated by the MCBS plant ecologist from interpretations of color infrared aerial photographs, both spring leaf-off and fall leaf-on (NAPP 1991; MN DNR Forestry 1992). These areas were transcribed onto USGS 7.5 minute topographical maps and visited by the plant ecologist during the 1992-93 field seasons.

Other sources of natural resource data were consulted to help prioritize survey efforts and provide supplemental information for the classification and ranking of natural communities: forest inventory data and cover maps from the DNR Forestry Cooperative Stand Assessment (CSA); the BCV management plan (MN DNR 1980); historic notes of the park's vegetation from the 1853 Public Land Survey; and the Soil Survey of Houston County (USDA 1984). The geological classification of bedrock strata within cliff escarpments observed in BCV was based upon University of Minnesota geologic maps (Mossler 1983).

The MCBS plant ecologist identified each area according to its natural community type. These natural communities were evaluated for their ecological quality and assigned a community rank from "A" through "D". An "A" ranking represents near pristine conditions with only minor human disturbance. For example, an oak forest that has not been grazed by livestock or cut for timber would be assigned an "A" rank. Conversely, a "D" rank defines an area with very poor ecological qualities, such as a recently logged oak forest with frequent grazing where few species characteristic of an oak forest are found.

Natural communities in BCV were also categorized according to their ecological significance as high, medium or low. The ecological significance rating for a natural community was derived from several

factors including the state endangerment rank, community quality rank, species diversity and proximity to other important communities.

The final boundaries of the natural communities were digitized using ARC/INFO GIS. A vegetation map based on the natural community classification was prepared for BCV.

#### <u>Results</u>

There were eleven types of natural communities mapped within the park (Figure 1). Communities extending outside of the park borders were included in the analysis in order to fully illustrate the complex and variable shapes of the natural communities. Figure 1 should be viewed within the larger context of a landscape predominated by agricultural land and previously cut forests. The sinuous patterns created by the natural communities closely follow the topographic contours of the valley and demonstrate the relationship of natural communities to characteristic landscape features such as elevation, aspect, soil type and bedrock escarpments.

There are 84 locations in the park of natural communities of varying quality ranked "A" to "D". In addition, there are 13 agricultural areas, 1 old field and 1 large area of park development. These locations represent homogeneous areas in regard to their natural community type and community quality rank. The relatively high number of natural community occurrences within BCV can be attributed to topographic variation and patterns created by historic and present land use. The total acreage of the 99 polygons mapped in Figure 1 is 1,497.9 (the statutory boundaries of the park contain 1,214 acres; 674 acres are state owned (MN DNR 1980)).

Table 1 summarizes the total acreage of the 11 natural community types and shows the range of area sizes for each community type regardless of quality. For example, there are 7 areas classified as algific talus slopes with a combined total of 10.3 acres with the smallest area being about 0.3 acre in size and the largest 2.0 acres. The average size for algific talus slopes in BCV was about 1.5 acres. In contrast, there are 33 areas of oak forests ranging in size from an isolated 2.0 acre tract to a D-ranked oak forest of 67.6 acres; however, the majority of oak forests are about 20 acres in size.

Natural communities were tabulated by quality rank and percent total area in Table 2. It is apparent that oak forest, excluding the mesic and dry subtypes, covers nearly 46% of the park surface. However, nearly half of these communities are so badly disturbed (D-ranked: 19.1%) that they can no longer be considered a "natural community". Yet, 22.7% of all the park's natural communities are ranked "BC" quality or better: a combined total of 340.5 acres of high-quality natural areas! This is geographically illustrated on the map in Figure 2, which portrays the natural communities by their quality ranking.

Over 18% of the park contains natural community types which are considered "endangered" in the state of Minnesota. Of these, only one-third or 7.1% of the park (106 acres) are categorized as endangered communities with a State Rank of 2 and a quality rank of "BC" or better.

Table 3 and the map in Figure 3 summarize the ecological significance of the natural communities. Within the mapped area, 15.6% (233.67 acres) are designated as having high ecological significance. These areas are coded red in Figure 3. The six polygons with high ecological significance but low community quality (CD-D) are overgrown bluff prairies, maple basswood forests, and algific talus slopes. These areas may have degraded vegetation yet still provide important habitats for rare species.

# **RELEVE SAMPLE PLOTS OF VEGETATION**

#### Methods

Releve sampling is a method of summarizing vegetation within a previously defined area that has already been classified by some ecological criteria. Releve procedures are described in the Natural Heritage Program's releve handbook (Almendinger 1987).

Releve plots were 400 square meters for forested communities, and 100 square meters for prairies. Locations for permanent releve plots were selected to characterize BCV's natural community types. Multiple plots were established in some natural community types in an attempt to document the range of variability observed in BCV.

Permanent plots were marked with orange metal stakes driven into the upper right-hand corner of the releve plot as one faces upslope with a clinometer. Each stake is identified with a numbered tag. The releve boundaries and stake location are included in photocopies of the original data sheets. In 1994, the MCBS will return to these plots to record latitudes and longitudes with a GPS satellite positioning unit. GPS data will then be post-processed for greater accuracy.

The species and cover abundance of plants found within a releve are recorded by life-form group and height stratum. Life-form group refers to categories such as conifers, deciduous trees, grasses, etc. Species abundance was recorded by estimating the percent cover for each species of a life-form group that occurred in each of the different height layers or strata. Therefore some species were recorded more than once in a releve when they occurred in different height strata. In addition, the diameter breast height (DBH) for each tree over 7.5 centimeters was recorded by species; saplings between 3.5-7.5 cm and seedlings under 3.5 cm were counted for each species. Releve data were entered into the NHIS Releve Database.

# **Results**

The MCBS established 12 permanent plots in 6 types of natural communities. Locations of the permanent plots are shown in Figure 4 and are indexed in Table 4 by their NHIS releve database number, field tag number, field data-sheet number, natural community type, date sampled and legal location.

In general, the releve data show the cover abundance of each species in the plot for each layer of vegetation: canopy, subcanopy, shrub layer, seedling layer and herbaceous layer. The height range of each stratum is given in the data sheet. When resampled, these permanent plots may show large scale transformations in plant associations over time as natural communities change due to management or natural succession. Occasionally rare plants were found within the plot and the releve assessment may be considered a very rough estimate of its population size. The data for these plots are available from NHP. Interpretations for codes in the data are in the releve handbook (Almendinger 1987).

# **RARE PLANT INVENTORY**

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. 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, MCBS tracks rare species that are not legally listed or protected. These fall into the categories of Federal candidate species: proposed endangered, proposed threatened and proposed special concern. Other rare species requiring further field survey to determine their

status are designated as non-listed rare species.

#### Methods

The MCBS plant ecologist complied a list of rare plants which could potentially occur in BCV. These were inferred from their range of distribution, habitat preference and past collections in the vicinity (Ownbey and Morley 1991; Hartley 1962; Moore and Huff 1947; Wheeler and Ownbey 1984; Wheeler 1985). In 1992-93, the plant ecologist searched BCV for rare plants as part of his regular duties. In 1993, MCBS hired a seasonal botanist who conducted an intensive search throughout the park and assisted in sampling vegetation plots. Plant specimens were collected when populations were of adequate size, labeled and deposited into the Herbarium of the University of Minnesota, Saint Paul. Attributes pertaining to rare plant occurrences were recorded in NHIS and digitally recorded in the ARC/INFO GIS.

# **Results**

There are 27 rare plant species listed for BCV with a total of 41 occurrences. Two-thirds of these were found by the MCBS during the 1992-93 field seasons. MCBS found 16 rare species never before documented in the park. In addition, the MCBS documented 10 new occurrences of previously known species at different locations within the park. The occurrences of all rare plant species found in BCV are plotted on Figure 5. The legend in Figure 5 lists the scientific and common names of these plants along with their Minnesota legal status. The element name and its occurrence number refer to the Element Occurrence Record (EOR) in the NHIS Rare Features Database.

#### DISCUSSION

Beaver Creek Valley State Park is one of the most biologically rich landscapes in southeast Minnesota as evidenced by the number of rare features documented within such a relatively small area. For example, the concentration of rare plants in the northwest quarter of section 17 reflects the high quality and ecological significance of the natural communities they occupy (Figure 1). Fourteen occurrences of rare plants (33.3% of all rare plant records for BCV) inhabit 7 contiguous natural communities, having a combined acreage of 51.3 acres or 3.4% of the area mapped in Figure 1. In addition, the MCBS animal survey documented 7 occurrences of rare animals in this area - 21% of BCV records (Figure 7).

Another important measure of the park's biodiversity includes the spatial relationships of natural communities including their size, shape and proximity to one another within a landscape. In Houston County nearly all level ground has been converted to human use. BCV is one of the very few areas in the county where a relatively broad alluvial plain is left in a natural state. Just as important is that these lowland corridors are adjacent to dry prairies and natural forests of the highest quality.

Several areas within BCV represent the best examples of their natural community types extant in Houston County. These are discussed as follows in order of their ecological significance.

# **Talus Slope Algific Subtype**

This is probably one of the rarest natural community types in southeastern Minnesota with a state endangerment rank of "2" and is considered "endangered" throughout its range in Minnesota. Algific talus slopes are so fragile that mere walking upon them can instigate their demise. The soil types on the steep-sided bluffs are extremely vulnerable to erosion. According to Frest (1987), who studied many of the algific talus slopes throughout the Paleozoic Plateau in Wisconsin, Illinois, Iowa and Minnesota; algific talus slopes require five main features in order to maintain the cool microhabitat through the summer:

- Small upland sinks (karst holes/small fissures) which vent air and water through vertical and horizontal fissures created by ice-wedging of large dolomite blocks which slip along strata of shales or bentonite. The substrate is comprised of sedimentary rock formed during the middle-to-upper Ordovician Period (principally Prairie Du Chien and Galena Groups and predominantly Wise lake, Dunleith and Blanding formations). In Prairie Du Chien formations, the underlying strata of Jordan sandstone is the impermeable layer.
- Persistent ice is stored within the rock strata. Typically this shrinks from May to October and expands from November to April while emitting cold air continuously throughout the year and cold water from May to October (often there is a spring at the talus base).
- Horizontal fissures, connected to the ice reservoir along a relatively impervious strata (usually shale, bentonite or shaley, cherty carbonate rock), terminate abruptly in orifices on side-slopes covered by talus.
- The talus accumulates at the bases of individual slopes and cliffs as debris dislodged from the bedrock and mantled with colluvial soil to a maximum depth of 12 cm.
- Algific talus slopes are characteristically found on forested, north-facing, steep slopes along edges of natural escarpments and deep stream valleys.

Several species of land snails are found only in algific talus slopes. They are thought to be relict species and northern disjuncts which have survived in these cold habitats since the pleistocene ice age. The rare plant, Golden saxifrage (*Chrysosplenium iowense*) is "widely distributed in the arctic" but in the continental United States, it is found only on "cold air slopes" within the Paleozoic Plateau (Gleason and Cronquist 1991).

Minnesota has 55 element occurrence records for algific talus slopes but only 8 are "B" quality or better. Houston County has 19 algific talus slope records, all but two algific slopes (one "B" ranked and one "C" ranked) are badly degraded or otherwise do not maintain cold air flow through the summer. There are 7 algific talus slopes mapped in Figure 1.

There are 6 occurrences of golden saxifrage in Minnesota - 5 of these are in Fillmore county. The "B" quality algific talus slope in BCV has the only known population of golden saxifrage in Houston County, probably because it maintains the cold micro-climate throughout the summer.

#### Management considerations for algific talus slopes.

Because algific talus slopes are dependant upon sinkholes and fissures which may be some distance away, efforts should be made to protect them from activities which prevent cold air flow or contaminate the water which seeps into the natural community. According to Ostlie (1989), Prairie Du Chien formations seldom have karst holes. Air and water are fed through small fissures (10-50 cm) which could be covered with soil. Fracture lines recede into the bedrock not farther than 1/8 mile; most rarely go back farther than a few hundred (400) feet. In contrast, Blandings formations can go back as far as 1/2 to 3/4 mile. Increased sheet erosion or sedimentation resulting from adjacent land use (cropland, parking lots, timber sites, trails, etc.) may create unstable conditions. This would include increased runoff and/or sedimentation through established drainage as a result of altered management practices such as logging, cultivation or other activites which drastically alter the ground cover.

Temperature and humidity on algific talus slopes are similar, varying in a yearly cycle within a narrow range. The result is a buffered climate provided by a sort of natural air conditioning system. The observed relative humidity from May to December is 50-70%. Spot measurements of algific talus from over 50 sites never exceeded 10 degrees celsius nor were they lower than -8 celsius during the period 1984-1986. Spot measurements of an algific fissure in Clayton County, Iowa never apparently exceeded 5 degrees celsius (Frest 1987). Any observed degradation of these conditions (e.g. loss of canopy from logging) may result in a warmer, drier microclimate that is inhospitable to the community's rare flora and fauna.

Because of the extreme vulnerability of this natural community, public use of this community should be strongly discouraged.

# Maple basswood forest

Maple basswood forests are seen on the lower two-thirds of north and east facing slopes or on the alluvium of protected ravines which drain the bluffs. This community type has the richest flora in the park and perhaps the county as well. The park flora lists 386 taxa, of which 184 (48%) are known to inhabit maple basswood forests (Huff and Moore 1947; Zager 1994). Several species characteristic of maple basswood forests were observed in great abundance throughout the community suggesting minimal disturbance by livestock. Rare plant species include: Twin leaf (*Jeffersonia diphylla*), Squirrel-corn (*Dicentra canadensis*) and Moschatel (*Adoxa moschatellina*).

The forest in NW1/4 of section 17 is classified as "old growth" despite the fact that typically the canopy is comprised of mature trees less than 120 years of age. A sugar maple with a girth of 57.0 cm dbh was aged at 150-156 years (Rusterholtz 1992). Trees of this size class were occasional to infrequent throughout the community. In releve 4403, the canopy of one such sugar maple tree (56 cm dbh) dominated 25-50% of the plot for the height stratum of 20-35 meters. It appears that in a closed canopy, the trees grow straight up to obtain light, becoming tall and spindly with weak root bases and therefore are vulnerable to high winds. Large trees may be unstable on the steep slopes. Several trees tipped over in 1994 because the unstable soils were saturated from unusually high precipitation. The vegetation patterns created by the rich flora suggests this community has been forested for a long time. This community is ranked "A" quality and is only one of three Maple basswood forests of this caliber in Houston County.

# Management considerations for maple basswood forests.

The unstable soils cannot withstand extensive off-trail hiking. Casual hiking in this area should be discouraged. Erosion and sedimentation could destroy plant populations and encourage weeds. Also, rare herbaceous plants are generally adapted to low light levels and high available moisture. Management practices which result in increased light to the forest floor may favor common woodland plants over rare species.

# Lowland Hardwood Forest

While flash flooding frequently occurs after heavy rains, the broad alluvial plain is not classified as floodplain forest. Rather it is a lowland hardwood forest because the deep alluvium is terraced and

well-drained by channels. This promotes a unique combination of species which are tolerant of shortterm flooding and favor moist, deep soils: sugar maple, black walnut, bur oak, as well as hydrophilic species of cottonwood and willows.

Within this community are known two plant species of Special Concern: Moschatel (Adoxa moschatelliana) and Heart-leaved skullcap (Scutellaria ovata var. versicolor). Many other species are known to inhabit this community type as well including wood mint (Blephilia hirsuta), a rare but non-listed species.

The lowland hardwood forest in sections 17 and 8 is ranked "BC" because the flora suggests past grazing, mainly due to the presence of weedy species and Eurasian pasture grasses in open areas. Many spring ephemerals have recolonized the herb layer on well-drained mounds and side-slopes of channels. There are several trees of black walnut (*Juglans nigra*) and sugar maple (*Acer saccharum*) with large girths and spreading canopies suggesting an open grown habit. Many tree species found here are shade intolerant including the weedy black locust (*Robinia pseudoacacia*) and black willow (*Salix nigra*). Most of the trees are young to immature in age. Outside of the Mississippi floodplain, few floodplain or lowland hardwood forests of "C" quality or better remain in Houston County.

# Management considerations for lowland hardwood forests.

Management prescriptions are difficult for this area because of the variation of the community quality. Management of specific areas depends on the aesthetic quality desired and the habitat requirements of the species affected. For example, Moschatel (*Adoxa moschatellina*) prefers well-drained rich forests with closed canopies (high moisture, low light).

Only native plant species should be established within the park. Alien species should be eliminated. Black locust should be cut and treated to prevent resprouting. Exotic flowers should be removed from the park entirely (i.e., day lilies (*Hemerocallis fulva*), cultivars of lilies (*Lilium spp.*), Dame's rocket (*Hesperis matronalis*). The water cress (*Nasturtium officinale*) is an introduction but it will probably be unfeasible to eliminate.

# Black Ash Swamp Seepage Subtype and Moist Cliff

This seepage community contains several rare plant species including the state endangered bog bluegrass (*Poa paludigena*). It has one of the best assemblages of fern species in Houston County including the state listed narrow-leaved spleenwort (*Athyrium pycnocarpon*), Silvery spleenwort (*Athyrium thelypteroides*) and Goldie's fern (*Dryopteris goldiana*). The community flora is a blend of wetland plants, such as skunk cabbage, growing next to upland spring ephemerals.

Of great significance is the proximity of the Black Ash Seep to the large lowland hardwood forest. The several rare plants within the seep could potentially colonize similar habitats within the more disturbed lowland forest.

#### Management considerations for black ash and moist cliff seeps.

The plant assemblages of this community vary mostly because of available moisture. Saturated soils inhibit the growth of some species of trees, resulting in open wetlands. In better drained substrates, a dense forest canopy enables ferns to thrive. Management of areas within this community should be species specific. Public use of this area should not be promoted, but limited off-trail use is acceptable.

# Dry Prairie Bedrock Bluff Subtype

Bluff prairies are typically found on south and west facing exposures on rocky bluffs where high temperatures and low humidity restrict all but the most drought tolerant species.

Most prairies within Houston County are badly degraded from past grazing and are now overgrown with woody shrubs and trees. This is true for BCV except for a privately owned prairie outside of the statutory boundaries. Because of the abundant flora, this "B" quality prairie is one of the ten best in the county, despite the fact that portions are covered with a thicket of hazelnut (Corylus americana), gray-bark dogwood (Cornus foemina) and ninebark (Physocarpus opulifolius). Of further interest is the fact that this prairie is on a geological formation unique to the blufflands.

The "B" quality prairie, located on a mound or butte arising some 250 feet above the Badger creek floodplain, and portions of the adjacent bluffs are known as a "rock core meander" (Hallberg et.al. 1984). This unusual formation developed when large amounts of water flowing down the Beaver Creek Valley eroded a giant oxbow meander into the bedrock creating a "horse-shoe" shaped streambed recessed within the bluff. The butte was once connected to the west bluff by a narrow ridge sometimes called a "hog's back". As time progressed, the stream eroded this ridge leaving the oval shaped rock core in the center as a butte high above the adjacent alluvium. At one time, the stream flowed straight across, short cutting the bend in the stream, approximately where the county road is now. Since then, the course of the stream has returned to the oxbow and presently flows under the old township road bridge within the State Park. There are about 20 of these rock cores throughout Houston County including Mound Prairie Scientific Natural Area and Cushing's Peak, both along Highway 16.

# Management considerations for dry prairies.

Many of the prairies need active removal of the invading brush and prescribed burns to stimulate prairie plant growth. Because so many of the prairies are in private ownership, similar management recommendations to those landowners should be encouraged by park staff.

#### Oak Forest including Dry and Mesic Subtypes

There are three classifications of oak forest defined along a moisture continuum from mesic to dry. Oak forest mesic subtype is dominated by red oak (*Quercus rubra*) in moist areas with north aspects. The dry subtype is mostly bur oak (*Q. macrocarpa*) and white oak (*Q. alba*) on dry rocky soil with south and west exposures. Areas were classified as "oak forest" when they were either dry-mesic communities with loamy soils on upper slopes and crests, or when there were inclusions of both mesic and dry areas such as ravines or cliff edges.

Few plant species exclusively inhabit oak forests. Mesic oak forest often has species found in maple basswood communities, while dry oak forest often has prairie or remnant savanna plants. It appears that Short's aster (*Aster shortii*) and stemless tick-trefoil (*Desmodium nudiflorum*) have only been found inhabiting mesic oak forest in Houston county. Yet there has only been a limited number of collections so it is not certain.

#### Management considerations for oak forests.

Vegetation notes in the 1853 public land survey in BCV suggest that the canopies of oak forest were similar to present conditions. Much of the management of oak forest is site specific and therefore general prescriptions are often impractical. The detailed recommendations listed on pages 50 and 51

of the BCV management plan are still applicable (MN DNR 1980). These are probably best implemented in consultation with the park's natural resource specialist for specific projects.

Part 2. Surveys of amphibians, reptiles, breeding birds, and mammals in Beaver Creek Valley State Park by the Minnesota County Biological Survey

#### prepared by

Carol Dorff, Herpetologist; amphibian and reptile surveys Steve Stucker, Ornithologist; bird surveys Gerda Nordquist, Animal Survey Coordinator; mammal surveys

Beaver Creek Valley State Park provides some of the best habitat for rare, as well as more common, animal species in Houston County. Due largely to its extensive lowland hardwood forests associated with Beaver Creek, the Park is renowned among Minnesota birders as one of the best spots in the state to see such rare birds as the Acadian flycatcher, Louisiana waterthrush, and Cerulean warbler. Southeastern Minnesota contains the greatest diversity of herpetofauna (amphibians and reptiles) in the state, due in part to its favorable habitat, climate, and proximity to the Mississippi River which facilitates northward dispersal of several species. The bluff prairies and rock outcrops found in the Park are key habitats for many of the reptile species found in this region. Rare species, such as the Five-lined skink and Timber rattlesnake, are regularly found within Beaver Creek State Park.

