MISSOURI NATURAL AREA NOMINATION FORM
Final Draft 10-30-2006

Name of Area: Auxvasse Natural Area **Nomination Date:** Winter 2006

Prepared By: Lydia Miramontes, John George, and Mike Leahy

Inspection Dates: 1/25/06, 4/14/06, 6/7/06, 6/22/06, 7/26/06
Also field visits by Gary Reese, Tim Nigh, Greg Gremaud, and Tim Smith, 1980's - 2006

Principal Features (Name and EO Code):	**Rank**	**Size**
Dolomite glade – CTGZO15200.056	Significant	31 acres

Other Features (Name and EO Code):	**Rank**	**Size**
Dry limestone/dolomite woodland (EO in progress)	Notable	32 acres
Mesic bottomland forest	Unranked	17 acres
Dry-mesic and mesic limestone/dolomite forest	Unranked	30 acres
Sandstone glade	Unranked	1 acre

Rare or Endangered Species	**Status**	**EO Code**
None known		

Preservation Value:
The primary feature of Auxvasse Natural Area is the outstanding and extensive dolomite glade system that extends for nearly ¾ of a mile along an east-west trending ridge in Callaway County. The dolomite glades at Auxvasse Natural Area are unusually large and exceptionally diverse. It is the largest dolomite glade complex north of the Missouri river. This natural feature was first identified in 1984 by Gary Reese as part of the Missouri Natural Features Inventory (Callaway County Site #49). Reese (1986) concluded that the dolomite glades here were the largest and best quality in the inventory region. Subsequent Natural Features Inventories and Missouri Department of Conservation (MDC) State Land Inventories in the Outer Ozark Border Subsection have not identified any further dolomite glade complexes of the size and diversity of the glades found at the Auxvasse natural feature site either on private or public lands.

Over 220 native plant species have been identified from the complex of dolomite glades and dry dolomite woodlands that occur at Auxvasse Natural Area (NA). A number of Ozark plant and animal species occur here at the northern edge of their range in the state, including yellow coneflower (*Echinacea paradoxa*), a sedge (*Carex crawei*), the striped bark scorpion (*Centruroides vittatus*), and the Texas brown tarantula (*Aphonopelma hentzi*). The glade/woodland complex at Auxvasse Natural Area is very Ozarkian in its suite of plant and animal species and is unusual for a site north of the Missouri River. Also contained within Auxvasse Natural Area are notable quality dry dolomite woodlands and glades, and unranked stands of dry-mesic to mesic dolomite forests, mesic bottomland forests, and sandstone glades.

There are eleven other Missouri Natural Areas in the Outer Ozark Border Subsection. None of these represent a significant dolomite glade. While Danville Glades NA contains significant limestone glades and exceptional limestone woodlands; Graham Cave Glades NA contains significant sandstone glades and notable quality examples of dolomite glades; and Grand Bluffs NA contains exceptional dry dolomite woodlands, none of these represent a significant dolomite glade system like that at Auxvasse Natural Area. In addition Auxvasse Natural Area occurs within the Reform Hills (Site #126) Conservation Opportunity Area identified by the MDC during development of the Missouri

Comprehensive Wildlife Strategy.

Since the late 1980s Greg Gremaud (MDC) had worked with the landowners of the Auxvasse natural feature site to attempt purchase by MDC. It was not until January 2006 that the majority of the Auxvasse site was acquired from the Marchesi family by MDC in two tracts: an 150 acre tract purchased by MDC in fee simple, and an 130 acre tract purchased by MDC that has a life estate for hunting rights only for the Marchesi family and its assigns.

The current Auxvasse NA captures nearly 80% of the significant dolomite glade/woodland complex of the natural feature site. The remaining six acres of the Auxvasse natural feature site are currently owned by a private individual (Carl Adams). There are a number of Missouri Natural Areas where the natural feature is not completely owned by the managing agency. Examples of this include: Grand Bluffs NA (dry dolomite cliffs), Hughes Mountain NA (igneous glades), Spring Creek Gap Glades NA (dolomite glades), Overcup Fen NA (wet-mesic bottomland forest), Valley View Glades NA (dolomite glades), and Wah-Sha-She Prairie NA (hardpan prairies). Because MDC has pursued acquiring the Auxvasse natural feature site for years and now the Department owns ¾ of the site, we recommend Natural Area designation for this site as described below. It is hoped that the remaining ¼ of the glade system will be managed for its natural values by the landowner through cooperative agreements with MDC. Further purchase either in fee simple or conservation easement would be recommended to protect the remainder of the Auxvasse natural feature site. Once the Marchesi life estate is completed that property should be reviewed for natural area nomination. The tract currently in the Marchesi life estate has a number of notable natural communities and would be a good addition to the natural area. However, it is important to designate Auxvasse Natural Area now to highlight its significance and focus natural community management efforts on that portion controlled by MDC. Natural area nomination as described below will assist in leveraging conservation of the entire Auxvasse natural feature site.