The MCBS conducted surveys for breeding birds, amphibians, reptiles, and mammals in the Park from April through August, 1993. Survey efforts focused on locating rare species expected to occur in the Park (Table 5). These included species that are federally or state-listed as endangered, threatened, or of special concern, as well as candidates for federal listing. Species lacking regional documentation were also targeted. In addition, work was specifically directed to areas along the proposed bike trail in order to assess potential impact of the trail to rare animals in the area.

Prior to the animal surveys conducted in 1993 by the MCBS, the Rare Features database (part of the Natural Heritage Information System, Department of Natural Resources) had a total of 14 locations for five rare animal species (Louisiana waterthrush, Pickerel frog, Timber rattlesnake, Milk snake, and Five-lined skink) documented in the Park. Since completion of the Survey, 15 new or updated locations were added to the database for these five species and one summer bat concentration.

#### AMPHIBIAN AND REPTILE SURVEYS

# Methods

Surveys techniques for amphibians and reptiles at Beaver Creek Valley State Park included herp searches, drift fences, and anuran surveys (see Appendix 1 for detailed description of methodology). Anuran surveys were conducted at 12 sites within the park on 27 April and 13 July (see Fig. 6 for a map and Appendix 2 for a list showing locations of survey sites). All anuran survey sites were located near stagnant or flowing water in forested habitat and were easily accessible at night along roads. Following the protocol for the anuran monitoring developed by Wisconsin DNR, sites should be visited during three specific time periods each year. Because easy access was an important consideration in the selection of monitoring sites, none of the ephemeral ponds along the hiking trails or far from the road were included in the survey. Herp searches were conducted at six locations within the Park and adjoining lands for a total of 8 person-hours. Two drift fences were placed in lowland hardwood habitat adjacent to stagnant water to capture amphibians breeding nearby or moving through the area. The fences were installed in late April and run continuously through late June, after which time the buckets were closed. Buckets were reopened for a brief period in late

August prior to the fences being removed. The drift fences were open for a total of 156 trap days.

#### <u>Results</u>

A total of eight species, five amphibians and three reptiles, were found in the Park during the MCBS surveys. These included the Five-lined skink, a state endangered species, and two state special concern species, the Pickerel frog, and Timber rattlesnake. Previous surveys by the Minnesota Herpetological Society (Moriarty 1985), D. Keyler and B. Oldfield (1992) and reports by Park personnel have documented an additional eight species, two amphibians and 4 reptiles (Table 6).

Spring peepers were the only frogs recorded as calling within the Park during anuran surveys. They were heard at the Big Spring site (see Fig. 6, Appendix 2). The scarcity of frogs heard chorusing during the survey may be due, in part, to the cool weather conditions during spring and early summer and the lack of suitable breeding ponds that were easily accessible by field staff at night. Anuran surveys planned for late May - early June were not conducted, but would be recommended in any future surveys of this type.

Only two herp species, American toads and Pickerel frogs, were captured in the drift fences. The low diversity of herps documented by drift fences was comparable to others placed in similar forested sites in Winona County. The ability of some species to escape from drift fence buckets, such as Spring peepers and Gray treefrogs whose toe pads enable them to adhere to the bucket wall, may have biased the drift fence results.

#### Rare amphibians and reptiles

Five-lined skinks, a state endangered species, utilize rock outcrops of bluff prairies or forest edges. Skinks were documented at three locations along the Hole-in-Rock Trail on the south end of the park, and directly north of the park on the bluff prairie near Schech's Mill (Fig. 7). They were also sighted by Oldfield and Keyler in 1991 at the old stone quarry. Park staff have observed them in the vicinity of the park office and picnic shelter. Five-lined skinks were found at only one other site in Houston County in 1993. None were located in Winona County.

Throughout its range, the Timber rattlesnake has been greatly threatened by human disturbance, persecution, and loss or degradation of habitat. The bluff prairie, rock outcrops, and large forested tracts at Beaver Creek Valley State Park provide overwintering sites, basking surfaces, and foraging habitat important to rattlesnakes. This affords an excellent opportunity for protection of this threatened species at the Park. During the 1993 surveys, MCBS staff documented Timber rattlesnakes at a rookery (places inhabited by gravid, gestating females) along the Hole-in-Rock Trail at the south end of the park, on the wood pile west of the park office, on the park entrance road east of the office, and directly north of the park in the Schech's Mill bluff prairie (Fig. 7). Rattlesnakes were also sighted by park employees and visitors in the office/shop area and at the fisherman's parking area during 1993. In 1991, Oldfield and Keyler also found rattlesnakes in the vicinity of the old stone quarry near the Quarry Trail, and park staff found one near the stream in Section 8. Four of the 21 occurrences of Timber rattlesnakes found by the Survey in Houston County were located within or adjacent to Beaver Creek Valley State Park.

Pickerel frogs were found at the Park in forested habitats along Beaver Creek, as well as in the grassy openings of the mowed trail adjacent to the creek. Elsewhere in Houston County, Pickerel frogs were abundant where forested habitat was present along springs and cold streams. During the spring breeding season, adults gathered at woodland ponds and sloughs. Twelve Pickerel frog occurrences

were documented in Houston County during the 1993 field season, five of these were within or adjacent to Beaver Creek Valley State Park (Fig. 7).

# **BIRD SURVEYS**

#### **Methods**

A total of 26 point counts were conducted in the Park between 3 and 9 June, 1993, including ten points surveyed along the proposed trail route (see Appendix 1 for detailed description of methodology). Twenty-one points were located in deciduous forest, and five points were in old field or edge habitats. In addition, recorded calls of Louisiana waterthrushes were played at six locations along Beaver Creek (refer to Fig. 6 for a map and Appendix 2 for a list of survey locations).

#### Results

MCBS bird surveys resulted in the detection of 62 species in the Park during the breeding season, 50 of which were found along the proposed bike trail (Table 7). This included rare species, such as the Louisiana waterthrush, a state special concern species, and the Cerulean warbler, a candidate for federal listing. Breeding bird surveys conducted in the Park by L. Hanson in 1987 identified an additional 15 species.

Other areas in Houston and Winona counties were inventoried at the same time as the Park, thus enabling a comparison of the bird fauna within the Park to that elsewhere in southeastern Minnesota (Table 8). The extensive lowland hardwood forest present in the valley bottom along Beaver Creek appears to strongly influence the Park's avifauna. Lowland hardwood tracts in other valleys in the region are typically much narrower. At Beaver Creek Valley State Park, this habitat contained bird species normally associated with the large expanses of floodplain forest found along the Mississippi River. For example, American Redstarts, which prefer floodplain forest habitats, occurred at 75 percent of the floodplain forests sites surveyed in Houston and Winona counties, but only 27 percent of upland deciduous sites. Conversely, Ovenbirds, an upland forest species, were found at 40 percent of points in upland deciduous forests of Winona and Houston counties, but only 10 percent of points in similar habitat within the Park. The Park's bird community more closely resembles that of floodplain forests than upland deciduous habitats.

#### Rare bird species

Two regionally rare species were found in the Park. The Veery, common in the forested portions of northern and central Minnesota, is rare south of the Minneapolis-St. Paul metropolitan area, with no documented breeding in southeastern Minnesota. The MCBS found Veery's at five locations in Houston County, and three locations in Winona County. Four of the five Houston County sightings were in Beaver Creek Valley State Park. This included an adult seen carrying food, indicating that this species probably nests in the Park. Similarly, Least flycatchers are very common in northern and central Minnesota, but rare in the southeastern part of the state. Where it does occur in southeastern Minnesota, this species is often associated with lowland hardwood forests. Least flycatchers were found at only five locations in Houston County during MCBS surveys, four of which were in Beaver Creek Valley State Park. Least flycatchers were also found at five locations in Winona County.

Three to four nesting pairs of Louisiana waterthrushes (documented by males exhibiting territorial behavior) were concentrated along the creek in a stretch beginning near the picnic area and extending north to the Plateau Rock Trail junction (Fig. 7). In previous years, waterthrushes have also been

found at the hanging bridge and often near the beginning of the Steep Rock Trail. At the southern end of the Park, Louisiana waterthrushes were found near the group camp; in previous years this species has been seen near Big Spring. Outside of Beaver Creek Valley State Park, Louisiana waterthrushes were only found at one other location in Houston County, approximately 2.5 miles southwest of the park on the west branch of Beaver Creek. Waterthrushes are closely associated with clear, swiftly-flowing streams within sizeable tracts of mature, closed-canopy forest. Narrow corridors of trees along streams are not suitable to waterthrushes. This species nests in root masses and crevices of cut-banks along streams, and forages at the water's edge. Outside the park, there was very little good habitat for Louisiana waterthrushes in Houston County. Most valleys with permanently-flowing water were either grazed or had insufficient canopy cover along the streams. Louisiana waterthrushes were found at 14 locations in Winona County, which had more suitable habitat than Houston County.

Cerulean warblers were found at four locations in the park, all of which were along the proposed bike trail (Fig. 7). Outside the park this species was found at only three other locations in Houston County, and 17 locations in Winona County. Cerulean warblers are most commonly associated with mature floodplain or lowland hardwood forests, but they are also found less frequently in mature upland deciduous forests. This species spends most of its time in the upper portions of the canopy, in forests comprised of tall, mature trees.

One non-listed rare species, the Acadian flycatcher, was found at six locations within the Park (Fig. 7). Only three other records for this bird were obtained by MCBS in Houston County. In Minnesota, Acadian flycatchers are associated with mature deciduous forest, usually near streams.

#### MAMMAL SURVEYS

#### Methods

Four small mammal trap grids were set along segments of the proposed bike trail and where alternative trail routes were being considered. Grids were run between 2-5 August 1993 (refer to Appendix 1 for detailed descriptions of methodology). Mammals retrieved from drift fences set for herpetofauna were also identified. A bat detector was used to locate and identify foraging bats, and mist nets were set one evening across the openings to the picnic shelter to identify bats using the shelter as a day roost (refer to Fig. 6 for a map and Appendix 2 for a list of survey sites).

#### **Results**

A total of 18 mammal species, including the Woodland vole, a state special concern species, were recorded by MCBS from Beaver Creek Valley State Park (Table 9). Seven small mammals were taken from trap grids and drift fences, two bat species were captured in mist nets and the Red bat was identified by the bat detector foraging along Beaver Creek. The remaining mammal species were either directly observed or their burrows, tracks, or scats found. The list is not exhaustive for all mammals inhabiting the Park. Other species, such as tree squirrels and foxes, almost certainly are found here. A family of coyotes was closely associated with the park. Although no den was found, members of the group were heard calling and four juvenile coyotes were observed running across the entrance road east of the Park office.

#### Rare mammal species

The Woodland vole was the only rare mammal found in the park. A single individual was taken from the drift fence located in the lowland hardwood forest (NESW8). This is a very important record for

this species. Only one historical record exists for Houston County, when the species was found near Caledonia in 1935. During the Survey, the Woodland vole was found in only one other location, a mature maple-basswood forest in Whitewater Wildlife Management Area in Winona County. Mature deciduous forest with a deep, loose litter layer appears to be the preferred habitat for this species in northeastern Iowa. It is not certain whether Woodland voles in the Park are living in the lowland hardwood forest or if the individual wandered down from the adjacent maple-basswood forest. In either case, the forests in the vicinity of the drift fence location should be protected from excessive trampling and disturbance.

The picnic shelter at the Park serves as an important day roost for bats during the summer. Over 30 bats were counted exiting from the shelter one night. The majority of these were Little brown bats, but several Big brown bats were also captured. Most were tucked behind the central ridge beam, many out of sight from below.

The grassland habitats present in the Park did not appear suitable to Prairie voles, a state special concern species. Only one record of this species was obtained, from Mounds Prairie Scientific and Natural Area, during 1993 surveys in Houston and Winona counties. The moist soils and heavy cover of the Park's old field favor the Meadow vole over the Prairie vole. The bluff prairies at Beaver Creek Valley State Park are small and overgrown. Bluff prairies in similar condition were surveyed outside the Park. Typically, these sites were dominated by the White-footed mouse, a forest species, that will expand into prairie habitats as woody vegetation increases.

# DISCUSSION OF SIGNIFICANT AREAS FOR ANIMALS

Protection of the rare animals found at Beaver Creek Valley State Park requires that critical habitats be identified and managed appropriately. For especially sensitive species, the public should be diverted from areas containing these species. Areas of particular importance are discussed below.

# Beaver Creek and adjoining lowland hardwoods

The extensive, mature, closed-canopy forest along Beaver Creek provides an important habitat feature for many of the rare animals of the Park. The Louisiana waterthrush, Cerulean warbler, Acadian flycatcher, Woodland vole, and Pickerel frog are all found here. Degradation of stream valleys elsewhere in Houston County has greatly reduced the amount of habitat of similar quality outside the Park. The most significant portion of Beaver Creek Valley within the Park is the section located between the picnic area and the southern end of the old field. The forested north-facing slopes extending from the picnic area to the main campground are also an important, associated habitat component to species that utilize the valley floor.

In general, any disturbance of the valley bottom and adjacent slopes would be detrimental to the Park's sensitive fauna. Louisiana waterthrushes are wary and stop singing when a human approaches. Repeated disturbance may force the birds to abandon their nests. Physical alteration to the surrounding forests, such as opening of the forest canopy over the creek, may reduce the area's suitability to Louisiana waterthrushes, Cerulean warblers, and Acadian flycatchers. Although Pickerel frogs can tolerate forest openings and will utilize grassy areas adjacent to the stream, they require clean, cool flowing water and woodland ponds. Any reduction in water quality due to pollution or siltation from adjacent lands could impact the abundance of this species in the Park.

# Extensive tracts of mixed oak forest

The forested slopes that rise up from the river bottoms buffer the stream valley and provide habitat for upland forest species such as the Timber rattlesnake and many forest songbirds such as the Ovenbird and Wood thrush. The contiguous tracts of oak forest are critical for the protection of Timber rattlesnakes. Although they will also utilize lowland forest, one of this snake's primary food sources, the Eastern chipmunk, is more common in oak forests where acorns, seeds and fruits are more abundant.

#### Bluff prairies

Although the bluff prairies within the Park are small and few in number they provide critical habitat for resident reptiles. Elimination of brush on these openings would improve conditions for both the Five-lined skink and Timber rattlesnake. Active management of one overgrown bluff prairie and associated rock outcrops, located at the north end of the Park, may greatly benefit rattlesnakes. Use of this particular site by Timber rattlesnakes has not been assessed, however, park visitors have repeatedly sighted snakes in the grassland below. This suggests that the rock outcrops may be used as a rookery site. The continued increase of shrubby growth and build-up of heavy leaf cover on the bluff prairie will discourage its use by Timber rattlesnakes. If this area is shown to be used by rattlesnakes, clearing of shrubs and saplings should begin as soon as possible.

Identification and monitoring of all active rattlesnake dens and rookeries within the Park is recommended. A male Timber rattlesnake will travel an average of 2.5 miles from the den (Brown 1993). Ideally, management actions would maintain open bluff prairies around the den site and a forested buffer surrounding the bluff prairie into which the snakes would move during the summer. Human disturbance should be minimized near the den or rookery sites, and visitors cautioned or even rerouted from trails within a rattlesnake territory during critical times.

Management of the bluff prairies adjacent to the Park, such as that near Schech's Mill, would substantially increase the protection of Timber rattlesnakes within the Park boundaries. Restoration of intervening lands between the bluff prairies of the Park and outside would encourage movement of snakes between these areas.

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# Legend for Figure 1.















Figure 4. RELEVE PLOT SAMPLING POINTS IN BEAVER CREEK VALLEY STATE PARK.







# Legend for Figure 5.

Map	MN	Occur		
_#_	Stat	#	Element name	Common_name
1	NON	46	Actaea pachypoda	White baneberry
2	NON	47	Actaea pachypoda	White baneberry
3	SPC	47	Adoxa moschatellina	Moschatel
4	SPC	65	Adoxa moschatellina	Moschatel
5	NON	11	Arabis laevigata	Smooth rock-cress
6	NON	9	Arabis laevigata	Smooth rock-cress
7	NON	6	Asplenium platyneuron	Ebony spleenwort
8	NON	8	Asplenium platyneuron	Ebony spleenwort
9	NON	9	Aster prenanthoides	Crocked-stem aster
10	PSC	6	Aster shortii	Short's aster
11	SPC	12	Athyrium pycnocarpon	Narrow-leaved spleenwort
12	NON	11	Athyrium thelynteriodes	Silvery spleenwort
13	NON	11	Blenhilia hirsuta	Wood mint
14	NON	20	Blenhilia hirsuta	Wood mint
15	NON	22	Blenhilia hirsuta	Wood mint
16	NON	23	Blenhilia hirsuta	Wood mint
17	SPC		Carex laxiculmis var. conulata	Spreading sedge
18	SPC	4	Carex laxiculmis var. conulata	Spreading sedge
19	SPC	8	Carex laxiculmis var. conulata	Spreading sedge
20	SPC	2	Carex woodii	Wood's sedge
21	END	6	Chrysosplenium iowense	A species of golden saxifrage
22	THR	34	Desmodium illinoense	Illinois tick-trefoil
23	PSC	4	Desmodium nudiflorum	Stemless tick-trefoil
24	PSC	5	Desmodium nudiflorum	Stemless tick-trefoil
25	PSC	6	Desmodium nudiflorum	Stemless tick-trefoil
26	SPC	3	Dicentra canadensis	Squirrel-corn
27	PSC	36	Dodecatheon amethystinum	lewelled shooting star
28	PSC	37	Dodecatheon amethystinum	lewelled shooting star
29	SPC	8	Druopteris goldiana	Goldie's fern
30	THR	5	Ieffersonia diphylla	Twinleaf
31	THR	9	Ieffersonia diphylla	Twinleaf
32			Error: no rare plant species og	currence at Map# 32
33	SPC	109	Panax auinauefolium	Ginseng
34	END	10	Poa valudigena	Bog bluegrass
35	PSC	3	Psoralea tenuiflora	Slender-leaved scurf pea
36	SPC	12	Sanicula trifoliata	Black snakeroot
37	SPC	8	Sanicula trifoliata	Black snakeroot
38	SPC	7	Scutellaria ovata var. versicolor	Ovate-leaved skullcap
39	NON	12	Taenidia integerrima	Yellow pimpernel
40	SPC	46	Tradescantia ohiensis	Ohio spiderwort
41	NON	6	Vitis aestivalis var. argentifolia	Silverleaf grape
42	NON	ž	Vitis riparia	Dune grape

<u>Minnesota Legal Status</u> END = Endangered THR = Threatened SPC = Special Concern PSC = Proposed Special Concern NON = No legal status

Figure 5. RARE PLANT SPECIES OCCURRENCES IN BEAVER CREEK VALLEY STATE PARK.


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# Legend for Figure 7.

Map	MN	Occur		
_#_1	<u>Stat</u>	#	Element name	Common name
1	NON	15		Bat concentration
2	SPC	1	Crotalus horridus	Timber rattlesnake
3	SPC	2	Crotalus horridus	Timber rattlesnake
4	SPC	20	Crotalus horridus	Timber rattlesnake
5	SPC	3	Crotalus horridus	Timber rattlesnake
6	SPC	4	Crotalus horridus	Timber rattlesnake
7	SPC	5	Crotalus horridus	Timber rattlesnake
8	SPC	64	Crotalus horridus	Timber rattlesnake
9	SPC	66	Crotalus horridus	Timber rattlesnake
10	SPC	81	Crotalus horridus	Timber rattlesnake
11	NON		Dendroica cerulea	Cerulean warbler
12	NON		Dendroica cerulea	Cerulean warbler
13	NON		Dendroica cerulea	Cerulean warbler
14	NON		Dendroica cerulea	Cerulean warhler
15	NON		Dendroica cerulea	Cerulean warbler
16	NON		Empidonar virescens	Acadian flycatcher
17	NON		Empidonax virescens	Acadian flycatcher
18	NON		Empidonar virescens	Acadian flycatcher
19	NON		Empidonar virescens	Acadian flycatcher
20	NON		Empidonax virescens	Acadian flycatcher
21	NON		Emplaonar virescens	Acadian flycatcher
22	FND	30	Fumeres fasciatus	Five-lined skink
23	END	34	Fumeres fasciatus	Five-lined skink
24	FND	36	Fumeres fasciatus	Five-lined skink
25	END	37	Fumeres fasciatus	Five-lined skink
$\frac{1}{26}$	FND	38	Fumeres fasciatus	Five-lined skink
27	SPC	67	Lamotra annondir	American brook lamprov
28	SPC	37	Lamperna appendix Lampropeltis triangulum	Milk snake
29	SPC	10	Rana nalustris	Pickeral frog
20	SPC	10	Runa palustris	Pickerol frog
31	SPC	15	Runa palustris	Pickerel frog
32	SPC	15	Runa palustris	Pickerel frog
32	SPC	10	Rana nalustris	Pickerol frog
24	SPC	1/ 10	Runu putustris Rana maluatria	Pickerel frog
25	SPC	10	Rana palustris	Pickerel frog Biskerel frog
30	SPC	19	Rana malustris	Pickerel frog
27	SPC	20	Rana palustris	Pickerel frog
20	SPC	21	Rana palustris	Fickerel frog
20	SPC	40	Seiurus motacilla	Louisiana waterthrush
37	SPC	4/	Seturus motacilla	Louisiana Waterthrush
4U 41	SPU	4ð	Seturus motacilia	Louisiana Waterinrush
41	NON	1	Vertigo Dollestana	Delicate vertigo
42		9	vertigo nuorichti	Hubrichts vertigo
43	SPC	4	wicrotus pinetorum	woodland vole

# <u>Minnesota Legal Status</u> END = Endangered SPC = Spœcial Concern NON = No legal status





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Table 1. Acreages and quantity of natural community types in Beaver Creek State Park, organized by State Endangerment Rank and Quality Rank.