Missouri Natural Heritage Database Comparison

Natural Community	Total # of Sites for Missouri in the Database	Total # of Sites in Missouri NAs	Total # of Sites in the Outer Ozark Border Subsection	Total # of Sites in Missouri NAs in the Outer Ozark Border Subsection
Dolomite glade	254	25	6	0
Dry limestone/dolomite woodland	24	7	6	3
Mesic limestone/dolomite forest	29	6	3	0
Mesic bottomland forest	34	9	10	2
Sandstone glade	42	10	13	3

Owner or Public Land Unit: Reform Conservation Area (addition), Missouri Department of Conservation, Wildlife Division, John George, Area Manager; 1907 Hillcrest, Columbia, MO 65201; 573-882-8388.

Natural Division/Section: Ozark Border Division/Missouri River Section

Section/Ecological Subsection /Land Type Association (LTA): OZ- Ozark Highlands Section; OZ12- Outer Ozark Border Subsection; OZ12h - Central Missouri Oak Woodland/Forest Hills LTA
County: Callaway **Quadrangle:** Reform
Twsp: 46N **Range:** 8W **Sections/Fractions:** Generally the S ½ of Section 9 (See Figures 1-2 and Boundaries description for details).

Size: 110 Acres

Boundaries: The NA occurs on land owned in fee simple by MDC and is contiguous with MDC property that adjoins the Reform Conservation Area (Figure 1, 2). Nearly all of the high quality natural community acreage is captured within the 110 acre NA (Figure 3). Lesser quality natural communities, old fields and field roads occur on the Marchesi family life estate to the north and east of the NA and the land in Section 10. When the Marchesi life estate ends and property ownership is completely transferred to MDC, then expansion of the NA to include the 130 acres should be considered. The property is accessed off of a right-of-way from a county gravel road (CR 428). Legal description is: NW ¼ of SW ¼; W ½ of SW ¼ of SW ¼; SE ¼ of SW ¼ of SW ¼; S ½ of SE ¼ of SW ¼; S ½ of SW ¼ of SW ¼ of SE ¼; S ½ of SE ¼ of SW ¼ of SE ¼; T 46 N, R 8 W.

DESCRIPTION OF AREA

Topography: The Central Missouri Oak Woodland/Forest Hills LTA consists of deeply dissected hills and bluffs with local relief ranging from 150 feet away from the Missouri River to more than 250 feet close to it. Within the natural area, hills are deeply dissected, slopes are steep, and bedrock exposures are common. Local relief is 150 feet. The area drains into Auxvasse Creek, just to the west of the natural area. Slopes range from 0 to 3% in the bottomland forest to 12 to 15% on the south facing slopes of the dolomite glades to 25 to 40% on the north facing slopes of the mesic limestone/dolomite forest.

Geology: Auxvasse Natural Area has bedrock of the Ordovician-age Jefferson City-Cotter Dolomite formation and either the Ordovician-age St. Peter Sandstone formation or the Devonian-age Cedar Valley formation (formerly the Callaway formation) (based on the map "Geology of the Southeastern Portion of the Fulton Quad" by Howard Hampstead, 1953). All exposed bedrock within the natural area is Paleozoic in age.

Most of the communities within the natural area, including the dolomite glades and woodlands, developed on Jefferson City-Cotter Dolomite. The sandstone outcrops in the northwest part of the natural area are found on either St. Peter Sandstone or sandstone of the Cedar Valley formation.

Soils: Soils range from deep silt loam in loess on ridge tops, through cherty silt loams derived from dolomite on side slopes, to shallow soils over bedrock at mid-slope on south aspects. Predominant soils of the Auxvasse NA include: the Goss-Gasconade Complex, Weingarten Silt Loam, and Cedargap Loam (Figure 4).

Goss-Gasconade Complex, 5-35% slopes. Goss soil is found on upper side slopes in the uplands while the Gasconade soil and rock outcrop are intermingled on short, steep upland slopes below the Goss soil. The Goss series consists of very deep, well drained soils formed in colluvium and residuum weathered from cherty limestone or cherty dolomite and some interbedded shale. The Gasconade series consists of shallow and very shallow, somewhat excessively drained, moderately slowly permeable soils formed in thin clayey layers with a considerable amount of coarse fragments from residuum of the underlying dolomite bedrock. These soils are on steep dissected upland landscapes and generally are isolated glade areas. The majority of the natural area lies within this soil mapping unit. All of the dolomite glades, most of the dry dolomite woodland, and all of the mesic and dry-mesic dolomite forests are found on the Goss-Gasconade soil complex.