Natural Community	Quantity #	Smallest acres	Mean acres	Largest acres	Total acres
Algific Talus slope	7	0.31	1.5	2.0	10.3
Maple-basswood forest	11	3.0	11.4	26.1	125.3
Mesic Oak forest	6	6.0	24.1	43.3	144.6
Black ash seep	1		2.1		2.1
Dry Cliff	2	2.9	4.5	6.0	8.9
Dry Oak forest	3	11.3	22.8	30.9	68.4
Dry Prairie	9	0.7	2.4	5.8	22.0
Moist Cliff	5	0.5	1.2	1.8	6.2
Oak forest	33	2.0	20.8	67.6	687.8
Oak woodland	1		2.9		2.9
Lowland hardwood forest	5	2.4	33.7	64.6	168.6
Old field	1				11.8
Developed park land	1				44.9
Agricultural land	13				194.1
Total acres of mapped area	99				1497.9

Table 2. Percent acreage and quantity of natural communities in Beaver Creek Valley State Park, organized by State Endangerment Rank and Quality Rank.

State Rank	Natural community type	Total	А	В	BC	С	CD	D
2	Algific talus slope	7 - 0.69%		1 - 0.13%		2 - 0.21%	2 - 0.23%	2 - 0.11
2	Maple-basswood	12 - 8.37	1 - 0.41	4 - 3.91	1 - 0.98	2 - 1.53	2 - 0.68	2 - 0.85
2	Mesic Oak f.	6 - 9.65		1 - 1.64		2 - 3.35	3 - 4.66	
3	Black ash seep	1 - 0.14				1 - 0.14		
3	Dry Prairie	9 - 1.47		1 - 0.21		3 - 0.55	2 - 0.17	3 - 0.54
3	Dry cliff	2 - 0.59		2 - 0.59				
3	Dry Oak f.	3 - 4.57			1 - 2.06	1 - 1.75		1 - 0.75
3	Moist cliff	5 - 0.41				5 - 0.41		
3	Oak forest	33 - 45.92			5 - 8.49	7 - 9.28	7 - 9.04	14 - 19.10
4	Lowland hardwood	5 - 11.26			1 - 4.31		1 - 2.17	3 - 4.7
4	Oak woodland	1 - 0.19				1 - 0.19		
	Old field_	1 - 0.79						1 - 0.79
	Developed park land	1 - 3.00						1 - 3.00
	Agricultural land	13 - 12.96						13 - 12.96
	Total	99 - 100 % *	1 - 0.41%	9 - 6.48%	8 - 15.84%	24 - 17.41%	17- 16.95%	40 - 42.80

Percent acreage of natural community polygons for each quality rank

\* 1% = 14.979 acres

Total map acres = 1,497.9 (all cover types)

(2) Natural communities are catagorized by their relative endangerment in Minnesota - a scale of 1 to 5; where those ranked "1" are considered critically endangerd in Minnesota while communities ranked "5" are considered secure under present conditions. These rankings do not have legal protection status.

Table 3. Percent area of ecological significance categories of natural community types in Beaver Creek Valley State Park, organized by High, Medium and Low quality rank.

Ecological	Percent acreage of natural community polygons for each quality rank						
Significance	Total	A	В	BC	С	CD	D
High	23 - 15.6	1 - 0.4	7 - 5.9	1 - 4.3	8 - 3.3	3 - 1.5	3 - 0.2
Medium	25 - 31.2			7 - 11.5	13 - 12.5	5 - 7.2	
Low	36 - 37.2		2 - 0.6		3 - 1.6	8 - 8.2	23 - 26.8
Developed	15 - 15.9						15 - 15.9
Total	99 - 100 *	1 - 0.4	9 - 6.5	8 - 15.8	24 - 17.4	16 - 16.9	41 - 42.9

\* Difference due to rounding.

Table 4. Permanent Releve Plots in Beaver Creek Valley State Park located by Minnesota Natural Heritage Releve Database Number and Natual Community Type.

Releve #	Field #	Datasheet #	Natural Community Classification	Date	Legal location	Polygon
4403	23	R93-2	Maple basswood Forest "Old Growth"	05/26/93	SWNENWNW17	51
4402	31	R93-4	Maple basswood Forest	05/28/93	SESENENW17	67
4401	45	R93-6	Maple basswood Forest	06/03/93	SENWSWSE05	08
4400	28	R93-7	Maple basswood Forest	06/03/93	SWNWNENW16	46
4399	22	R93-12	Black ash swamp seepage subtype	06/29/93	SWNENWNW17	61
4398	38	R93-13a	Mixed oak forest (dry-mesic))	06/29/93	NENWNWNW17	52
4397	24	R93-13b	Mixed oak forest mesic subtype	07/02/93	SWSESESE17	82
4396	46	R93-14	Lowland hardwood forest	07/02/93	SWNWNESW17	24
4395	27	R93-26	Lowland hardwood forest	07/27/93	NENENWNW17	24
4394	32	R93-60-2	Dry prairie bedrock bluff subtype	07/10/93	NESWNESE17	76
4393	-	R93-35	Dry prairie bedrock bluff subtype	07/06/93	SESESESW08	58
4392	-	R93-30	Dry prairie bedrock bluff subtype	08/13/93	NESESWSW05	18

Table 5. Rare animals targeted for 1993 surveys at Beaver Creek Valley State Park by the Minnesota County Biological Survey. Species, along with their federal and state statuses, are associated with their primary habitats.

Species		Status (F: federal, S: state)
LOWLAND	HARDWOOD FORESTS	
Birds:	Cerulean Warbler (Dendroica cerulea)	F: Candidate
	Red-shouldered Hawk (Buteo lineatus)	S: Special Concern
	Louisiana Waterthrush (Seiurus motacilla)	S: Special Concern
	Acadian Flycatcher (Empidonax virescens)	Non-listed
UPLAND D	ECIDUOUS FORESTS, FOREST OPENINGS AN	D BRUSHLAND EDGES
Birds:	Tufted Titmouse (Parus bicolor)	Non-listed
	Kentucky Warbler (Oporornis formosus)	Non-listed
	Hooded Warbler (Wilsonia citrina)	Non-listed
	Bell's Vireo (Vireo bellii)	Non-listed
Herps:	Black rat snake (Elaphe obsoleta)	S: Special Concern
•	Fox snake (Elaphe vulpina)	S: Special Concern
	Milk snake (Lampropeltis triangulum)	S: Special Concern
Mammals:	Least shrew (Cryptotis parva)	S: Special Concern
	Woodland vole (Microtus pinetorum)	S: Special Concern
	Northern myotis (Myotis septentrionalis)	S: Special Concern
	Eastern pipistrelle (Pipistrellus subflavus)	S: Special Concern
	Little brown myotis (Myotis lucifugus)	Non-listed
	Big brown bat (Eptesicus fuscus)	Non-listed
	Silver-haired bat (Lasionycteris noctivagans)	Non-listed
	Red bat (Lasiurus borealis)	Non-listed
	Hoary bat (Lasiurus cinereus)	Non-listed
<b>BLUFF PRA</b>	AIRIES AND OLD FIELDS	
Herps:	Five-lined skink (Eumeces fasciatus)	S: Endangered
L	Blue racer (Coluber constrictor)	S: Special Concern
	Timber rattlesnake (Crotalus horridus)	S: Special Concern
	Eastern hognose snake (Heterodon platyrhinos)	S: Special Concern
	Bullsnake (Pituophis melanoleucus)	S: Special Concern
AQUATIC I	HABITATS	
Herps:	Blanchard's cricket frog (Acris crepitans)	S: Special Concern
•	Common snapping turtle (Chelydra serpentina)	S: Special Concern
	Pickerel frog (Rana palustris)	S: Special Concern

Table 6. List of amphibian and reptile species recorded from Beaver Creek Valley State Park, associated with their primary habitats (data was obtained from 1993 MCBS animal surveys, Park staff reports, Oldfield and Keyler 1991, Moriarty 1985).

## LOWLAND HARDWOOD FORESTS

Spring peeper (Pseudacris crucifer) Pickerel frog (Rana palustris) Wood frog (Rana sylvatica)

# **BLUFF PRAIRIES AND OLD FIELDS**

Northern leopard frog (Rana pipiens) Six-lined racerunner (Cnemidophorus sexlineatus) Five-lined skink (Eumeces fasciatus) Ringneck snake (Diadophis punctatus) Milksnake (Lampropeltis triangulum) Timber rattlesnake (Crotalus horridus)

# **AQUATIC HABITATS**

Green frog (Rana clamitans) Painted turtle (Chrysemys picta)

#### HABITAT GENERALISTS

Tiger salamander (Ambystoma tigrinum) American toad (Bufo americanus) Gray treefrog (Hyla versicolor) Eastern garter snake (Thamnophis sirtalis) Table 7. List of breeding birds recorded from Beaver Creek State Park, associated with their primary habitats (data was obtained from 1993 MCBS animal surveys, Hanson 1987).

#### LOWLAND HARDWOOD FORESTS

Red-bellied woodpecker (Melanerpes carolinus) Acadian flycatcher (Empidonax virescens) Least flycatcher (Empidonax minimus) Veery (Catharus fuscescens) Warbling vireo (Vireo gilvus) Cerulean warbler (Dendroica cerulea) American redstart (Setophaga ruticilla)

## UPLAND DECIDUOUS FORESTS, FOREST OPENINGS AND BRUSHLAND EDGES

Broad-winged hawk (Buteo platypterus) Ruffed grouse (Bonasa umbellus) Wild turkey (Meleagris gallopavo) Ruby-throated hummingbird (Archilochus colubris) Red-headed woodpecker (Melanerpes erythrocephalus) 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) Tufted titmouse (Parus bicolor) 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) Northern mockingbird (Mimus polyglottos) Yellow-throated vireo (Vireo flavifrons) Red-eved vireo (Vireo olivaceus) Blue-winged warbler (Vermivora pinus) Ovenbird (Seiurus aurocapillus) Scarlet tanager (Piranga olivacea) Northern cardinal (Cardinalis cardinalis) Rose-breasted grosbeak (Pheucticus ludovicianus) Rufous-sided towhee (Pipilo erythrophthalmus) Song sparrow (Melospiza melodia) Common grackle (Quiscalus quiscula) Brown-headed cowbird (Molothrus ater) Northern oriole (Icterus galbula)

#### **BLUFF PRAIRIES AND OLD FIELDS**

American kestrel (Falco sparverius) Red-tailed hawk (Buteo jamaicensis) Killdeer (Charadrius vociferus) Mourning dove (Zenaida macroura) Willow flycatcher (Empidonax trailli) Eastern kingbird (Tyrannus tyrannus) Northern rough-winged swallow (Stelgidopteryx serripennis) Bank swallow (Riparia riparia) Barn swallow (Hirundo rustica) Eastern bluebird (Sialia sialis) European starling (Sturnus vulgaris) Indigo bunting (Passerina cyanea) Chipping sparrow (Spizella passerina) Clay-colored sparrow (Spizella pallida) Field sparrow (Spizella pusilla) Savannah sparrow (Passerculus sandwichensis) American goldfinch (Carduelis tristis)

# **AQUATIC HABITATS**

Great blue heron (Ardea herodias) Wood duck (Aix sponsa) Common snipe (Gallinago gallinago) Belted kingfisher (Ceryle alcyon) Tree swallow (Tachycineta bicolor) Yellow warbler (Dendroica petechia) Louisiana waterthrush (Seiurus motacilla) Common yellowthroat (Geothlypis trichas) Red-winged blackbird (Agelaius phoeniceus)

#### HABITAT GENERALISTS

Chimney swift (Chaetura pelagica) Blue jay (Cyanocitta cristata) American crow (Corvus brachyrhynchos) Black-capped chickadee (Parus atricapillus) American robin (Turdus migratorius) Cedar waxwing (Bombycilla cedrorum)

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SPECIES	FREQUENCY		
	SE (159 points)	BCV (21 points)	<del></del>
Eastern wood-pewee	.67	.48	
Blue jay	.45	.48	
House wren	.40	.57	
Red-eyed vireo	.40	.19	
Ovenbird	.40	.10	
Rose-breasted grosbeak	.37	.33	
Northern cardinal	.33	.24	
American robin	.31	.43	
White-breasted nuthatch	.31	.14	
American crow	.30	.38	
Great crested flycatcher	.30	.29	
American redstart	.27	.76	
Brown-headed cowbird	.26	.24	
Gray catbird	.25	.17	
Blue-gray gnatcatcher	.23	.24	
Indigo bunting	.21	.38	
Red-bellied woodpecker	.21	.10	
Wood thrush	.19	.10	
Northern oriole	.17	.38	
Rufous-sided towhee	.15	.14	
American goldfinch	.14	.48	
Yellow warbler	.12	.38	

Table 8. Comparison of frequencies of occurrence between deciduous forest birds found in Houston and Winona counties (SE) and Beaver Creek Valley State Park (BCV). Frequency = # of points at which a species was present/ total # of points.

Table 9. List of mammals recorded from Beaver Creek Valley State Park, associated with their primary habitats (data was obtained from 1993 MCBS animal surveys).

## LOWLAND HARDWOOD FORESTS

Northern short-tailed shrew (Blarina brevicauda) Eastern mole (Scalopus aquaticus) Woodland vole (Microtus pinetorum)

#### UPLAND DECIDUOUS FORESTS, FOREST OPENINGS AND BRUSHLAND EDGES

Little brown myotis (Myotis lucifugus) Big brown bat (Eptesicus fuscus) Red bat (Lasiurus borealis) Eastern cottontail (Sylvilagus floridanus) Woodchuck (Marmota monax) Eastern chipmunk (Tamias striatus) White-footed mouse (Peromyscus leucopus) Raccoon (Procyon lotor) Striped skunk (Mephitis mephitis)

#### PRAIRIES, PASTURES AND OLD FIELDS

Plains pocket gopher (Geomys bursarius) Meadow vole (Microtus pennsylvanicus) Meadow jumping mouse (Zapus hudsonius)

# HABITAT GENERALISTS

Masked shrew (Sorex cinereus) Coyote (Canis latrans) White-tailed deer (Odocoileus virginianus)

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#### Appendix 1. Detailed methodology used for MCBS animal surveys.

#### Site Selection

Selection of sites for animal surveys is based primarily on the animal species of interest and their preferred habitats. These species of interest include federally- or state-protected species (i.e. species listed as endangered, threatened, or of special concern), non-listed rare species, and non-listed species lacking county documentation. Locations of specific habitat types preferred by targeted species are obtained from a review of available maps and aerial photography, recommendations from MCBS plant ecologists and local resource managers, followed by ground reconnaissance to confirm suitability of the sites. Habitats that are not expected to contain animal species of interest may be selected to complete the sampling of representative natural community types.

#### Breeding Bird Surveys

Surveys of breeding birds are conducted from late May through mid-July. For early or late breeding species, surveys may begin as early as April and extend through August. The primary survey method is a point count. At several points within a given habitat all birds heard or seen during a six-minute interval are identified, and evidence of breeding behavior or nesting is recorded. Points are spaced 200-250 meters apart and at least 150 meters from the edge of the habitat. The exact number of points within a particular site is determined by the size of the area and may range from 1 up to 10 points per site. Point counts are conducted from sunrise to 0930 hours, during suitable weather conditions (i.e. wind less than 10 mph, precipitation no greater than a light rain).

Playback of taped calls are used to elicit responses from relatively secretive species, like Redshouldered hawks and Common moorhens, or species that are known to react strongly to this technique, such as Louisiana waterthrushes. Depending on the bird species, taped calls of territorial males or avian predators are played using an amplifier speaker. All species reacting to the call are recorded and their behavior noted. This technique is also employed for nocturnally active birds, such as owls.

Road surveys are conducted for large or conspicuous bird species associated with open country, such as agricultural areas and grassland tracts. Routes are selected that bisect or run along selected open lands. Stops are made every half mile, depending on the size of the site. From roadside, sites are scanned with binoculars or spotting scope to locate species of interest. This technique is used to search for Loggerhead Shrikes, which frequently hunt from roadside wires in open country.

#### Herpetofauna Surveys

Anuran call surveys, which document breeding frogs and toads, are conducted at night after 2200 hours during chorusing periods from April through July. Wetland locations are surveyed for three to five minutes, where all species calling were identified and the intensity of calls (an index of the number of calling individuals) are recorded.

Drift fences are utilized to capture more secretive herpetofauna, such as salamanders, and to record seasonal movements of a variety of species. Drift fences consist of 50-foot rolls of aluminum flashing with six to eight five-gallon buckets buried flush with the ground on either side of the flashing. Fences are installed in April or May, the buckets are open through June and again in late August and September. The buckets are checked two to three times per week and all herpetofauna and small mammals are removed and identified. Buckets are closed during July and August when herpetofauna

are generally inactive. All drift fences are removed by the end of September.

Terrestrial searches involve actively searching a particular habitat or area, and hand-capturing all herpetofauna found. Logs and ground debris are turned over to check for concealed herps. This technique is useful for documenting snakes and skinks that might not be found using other methods.

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

#### Small Mammal Surveys

Small mammal surveys are conducted during late summer, July through August, when population levels are high. Trap grids are established in a 4 x 10 station array, with one trap per station. Trap types include 16 Sherman live traps, 16 Museum Special snaptraps, 4 cone pit-fall traps and 4 Victor rat traps. All traps, except pit-falls, are baited with peanut butter and oatmeal, set for four days and checked twice a day, for a total of 120 trapnights per grid. Data obtained from each specimen included species identification, sex, reproductive condition, age, and molt. After processing live mammals in the field they are marked with permanent markers and released. Other specimens are further processed at the field station. Standard measurements are taken and selected captures are prepared as voucher specimens for permanent storage at the Bell Museum of Natural History, University of Minnesota.

Bats are located and tentatively identified by using a bat detector which transforms their ultrasonic calls to an audible range. The quality and pitch of the calls enables individual species to be identified. Bat searches begin at sunset and continue until approximately 2400 hours. Where bats are observed foraging in an area, mist nets may be set across their flyways. Nets are open after sunset, monitored continuously and closed before sunrise. Bats becoming entangled in the nets are immediately removed, processed in the field, and released.

Appendix 2. Locations and associated habitats for MCBS animal survey work in Beaver Creek Valley State Park, 1993. Legal descriptions for all locations correspond to T102N R06W. Refer to Fig. 6 for map of these locations.

Amphibia	n and reptile surv	<i>reys</i>		
Drift fence	es (2 total)			
	NESW08	lowland hardwood forest		
	NWNW17	black ash swamp		
Herp searc	thes (6 total)			
	NWSW05	dry prairie/rock outcrop		
	SWSW05	old field		
	NWNW08	old field		
	SW08	lowland hardwoods		
	NW17	lowland hardwoods/black ash swamp		
	SE17	mixed oak forest/dry prairie/rock outcrop		
Anuran su	rveys (12 total)			
	SWSW05	disturbed forest opening/Beaver Creek		
	SESE08	lowland hardwood forest/intermittent stream		
	SWSW09	lowland hardwood forest/intermittent stream		
	SWSE09	mixed oak forest regrowth/intermittent stream		
	NWNE16	mixed oak forest regrowth/Intermittent stream		
	NWNE17	disturbed lowland hardwoods/stream		
	NWNE17	disturbed opening/Beaver Creek		
	NENE17	lowland hardwood forest/intermittent stream		
	NESE17	disturbed lowland hardwoods/Beaver Creek		
	SENE17	disturbed lowland hardwoods/Beaver Creek		
	SENE17	disturbed lowland hardwoods/Beaver Creek		
	SESE17	disturbed lowland hardwoods/Beaver Creek		
Birds surv	<i>y</i> eys			
Point coun	ts (26 total)			
	SWSW05	old field		
	NWNW08	old field		
	NWNW08	lowland shrubby regrowth		
	SWNW08	lowland shrubby regrowth		
	SWSW08	lowland hardwood forest		
	NESW08	lowland hardwood forest		
	SWSW08	lowland hardwood forest		
	SESW08	lowland hardwood forest		
	SESW08	maple-basswood forest		
	NWNW17	black ash swamp		
	NENW17	disturbed deciduous forest		
	NESE17	mixed oak forest		
	NESE17	maple-basswood forest/pasture edge		
	NESE17	maple-basswood forest/pasture edge		

NESE17 disturbed lowland hardwoods

SWNE17 maple-basswood forest

SWNE17 disturbed lowland hardwoods

SWN	E17	disturbed lowland hardwoods
SEN	W17	mixed oak forest/regrowth edge
SENV	W17	mixed oak forest/regrowth edge
SESE	217	mixed oak forest
SENE	E17	mixed oak forest/regrowth edge
SESE	17	mixed oak forest/pasture edge
SESE	217	disturbed lowland hardwoods
SESE	217	disturbed lowland hardwood
NESH	E24	disturbed lowland hardwoods
Playbacks (6 total	l)	
NESV	N08	lowland hardwood forest
SWS	W08	lowland hardwood forest
SWSV	W08	lowland hardwood forest
SWS	W08	lowland hardwood forest
SESV	V08	lowland hardwood forest
NWN	IW17	lowland hardwood forest
Mammal survey	5	
Trap grids (4 tota	al)	
NWN	ŴO8	old field
NWS	W08	lowland hardwood forest
SWSV	W08	disturbed lowland hardwood forest
SESW	V08	lowland hardwood forest/mixed oak forest
Bat nets (1 total)		
NEN	W17	Disturbed forest opening

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Appendix 3. Natural Heritage Database Print-outs: an explanation of selected fields.