Weingarten Silt Loam, 5-15% slopes, eroded. Weingarten silt loam is found on convex ridgetops and side slopes in the uplands. The Weingarten series consists of very deep, well drained, moderately slowly permeable soils that formed in loess and other silty sediment overlying residuum

weathered from cherty limestone or dolomite. The soils formed in 40 to 60 inches of loess and other silty sediment over residuum weathered from cherty limestone or dolomite. This soil mapping unit constitutes only a small part of the natural area along a ridge top.

Cedargap Loam, 0-2% slopes, frequently flooded. This deep, nearly level, well drained soil is on flood plains in areas where small streams widen out into larger streams. The Cedargap series consists of deep, well drained soils on flood plains along small streams. These soils formed in cherty, loamy alluvium with a high content of chert fragments. Permeability is moderately rapid. This soil mapping unit makes up a large part of the northern half of the natural area. Mesic bottomland forest is found on the Cedargap Loam soil mapping unit.

Geologic Features: No significant features.

Natural Communities: See Figure 3.

Dolomite glade **Significant** **Grade B** **31 acres**

Dolomite glades occur on south to southwest facing slopes in the natural area. The dolomite glades are complexly intermingled with dry dolomite woodlands making it difficult to map out each individual glade opening. The highest quality and largest dolomite glades are found on the southern half of the natural area along a mile long stretch of south to southwest facing slopes (Grade A/B). About six acres of this glade occurs to the west on private land. A second glade/woodland complex is found on the next series of hills to the north but isn't as high quality (Grade C). The larger glade complex on the south ridge is about 30 acres of which about nine acres are currently open glade. A series of aerial photos from the 1940's to 1960's show that about 26 acres of the same area was historically open glade. Slopes are moderately steep (15-20%) with some exposed fragments and benches of Jefferson City-Cotter dolomite. Dominant species on the glades include prairie dropseed (*Sporobolus heterolepis*), yellow coneflower (*Echinacea paradoxa*), Missouri coneflower (*Rudbeckia missouriensis*), little bluestem (*Schizachyrium scoparium*), Indian grass (*Sorghastrum nutans*), and sideoats grama (*Bouteloua curtipendula*). Scattered old-age stunted and gnarled trees occur on the glades including white oak (*Quercus alba*), chinquapin oak (*Q. muhlenbergii*), post oak (*Q. stellata*), and eastern red cedar (*Juniperus virginiana*). Other characteristic glade species include lead plant (*Amorpha canescens*), wild hyacinth (*Camassia scilloides*), purple prairie clover (*Dalea purpurea*), Missouri evening primrose (*Oenothera macrocarpa*) and narrow-leaved bluets (*Hedyotis nigricans*). Spring seepage areas support flattened spike rush (*Eleocharis compressa*). A soil pH test in the glade revealed the soil was alkaline with pH 8.0.

There is light to moderate cedar invasion throughout the larger glade system on the south ridge and heavy cedar invasion in glades on the north ridge. Cedar cutting and prescribed fire initiated in winter 2006 have already begun to open the structure and create more glade habitat. The combination of burn treatments and cutting should in the future return Auxvasse glades to something closer to the open structure it had in the past. With management, the B grade glade openings will move towards A rank occurrences.

Dry Limestone/Dolomite Woodland **Notable** **Grade C+** **32 acres**

Dry dolomite woodlands are found interspersed with dolomite glades on moderately steep to steep south facing slopes (15 - 30%) within the natural area. Moderate cedar invasion has created more of a closed vegetation structure. A prescribed burn in March 2006 killed a large percentage of the smaller cedar and continued burning will likely create a more open vegetation structure in the future. A few species dominate the overstory: white oak, chinquapin oak, post oak, white ash (*Fraxinus americana*), and shagbark hickory (*Carya ovata*). The majority of oaks cored were between 120 and 155 years old classifying these trees and stands as old growth according to the Missouri Natural Features Inventory

standards. Tree age data include: two 13 inch diameter (dbh) chinquapin oaks aged at 119 and 156 years; one post oak aged at 145 years; and a 17 inch dbh white oak was 120 years old. Unfortunately portions of these woodlands were high-grade logged in the last 10-15 years. Overall soil disturbance was minimal on the glades and driest areas of the woodlands but rutting did occur on the upper slopes and ridgetop. The type of logging that occurred on the area down-graded a B-ranked community to a C grade and the significance of this stand was lowered from exceptional to notable. In time this stand will likely transition back to a B grade community. Understory dominants include eastern red cedar, fragrant sumac (*Rhus aromatica*), and ironwood (*Ostrya virginica*). Scattered chert and sandstone rocks occur in places, but overall the flora consists of calciphiles. Dominant ground flora include tick trefoil (*Desmodium glutinosum*), elm-leaved goldenrod (*Solidago ulmifolia*), sea oats (*Chasmanthium latifolium*), rock muhly (*Muhlenbergia sobolifera*), and three sedges (*Carex eburnea*, *C. cephalophora*, and *C. retroflexa*). Characteristic plants include yellow pimpernel (*Taenidia integerrima*), green violet (*Hybanthus concolor*), and hoary puccoon (*Lithospermum canescens*).

Mesic Bottomland Forest Unranked Grades C to D 17 acres

Mesic bottomland forest is found in the low lying area surrounding two intermittent streams in the northern half of the natural area. The north end of the bottomland forest is of higher quality than the south half. The higher quality area is farther removed from old fields that have succeeded back to young forest. The canopy in both areas is dominated by sycamore (*Platanus occidentalis*), black walnut (*Juglans nigra*), sugar maple (*Acer saccharum*), box elder (*Acer negundo*), slippery elm (*Ulmus rubra*), shagbark hickory, and honey locust (*Gleditsia triacanthos*) with some swamp white oak (*Quercus bicolor*) in the higher quality site. The understory is dominated by musclewood (*Carpinus caroliniana*), hackberry (*Celtis occidentalis*) paw paw (*Asimina triloba*), and Ohio buckeye (*Aesculus glabra*). The ground flora is moderately diverse and fairly intact considering the area has been high-grade logged or partially cleared in the past. The ground layer contains blue-eyed Mary (*Collinsia verna*), swamp buttercup (*Ranunculus septentrionalis*), trout lily (*Erythronium americanum*), blue phlox (*Phlox divaricata*), golden glow (*Rudbeckia laciniata*), and waterleaf (*Hydrophyllum virginianum*) with some fragile fern (*Cysopteris fragilis*) and putty root orchid (*Aplectrum hyemale*). Stand age structure ranges from young to mature.

Dry-mesic and mesic limestone/dolomite forests Unranked Grade C 30 acres

This community type occurs on north and north-west facing backslopes within the natural area. It is primarily mesic but contains sizable areas of dry-mesic soils. Dominant canopy species are northern red oak (*Quercus rubra*), white oak, sugar maple, shagbark hickory, basswood (*Tilia americana*) and blue ash (*Fraxinus quadrangulata*). This area was high grade logged around 15 years ago but remaining canopy trees are mature. Dominant understory plants include Ohio buckeye, bladdernut (*Staphylea trifoliata*), serviceberry (*Amelanchier arborea*), spicebush (*Lindera benzoin*), and ironwood. In early spring, dominant ground flora includes spring beauty (*Claytonia virginica*), Dutchmen's breeches (*Dicentra cucullaria*), and false hellebore (*Veratrum woodii*). Other common species include wild ginger (*Asarum canadense*), pale Indian plantain (*Cacalia atriplicifolia*), white bear sedge (*Carex albursina*), pale corydalis (*Corydalis flavula*), fragile fern (*Cysopteris fragilis*), dwarf larkspur (*Delphinium tricorne*) blue phlox (*Phlox divaricata*) and false garlic (*Nothoscordum bivalve*).

Sandstone glade Unranked Grade C+ 1 acre

Near the northwest corner of the natural area there is a small 1 acre sandstone glade. The glade is on a moderately steep south-facing slope (20%). Two tree species dominated this community: blackjack oak (*Quercus marilandica*) and eastern red cedar. Ground flora on this glade includes fame flower (*Talinum* sp.), sea oats (*Chasmanthium latifolium*), hairy lip fern (*Cheilanthes lanosa*), small bluets (*Hedyotis crassifolia*), both dwarf and potato dandelion (*Krigia virginica* and *K. dandelion*), eastern prickly pear cactus (*Opuntia humifusa*), the exotic, Johnny jump-up (*Viola rafinesquii*), blunt-lobed cliff fern (*Woodsia obtusa*), reindeer lichen (*Cladina* sp.), false garlic (*Nothoscordum bivalve*), pinweed (*Lechea*

tenuifolia) and hoary plantain (*Plantago virginica*). Just south of the glade is a sandstone wall that varies in height from five to ten feet. Species on the wall include river oats and blunt-lobed cliff fern. A soil pH test in the glade revealed the soil was very strongly acidic with pH 4.5.