#### Natural Heritage Database Print-outs: An Explanation of Selected Fields

The Natural Heritage database is maintained by the Natural Heritage Program and the Nongame Wildlife Program, units within the Section of Wildlife, 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-bycounty inventory of rare natural features, which is now underway.

Please note that the print-outs are copyrighted and cannot be reproduced without permission.

#### Index

The Natural Heritage database maintains records of rare features, or "elements" in Minnesota. The records contain many fields which can be organized into variously formatted printouts. Each line in an abbreviated print-out, or index, represents one occurrence of a rare natural feature such as an endangered plant or animal, a rare plant community, or a significant geological feature. Your index is organized by township, range and section and includes the following fields:

TWP, RNG, SECTION: Township, range and section numbers. In most cases, print-outs will list records to the nearest section to protect rare features that are vulnerable to exploitation. If the data manager determines that there is a need for more detailed location information, more specific section information will be included. In that case, you will note that 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). "O" is used as a place holder when a 1/2 section is specified (e.g., ONO3=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).

FED STATUS: Status of species under the Federal Endangered Species Law. Codes are LE=endangered, LT=threatened, C2=species which are candidates for listing, but about which there is not enough data to support listing proposals at this time, 3C=species that were once considered for listing, but which have proven more abundant than previously believed and are not subject to any identifiable threat at this time.

MN 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 are rare, and may become listed if they decline further; codes for these are PEN=proposed endangered, PTH=proposed threatened, PSC=proposed special concern, and NON=rare, but no legal status. 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.

NC STATUS: Although natural communities or habitats have no legal status in Minnesota, the Natural Heritage program has evaluated and ranked them according to their relative rarity and endangerment in the state. Codes are as follows: CSE= critically state endangered, END=endangered, THR=threatened, SPC=special concern, DSC=demonstrably secure, and UND=undetermined. A status of undetermined indicates that there is insufficient information about a community type at this time to allow an assessment of its status.

ELEMENT AND OCCURRENCE NUMBER: For plant and animal species this is the scientific name with the common name in parentheses; for all other features it is the feature name. The occurrence number, in combination with the element name, uniquely identifies each record and may be used to retrieve additional information from the full-record printout.

MANAGED AREA: If the element occurs within the boundaries of an area managed by a public agency or a conservation organization such as The Nature Conservancy, the name of the area is recorded. If this field is blank, the element probably occurs on private land.

#### Full Record Printout (compressed version)

Some users of Natural Heritage database information are interested in more detailed information about the individual occurrences of rare features than is provided by the index. The full record printout (compressed version) is designed to include additional fields from the database that are likely to be most relevant to users.

In full record printouts that are organized geographically, the first line of each record contains the legal description of the location, and the county. The legal description field contains the township, range and section numbers. In most cases, print-outs will list records to the nearest section to protect rare features that are vulnerable to exploitation. If the data manager determines that there is a need for more detailed location information, more specific section information will be included. In that case, you will note that 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). "O" is used as a place holder when a 1/2 section is specified (e.g., ONO3=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).

The second line shows the element name ("ename"), the common name for plants and animals, and the occurrence number. Other fields are defined below.

Last Observed Date: The date of the most recent information about this record.

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 or animal species that have legal status under the federal Endangered Species Law - Endangered, Threatened, Category 2 (a candidate species), Category 3 (more abundant than previously thought).

State NC Status: Natural community status; although natural communities or habitats have no legal status in Minnesota, the Natural Heritage program has evaluated and ranked them according to their relative rarity and endangerment in the state. ("Undetermined" indicates that there is insufficient information about a community type at this time to allow an assessment of its status.)

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 latlong 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.

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.

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 eagles are sensitive to disturbance during the breeding season from curious on-lookers. For this reason, information from the Natural Heritage database should not be reproduced or published without permission from the Natural Heritage Program. If you have questions, please call and discuss this issue with the Environmental Review Specialist for the Natural Heritage and Nongame Wildlife Programs at 612/297-2276.

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 Wildlife Programs.

Appendix 4. Natural community records for Beaver Creek Valley State Park.

Records are compiled from the Rare Features Database of the Natural Heritage Information System and organized alphabetically by element name (natural community) and occurrence number.

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Minnesota Natural Heritage Database Element Occurrence Records

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NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

19:19 Thursday, MARCH 10, 1994 Copyright 1994 State of Minnesota DNR

Element: BLACK ASH SWAMP SEEPAGE SUBTYPE #8 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: THREATENED Legal : T102N R06W 0ENWNW17 Wildlife Area: 510 FO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 36" Long: 91 35' 11" Last Obs.: 28 May 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified BLACK ASH SEEP CANOPY 25% COVER; 15M HGT; DOM: FRAXINUS NIGRA, ULMUS AMERICANA MODE DBH: 8-14CM. SUBC: RARE W/ F.NIGRA <10M HGT. SHRUBS ABSENT. HERB COVER HETEROGENEOUS MIX OF MESIC FOREST SPECIES AND WET PLANTS (RANUNCULUS, HYDROPHYLLUM, DRYOPTERIS GOLDIANA, SYMPLOCARPUS, CAREX STIPATA, C. HYSTERICINA. GLYCERIA. E-ASPECT; ELEV. <800-840 FT; JORDAN SANDSTONE OUTCROP; ALLUVIAL SOILS; CHANNELED TERRACE AND MUCK. MISS RIVER OUTWASH.

Element: DRY CLIFF (SOUTHEAST) #8 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: THREATENED Legal : T102N R06W SWSW16 Wildlife Area: 510 EO Size: EO Rank: B Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 3" Long: 91 34' 7" Last Obs.: 03 June 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.C. (CO BIOL SURVEY 1993) Voucher: Verification: verified DRY CLIFF WITH BLUFF PRAIRIE ON NARROW RIDGE DESCENDING INTO ALLUVIAL PLAIN BETWEEN CLIFF FACES. TWO CRESCENT-SHAPED CLIFFS ON OUTSIDE MEANDER OF ANCIENT STREAM ABOVE CONFLUENCE WITH SECOND STREAM INSIDE PARK BOUNDARIES. NARROW RIDGE CREATED WHEN ADJOINING STREAM VALLEYS ERODED, SOLID FACADE WITH FEW FISSURES.

CREVICES. CLIFF IS FAIRLY OPEN <40% WOODY COVER. S-ASPECT; ELEV. 920-1060 FT; ONEOTA DOLOMITE. REDWING-LACRESCENT GEOMORPH REG.

Element: DRY PRAIRIE (SOUTHEAST) BEDROCK BLUFF SUBTYPE #142 Location: HOUSTON COUNTY. MN DNR Region: 5 State NC Status: THREATENED Legal : T102N R06W NENWSW05 Wildlife Area: 510 EO Size: 10 acres EO Rank: B Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY Latitude: 43 39' 53" Long: 91 35' 9" CBS Site #: 60 Last Obs.: 27 September 1993 Ownership: Private Precision: approx. boundaries have been determined Managed Area(s): R.J.DORER STATE FOREST (STATUTORY BNDRY) BEAVER CREEK VALLEY STATE PARK(ST BND Source: ZAGER, S.C. (CO BIOL SURVEY 1993) Verification: verified Voucher: LOCATED AT CONFLUENCE OF EAST & WEST BEAVER CREEK BRANCHES NEAR SCHECH'S MILL. DRY BLUFF PRAIRIE DOMINATED BY ANDROPOGON GERARDI AND SCHIZACHYRIUM SCOPARIUM. HIGH FORB DIVERSITY: SPECIES ABUNDANT AND WELL DISPERSED (SPIRANTHES MAGNUMCAMPORUM, SALIX HUMILIS, PEDICULARIS CANADENSIS), WOODY SHRUBS 10-50% COVER FORMING THICKETS, SW-ASPECT, 30-60% GRADE, 1/3 POSITION TO CREST, SANDY LOAM W/ COBBLESTONES, ON ROCK CORE MEANDER, MISS VALLEY OUTWASH GEOMORPH REG. Element: DRY PRAIRIE (SOUTHEAST) BEDROCK BLUFF SUBTYPE #143 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SENESE17 State NC Status: THREATENED Wildlife Area: 510 EO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 38' 4" Long: 91 34' 16" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 18 August 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK

Source: ZAGER,S.C.(CO BIOL SURVEY 1993) DRY BLUFF PRAIRIE (RELEVE 4394) DOM: BOUTELOUA CURTIPENDULA, SCHIZACHYRIUM, SORGHASTRUM. FORBS ABUNDANT BUT WITH MOSTLY WEEDY SPECIES. OPEN-GROWN OAKS CANOPY 10-20% COVER, SHRUB COVER LOW. DISTURB: HIKING TRAIL, PAST GRAZING. S-ASPECT; ON NARROW, ROCKY RIDGE 900-1100 FT; GRADE 30-50%; ONEOTA DOLOMITE OUTCROPS. REDWING-LACRESCENT GEOMORPH REG. Minnesota Natural Heritage Database Element Occurrence Records NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

19:19 Thursday, MARCH 10, 1994 Copyright 1994 State of Minnesota DNR

Element: LOWLAND HARDWOOD FOREST #37 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: SPECIAL CONCERN Legal : T102N R06W NE17SESE08 Wildlife Area: 510 EO Size: EO Rank: CD Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 47" Long: 91 34' 25" Last Obs.: 05 June 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.C. (CO BIOL SURVEY 1993) Voucher: Verification: verified IMMATURE LOWLAND HARDWOODS FOREST CANOPY 70-100% COVER; <15M HGT; DOM: ULMUS AMERICANA MODAL DBH: 20-30CM; Q. MACROCARPA 40CM; JUGLANS NIGRA 30CM. SUBCAN INDISTINCT. HERB COVER 50%; WEEDY ALLUVIAL SPECIES. E-ASPECT; NARROW ALLUVIAL PLAIN OF INTERMITTENT STREAM, 871-970 FT ELEV.; ADJACENT TO ONEOTA DOLOMITE CLIFFS; ALLUVIAL SOILS CHANNELED, WELL-DRAINED. REDWING-LACRESCENT GEOMORPH REG.

Element: LOWLAND HARDWOOD FOREST #38 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: SPECIAL CONCERN Legal : T102N R06W 0E0E08 Wildlife Area: 510 EO Size: 36 acres approx EO Rank: BC Current Status: 1 Intended Status: 6 Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY (1214 acres) Latitude: 43 39' 2" Long: 91 35' 7" CBS Site #: 60 Last Obs.: 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK

Source: ZAGER,S.(CO BIOL SURVEY 1993); RUSTERHOLZ,K.; WOOLSEY & MAXSON; PARK MANAG PLAN Voucher: Verification: verified 1993: LOWLAND HARDWOOD FOREST. CANOPY HETEROGENEOUS W/YOUNG AND OLD TREES; COVER 25-75%, 20 TO >35M HGT; MOSTLY ULMUS AMERICANA 10-20CM DBH; ACER SACCHARUM 64CM; JUGLANS NIGRA 67CM; ULMUS RUBRA 75CM; ALSO, SALIX NIGRA 57CM, ACER NEGUNDO & ROBINIA. SUBC: 25-75% COVER W/ULMUS, A. NEGUNDO, A. SACCHARUM, TILIA AMERICANA. SHRUBS PATCHY. HERB COVER PATCHY MIXTURE OF MESIC UPLAND & WET FLOODPLAIN FLORA. ALLUVIAL PLAIN - CHANNELED TERRACE 800 FT; GRADE 0-6%. REDWING-LACRESC GEOM REG.

Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #15 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W 0E0E08 Wildlife Area: 510 EO Size: EO Rank: B Current Status: 1 Intended Status: 6 Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 39' 2" Long: 91 35' 14" Last Obs.: 1993 Site: BEAVER CREEK VALLEY (1214 acres) CBS Site #: 60 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK

Source: ZAGER,S.(CO BIOL SURVEY 1993); RUSTERHOLZ,K.; LAWRENCE & BERLIN;WOOLSEY & MAXSON Voucher: Verification: verified 1993: MAPLE-BASSWOOD F DOM: ACER SACCHARUM UP TO 61 CM DBH; TILIA W/FRAXINUS AMER; Q. RUBRA; JUGLANS CINEREA 132CM DBH. SUBC & SHRUB LAYER DOM: OSTRYA; CARP-INUS; SOME ZANTHOXYLUM & RIBES. DIVERSE SPRING FLORA W/POLEMONIUM, CLAYTONIA VIR, DENTARIA LA, DICENTRA CU, ERYTHRONIUM AM. LITTLE ACER REPRODUCTION IN PLACES. ALLUVIUM OF E-W RAVINE & FOOT-SLOPES N,S,E-ASPECTS; ELEV <800-1000 FT; GRADE <40%; SOILS: MISS RIVER OUTWASH & REDWING-LACRESCENT GEOMORPHIC REGIONS.

Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #31 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W NWNW16 Wildlife Area: 510 EO Size: EO Rank: B Current Status: 1 Intended Status: ? Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY (1214 acres) Latitude: 43 38' 38" Long: 91 33' 55" Last Obs.: 1993 CBS Site #: 60 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK

Source: ZAGER,S. (CO BIOL SURVEY 1993); RUSTERHOLZ,K.(1989); PARK MANAGEMENT PLAN (1979) Voucher: Verification: verified 1993: MAPLE-BASSWOOD FOREST, VARIOUSLY-AGED, HETERGENEOUS CANOPY 90% COVER; 20-35M HGT (SUPER CANOPY TREES 52-55CM DBH) DOM: ACER SACCHARUM MODE DBH: 22-37CM, RARE MAX: 76CM; TILIA AMER (10) 30-38CM, MAX: 44CM. SUBC: <25% COVER; 10M HGT; ACER SACC, OSTRYA. SHRUB COVER <5%; CARYA CORD, OSTRYA, ACER. HERB COVER >75%, DIVERSE, MESIC FORBS. N-ASPECT; 920-1020 FT; GRADE 50%; ONEOTA OUTCROPS; SOILS: DARK COLLUVIAL SILT LOAM. REDWING-LACRESCENT GEOMORPHIC REGION.

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NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF Minnesota Natural Heritage Database BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA 19:19 Thursday, MARCH 10, 1994 Element Occurrence Records MnDNR, Natural Heritage and Nongame Research Program Copyright 1994 State of Minnesota DNR Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #88 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SESE05 State NC Status: ENDANGERED Wildlife Area: 510 EO Size: EO Rank: BC Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 44" Long: 91 34' 32" Last Obs.: 12 September 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): R.J.DORER STATE FOREST (STATUTORY BNDRY) BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C. (CO BIOL SURVEY 1993) Verification: verified Voucher: MATURE MAPLE-BASSWOOD FOREST CONTINUOUS CANOPY >75% COVER: 20-35M HGT: DOM: ACER SACCHARUM MODE DBH: 30CM MAX: 51CM: QUERCUS RUBRA MAX: 71CM. SUBC: <25% COVER DOM: ACER SACC. 10-20M HGT. SHRUB COVER PATCHY <50%; SUCCESSION TREES, RIBES ZANTHOXYLUM. HERBS <20% MESIC/DRY-MESIC SPP: HYDROPHYLLUM. SANQUINARIA. DISTURB: SELECT LOGGING. N & NW-ASPECT; ELEV 900-1080 FT.; GRADE 3-50%; ONEOTA ROCK OUTCROPS; COBBLY SILT LOAM. REDWING-LACRESCENT GEOMORPH REGION Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #89 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W NENWNE08 Wildlife Area: 510 EO Size: EO Rank: B Intended Status: Quad Map: SHELDON (X23A) Current Status: Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39/ 33" Long: 91 34/ 41" Last Obs.: 21 September 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified MATURE MAPLE-BASSWOOD FOR (127 YRS) CANOPY 80% COVER; 25M HGT; DOM: ACER SACCHARUM 56CM, QUERCUS ALBA 52CM, TILIA. SUBC: >75% COVER DOM: ACER SACC, OSTRYA. CARPINUS. SHRUB COVER SPARSE W/ STAPHYLEA. HERB 50% COVER W/ ARISAEMA, UVULARIA, CYPRIPEDIUM. DISTURB: SLIGHT. N-ASPECT; ELEV 900-1080 FT; GRADE 60%; REDWING LACRESCENT GEOMORPH REG. Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #90 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W SWNE17 Wildlife Area: 510 Quad Map: SHELDON (X23A) EO Size: EO Rank: B Intended Status: Forestry District: 532 Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 24" Long: 91 34' 43" Last Obs.: 28 May 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified IMM TO MATURE MAPLE-BASSWOOD FOREST. HETEROGENEOUS CANOPY >75%; GAPS<25%; 20-30M HGT; DOM: ACER SACCHARUM MODE DBH: 40-46CM, MAX: 51CM; QUERCUS RUBRA 55-70CM DBH; POPULUS 40CM. TILIA 15CM. IMMATURE TREES AT BASE. BASAL AREA 100 SQ.FT/AC. SUBC <50%; 10CM DBH; 15M HGT; W/ OSTRYA, CARPINUS AND ULMUS, SHRUB COVER VARIES 5-75% W/ STAPHYLEA. VARIABLE HERB COVER >75% DIVERSE MESIC FLORA. NE-ASPECT; ELEV 840-960 FT; GRADE 30-70%; ONEOTA OUTCROPS, REDW-LAC GEOM REG. Element: MAPLE-BASSWOOD FOREST (SOUTHEAST) #91 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W 0ENWNW17 Wildlife Area: 510 EO Size: Intended Status: Quad Map: SHELDON (X23A) EO Rank: A Current Status: Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 33" Long: 91 35' 7" Last Obs.: 28 May 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified OLD GROWTH MAPLE-BASSWOOD FOREST CANOPY 70% COVER; UNIFORMLY 30M HGT (SPINDLY TREES: TIP-UPS COMMON); MODE DBH: 40-50CM; DOM: ACER SACCHARUM, ULMUS RUBRA, TILIA. SUBC: 50%; 5-20M; W/ OSTRYA, U.RUBRA, ACER SACC. SHRUB COVER PATCHY (25-50%) CORNUS ALTERNIFOLIA, CARPINUS, STAPHYLEA, MESIC TREES. HERBS >75% COVER: UNDISTURBED MESIC FLORA DIVERSE AND ABUNDANT. N.E-ASPECT: GRADE 70%: 840-1000 FT: ONEOTA OUTCROPS: SOIL DARK COLLUVIAL LOAM. REDWING-LACRESCENT GEOM REG.

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Minnesota Natural Heritage Database Element Occurrence Records NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

19:19 Thursday, MARCH 10, 1994 Copyright 1994 State of Minnesota DNR

Element: MOIST CLIFF (SOUTHEAST) #7 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W 0ESWSW08 Wildlife Area: 510 State NC Status: THREATENED EO Rank: C Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: Current Status: CBS Site #: 60 Latitude: 43 38' 52" Long: 91 35' 12" Last Obs.: 28 June 1993 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.C. (CO BIOL SURVEY 1993) Voucher: Verification: verified MOIST CLIFF, JORDAN SANDSTONE, 50M X (5)10M HGT, SOLID FACADE (BARE STONE) WITH FEW LEDGES, CREVICES OR RECESSES. HERB COVER SPARSE W/ POLYPODIUM VIRGINIANUM AND BRYOPHYTES. E-ASPECT: ELEV. <800-840 FT; ADJACENT TO FLOWING STREAM. REDWING-LACRESCENT GEOMORPHIC REGION.

Element: MOIST CLIFF (SOUTHEAST) #8 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SENE17 Wildlife Area: 510 State NC Status: THREATENED EO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 38' 37" Long: 91 33' 45" Last Obs.: 05 June 1993 Site: BEAVER CREEK VALLEY CBS Site #: 60 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified SHADED. MOIST CLIFF. SOLID FACADE OF ONEOTA DOLOMITE WITH SEVERAL LEDGES. FRACTURED RECESSES. CREVICES AND AT LEAST ONE "ROCK-HOUSE" 1-2M DEPTH. A CRESCENT-SHAPED ESCARPMENT RECESSED INTO N-ASPECT BLUFF (POSSIBLY QUARRIED IN DISTANT PAST). NO COLD AIR DETECTED. HERB COVER SPARSE, W/ MESIC FORBS AND WEEDY BRYOPHYTES AND FERNS (CYSTOPTERIS BULBIFERA). DISTURB: CLEARED UPLAND AND SURROUNDED BY YOUNG TREES. N-ASPECT, 960-1000 FT; 30M X 15M HGT.