Historic Vegetation

General Land Office survey notes from 1816 report that the land in and around Auxvasse Natural Area was poor and broken with thin soil. Dominant trees in the uplands were white oak, black oak, and cedar. Other species listed were red oak, bur oak (*Quercus macrocarpa*), sugar maple, butternut (*Juglans cinera*), black walnut, hackberry, elm, sycamore, and hickory. Dominant undergrowth was oak, cedar and hazelnut (*Corylus americana*).

Aerial photos from the 1940's through the 1960's show a much more open dolomite glade system. In 2005 open glade was reduced to about a quarter of its former extent as compared to 1941 (Figure 5).

Land Use History: The site was purchased from Don Marchesi in January 2006. Don Marchesi had owned the property since 1986. The Marchesi's have primarily used the property for hunting.

Grazing: Some evidence of past grazing exists on the natural area. There are remains of a barbwire fence running north-south through the dolomite glade as well as intact barbwire fencing on the north, south, and west boundaries of the property. The only sandstone glade in the natural area is cut in half by a barbwire fence. In the early 1990's Greg Gremaud reported a dead hog on the sandstone glade and grazing on the west side of the large dolomite glade system. The dolomite glades/woodlands along the main E-W ridge show few grazing indicator species, e.g. coralberry.

Logging: The entire area was high grade logged about 10 to 15 years ago. The glades were unscathed and most of the woodlands and forests on the NA were only moderately negatively impacted. Forests to the north and east of the NA were more heavily cut.

Fire: There were at least two lightning fires in the past, one in the 1960's and one in the 1970's according to a neighbor and longtime resident of the area. A 90 acre area encompassing the glade/woodland complex was prescribed burned in March 2006 by MDC.

Litter: There has been no public use of this area to date and so currently there is little to no litter. Some old deer stands are scattered around the property.

Travelways: A dirt/gravel road runs the length of the E-W ridge through the area. It passes through the NA for about 700 feet through the dry dolomite woodland with little impact. In this section, the road is full of grey-headed coneflower (*Ratibida pinnata)*, Ohio spiderwort (*Tradescantia ohiensis)*, woodland sunflower (*Helianthus hirsutus)*, beebalm (*Monarda bradburiana)* and other open woodland species.

Adjacent Land Uses: The land to the north, west, and south of the natural area is all wooded and privately owned. The land to the east of the natural area is owned by MDC but is in a life estate with Don Marchesi. He is allowed to hunt on the property. To the east of the life estate portion is Reform CA.

Potential Threats: Root digging, rock flipping, glade animal collecting, and ATV-use could become quick threats to the NA's glades. Adjacent land use to the west of the large glade on the NA could cause significant problems in managing the glade-woodland system with prescribed fire. Exotic

plants, in particular sericea lespedeza (*Lespedeza cuneata*), sweet clover (*Meliolotus* spp.), and teasel (*Dipsacus laciniatus*), occur within Callaway County and could show up in the future.

Recommended Additions: The 6 acres of the significant dolomite glade lying to the west of the MDC NA line (Figure 2, 3) should be acquired by MDC or protected via a conservation easement if possible. This property, the SE ¼ T46N R8W, is a critical piece in the future management of the NA.

Supporting Information

References:

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Maps (see attached, Figures 1-5):