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: OAK FOREST (SOUTHEAST) #6 Legal : T102N R06W SWSW05 Wildlife Area: 510 State NC Status: ENDANGERED Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: CD Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 58" Long: 91 35' 7" Last Obs.: 21 September 1993 Precision: approx. boundaries have been determined Ownership: Private Managed Area(s): R.J. DORER STATE FOREST (STATUTORY BNDRY) BEAVER CREEK VALLEY STATE PARK(ST BND Source: ZAGER, S.C. (CO BIOL SURVEY 1993) Voucher: Verification: verified MIXED OAK FOR W/MESIC INCLUSIONS. HETEROGENEOUS CANOPY YOUNG W/FEW LARGE TREES: 50-80%; 25-40CM DBH; 10-20M HGT; DOM: QUERCUS RUBRA; ACER SACCHARUM. SUBCAN: INDISTINCT: SHRUB COVER >50%: CORYLUS AMERICANA. ZANTHOXYLUM, HERB COVER 75%: WEEDY WOODLAND SPECIES: AGRIMONIA GRYPOSEPALA, EUPATORIUM RUGOSUM, DISTURB: SELECT LOGGING/GRAZING. N & NE-ASPECT; ELEV: 850-1050 FT.; GRADE 12-45%; JORDAN SANDSTONE/ONEOTA DOLOMITE; COBBLY SILT LOAM. REDWING LACRESCENT GEOM REG. Location: HOUSTON COUNTY, MN DNR Region: 5 Element: OAK FOREST (SOUTHEAST) #7 State NC Status: ENDANGERED Legal : T102N R06W ONNE08SE05 Wildlife Area: 510 Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: BC Current Status: Intended Status: Latitude: 43 39' 39" Long: 91 34' 42" Last Obs.: 18 September 1993 Site: BEAVER CREEK VALLEY CBS Site #: 60 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): R.J.DORER STATE FOREST (STATUTORY BNDRY) BEAVER CREEK VALLEY STATE PARK

Source: ZAGER,S.C.(CO BIOL SURVEY 1993) IMM TO MATURE OAK FOR W/DRY INCLUSIONS (60-127 YRS) BASAL AREA 240 SQ. FT/AC. CANOPY 80% COVER; 25M HGT; DOM: QUERCUS RUBRA MODE DBH: 45CM MAX: 62CM; Q. ALBA 36-51CM DBH. SUBC: 90%; 3-15M HGT; 7CM DBH; DOM: OSTRYA, ACER SACC. SHRUB COVER 15% W/ MESIC TREES. HERB COVER <25% MESIC SPP: GOODYERA, CAREX ALBURSINA. SELECT LOGGING. N, S, & W-ASPECT; RAVINE WITH GULLIES, ELEV 800-1140 FT; GRADE 3-70%. REDWING-LACRESCENT GEOMORPH REG. Minnesota Natural Heritage Database Element Occurrence Records NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: OAK FOREST (SOUTHEAST) #8 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W 0W0W08 Wildlife Area: 510 FO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 17" Long: 91 35' 5" Last Obs.: 21 September 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified IMM TO MATURE MIXED OAK FOR. MESIC TO DRY CANOPY 50-80% COVER; 15-20M HGT; DOM: ULMUS RUBRA 32CM DBH; QUERCUS RUBRA 47CM; Q. MACROCARPA. DOM: ACER SACCHARUM AT FOOTSLOPE CLIFFS WITH PRAIRIE OPENINGS. SUBCAN: 100% BLENDING INTO CANOPY W/ CELTIS, OSTRYA, ACER SACC, CARYA CORDIFORMIS, SHRUB COVER DENSE, HERB COVER SPARSE WEEDY MESIC SPECIES. W. SW-ASPECT; 800-1080 FT; GRADE 30-60%; SOILS: SILT LOAM. REDWING-LACRESCENT GEOMORPH REGION.

Element: OAK FOREST (SOUTHEAST) #9 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W NE08NWSE08 Wildlife Area: 510 EO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 9" Long: 91 34' 44" Last Obs.: 12 September 1993 Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified

MIXED OAK FOR(88-104 YRS) DRY-MESIC. CANOPY 100% COVER; 20-30M HGT; DOM: QUERCUS ALBA MODE DBH: 52CM MAX: 74CM; Q. RUBRA 52/80CM DBH; JUGLANS CINEREA (DD). SUB-CAN: 25%; 5-25M HGT; DOM: OSTRYA, ACER SACC, CARYA OVATA, PRUNUS. SHRUB COVER 10 -75%. HERB COVER SPARCE TO 50% MESIC FLORA. STUMPS/ADJACENT STANDS CUT. S-FACING LATERAL RAVINE, SE-ASPECT; ELEV 950-1120 FT; RAVINE W/ DENDRITIC GULLIES; GRADE 6-30% TO CREST. REDWING-LACRESCENT GEOMORPH REG.

Element: OAK FOREST (SOUTHEAST) #10 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W SW09 Wildlife Area: 510 EO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 58" Long: 91 34' 5" Last Obs.: 21 June 1993 Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified IMM TO MATURING OAK FOREST, DRY-MESIC, EVEN-AGED CANOPY >80% COVER: 15-25M HGT; DOM: QUERCUS ALBA MODAL DBH: 38CM (ABUNDANCE 60% OF BASAL AREA): Q. RUBRA 46CM (OCCASIONAL 11% BASAL AREA). INCLUSION DOM: ULMUS RUBRA MODAL DBH: 18CM (ABUNDANCE 50% OF BASAL AREA): ACER SACCHARUM 20CM (COMMON 12% B.A.): QUERCUS RUBRA 20CM COMMON SUBC: SPARSE COVER W/ PRUNUS, CARYA, JUGLANS, S.W-ASPECTS; ELEV (920) 1000-1140 FT: REDWING-LACRESCENT GEOMORPH REG.

Element: OAK FOREST (SOUTHEAST) #12 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W SWSW16 Wildlife Area: 510 EO Size: EO Rank: C Intended Status: Quad Map: SHELDON (X23A) Current Status: Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 37' 59" Long: 91 34' 13" Last Obs.: 03 June 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified MIXED OAK FOREST WITH DRY (S,W-ASPECTS) AND MESIC INCLUSIONS (N-ASPECTS) ALSO, DRY PRAIRIE OPENINGS ON CLIFFY, NARROW RIDGE FORMED AT CONFLUENCE OF TWO ANCIENT, MEANDERING STREAMS. E, W, N-ASPECTS; ELEV 920-1080 FT. REDWING-LACRESCENT GEOMORPHIC REGION.
NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: OAK FOREST (SOUTHEAST) #13 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SESE17 State NC Status: ENDANGERED Wildlife Area: 510 EO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 37' 56" Long: 91 34' 23" Last Obs.: 21 June 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.C. (CO BIOL SURVEY 1993) Verification: verified Voucher: MIXED OAK FOREST, DRY-MESIC, CANOPY 50-75% COVER; 20-35M HGT; DOM: QUERCUS RUBRA MODE DBH: 37-50 MAX: 75CM (RARE); Q.ALBA 30-37CM DBH. SUBCAN 10-20M HGT: 15-24CM DBH: ENCLOSING CANOPY. SHRUB COVER DENSE >75%, HERB COVER SPARSE <5% W/ COMMON WOODLAND FORBS, I.E., LOW DIVERSITY, DISTURB: SHRUBBY REGROWTH FROM LOGGING (ESPECIALLY ON S-ASPECT). S.NE-ASPECT: ELEV 920-1080 FT: GRADE 6-70%. REDWING-LACRESENT GEOMORPHIC REGION.

Element: OAK FOREST (SOUTHEAST) #14 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N RO6W ONSENW17 Wildlife Area: 510 EO Size: EO Rank: BC Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Current Status: Latitude: 43 38' 19" Long: 91 34' 44" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 28 May 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.C. (CO BIOL SURVEY 1993) Voucher: Verification: verified MIXED OAK FOREST, MESIC TO DRY ON CREST OF NARROW RIDGE. OPEN CANOPY 60% (GAPS FROM TERRAIN AND FALLEN TREES); QUERCUS RUBRA 36CM; Q. MACROCARPA (UPPER SLOPE)

49-65CM; ACER SACCHARUM (LOWER THIRD SLOPE) 48CM. SUBC: COVER 80%; 10CM DBH; ACER SACC, FRAXINUS NIGRA. SHRUB COVER <25% W/ CORNUS ALTERNIFOLIA. HERB COVER 50-75% W/ MESIC FLORA. N, NW-ASPECTS; ELEV 880-1040 FT; GRADE 6-70%; ONEOTA DOLOMITE BOULDERS ARE MOSS COVERED ON LOWER ELEV; SILT LOAM. REDW-LAC GEOM REG.

Element: OAK FOREST (SOUTHEAST) #15 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W OWNW17 Wildlife Area: 510 EO Size: EO Rank: C Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 38" Long: 91 35' 23" Last Obs.: 15 June 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified MIXED OAK FOREST (60-80 YRS) DRY-MESIC, CANOPY 50-75% COVER; 25M HGT; DOM: QUERCUS ALBA 30-40CM DBH; Q.RUBRA 42CM (COM) SUBC: >75%; 5-10M HGT W/ PRUNUS, OSTRYA, AND ACER SACCHARUM. SHRUB COVER PATCHY W/ ZANTHOXYLUM, RIBES, OSTRYA, TILIA, ACER SACC. HERB LAYER >75%; DOM: CAREX PENSLYVANICA; FORBS SPARSE

(CORALLORHIZA MACULATA) MANY TREE SEEDLINGS. N,NE-ASPECT; ELEV 940-1120 FT; GRADE 6-30%; SOILS: SILT LOAM. REDWING-LACRESCENT GEOMORPHIC REGION.

Element: OAK FOREST (SOUTHEAST) DRY SUBTYPE #25 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W 0S0S08 Wildlife Area: 510 EO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 CBS Site #: 60 Latitude: 43 38' 45" Long: 91 34' 44" Last Obs.: 13 August 1993 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.C. (CO BIOL SURVEY 1993) Voucher: Verification: verified IMMATURE, DRY OAK FOR W/MESIC FOOTSLOPES & BRUSHY PRAIRIE OPENINGS, CANOPY: MODE DBH: 25-30CM: QUERCUS MACROCARPA, ACER SACCHARUM, OCCASIONAL Q, RUBRA 50CM. CANOPY VARIES DUE TO PAST CUTTING AND DISSECTED TERRAIN, TRAILS, LOG ROADS. SUBCAN: COVER <5M HGT; THICKET OF PRUNUS, CARYA, QUERCUS. NW,W,S-ASPECT; ELEV

800-1100 FT; GRADE 6-70%; MANY, CLIFFY OUTCROPS OF ONEOTA DOLOMITE; COBBLY SILT LOAM. REDWING-LACRESCENT GEOMORPH REG.

NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Location: HOUSTON COUNTY, MN DNR Region: 5 Element: OAK FOREST (SOUTHEAST) DRY SUBTYPE #26 Legal : T102N R06W 0E17 Wildlife Area: 510 State NC Status: ENDANGERED EO Rank: BC Intended Status: FO Size: Current Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 17" Long: 91 34' 22" Last Obs.: 01 July 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified DRY TO DRY-MESIC OAK FOR W/MESIC INCLUSIONS IN GULLIES, ROCK OUTCROPS & FOOT-SLOPES. PRAIRIE OPENINGS NEAR ROCK LEDGES. HETEROGENEOUS CANOPY MODE DBH: 30 CM; WITH YOUNG MESIC SPECIES AND OLDER, OPEN-GROWN OAKS; ALSO, LARGE RED CEDER STANDS. COELOGLOSSUM VIRIDE NEAR ROCK OUTCROP BASE (1000 FT ELEV). W.SW-ASPECT. ELEV 800-1040 FT: GRADE (6)30-70%; ONEOTA CLIFFS & OUTCROPS. REDWING-LACRESCENT GEOMROPH REG.

Element: OAK FOREST (SOUTHEAST) MESIC SUBTYPE #96 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W OWNW17 State NC Status: ENDANGERED Wildlife Area: 510 EO Size: EO Rank: B Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 30" Long: 91 35' 17" Last Obs.: 28 May 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Voucher: Verification: verified OLD GROWTH. MESIC MIXED OAK FOREST. HETEROGENEOUS CANOPY 100% (SUPER CANOPY 40%: 30M HGT: 120-140 YRS): DOM: QUERCUS RUBRA MODE DBH: 30CM MAX: 75CM (COM):

CANOPY 15-25M HGT; Q.ALBA, ACER SACCHARUM 30CM DBH. SUBC: INDISTINCT; DOM: ACER SACCHARUM. SHRUB COVER SPARSE. HERB COVER SPARSE W/WEEDY MESIC FLORA (DENSE SHADE TO SUBSTRATE). ERODED TOPSOIL. S, E-ASPECT; ELEV (960)1000-1100 FT; GRADE 6-45%; SOILS: SILT LOAM, ERODED A-HORIZON. REDWING-LACRESCENT GEOMORPHIC REG.

Element: OAK WOODLAND-BRUSHLAND (SOUTHEAST) #28 Location: HOUSTON COUNTY, MN DNR Region: 5 Wildlife Area: 510 Legal : T102N R06W OSSWNENW17 State NC Status: SPECIAL CONCERN FO Size: EO Rank: C Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 38' 32" Long: 91 35' 8" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 15 June 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.C.(CO BIOL SURVEY 1993) Verification: verified Voucher: MIXED OAK WOODLAND-BRUSHLAND ON EAST-WEST NARROW, ROCKY RIDGE BORDERED BY MESIC FOREST ON STEEP SIDE-SLOPES. CANOPY 50-70%; 15M HGT W/ QUERCUS MACROCARPA, JUGLANS NIGRA, BETULA PAPYRIFERA. SHRUB LAYER >30% COVER; 2-10M HGT W/ ZANTHOXYLUM, RIBES, RUBUS, JUNIPERUS VIRGIN, ACER SACCHARUM AND LIANA THICKET: VITIS AESTIVALIS, V. RIPARIA. HERBS A MIX OF PRAIRIE AND WOODLAND SPECIES. ELEV: 960-1040 FT; 30-60%; ONEOTA DOLOMITE CLIFFS/OUTCROPS. REDW-LACRESCENT GEOM REG.

Element: TALUS SLOPE ALGIFIC SUBTYPE #7 Location: HOUSTON COUNTY, MN DNR Region: 5 State NC Status: ENDANGERED Legal : T102N R06W NWNW17 Wildlife Area: 510 Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: B Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 34" Long: 91 35' 14" Last Obs.: 03 May 1990 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: OSTLIE.W. Voucher: Verification: verified MOD SIZED ALGIFIC SLOPE OCCURS ON NE-FACING HILLSIDE ABOVE BEAVER CREEK, COLDEST POCKET, ROUGHLY 60 FT BY 20 FT. POSSESSES LITTLE TREE CANOPY, GROUND VEGETATION DOM BY CHRYSOPLENIUM IDWENSE. ADOXA MOSCH, CYSTOP BULB & IMPATIENS PALLIDA, DOM SHRUB IS SAMBUCUS PUBENS, NO EVIDENCE OF DISTURB OUTSIDE OF OCCAS DEER TRAFFIC. POTENTIAL THREATS INCLUDE HUMAN TRAFFIC, UPLAND DESTRUCT OF SINKHOLES, CONTAM CONTAM WATER SUPPLY. IN 1990 RE-VISIT TO SITE, 2 LANDSNAIL SPP COLLECTED.

NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: TALUS SLOPE ALGIFIC SUBTYPE #8 State NC Status: ENDANGERED EO Size: EO Rank: C Current Status: Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation	Intended Status: CBS Site #: 60	Location: HOUSTON COUNTY, MN Legal : T102N RO6W NENWNE17 Quad Map: SHELDON (X23A) Latitude: 43 38' 36" Long: 91 34' 33" Precision: approx. boundaries have been o	DNR Region: 5 Wildlife Area: 510 Forestry District: 532 Last Obs.: 1993 Metermined
Managed Area(s): BEAVER LREEK VALLEY STATE PARK Source: ZAGER,S.C. (CO BIOL SURVEY 1993); OSTLIE,W. (1989) 1993: NO COLD AIR OBSERVED 26 MAY. ROCKY TALUS SURROUNDING S IFEROUS). OPEN CANOPY W/ULMUS RUBRA & TILIA MODE DBH: 20-30C CENT GEOM REG. 1989: A NICE, FAIRLY LARGE ALGIFIC SLOPE ABOV	STEP-LIKE CLIFFY SHELVES TRICKLI M; MAX 40CM. NE-ASPECT; 960-102 E EMERGENCY TRAIL. LOCATED S OF	Voucher: NG W/SEEPAGE FLOW. HERB COVER DENSE BUT WE O FT; 40-70%; ONEOTA DOLOMITE OUTCROPS; S ENTRANCE INTO PARK, .25 MI E OF HDQTERS E	ified EEDY (CYSTOPTERIS BULB- ILT LOAM. REDW-LACRES- BUILDING.
Element: TALUS SLOPE ALGIFIC SUBTYPE #9 State NC Status: ENDANGERED EO Size: EO Rank: C Current Status: Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER,S.C (CO BIOL SURVEY 1993); OSTLIE,W. (1989) SMALL ALGIFIC SLOPE LOCATED ON AND AROUND A SHORT CLIFF. SIT ZONITOIDES LIMATULUS AND DISCUS CATSKILLENSIS OCCUR AT SITE.	Intended Status: CBS Site #: 60 TE IS LOCATED SOUTH OF ENTRANCE	Location: HOUSTON COUNTY, MN Legal : T102N R06W SESESE08 Quad Map: SHELDON (X23A) Latitude: 43 38' 43" Long: 91 34' 17" Precision: approx. boundaries have been o Voucher: Verification: ver ROAD INTO PARK, .5 MILE EAST OF PARK HEADO	DNR Region: 5 Wildlife Area: 510 Forestry District: 532 Last Obs.: 1993 determined ified QUARTERS. SNAIL SPECIES

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: TALUS SLOPE ALGIFIC SUBTYPE #10 State NC Status: ENDANGERED Legal : T102N R06W NWNENW16 Wildlife Area: 510 FO Size: EO Rank: D Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 38' 39" Long: 91 33' 58" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 1993 Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.C. (CO BIOL SURVEY 1993); OSTLIE, W. (1989) Voucher: Verification: verified 1993: PERHAPS BEST CLASSIFIED AS MOIST CLIFF, EXPOSED FACADE OF ONEOTA DOLOMITE HAS FEW FRACTURES (SOLID) AND MAY HAVE BEEN QUARRIED (WITHIN CSA STAND: 3-NH63). 1989: A SMALL CLIFFY ALGIFIC SLOPE LOCATED SOUTH OF ENTRANCE ROAD INTO PARK, 1 MI E OF HDQTERS BUILDING.

Element: TALUS SLOPE ALGIFIC SUBTYPE #11 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SENE17 Wildlife Area: 510 State NC Status: ENDANGERED Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: D Current Status: Intended Status: Latitude: 43 38' 17" Long: 91 34' 26" Last Obs.: 1989 Site: BEAVER CREEK VALLEY CBS Site #: 60 Precision: approx. boundaries have been determined Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: OSTLIE.W. Voucher: Verification: verified MODERATELY-SIZED, EAST-FACING, CLIFFY ALGIFIC SLOPE LOCATED ALONG BEAVER CREEK, 1/8 MILE UPSTREAM FROM LARGE SPRING WHICH FEEDS MOST OF CREEK.

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NATURAL COMMUNITY ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: TALUS SLOPE ALGIFIC SUBTYPE #12 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SESE17 Wildlife Area: 510 State NC Status: ENDANGERED Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: D Current Status: CBS Site #: 60 Latitude: 43 38' 2" Long: 91 34' 24" Last Obs.: 1993 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: approx. boundaries have been determined Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.C. (CO BIOL SURVEY 1993); OSTLIE, W. (1989) Voucher: Verification: verified 1993: PERHAPS BETTER CLASSIFIED AS MOIST CLIFF (MADERITE?) 30M HGT, NO SEEPS OBSERVED. ON OUTSIDE MEANDER OF ANCIENT STREAM. TALUS MOSTLY LARGE BOULDERS. FACADE SOLID WITH FEW CREVICES. SE, E-ASPECTS; 900-980 FT; PRECIPITOUS TO STREAM; ONEOTA DOLOMITE. REDWING-LACRESCENT GEOMORPHIC REG. 1989: SMALL, CLIFFY ALGIFIC SLOPE #12. LOCATED 0.5 MI S FROM THE SPRING.

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Appendix 5. Rare plant species records for Beaver Creek Valley State Park.

Records are compiled from the Rare Features Database of the Natural Heritage Information System and organized alphabetically by element name (scientific name) and occurrence number.

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RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

8:42 Friday, MARCH 11, 1994 Copyright 1994 State of Minnesota DNR

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: ACTAEA PACHYPODA (WHITE BANEBERRY) #46 State Status: No Legal Status Legal : T102N R06W SWNWNW08 Wildlife Area: 510 EO Size: EO Rank: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Current Status: Latitude: 43 39' 22" Long: 91 35' 20" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 11 August 1993 Precision: within 0.25 mile. confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Voucher: MIN Verification: verified Source: KERN.C.S.(2130) MIXED OAK FOREST, DOMINATED BY QUERCUS RUBRA. E FACING, SANDY SILTY LOAM, 50 DEGREE SLOPE. ASSOCIATES: RHUS RADICANS. JUGLANS CINEREA. VITUS RIPARIA. ACER SACCHARUM, BETULA PAPYRIFERA.

Element: ACTAEA PACHYPODA (WHITE BANEBERRY) #47 State Status: No Legal Status EO Size: EO Rank: CD Current Status: Intended Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER,S.(930903-1) IN IMMATURE MESIC MIXED OAK FOREST DOMINATED BY UNMUS RUBRA CARYA CORDIFORMIS WITH CELTIS

Location: HOUSTON COUNTY, MN Legal : T102N RO6W NWNWNENW08 Quad Map: SHELDON (X23A) Latitude: 43 39' 32" Long: 91 35' 10" Precision: within 0.25 mile, confirmed

DNR Region: 5 Wildlife Area: 510 Forestry District: 532 Last Obs.: 03 September 1993

Source: ZAGER,S.(930903-1) IN IMMATURE, MESIC MIXED OAK FOREST DOMINATED BY ULMUS RUBRA, CARYA CORDIFORMIS WITH CELTIS OCCIDENTALIS. CANOPY (20M HGT; 32CM DBH). UNDERSTORY HGT VARIED, CLOSED COVER WITH PARTIAL LIGHT TO SUBSTRATE DUE TO SNAG (FRAXINUS NIGRA). SW ASPECT, 35% SLOPE, BASE, DARK COLLUVIAL SOIL, FRIABLE CLAY SILT W/GRAVEL. ONE WEAK PLANT W/FRUITS. SPARSE HERB COVER (5-10%). ASSOC: ARISAEMA TRIFLORUM, HACKLEA VIRGINIANA, GEUM CANADENSIS.