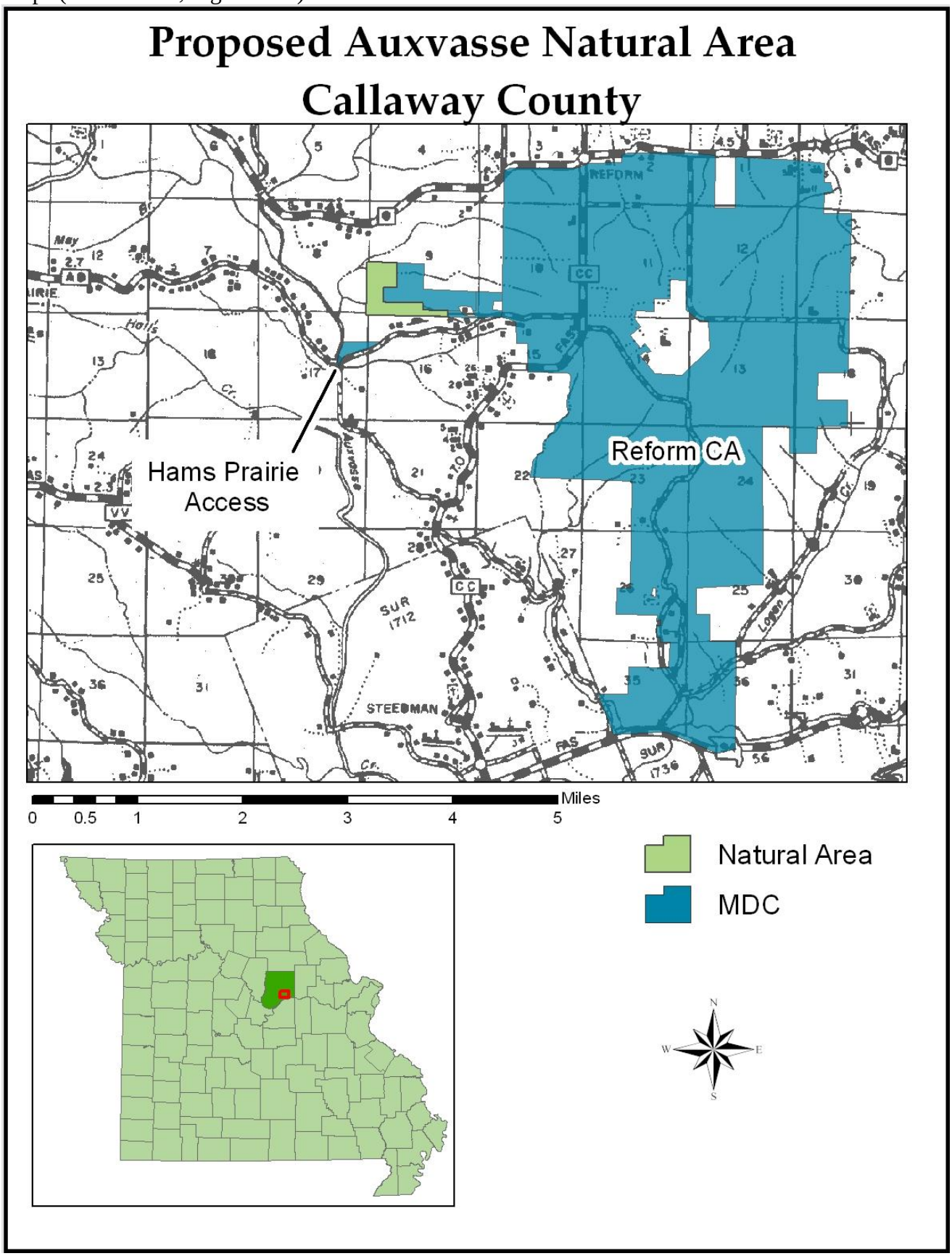

Figure 1. Auxvasse NA vicinity map with surrounding Conservation Areas.