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: ADOXA MOSCHATELLINA (MOSCHATEL) #47 State Status: SPECIAL CONCERN Legal : T102N R06W NWNW17 Wildlife Area: 510 FO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 38' 37" Long: 91 35' 13" Last Obs.: 02 May 1990 Site: BEAVER CREEK VALLEY CBS Site #: 60 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: OSTLIE.W.(SIGHT RECORD) Voucher: Verification: sight rec. BEAVER CREEK VALLEY STATE PARK: NWNW SEC 17 T102N R06W. ON ALGIFIC SLOPE PROPER AND EXTENDING DOWNHILL TO ROUGHLY 1/2 THE DISTANCE TO THE FLOODPLAIN, APPARENTLY BENEFITTING FROM THE COLD-AIR DRAINAGE OF THE ALGIFIC SLOPE. BETWEEN 101 AND 1000 INDIVIDUALS. ASSOCIATED PLANT SPECIES INCLUDE: CHRYSOSPLENIUM IOWENSE. CYSTOPERIS BULBIFERA AND IMPATIENS PALLIDA.

Element: ADOXA MOSCHATELLINA (MOSCHATEL) #65 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NWNESW08 Wildlife Area: 510 Quad Map: SHELDON (X23A) EO Size: EO Rank: BC Current Status: Intended Status: Forestry District: 532 Latitude: 43 39' 4" Long: 91 35' 5" CBS Site #: 60 Last Obs.: 02 July 1993 Site: BEAVER CREEK VALLEY Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S. & KERN, C. Voucher: MIN Verification: verified IN PARK RELEVE #R93-14. IN LOWLAND HARDWOOD FOREST DOMINATED BY ACER SACCHARUM AND JUGLANS NIGRA. CANOPY (35M. HGT: 60% COVER). UNDERSTORY 100% COVER DOM. BY ULMUS RUBRA AND U. AMERICANA. WELL DRAINED, SANDY LOAM, DARK, 2% SLOPE, W-ASPECT, CHANNELED. 25 PLANTS, NO FRUITS. LAPORTEA CANADENSIS, OSMORHIZA

LONGISTYLIS, CRYPTOTAENIA CANADENSIS, BLEPHILIA HIRSUTA.

RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Location: HOUSTON COUNTY, MN DNR Region: 5 Element: ARABIS LAEVIGATA (SMOOTH ROCK-CRESS) #9 State Status: No Legal Status Legal : T102N R06W NWNW08 Wildlife Area: 510 EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 32" Long: 91 35' 8" Last Obs.: 11 August 1993 -Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN.C.S.(2126) Voucher: MIN Verification: verified ABOVE MAINTAINED TRAIL APPROXIMATELY 10 FEET, ALONG A DEER PATH. MIXED OAK FOREST, DOMINATED BY ACER SACCHARUM, QUERCUS RUBRA, TILIA AMERICANA. SILTY LOAM, SW FACING. 25 DEGREE SLOPE. SCATTERED IN 5 FOOT AREA. ASSOCIATES: XANTHOXYLUM AMERICANA, PARTHENOCISSUS QUINQUEFOLIA, TARAXACUM OFFICINALE, HYSTRIX PATULA.

Element: ARABIS LAEVIGATA (SMOOTH ROCK-CRESS) #11 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: No Legal Status Legal : T102N R06W NWNW17 Wildlife Area: 510 Quad Map: SHELDON (X23A) Forestry District: 532 Intended Status: EO Size: EO Rank: Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 39" Long: 91 35' 18" Last Obs.: 29 June 1993 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S. Voucher: MIN Verification: verified IN BLACK ASH SWAMP (SEEPAGE AREA AT BASE OF JORDAN SANDSTONE, DOMINATED BY FRAXINUS NIGRA, ULMUS AMERICANA. MESIC/WET SANDY TALUS, DRAINED, 3% SLOPE WITH

DOLOMITE COBBLESTONES. NE-ASPECT, SCATTERED PLANTS DECUMBENT ALONG SOIL, LAPORTEA CANADENSIS, CYSTOPTERIS BULBIFERA, IMPATIENS SPP.

Element: ASPLENIUM PLATYNEURON (EBONY SPLEENWORT) #6 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SESW05 Wildlife Area: 510 State Status: No Legal Status EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 CBS Site #: 60 Latitude: 43 39' 40" Long: 91 35' 12" Last Obs.: 03 June 1993 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Verification: verified Source: KERN,C. & ZAGER,S. Voucher: MIN SCHECHS MILL ENTRANCE TO FISHERMAN'S PARKING LOT; CROSS BRIDGE TO NORTH BLUFF, ABOUT 900 TO 1000 FOOT ELEVATION. OVERGROWN BEDROCK BLUFF PRAIRIE, DOMINATED BY QUERCUS MACROCARPA, BETULA PAPYRIFERA, WITH TILIA AMERICANA, OSTRYA VIRGINIANA. SAND WITH SOME HUMUS, NW ASPECT, 40 DEGREE SLOPE. 26+ PLANTS IN SANDY, MOSSY AREA, AREA LESS THAN 7 FOOT DIAMETER. ASSOCIATES: RHUS RADICANS, OSMORHIZA CLAYTONII, ADIANTUM PEDATUM, PHLOX PILOSA, CAREX CONVOLUTA, VITIS RIPARIA.

Element: ASTER PRENANTHOIDES (CROOKED-STEM ASTER) #9 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SENE17 Wildlife Area: 510 State Status: No Legal Status FO Size: Current Status: 1 Intended Status: 1 Quad Map: SHELDON (X23A) Forestry District: 532 EO Rank: Site: BEAVER CREEK VALLEY STATE PARK Latitude: 43 38' 22" Long: 91 34' 29" Last Obs.: September 1945 Ownership: MN DNR Parks and Recreation Precision: within 0.50 mile Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ROSENDAHL, C.O. (7748) Voucher: 385932 MIN Verification: unverified IN MOIST SITUATIONS, BELOW EAST BEAVER SPRINGS. SECTION 17, CALEDONIA TWP, HOUSTON CO.

RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: ATHYRIUM PYCNOCARPON (NARROW-LEAVED SPLEENWORT) #12 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NWNW17 Wildlife Area: 510 Quad Map: SHELDON (X23A) EO Size: EO Rank: A Current Status: Intended Status: Forestry District: 532 CBS Site #: 60 Latitude: 43 38' 39" Long: 91 35' 18" Last Obs.: 16 July 1992 Site: BEAVER CREEK VALLEY STATE PARK Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.(920716-2) Voucher: MIN Verification: verified LOCATED 1/5 MILE WEST FROM PICNIC PARKING AREA AT BASE OF NE-FACING SLOPE. IN OLD-GROWTH, MAPLE/BASSWOOD FOREST, 100% CANOPY, AT SLOPE BASE. IN SEEPAGE AREA WITHIN 5 METER ELEVATION ABOVE STREAM ALLUVIUM, DARK, CLAY-SILTY SOIL WITH SOME ROCK OUTCROPS AND CLIFFS. SEVERAL PLANTS, ASSOC: ATHYRIUM THELYPTEROIDES. DRYOPTERIS GOLDIANA, CAULOPHYLLUM THALICTROIDES, ASARUM SPP.

Element: ATHYRIUM THELYPTERIODES (SILVERY SPLEENWORT) #11 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NWNW17 State Status: No Legal Status Wildlife Area: 510 Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: A Current Status: Site: BEAVER CREEK VALLEY STATE PARK CBS Site #: 60 Latitude: 43 38' 39" Long: 91 35' 18" Last Obs.: 16 July 1992 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S. (920716-3) Voucher: MIN Verification: verified LOCATED 1/5 MILE WEST FROM PICNIC PARKING AREA AT BASE OF NE-FACING SLOPE. IN OLD-GROWTH, MAPLE/BASSWOOD FOREST. 100% CANOPY, AT SLOPE BASE. IN SEEPAGE AREA WITHIN 5 METER ELEVATION ABOVE STREAM ALLUVIUM, DARK, CLAY-SILTY SOIL WITH SOME ROCK OUTCROPS AND CLIFFS. SEVERAL PLANTS. ASSOC: ATHYRIUM PYCNOCARPON,

DRYOPTERIS GOLDIANA, CAULOPHYLLUM THALICTROIDES, ASARUM.

Element: BLEPHILIA HIRSUTA (WOOD MINT) #11 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: No Legal Status Legal : T102N R06W 08 Wildlife Area: 510 Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: 1 Intended Status: 1 Latitude: 43 39' 26" Long: 91 35' 12" Site: BEAVER CREEK VALLEY STATE PARK Last Obs.: July 1921 Ownership: MN DNR Parks and Recreation Precision: within one mile Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ROSENDAHL.C.O.(4096) Voucher: 226934 MIN Verification: unverified COMMON, DENSLY WOODED BOTTOM LANDS, LOWER PART OF EAST BEAVER, SHELDON VALLEY, (WITH SCUTELLARIA VERSICOLOR)

Element: BLEPHILIA HIRSUTA (WOOD MINT) #20 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NWNW17 Wildlife Area: 510 State Status: No Legal Status Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: A Current Status: Intended Status: Site: BEAVER CREEK VALLEY STATE PARK CBS Site #: 60 Latitude: 43 38' 39" Long: 91 35' 18" Last Obs.: 16 July 1992 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S. (920716-6) Voucher: MIN Verification: verified LOCATED 1/5 MILE WEST OF PICNIC PARKING AREA ON NE FACING SLOPE. IN 60 X 20 METER OPENING OF MAPLE/BASSWOOD FOREST, ASSOCIATED WITH COLD TALUS AND WET SEEP, MID-SLOPE, 70% GRADE, DARK SILTY SOIL WITH MOSS COVERED ROCKS. ONE PLANT ASSOCIATED WITH DRYOPTERIS GOLDIANA, CORNUS RUGOSA, SAMBUSCUS PUBENS, LAPORTEA CANADENSIS, HYDROPHYLLUM APPENDICULATUM.

RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: BLEPHILIA HIRSUTA (WOOD MINT) #22 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NWNE17 State Status: No Legal Status Wildlife Area: 510 EO Size: EO Rank: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Current Status: Latitude: 43 38' 36" Long: 91 34' 37" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 15 July 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN.C. Voucher: MIN Verification: verified BEAVER CREEK VALLEY STATE PARK. MAPLE-BASSWOOD FOREST, DOMINATED BY ACER SACCHARUM, TILIA AMERICANA, OSTRYA VIRGINIANA. LEVEL GROUND, SILTY CLAY. IN BUD, 15+ PLANTS, LEAVES DAMAGED BY BUGS. ASSOCIATES: HYDROPHYLLUM VIRGINIANUM, VIOLA PUBESCENS, PODOPHYLLUM PELTATUM, LAPORTEA CANADENSIS.

Element: BLEPHILIA HIRSUTA (WOOD MINT) #23 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: No Legal Status Legal : T102N R06W NWNW08 Wildlife Area: 510 EO Size: Quad Map: SHELDON (X23A) Forestry District: 532 EO Rank: Current Status: Intended Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 29" Long: 91 35' 10" Last Obs.: 06 August 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN.C.S.(2124) Voucher: MIN Verification: verified OLD FIELD. SILTY CLAY LOAM, LEVEL TO SLIGHTLY UNDULATING. GROWING UNDER A DENSE COLONY OF SOLIDAGO CANADENSIS. ASSOCIATES: MONARDA FISTULOSA, URTICA DIOICA, CIRSIUM ARVENSE, POA PRATENSIS,

Element: CAREX LAXICULMIS VAR. COPULATA (SPREADING SEDGE) #3 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W SESE08 Wildlife Area: 510 EO Size: EO Rank: Current Status: 1 Intended Status: 1 Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY Latitude: 43 38' 43" Long: 91 34' 21" CBS Site #: 60 Last Obs.: May 1977 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: WHEELER.G.A.(1089) Voucher: 680856 MIN Verification: verified BEAVER CREEK VALLEY STATE PARK. CA 1 MI E OF THE ENTRANCE GATE. GROWING ON A STEEP N-FACING WOODED SLOPE JUST S OF THE ROAD LEADING INTO THE PARK. T102N R6W SEC 8.

Element: CAREX LAXICULMIS VAR. COPULATA (SPREADING SEDGE) #4 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W SESW05 Wildlife Area: 510 EO Size: EO Rank: Current Status: 1 Intended Status: 1 Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 43" Long: 91 34' 58" Last Obs.: July 1979 Ownership: Private Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK(ST BNDRY) R.J.DORER STATE FOREST (STATUTORY BND Source: WHEELER, G.A. (4238) Voucher: 709246 MIN Verification: verified BEAVER CREEK VALLEY SP. GROWING ON A STEEP N-FACING WOODED BLUFF OVERLOOKING BEAVER CRK. T102N R6W SECTION 5.

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RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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DNR Region: 5 Element: CAREX LAXICULMIS VAR. COPULATA (SPREADING SEDGE) #8 Location: HOUSTON COUNTY, MN Legal : T102N R06W NENW16 Wildlife Area: 510 State Status: SPECIAL CONCERN Quad Map: SHELDON (X23A) Intended Status: Forestry District: 532 FO Size: EO Rank: AB Current Status: CBS Site #: 60 Latitude: 43 38' 39" Long: 91 33' 53" Last Obs.: 03 June 1993 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile. confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S. & KERN.C. Voucher: MIN Verification: verified RAVINE WEST OF PRIVATE DRIVE ON HWY NEAR PARK ENTRANCE (150 YDS SOUTH OF ROAD, 50 FT FROM STREAM CONFLUENCE). IN MATURE MAPLE BASSWOOD FOREST DOMINATED BY ACER SACCHARUM. SILT LOAM, FRIABLE, DARK, 30-50% SLOPE, NE-ASPECT. 3 CESPITOSE PLANTS. ASSOC: HYDROPHYLLUM VIRGINIANUM. PILEA SPP. POLEMONIA REPTANS. RANUNCULUS ARBORTIVUS, MITELLA DIPHYLLA. RELEVE #R93-7.

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: CAREX WOODII (WOOD'S SEDGE) #2 Legal : T102N R06W 08 Wildlife Area: 510 State Status: SPECIAL CONCERN Current Status: 1 Intended Status: 1 EO Size: EO Rank: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 39' 8" Long: 91 35' 20" Last Obs.: May 1977 Site: BEAVER CREEK VALLEY CBS Site #: 60 Precision: within one mile Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Voucher: 680852 MIN Verification: verified Source: WHEELER, G.A. (1095) BEAVER CREEK VALLEY SP: ABOUT .5 MI. W OF THE "FLOATING BRIDGE" ACROSS BEAVER CREEK. PLANT GROWING ON A STEEP, NORTH-FACING SLOPE DOMINATED BY SUGAR MAPLE AND BASSWOOD ON SOUTH BANK OF BEAVER CREEK. T102N R6W SECTION 8.

Location: HOUSTON COUNTY, MN Element: CHRYSOSPLENIUM IOWENSE (A SPECIES OF GOLDEN SAXIFRAGE) #6 DNR Region: 5 Wildlife Area: 510 Federal Status: CANDIDATE, CATEGORY 2 Legal : T102N R06W NWNW17 State Status: ENDANGERED Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: B CBS Site #: 60 Latitude: 43 38' 37" Long: 91 35' 13" Last Obs.: 15 May 1989 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: OSTLIE, W. (SIGHT RECORD) Voucher: Verification: sight rec. BEAVER CREEK VALLEY SP: NWNW 17 T102N R6W S17: SW OF PICNIC AREA. NE FACING ALGIFIC TALUS SLOPE, ON MID-SLOPE IN OPEN MOIST AREA. 200-500 PLANTS, MANY

FLOWERING. ASSOCIATED SPECIES INCLUDE: CYSTOPTERIS BULBIFERA, ADOXA MOSCHATELLINA, IMPATIENS PALLIDA.

Element: DESMODIUM ILLINOENSE (ILLINOIS TICK-TREFOIL) #34 State Status: THREATENED			Location: HOUSTON CC Legal : T102N ROGN	Location: HOUSTON COUNTY, MN Legal : T102N RO6W SENESE17		
EO Size:	EO Rank:	Current Status:	Intended Status:	Quad Map: SHELDON ()	(23A)	Forestry District: 532
Site: BEAVER CREEK	VALLEY		CBS Site #: 60	Latitude: 43 38′ 5'	Long: 91 34/ 19"	Last Obs.: 27 July 1993
Ownership: MN DNR Parks and Recreation			Precision: within 0.	Precision: within 0.25 mile, confirmed		
Managed Area(s): BE	AVER CREEK VALLEY	STATE PARK				
Source: KERN,C.S.,	ZAGER,S., OLDS,C.,	& BOLIN,K.		Voucher: MIN	Verification: ver	ified
BEAVER CREEK VALLEY	STATE PARK. BLUFF	PRAIRIE. COBBLY SILT	Y LOAM, 0-20 DEGREE SLOPE.	S & SE FACINGS. ALONG TRAIL	. 50+ PLANTS. ASSOCI	ATES: PETALOSTEMUM
PURPUREA, ANDROPOGO	N GERARDII, BOUTEL	DUA CURTIPENDULA, BRO	MUS KALMII, ASCLEPIAS VERT	ICILLATA, VIOLA PALMATA.		

RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: DESMODIUM NUDIFLORUM (STEMLESS TICK-TREFOIL) #4 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: PROPOSED SPECIAL CONCERN Legal : T102N R06W NWNW17 Wildlife Area: 510 Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 FO Size: EO Rank: A Current Status: Latitude: 43 38' 33" Long: 91 35' 17" CBS Site #: 60 Last Obs.: 10 August Site: BEAVER CREEK VALLEY STATE PARK Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile. confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.AND DUNEVITZ, H. (920810-19) Voucher: MIN Verification: verified LOCATED ON NORTH-FACE BLUFF CREST 1/4 MILE WEST OF PICNIC PARKING AREA NEAR SCENIC OVERLOOK AT END OF "SWITCH-BACK TRAIL". IN MIXED OAK FOREST, CANOPY 100% COVER. SUBCANOPY 50-75% COVER DOM. BY ACER SACCHARUM. HERBACEOUS LAYER LESS THAN 25% COVER. DARK, MOIST, SILT-LOAM SOIL. 20-40 PLANTS, MOSTLY VEGETATIVE ASSOCIATED WITH CAREX ALBURSINA, SOLIDAGO FLEXIPES, SANICULA TRIFOLIATA. Location: HOUSTON COUNTY, MN Element: DESMODIUM NUDIFLORUM (STEMLESS TICK-TREFOIL) #5 DNR Region: 5 State Status: PROPOSED SPECIAL CONCERN Legal : T102N R06W SESW08 Wildlife Area: 510 Intended Status: Quad Map: SHELDON (X23A) EO Size: EO Rank: Current Status: Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 43" Long: 91 34' 45" Last Obs.: 06 August 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN, C.S. (SIGHT RECORD) Voucher: Verification: sight rec. BEAVER CREEK VALLEY STATE PARK. JUST ABOVE A BLUFF PRAIRIE, ALONG EDGE OF A MIXED OAK FOREST, DOMINATED BY QUERCUS MACROCARPA, QUERCUS VELUTINA, POPULUS TREMULOIDES. CLAY, S FACING HILL TOP, 5 DEGREE SLOPE. ONE PLANT IN AN AREA BEING INVADED BY WOODY VEGETATION. IN BLOOM, NO LEAVES ON THE FLOWERING STALK, LEAVES ON SEPARATE STALK. ASSOCIATES: RUBUS OCCIDENTALIS, ACHILLEA MILLEFOLIUM, COMMANDRA UMBELLATA, XANTHOXYLUM AMERICANA, ANDROPOGON GERARDII. Location: HOUSTON COUNTY, MN Element: DESMODIUM NUDIFLORUM (STEMLESS TICK-TREFOIL) #6 DNR Region: 5 Legal : T102N R06W NWNWNENW08 State Status: PROPOSED SPECIAL CONCERN Wildlife Area: 510 EO Size: EO Rank: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Current Status: Latitude: 43 39' 33" Long: 91 35' 8" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 03 September 1993 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK 10 Source: ZAGER, S. (930903-2) Voucher: MIN Verification: verified IN DRY-MESIC, MATURE MIXED OAK FOREST DOM BY QUERCUS RUBRA (TYPICALLY 25M HGT; 47CM DBH). SUBCANOPY DOM BY OSTRYA W/ACER SACCHARUM. DARK, GRAY SILT W/GRAVEL, COBBLESTONES & BOULDERS. 1/3 SLOPE POSITION, 60% SLOPE W-ASPECT. ONE PLANT IN FLOWER. ASSOC: DESMODIUM GLUTINOSUM, SANICULA GREGARIANA, SOLIDAGO FLEXICAULIS. (Q. RUBRA: 47CM DBH; 25M HGT; 96 RINGS CORED) Element: DICENTRA CANADENSIS (SQUIRREL-CORN) #3 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SWSW08 Wildlife Area: 510 State Status: SPECIAL CONCERN FO Size: Current Status: 1 Intended Status: 69 Quad Map: SHELDON (X23A) Forestry District: 532 EO Rank: B Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 45" Long: 91 35' 18" Last Obs.: 10 May 1984 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: WHEELER, G.A. (8191) Voucher: 774937 MIN Verification: verified BEAVER CREEK VALLEY STATE PARK. PLANT GROWING IN OR ON A SKUNK CABBAGE SEEPAGE SITE AT THE BASE OF A STEEP, WOODED SLOPE NEAR BEAVER CREEK. T102N RO6W SEC.8. (PREV. COLL: LAWRENCE, D.B. (79-1) MAY 5 1979, SW1/4 SW1/4 SECTION 8, T102N R6W. NEAR BASE OF E-FACING FORESTED SLOPE OF EAST FORK OF BEAVER CREEK. SOFT EARTH. DECIDUOUS FOREST COMPLETELY UNDISTURBED AREA).

RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF Minnesota Natural Heritage Database BEAVER CREEK VALLEY STATE PARK. HOUSTON COUNTY, MINNESOTA 8:42 Friday, MARCH 11, 1994 Element Occurrence Records MnDNR. Natural Heritage and Nongame Research Program Copyright 1994 State of Minnesota DNR Element: DODECATHEON AMETHYSTINUM (JEWELLED SHOOTING STAR) #36 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: PROPOSED SPECIAL CONCERN Legal : T102N R06W SWSENW08 Wildlife Area: 510 EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 8" Long: 91 34' 59" Last Obs.: 27 May 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN.C.(2026) Voucher: MIN Verification: verified PLATEAU ROCK TRAIL TO THE HILL POINT: THE POPULATION IS LOCATED BETWEEN OVERLOOK AND SMALL DOLOMITE OUTCROP BEFORE TRAIL END. DOM: ACER SACCHARUM, BETULA PAPYRIFERA, DOLOMITE OUTCROP, NNW ASPECT, NEXT TO TRAIL UNPROTECTED FROM HIKERS, 200+ PLANTS, ASSOC: RIBES AMERICANUM, AQUILEGIA CANADENSIS, UVULARIA GRANDIFLORA RHUS RADICANS, HEPATICA ACUTILOBA, JUNIPERUS COMMUNIS, SANGUINARIA CANADENSIS. Element: DODECATHEON AMETHYSTINUM (JEWELLED SHOOTING STAR) #37 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: PROPOSED SPECIAL CONCERN Legal : T102N R06W SWSW05 Wildlife Area: 510 EO Size: EO Rank: Quad Map: SHELDON (X23A) Current Status: Intended Status: Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 38" Long: 91 35' 11" Last Obs.: 03 June 1993 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN.C. & ZAGER.S. Verification: verified Voucher: MIN SCHECHS MILL ENTRANCE TO FISHERMAN'S PARKING LOT. CROSS BRIDGE TO NORTH BLUFF, ABOUT 900 TO 1000 FOOT ELEVATION. OVERGROWN BEDROCK BLUFF PRAIRIE. DOMINATED BY QUERCUS RUBRA, QUERCUS MACROCARPA, BETULA PAPYRIFERA. SAND WITH SOME HUMUS, NW ASPECT, 25-40 DEGREE SLOPE. 200+ PLANTS, JUST FINISHING BLOOMING. ASSOC: ARALIA NUDICAULIS, RIBES MISSOURIENSE, AQUILEGIA CANADENSIS, OSTRYA VIRGINIANA, DESMODIUM GLUTINOSUM, RHUS RADICANS, LITHOSPERMUM CANESCENS. Element: DRYOPTERIS GOLDIANA (GOLDIE'S FERN) #8 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NWNW17 Wildlife Area: 510 EO Size: EO Rank: Current Status: 1 Intended Status: 1 Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY Latitude: 43 38' 37" Long: 91 35' 13" CBS Site #: 60 Last Obs.: June 1980 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: WOOLSEY.H.AND MAXSON.G.A.(S.N.) Voucher: 723728 MIN Verification: verified SW OF E BRANCH OF BEAVER CRK. GENTLE SLOPE AT BASE OF STEEP NE-FACING SLOPE, 4 PLANTS UNDER ULMUS AMERICANA, ACER SACCHARUM FRAXINUS NIGRA. WITH LAPORTEA CANADENSIS, HYDROPHYLLUM APPENDICULATUM, HYSTRIX PATULA.NW1/4NW1/4,SEC17T102NR6W Element: JEFFERSONIA DIPHYLLA (TWINLEAF) #5 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: THREATENED Legal : T102N R06W NWNW16 Wildlife Area: 510 Current Status: 1 Intended Status: 69 Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: B Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 41" Long: 91 34' 10" Last Obs.: June 1979 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: SMITH, W.R. (982) Voucher: MIN Verification: verified BEAVER CREEK VALLEY SP. OCCASIONAL ON STEEP N-FACING SLOPE OVERLOOKING CO HWY 1. FORMING SMALL CLUMPS CA 3 FT ACROSS IN SHADE OF ACER SACCHARUM, WITH CAREX ALB-URSINA AND LAPORTEA. NWNW SEC 16, T102N R6W. (PREV COLL: SCHUSTER, 1949.)

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RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Location: HOUSTON COUNTY, MN DNR Region: 5 Element: JEFFERSONIA DIPHYLLA (TWINLEAF) #9 Legal : T102N R06W NWNW17 Wildlife Area: 510 State Status: THREATENED Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: Intended Status: Latitude: 43 38' 37" Long: 91 35' 13" CBS Site #: 60 Last Obs.: 26 June 1989 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: SMITH, W.R. Voucher: MIN Verification: verified BEAVER CREEK VALLEY SP. OCCASIONAL ON WOODED NE-FACING TALUS SLOPE. IN 1990, 1 PLANT FOUND ON MAY 15 IN SEEP AT BASE OF E-FACING SLOPE NEAR CREEK BY S. STUCKER DURING CBS SURVEY.

Location: HOUSTON COUNTY, MN Element: MUHLENBERGIA SCHREBERI (DROP SEED) #3 DNR Region: 5 Legal : T102N R06W Wildlife Area: 510 State Status: No Legal Status Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: 1 Intended Status: 1 Site: BEAVER CREEK VALLEY STATE PARK Latitude: 43 38' 57" Long: 91 35' 4" Last Obs.: October 1947 Ownership: MN DNR Parks and Recreation Precision: within quadrangle map Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: MOORE, ROSENDAHL AND HUFF(19843) Voucher: 488712 MIN Verification: unverified NIMBLE WILL. GROWING ON SUNNY HILLSIDE, BEAVER CRK VALLEY SP. 1 DUP.

Element: PANAX QUINQUEFOLIUM (GINSENG) #109 Location: HOUSTON COUNTY, MN Legal : T102N R06W NWNENWNE08 State Status: SPECIAL CONCERN Wildlife Area: 510 EO Size: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Rank: Current Status: Latitude: 43 39' 33" Long: 91 34' 42" Site: BEAVER CREEK VALLEY CBS Site #: 60 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S.(930903-3) Verification: verified Voucher: MIN IN MATURE, MAPLE BASSWOOD FOREST DOM. BY ACER SACCHARUM (56 CM DBH; 25 M HGT) WITH QUERCUS ALBA (52 CM DBH), TILIA AMERICANA. CANOPY 80% COVER. SUBC: CARPINUS CAROLINIANA, OSTRYA, ACER SACC. COMPLETE SHADE TO SUBSTRATE. N-ASPECT, 60% SLOPE 1/3-2/3 SLOPE POSITION, DEEP FRIABLE ORGANIC SILT. ONE PLANT IN FRUIT. ASSOC: ARISAEMA TRIFOLIUM, STAPHDEA TRIFOLIATA (SEEDLINGS), UVULARIA PERFOLIATUM CYPRIPEDIUM PUBESCENS.

Element: POA PALUDIGENA (BOG BLUEGRASS) #10 Location: HOUSTON COUNTY, MN Federal Status: CANDIDATE, CATEGORY 2 Legal : T102N R06W NWNW17 State Status: ENDANGERED Current Status: Intended Status: Quad Map: SHELDON (X23A) FO Size: EO Rank: Latitude: 43 38' 37" Long: 91 35' 13" Site: BEAVER CREEK VALLEY CBS Site #: 60 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: SMITH, W.R. Voucher: MIN BEAVER CREEK VALLEY SP. LOCAL IN SEEP WITH BLACK ASH AND SKUNK CABBAGE.

DNR Region: 5 Last Obs.: 03 September 1993

DNR Region: 5

Wildlife Area: 510

Forestry District: 532

Last Obs.: 26 June 1989

Verification: verified

RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: SANICULA TRIFOLIATA (BLACK SNAKEROOT) #8 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NWNW17 Wildlife Area: 510 State Status: SPECIAL CONCERN Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 FO Size: EO Rank: A Site: BEAVER CREEK VALLEY STATE PARK CBS Site #: 60 Latitude: 43 38' 33" Long: 91 35' 17" Last Obs.: 10 August 1992 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile. confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S.AND DUNEVITZ, H. (920810-20) Verification: verified Voucher: MIN LOCATED ON NORTH-FACE BLUFF CREST 1/4 MILE WEST OF PICNIC PARKING AREA NEAR SCENIC OVERLOOK AT END OF "SWITCH-BACK TRAIL". IN MIXED OAK FOREST, CANOPY 100% COVER. SUBCANOPY 50-75% COVER DOM. BY ACER SACCHARUM. HERBACEOUS LAYER LESS THAN 25% COVER. DARK, MOIST, SILT-LOAM SOIL, 20-40 (MOSTLY VEGETATIVE) PLANTS. ASSOC: CAREX ALBURSINA, SOLIDAGO FLEXIPES, DESMODIUM NUDIFLORUM.

Element: SCUTELLARIA OVATA VAR. VERSICOLOR (OVATE-LEAVED SKULLCAP) #7 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W 08 Wildlife Area: 510 State Status: SPECIAL CONCERN Current Status: 1 Intended Status: 1 Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: CBS Site #: 60 Latitude: 43 39' 26" Long: 91 35' 12" Last Obs.: July 1921 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: within one mile Managed Area(s): BEAVER CREEK VALLEY STATE PARK Voucher: 227026 MIN Verification: unverified Source: ROSENDAHL AND BUTTERS (4095) ON DENSELY WOODED BOTTOM LANDS, LOWER PART OF EAST BEAVER, SHELDON VALLEY. (WITH BLEPHILIA HIRSUTA) (PREV COLL: ROSENDAHL AND BUTTERS(3642), PASTURE. BOTTOM LANDS OF DEEP VALLEY, SHELDON VALLEY, JULY 23, 1918.)

Element: TAENIDIA INTEGERRIMA (YELLOW PIMPERNEL) #12 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NENW17 Wildlife Area: 510 State Status: No Legal Status Quad Map: SHELDON (X23A) EO Rank: Forestry District: 532 EO Size: Current Status: Intended Status: Latitude: 43 38' 42" Long: 91 34' 57" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 15 July 1993 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN.C.(2093) Voucher: MIN Verification: verified BEAVER CREEK VALLEY STATE PARK. BLUFF PRAIRIE. DOMINATED BY QUERCUS MACROCARPA. CLAY, SW FACING, 10-40. ALONG QUARRY TRAIL. 75-100 PLANTS IN FRUIT. ASSOCIATES: AMPHICARPA BRACTEATA, PEDICULARIS CANADENSIS, THALICTRUM DIOICUM, RUDBECKIA HIRTA, DESMODIUM GLUTINOSUM.

Element: TRADESCANTIA OHIENSIS (OHIO SPIDERWORT) #46 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NENW17 Wildlife Area: 510 Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: CBS Site #: 60 Latitude: 43 38' 42" Long: 91 34' 59" Last Obs.: 15 July 1993 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN,C.S. (SIGHT RECORD) Voucher: Verification: sight rec. BEAVER CREEK VALLEY STATE PARK. BLUFF PRAIRIE DOMINATED BY QUERCUS MACROCARPA. CLAY, SW FACING, 10-40 DEGREE SLOPE. ALONG QUARRY TRAIL. 75-100 PLANTS IN FRUIT. ASSOCIATES: AMPHICARPA BRACTEATA, PEDICULARIS CANADENSIS, THALICTRUM DIOICUM, RUDBECKIA HIRTA, DESMODIUM GLUTINOSUM.

Minnesota Natural Heritage Database

Element Occurrence Records

RARE PLANT ELEMENT OCCURRENCES WITHIN THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

8:42 Friday, MARCH 11, 1994 Copyright 1994 State of Minnesota DNR

Element: VITIS AESTIVALIS VAR. ARGENTIFOLIA (SILVERLEAF GRAPE) #6 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: No Legal Status Legal : T102N R06W NENW17 Wildlife Area: 510 EO Size: EO Rank: A Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 38' 31" Long: 91 35' 9" Site: BEAVER CREEK VALLEY STATE PARK CBS Site #: 60 Last Obs.: 07 August 1992 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER, S. (920807-18) Voucher: MIN Verification: verified LOCATED 1/5 MILE WEST OF PICNIC PARKING AREA ON "SWITCH-BACK TRAIL". IN MIXED OAK WOODLAND INCLUSION ON NARROW, EAST/WEST ROCK RIDGE, CANOPY 50-70% COVER, 15 METER HGT, DOM. BY Q. MACROCARPA. SUBCANOPY 100% COVER, 5-10 METER HGT. SEVERAL VINES INCLUDING VITIS RIPARIA DRAPING CANOPY BROUGHS AND SHRUBS.

Element: VITIS RIPARIA (DUNE GRAPE) #2 State Status: No Legal Status EO Size: EO Rank: Current Status: 1 Intended Status: 1 Site: BEAVER CREEK VALLEY STATE PARK Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ROSENDAHL, C.O. (7735) GROWING OVER LOW BUSHES, NEAR EAST BEAVER SPRINGS, SEC 17 CALEDONIA TWP.

Location:	HOUSTON COUNTY, MN	DI	
Legal :	T102N R06W SENE17	W	
Quad Map:	SHELDON (X23A)	Fo	
Latitude:	43 38' 22" Long: 91 34' 29"	Ła	
Precision: within 0.50 mile			

NR Region: 5 ildlife Area: 510 orestry District: 532 ast Obs.: September 1945

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Voucher: 385496 MIN Verification: unverified Appendix 6. Rare animal species records for Beaver Creek Valley State Park.

Records are compiled from the Rare Features Database of the Natural Heritage Information System and organized alphabetically by element name (scientific name) and occurrence number.



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RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA 17:16 Tuesday, JUNE 14, 1994 Minnesota Natural Heritage Database MnDNR, Natural Heritage and Nongame Research Program Element Occurrence Records Copyright 1994 State of Minnesota DNR Element: BAT CONCENTRATION #15 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NENW17 Wildlife Area: 510 Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 FO Size: EO Rank: Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 36" Long: 91 35' 0" Last Obs.: 04 August 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: NORDQUIST, G., PRESLEY, S., WOLESLAGLE, J. (CO BIOL SURVEY 1993) Voucher: Verification: verified SUMMER DAY ROOST FOR OVER 50 MYOTIS LUCIFUGUS AND A FEW EPTESICUS FUSCUS. ROOST SITE IS THE PICNIC SHELTER AT BEAVER CREEK VALLEY STATE PARK. MOST BATS ARE OUT OF SIGHT, ROOSTING ALONG THE RIDGE BEAM, BATS BEGIN LEAVING THE SHELTER TO FOR-AGE AT APPROXIMATELY 2130 HOURS, ONE EPTESICUS FUSCUS (SJP 93-61) AND ONE MYOTIS LUCIFUGUS (SJP 93-60) WERE PREPARED AS VOUCHER SPECIMENS. Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #1 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NWSW05 Wildlife Area: 510 State Status: SPECIAL CONCERN Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: Latitude: 43 39' 55" Long: 91 35' 15" CBS Site #: 60 Last Obs.: 25 June 1993 Site: BEAVER CREEK VALLEY Ownership: Private Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK(ST BNDRY) Source: KEYLER.D. & B. OLDFIELD(CO BIOL SURVEY 1993) Voucher: Verification: reclassed 1980: 1 SNAKE OBSERVED BY J. VOELKER ON 20 AUG W OF BOUNDARY AT N END OF PARK: 60 INCHES LONG. 1991: 3 ADULTS LOCATED ON HILL W OF SCHECHS MILL BY KEYLER & OLDFIELD ON 24 MAY. HABITAT IS POCKETS OF BLUFF PRAIRIE WITH SCATTERED FALLEN SANDSTONE ROCK COVERED WITH WILD GRAPE, WITH BIRCH & CEDAR INTERSPERSED: SOIL VERY SANDY. ANOTHER SNAKE LOCATED ON 26 AUG. PHOTOS TAKEN. 1993: 1 SNAKE FOUND UNDER LARGE FLAT ROCK; UNABLE TO BE CAPTURED. Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #2 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NWNE17 Wildlife Area: 510 Quad Map: SHELDON (X23A) EO Size: EO Rank: Current Status: 1 Intended Status: 1 Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 39" Long: 91 34' 44" Last Obs.: 03 June 1993 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KEYLER, D & OLDFIELD, B. (TIMBER RATTLESNAKE FIELD SURVEY IN SE MN) Voucher: Verification: photo rec. 1978: 1 SNAKE OBSERVED NEAR CONTACT STATION BY N. COLLINS. 1982: 1 30 INCH SNAKE OBSERVED NEAR INFORMATION CENTER BY J. VOELKER ON 5 AUG. 1990: KEYLER & OLDFIELD OBS 1 SNAKE ON MAY 6 & ONE ON AUG 26. S EXPOSURE. 35-45 DEGREE SLOPE. HABITAT CONSISTED OF LIMESTONE QUARRY, LEDGE FISSSURES COVERED W/GRAPE VINES. NO SOIL COVER. 1/2 WAY BTW VALLEY FLOOR & PLATEAU ABOVE, SURROUNDED BY OAKS. PHOTOS TAK-EN, 1993: 1 SNAKE OBS SUNNING ALONG HOLE-IN-THE-ROCK-TRAIL BY C.KERN & S.ZAGER. Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #3 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W OSNE17 Wildlife Area: 510 Current Status: 1 Intended Status: 1 Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: CBS Site #: 60 Latitude: 43 38' 23" Long: 91 34' 33" Last Obs.: 03 June 1993 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KERN,C. & ZAGER,S. Voucher: Verification: sight rec. 1983: 1 40 INCH LONG SNAKE CAPTURED AND RELEASED NEAR BEGINNING OF STEEP ROCK TRAIL BY J. VOELKER ON 8 AUG. 1993: 1 SNAKE OBSERVED SUNNING ON A CUT LOG IN THE

HOLDING AREA NEAR THE PARK OFFICE.

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RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Location: HOUSTON COUNTY, MN DNR Region: 5 Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #4 Wildlife Area: 510 Legal : T102N R06W SESE17 State Status: SPECIAL CONCERN EO Size: Quad Map: SHELDON (X23A) Forestry District: 532 EO Rank: Current Status: Intended Status: Latitude: 43 38' 5" Long: 91 34' 19" Last Obs.: 26 August 1993 Site: BEAVER CREEK VALLEY CBS Site #: 60 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: DORFF.C.(CO BIOL SURVEY 1993) Voucher: Verification: photo rec. 1983: 1 CAPTURED IN S END OF PARK (NESE17) AND LATER RELEASED (J.VOELKER). 1985: OBSERVED DURING 1985 HERP SOCIETY SURVEY OF SE MINN (J.MORIARTY). 1993: ONE OBSERVED NEAR LARGE ROCK IN S-SE FACING BLUFF PRAIRIE ALONG HOLE-IN-THE-ROCK TRAIL. PHOTOGRAPHED ON 19 AUG & AGAIN ON 26 AUG. THIS INDIVIDUAL WAS MOST LIKELY A GRAVID FEMALE. VISITORS ALSO REPORTED A RATTLESNAKE IN THE VICNITY EARLIER IN THE SUMMER. 5-LINED SKINKS WERE ALSO OBSERVED IN THE VICINITY BY MCBS.

Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #5 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NWSW16 Wildlife Area: 510 State Status: SPECIAL CONCERN Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: Current Status: Intended Status: EO Rank: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 9" Long: 91 34' 10" Last Obs.: 25 June 1983 Ownership: Owner unknown Precision: within 0.25 mile, confirmed Managed Area(s): not managed or no record Source: VOELKER, J. Voucher: Verification: sight rec. 2 SNAKES OBSERVED EAST OF BOUNDARY AT SOUTH END OF BEAVER CREEK VALLEY STATE PARK.

Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #20 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NENW17 Wildlife Area: 510 Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: 1 Intended Status: 1 CBS Site #: 60 Latitude: 43 38' 40" Long: 91 34' 59" Last Obs.: 21 August 1978 Site: BEAVER CREEK VALLEY Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: DNR GREEN SLIP COLLINS.N. Voucher: Verification: sight rec. TIMBER RATTLESNAKE. 1 OBSERVED ON QUARRY TRAIL IN BEAVER CREEK VALLEY SP IN AUG, 1 OBSERVED NEAR PICNIC AREA IN JULY 1978.

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #64 Legal : T102N R06W NW17 State Status: SPECIAL CONCERN Wildlife Area: 510 Quad Map: SHELDON (X23A) Forestry District: 532 Current Status: Intended Status: EO Size: EO Rank: Site: BEAVER CREEK VALLEY STATE PARK Latitude: 43 38' 27" Long: 91 35' 13" Last Obs.: 26 August 1990 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KEYLER, D. & OLDFIELD, B. (TIMBER RATTLESNAKE FIELD SURVEY OF SE MN) (PHOTO RECORD) Voucher: Verification: photo rec. TWO LARGE MALES FOUND IN STONE QUARRY ADJACENT TO HIKING TRAIL. NO FEMALES PRESENT. LIMESTONE QUARRY COVERED WITH WILD GRAPE VINES AND SURROUNDED BY OAK FOREST. ONE LOCATED ON 5/6/90, THE SECOND ON 8/26/90.

RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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DNR Region: 5

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DNR Region: 5 Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #66 Location: HOUSTON COUNTY, MN Legal : T102N R06W SWSW05 Wildlife Area: 510 State Status: SPECIAL CONCERN Quad Map: SHELDON (X23A) Forestry District: 532 Intended Status: EO Size: FO Rank: Current Status: Latitude: 43 39' 35" Long: 91 35' 17" CBS Site #: 60 Last Obs.: 07 July 1991 Site: BEAVER CREEK VALLEY Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KEYLER D. AND OLDFIELD.B. (TIMBER RATTLESNAKE FIELD SURVEY IN SE MN) Voucher: Verification: sight rec. ONE SNAKE WAS CAPTURED & RELEASED BY PARK STAFF. HABITAT CONSISTED OF VALLEY FLOOR WITH GRASS PRAIRIE (WITH BRUSH PILES) ADJACENT TO STREAM.