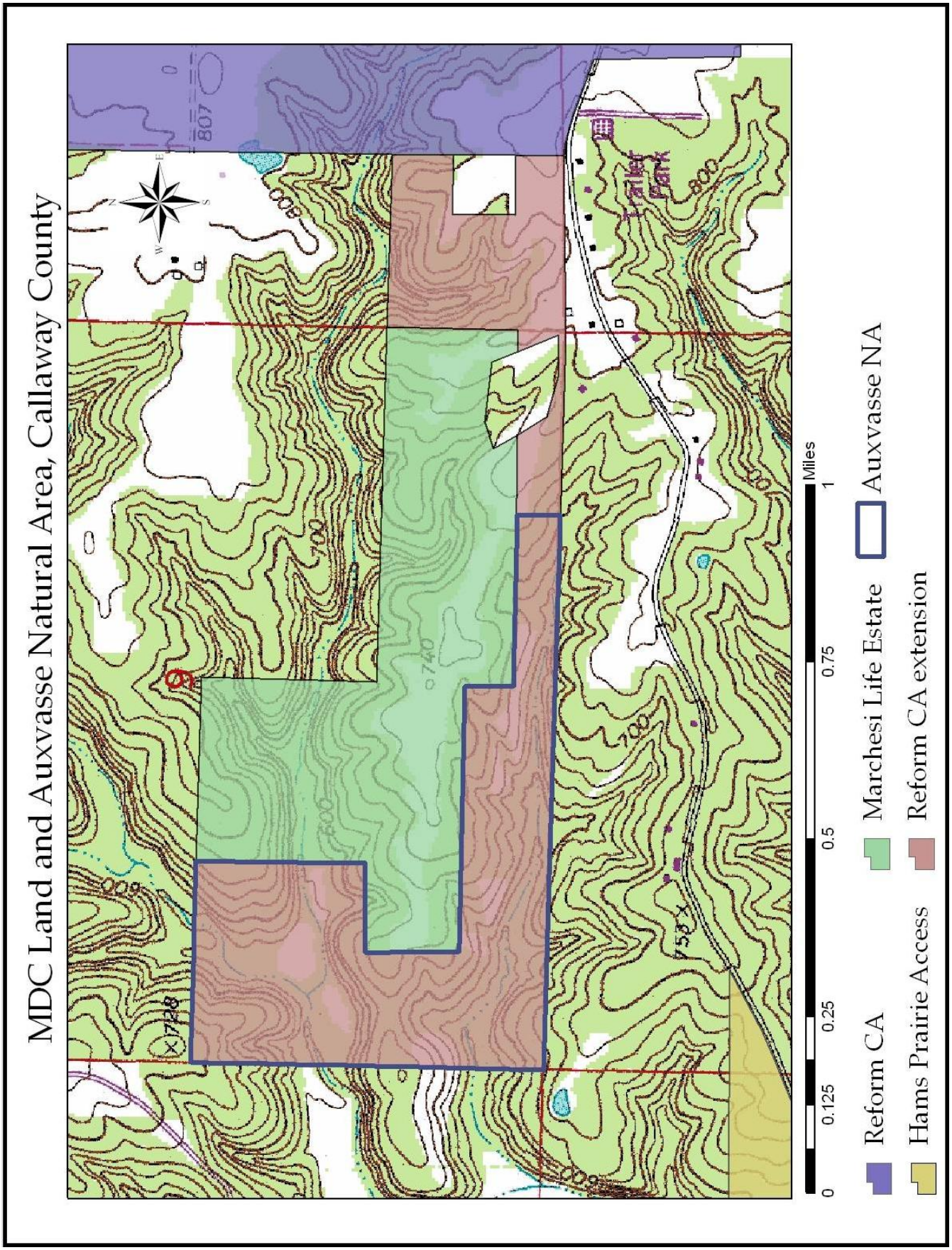

Figure 2. Auxvasse NA and adjacent life estate.