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: CROTALUS HORRIDUS (TIMBER RATTLESNAKE) #81 Legal : T102N R06W SWSWSW09 Wildlife Area: 510 State Status: SPECIAL CONCERN Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: Intended Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 45" Long: 91 34' 10" Last Obs.: August 1993 Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: ZAGER.S. Voucher: Verification: verified SNAKE COILED ON PARTIALLY SHADED ROAD. IT WAS RUN OVER BY A VEHICLE ABOUT MID-MORNING, LATER COLLECTED BY PARK STAFF, APPROX 2.5 FEET LONG.

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Minnesota Natural Heritage Database

Element: EUMECES FASCIATUS (FIVE-LINED SKINK) #30

Element Occurrence Records

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: EMPIDONAX VIRESCENS (ACADIAN FLYCATCHER) #1 Legal : T102N R06W 08 Wildlife Area: 510 State Status: No Legal Status FO Size: EO Rank: Current Status: 1 Intended Status: 1 Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 5" Long: 91 35' 6" Last Obs.: July 1979 Precision: within one mile Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: HIEMENZ.N. MOU FILES Voucher: Verification: verified ACADIAN FLYCATCHER. PN. BREEDING RECORDS FROM 1968, 1976, 1977. SIGHT RECORDS FROM 1971, 1974, 1975. CLOSELY ASSOCIATED WITH CREEK HABITAT IN NORTHERN HALF OF PARK SEVERAL OBSERVERS.

Legal : T102N R06W SESE17 Wildlife Area: 510 State Status: ENDANGERED EO Rank: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: Current Status: 1 Intended Status: 1 Latitude: 43 38' 5" Long: 91 34' 19" Last Obs.: 19 August 1993 Site: BEAVER CREEK VALLEY CBS Site #: 60 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KEYLER, D. AND OLDFIELD, B. (TIMBER RATTLESNAKE SURVEY IN SE MN) (PHOTO RECORD) Voucher: Verification: photo rec. 1985: 1 SKINK FOUND ON S-FACING CLIFFS IMMEDIATELY E OF GROUP CAMP IN SESE17. OBSERVED BY J. MORIARTY DURING HERP SOCIETY SURVEY OF SE MN. 1990: 1 INDIV FOUND UNDER ROCK AT EDGE OF OPENINGS, AT BASE OF CLIFF, BY G. NORDQUIST (CO BIOL SURVEY); SKINK PHOTO-DOCUMENTED ON 10SEPT BY OLDFIELD & KEYLER ON SMALL BLUFF PRAIRIE WITH ALMOST NO ROCKS. 1993: C. DORFF OBSERVED 1 SKINK AND 1 TIMBER RAT-TLESNAKE NEAR LARGE ROCK ALONG HIKING TRAIL ON SE-FACING BLUFF PRAIRIE.

Location: HOUSTON COUNTY, MN

RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: EUMECES FASCIATUS (FIVE-LINED SKINK) #34 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NENW17 State Status: ENDANGERED Wildlife Area: 510 Intended Status: FO Size: EO Rank: Quad Map: SHELDON (X23A) Forestry District: 532 Current Status: Site: BEAVER CREEK VALLEY Latitude: 43 38' 40" Long: 91 34' 59" CBS Site #: 60 Last Obs.: 15 May 1990 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: HANSON, L.G. AND STUCKER, S.P. (CO BIOL SURVEY 1990) Voucher: Verification: sight rec. 2 INDIVIDUALS CAPTURED, APPROXIMATELY 100 METERS APART. 1 INDIVIDUAL WAS FOUND UNDER A SMALL ROCK ON A STEEP, SOUTH-FACING SLOPE A SHORT DISTANCE FROM CREEK IN A VERY SMALL OPENING IN AN OTHERWISE OVERGROWN BLUFF PRAIRIE, WITH SCATTERED SMALL ROCKS, BARE SOIL, SPARSE GRASS, AND SHORT SUMAC WITH SURROUNDING SHRUBS. THIS OVERGROWN AREA IS AN EXTENSION OF A LARGER. RECENTLY BURNED BLUFF PRAIRIE WITH SCATTERED ROCKS. THE OTHER INDIVIDUAL WAS FOUND IN THE LARGER PRAIRIE.

Element: EUMECES FASCIATUS (FIVE-LINED SKINK) #36 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: ENDANGERED Legal : T102N R06W NW17 Wildlife Area: 510 EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY STATE PARK Latitude: 43 38' 27" Long: 91 35' 13" Last Obs.: 26 August 1990 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: KEYLER, D. & OLDFIELD, B. (TIMBER RATTLESNAKE FIELD SURVEY IN SE MN) (PHOTO RECORD) Voucher: Verification: photo rec. FOUND IN LIMESTONE QUARRY ADJACENT TO HIKING TRAIL. LIMESTONE COVERED WITH WILD GRAPE VINES AND SURROUNDED BY OAK FOREST.

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Element: EUMECES FASCIATUS (FIVE-LINED SKINK) #37 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: ENDANGERED Legal : T102N R06W NESE17 Wildlife Area: 510 Quad Map: SHELDON (X23A) EO Size: EO Rank: Current Status: Intended Status: Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 14" Long: 91 34' 22" Last Obs.: 19 August 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: DORFF.C. (CO BIOL SURVEY 1993) Voucher: Verification: photo rec. 3 FIVE-LINED SKINKS OBSERVED MOVING THROUGH GRASS AND UNDER ROCKS IN A SMALL WEST-FACING BLUFF PRAIRIE ALONG HOLE-IN-THE-ROCK TRAIL. 1 WAS PHOTOGRAPHED. AN ADDITIONAL SKINK WAS OBSERVED CLIMBING A TREE & PHOTOGRAPHED ALONG THE TRAIL IN A WOODED AREA NEAR HOLE-IN-THE-ROCK.

Element: EUMECES FASCIATUS (FIVE-LINED SKINK) #38 State Status: ENDANGERED EO Size: EO Rank: Current Status: Intended Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Ownership: Private Managed Area(s): BEAVER CREEK VALLEY STATE PARK(ST BNDRY) Source: KEYLER, D. & B. OLDFIELD(CO BIOL SURVEY 1993) Voucher:

Location: HOUSTON COUNTY, MN Legal : T102N R06W NWSW05 Quad Map: SHELDON (X23A) Latitude: 43 39' 55" Long: 91 35' 15" Precision: within 0.25 mile, confirmed

DNR Region: 5 Wildlife Area: 510 Forestry District: 532 Last Obs.: 25 June 1993

Verification: reclassed 1991: NUMEROUS FIVE-LINED SKINKS LOCATED ON THE HILL WEST OF SCHECHS MILL. HABITAT CONSISTED OF POCKETS OF BLUFF PRAIRIES WITH SCATTERED FALLEN SANDSTONE ROCK COVERED WITH WILD GRAPE, WITH BIRCH AND CEDAR INTERSPERSED. VERY SANDY SOIL. SKINKS FOUND DURING TIMBER RATTLESNAKE FIELD SURVEY IN SE MN, ON MAY 24 (PHOTO RECORD). 1993: 1 AD. FEMALE FOUND UNDER ROCK AT SCHECHS HILL. OTHER SPECIES FOUND INCLUDED 1 TIMBER RATTLESNAKE AND 3 PICKEREL FROGS.

RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: LAMPETRA APPEN	DIX (AMERICAN BRO	DOK LAMPREY) #67		Location: HOUSTON (	COUNTY, MN	DNR Region: 5
State Status: SPECIAL	CONCERN			Legal : T102N R00	SW SEOG	Wildlife Area: 510
EO Size:	EO Rank:	Current Status:	Intended Status:	Quad Map: SHELDON	(X23A)	Forestry District: 532
Site: CALEDONIA 6				Latitude: 43 39′ 44	" Long: 91 35' 35"	Last Obs.: 17 April 1985
Ownership: Owner unkn	own			Precision: within (	.25 mile, confirmed	
Managed Area(s): not	managed or no red	cord				
Source: MDNR FISHERIE	S			Voucher:	Verification: sig	ht rec.
3 SPECIMENS SAMPLED D	URING STREAM SURV	EY OF WEST BEAVER CR	EEK AT RIVER MILE 0.3. DIST	NCE CALCULATED BY MAP WHI	EL.	

Location: HOUSTON COUNTY, MN Element: LAMPROPELTIS TRIANGULUM (MILK SNAKE) #37 DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W SW05 Wildlife Area: 510 Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: Site: BEAVER CREEK VALLEY Latitude: 43 39' 55" Long: 91 35' 15" CBS Site #: 60 Last Obs.: 24 May 1991 Precision: within 0.25 mile, confirmed Ownership: Private Managed Area(s): BEAVER CREEK VALLEY STATE PARK(ST BNDRY) Source: KEYLER, D. & OLDFIELD, B. (TIMBER RATTLESNAKE FIELD SURVEY IN SE MN) (PHOTO RECORD) Voucher: Verification: photo rec. FOUND ON HILL W OF SCHECHS MILL. HABITAT CONSISTED OF POCKETS OF BLUFF PRAIRIE WITH SCATTERED FALLEN SANDSTONE ROCK COVERED WITH WILD GRAPE VINES. WITH BIRCH AND CEDAR INTERSPERSED. VERY SANDY SOIL.

Element: MICROTUS PINETORUM (WOODLAND VOLE) #4 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NESW08 Wildlife Area: 510 Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: Intended Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 2" Long: 91 35' 0" Last Obs.: 03 May 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: PRESLEY.S. (CO BIOL SURVEY 1993) Voucher: JFBM Verification: verified ADULT MALE TAKEN FROM DRIFT FENCE #2, SET IN A LOWLAND HARDWOOD FOREST ADJACENT TO MAPLE-BASSWOOD FOREST.

Location: HOUSTON COUNTY, MN DNR Region: 5 Element: RANA PALUSTRIS (PICKEREL FROG) #10 Legal : T102N R06W 0ESE17 Wildlife Area: 510 State Status: SPECIAL CONCERN FO Size: EO Rank: Current Status: 1 Intended Status: 1 Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 38' 5" Long: 91 34' 19" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 1985 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile. confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: MORIARTY, J. 1985 REPORT TO DNR NONGAME Voucher: JFBM-P Verification: verified OBSERVED DURING 1985 HERP SOCIETY SURVEY OF SE MINNESOTA.

RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: RANA PALUSTRIS (PICKEREL FROG) #13 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NENW17 State Status: SPECIAL CONCERN Wildlife Area: 510 FO Size: Quad Map: SHELDON (X23A) EO Rank: Current Status: Intended Status: Forestry District: 532 Latitude: 43 38' 38" Long: 91 34' 59" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 15 May 1990 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: PALMER, J.G. AND STUCKER, S.P. (CO BIOL SURVEY 1990) Voucher: Verification: sight rec. TWO INDIVIDUALS CAPTURED APPROXIMATELY 150 M APART, RELEASED AT SITE. IN SWIFTLY FLOWING CREEK AT BASE OF STEEP SLOPE. NW OF PICNIC AREA.

Element: RANA PALUSTRIS (PICKEREL FROG) #15 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NWSW05 Wildlife Area: 510 Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 55" Long: 91 35' 15" Last Obs.: 25 June 1993 Ownership: Private Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK(ST BNDRY) Source: KEYLER, D. & B. OLDFIELD (CO BIOL SURVEY 1993) Voucher: Verification: sight rec. THREE ADULT PICKEREL FROGS FOUND ON BLUFF PRAIRIE AT SCHECHS HILL. OTHER SPECIES FOUND INCLUDE 1 TIMBER RATTLESNAKE AND 1 5-LINED SKINK.

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Element: RANA PALUSTRIS (PICKEREL FROG) #16 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SWSW05 State Status: SPECIAL CONCERN Wildlife Area: 510 EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY Latitude: 43 39' 46" Long: 91 35' 15" Last Obs.: 22 June 1993 CBS Site #: 60 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: DAVIS, J. AND LEVELL, J. (CO BIOL SURVEY 1993) Voucher: Verification: sight rec.

ONE PICKEREL FROG OBSERVED BASKING AT EDGE OF PUDDLE IN PARKING LOT ON NORTH END OF BEAVER CREEK VALLEY STATE PARK.

Element: RANA PALUSTRIS (PICKEREL FROG) #17 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NESW08 Wildlife Area: 510 EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 39' 2" Long: 91 35' 0" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 24 August 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: DORFF, C. (CO BIOL SURVEY 1993) Voucher: Verification: sight rec. PICKEREL FROG BODY PARTS FOUND AT EDGE OF DRIFT FENCE BUCKET. DRIFT FENCE WAS LOCATED AT BASE OF FORESTED, NORTH-FACING SLOPE NEAR WOODLAND POND. YELLOWISH COLORATION ON LEGS WAS APPARENT.

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RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESCTA MnDNR, Natural Heritage and Nongame Research Program

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Element: RANA PALUSTRIS (PICKEREL FROG) #18 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NWNW08 Wildlife Area: 510 EO Size: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Rank: Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 39' 32" Long: 91 35' 18" Last Obs.: 03 June 1993 Precision: within 0.25 mile. confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: BANESS, E. (CO BIOL SURVEY 1993) Verification: sight rec. Voucher: ONE PICKEREL FROG OBSERVED ALONG BEAVER CREEK VALLEY STATE PARK TRAIL, FOUND ON WEST SIDE OF TRAIL IN GRASSLAND, EASTERN GARTER SNAKES ALSO OBSERVED IN THE AREA.

Element: RANA PALUSTRIS (PICKEREL FROG) #19 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W SWSW08 Wildlife Area: 510 Forestry District: 532 EO Size: EO Rank: Intended Status: Quad Map: SHELDON (X23A) Current Status: Last Obs.: 26 August 1993 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 47" Long: 91 35' 14" Precision: within 0.25 mile. confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: DORFF, C. (CO BIOL SURVEY 1993) Verification: sight rec. Voucher: PICKEREL FROGS WERE FOUND ALONG MOWED HIKING TRAIL WHICH LIES EAST OF BEAVER CREEK. AT LEAST 5 PICKEREL FROGS WERE CAPTURED AND RELEASED DURING A FIELD TRIP. HABITAT CONSISTED OF FLOODPLAIN FOREST WITH BROEKN CANOPY ABOVE THE GRASSY PARTS OF THE TRAIL. OTHER FROGS FOUND ALONG THE TRAIL INCLUDE SPRING PEEPERS AND AMERICAN TOADS. ALL FROGS FOUND WERE JUVENILES.

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Element: RANA PALUSTRIS (PICKEREL FROG) #20 Location: HOUSTON COUNTY, MN DNR Region: 5 Wildlife Area: 510 Legal : T102N R06W NWNW17 State Status: SPECIAL CONCERN EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 39" Long: 91 35' 18" Last Obs.: 24 May 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile. confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: BANESS.E.(CO BIOL SURVEY 1993) Voucher: Verification: photo rec. TWO PICKEREL FROGS WERE LOCATED IN HERBACEOUS VEGETATION OF FLOODPLAIN FOREST NOT FAR FROM BEAVER CREEK OR DRIFT FENCE. THESE WERE ADULT FROGS WITH BRIGHT YELLOW COLORATION ON LEGS. FROGS WERE FOUND BY DORFF, MAIER, FARLEY, AND SOVELL DURING BIOATHELON HERP SEARCH ON 14 MAY 93. PHOTOS TAKEN. ON 24 MAY BANESS FOUND ONE PICKEREL FROG IN DRIFT FENCE BUCKET. IT WAS PHOTOGRAPHED AND RELEASED.

Element: RANA PALUSTRIS (PICKEREL FROG) #21 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SENE17 Wildlife Area: 510 State Status: SPECIAL CONCERN FO Size: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Rank: Current Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 23" Long: 91 34' 33" Last Obs.: 08 June 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile. confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: BANESS, E. (CO BIOL SURVEY 1993) Voucher: Verification: sight rec. ONE ADULT PICKEREL FROG WAS OBSERVED ON ROCK SURROUNDED BY WATERCRESS IN BIG SPRING IN BEAVER CREEK VALLEY STATE PARK.

& TRAMPLING OF SLOPE.

RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #46 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SWSW08 State Status: SPECIAL CONCERN Wildlife Area: 510 EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 38' 47" Long: 91 35' 14" CBS Site #: 60 Site: BEAVER CREEK VALLEY Last Obs.: 24 May 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: BARDON, K. AND P.PAGE(CO BIOL SURVEY 1993) Voucher: Verification: reclassed INFERRED BREEDING. 1 INDIV SEEN & HEARD CALLNG WHILE FORAGING ON ROCKS IN STREAM ON 19 MAY. ON 24 MAY, 2-3 INDIV RESPONDED TO PLAYBACK ALONG BEAVER CREEK. BIRDS SANG &/OR APPROACHED OBSERVR AT DIFFERENT POINTS ON CREEK. CLEAR, SHALLOW, SWIFT FLOWING STREAM APPROX 2-3 M WIDE, WITH ROCKY STREAMBED & OCCAS STEEP, UNDERCUT BANKS, ROCK OUTCROPS, MATURE DIVERSE DECIDUOUS FOREST, 1975: INFERRED NESTING, FAMILY GROUP REPORTED IN PARK ON 20 JULY BY DM (MOU FILES). Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #47 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: SPECIAL CONCERN Legal : T102N R06W NWNW17 Wildlife Area: 510 Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Current Status: Intended Status: Site: BEAVER CREEK VALLEY CBS Site #: 60 Latitude: 43 38' 38" Long: 91 35' 13" Last Obs.: 04 June 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK

Source: JOHNSON,A.(CO BIOL SURVEY 1993) BREEDING SEASON OBSERVATION. ONE MALE HEARD SINGING ALONG BEAVER CREEK. ADJACENT MATUE, DIVERSE LOWLAND DECIDUOUS FOREST.

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Element: SEIURUS MOTACILLA (LOUISIANA WATERTHRUSH) #48 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W SESE17 State Status: SPECIAL CONCERN Wildlife Area: 510 EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Latitude: 43 37' 59" Long: 91 34' 23" Site: BEAVER CREEK VALLEY CBS Site #: 60 Last Obs.: 13 May 1993 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: BARDON, K. (CO BIOL SURVEY 1993) Voucher: Verification: unverified INFERRED BREEDING. INCIDENTAL OBSERVATION OF ONE MALE SEEN AND HEARD MAY 13-14. DIVERSE MAPLE-BASSWOOD FOREST ALONG BEAVER CREEK, NEAR GROUP CAMP. CLEAR, FAST-FLOWING WATER WITH ROCKY STREAM BED. STEEP SLOPE ON ONE SIDE OF STREAM, WITH MORE LEVEL FLOODPLAIN-UPLAND ON OTHER SIDE.

Element: VERTIGO BOLLESIANA (DELICATE VERTIGO) #1 Location: HOUSTON COUNTY, MN DNR Region: 5 State Status: No Legal Status Legal : T102N R06W NWNW17 Wildlife Area: 510 EO Size: EO Rank: Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 Site: BEAVER CREEK VALLEY STATE PARK Latitude: 43 38' 35" Long: 91 35' 15" Last Obs.: 03 May 1990 Ownership: MN DNR Parks and Recreation Precision: within 0.25 mile, confirmed Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: OSTLIE,W. Voucher: JFBM Verification: verified 6 MATURE SPECIMENS COLL FROM ALGIFIC TALUS SLOPE, I.D. BY TERRY FREST. TALUS SLOPE IS INTENSELY COLD & OCCURS AT ELEV 940-980 FT. ASSOC PLANT SPECIES INCLUDE CHRYSOPLENIUM IOWENSE, ADOXA MOSCH, SAMBUCUS PUBENS, HYDROPHYLLUM VIRG, CORNUS SPP, DICENTRA CUCULL, & ERYTHRONIUM ALBIDUM. SITE NEEDS PROTECTION FROM LOGGING

RARE ANIMAL OCCURRENCES WITHIN OR ADJACENT TO THE STATUTORY BOUNDARY OF BEAVER CREEK VALLEY STATE PARK, HOUSTON COUNTY, MINNESOTA MnDNR, Natural Heritage and Nongame Research Program

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Element: VERTIGO HUBRICHTI (HUBRICHTS VERTIGO) #9 Location: HOUSTON COUNTY, MN DNR Region: 5 Legal : T102N R06W NWNW17 Wildlife Area: 510 State Status: No Legal Status Federal Status: CANDIDATE, CATEGORY 2 Current Status: Intended Status: Quad Map: SHELDON (X23A) Forestry District: 532 EO Size: EO Rank: Latitude: 43 38' 35" Long: 91 35' 15" Last Obs.: 03 May 1990 Site: BEAVER CREEK VALLEY STATE PARK Precision: within 0.25 mile, confirmed Ownership: MN DNR Parks and Recreation Managed Area(s): BEAVER CREEK VALLEY STATE PARK Source: OSTLIE, W. (TNC) Voucher: JFBM Verification: verified 5 MATURE SPECIMENS COLL FROM ALGIFIC TALUS SLOPE, I.D. BY TERRY FREST. TALUS SLOPE IS INTENSELY COLD & OCCURS AT ELEV 940-980 FT. ASSOC PLANT SPECIES INCLUDE: CHRYSOPLENIUM IOWENSE, ADOXA MOSCH, SAMBUCUS PUBENS, HYDROPHYLLUM VIRG, CORNUS SPP, DICENTRA CUCULL, & ERYTHRONIUM ALBIDUM. SITE NEEDS PROTECTION FROM LOGGING & TRAMPLING OF SLOPE.