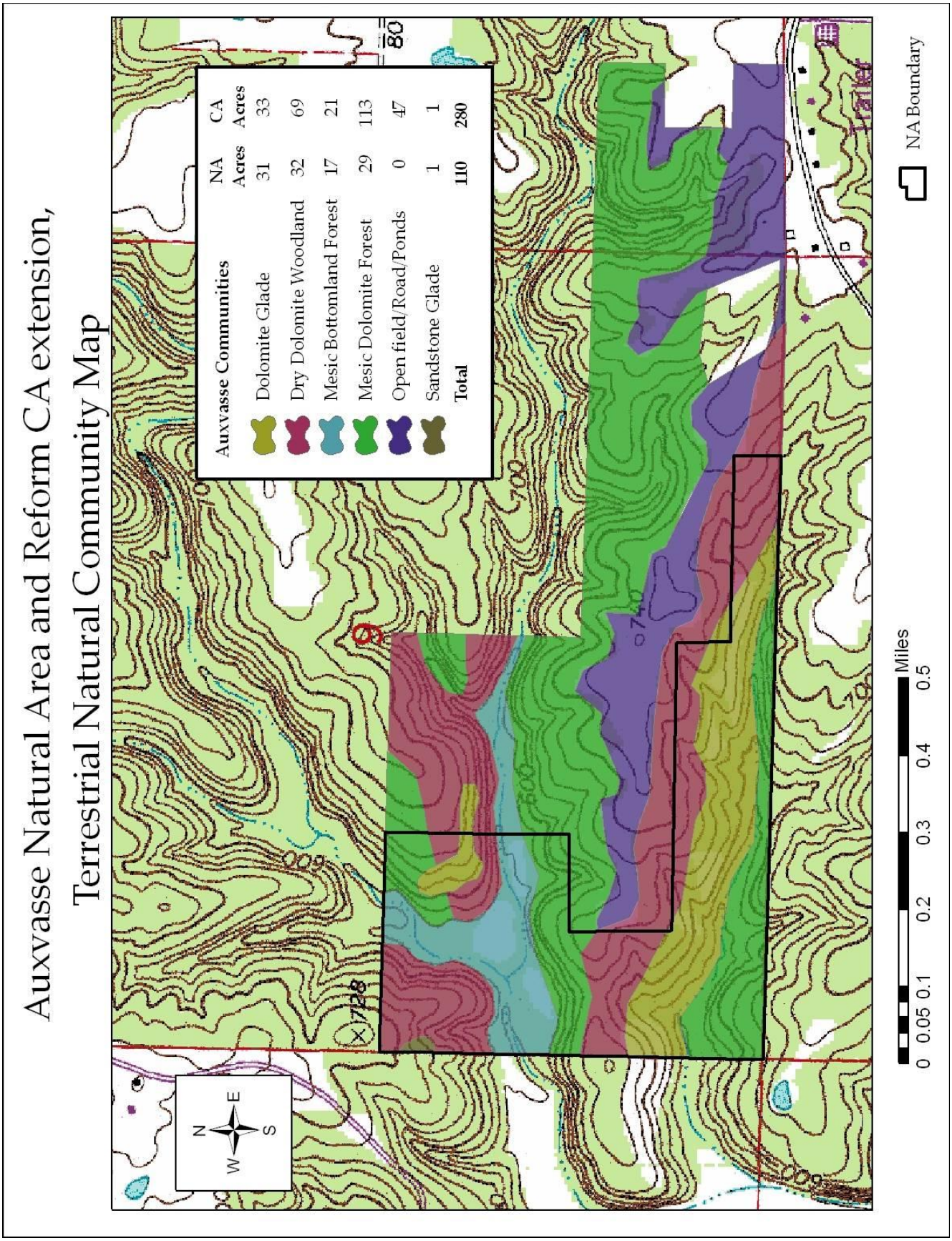

Figure 3. Auxvasse natural community map.

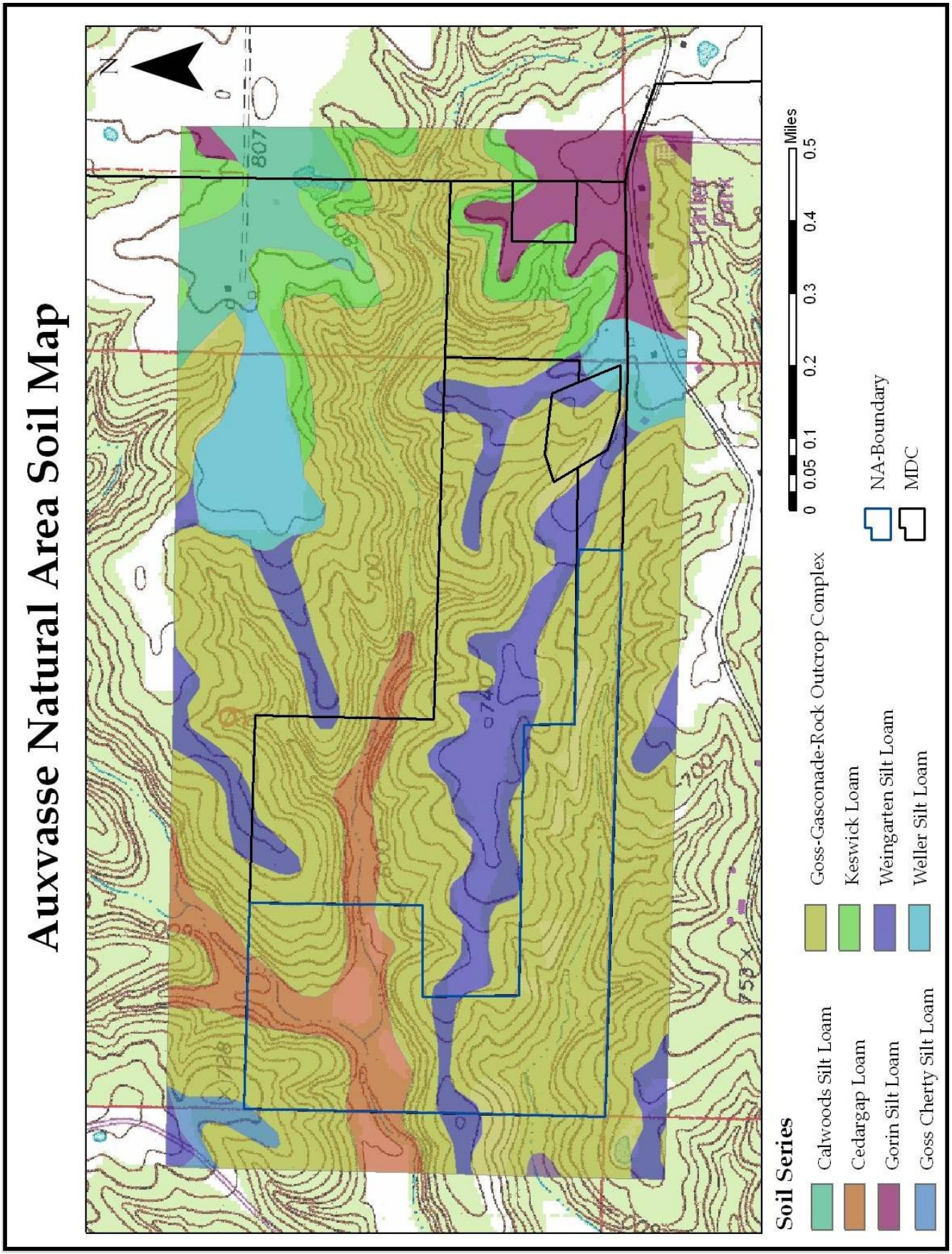

Figure 4. Soil map.

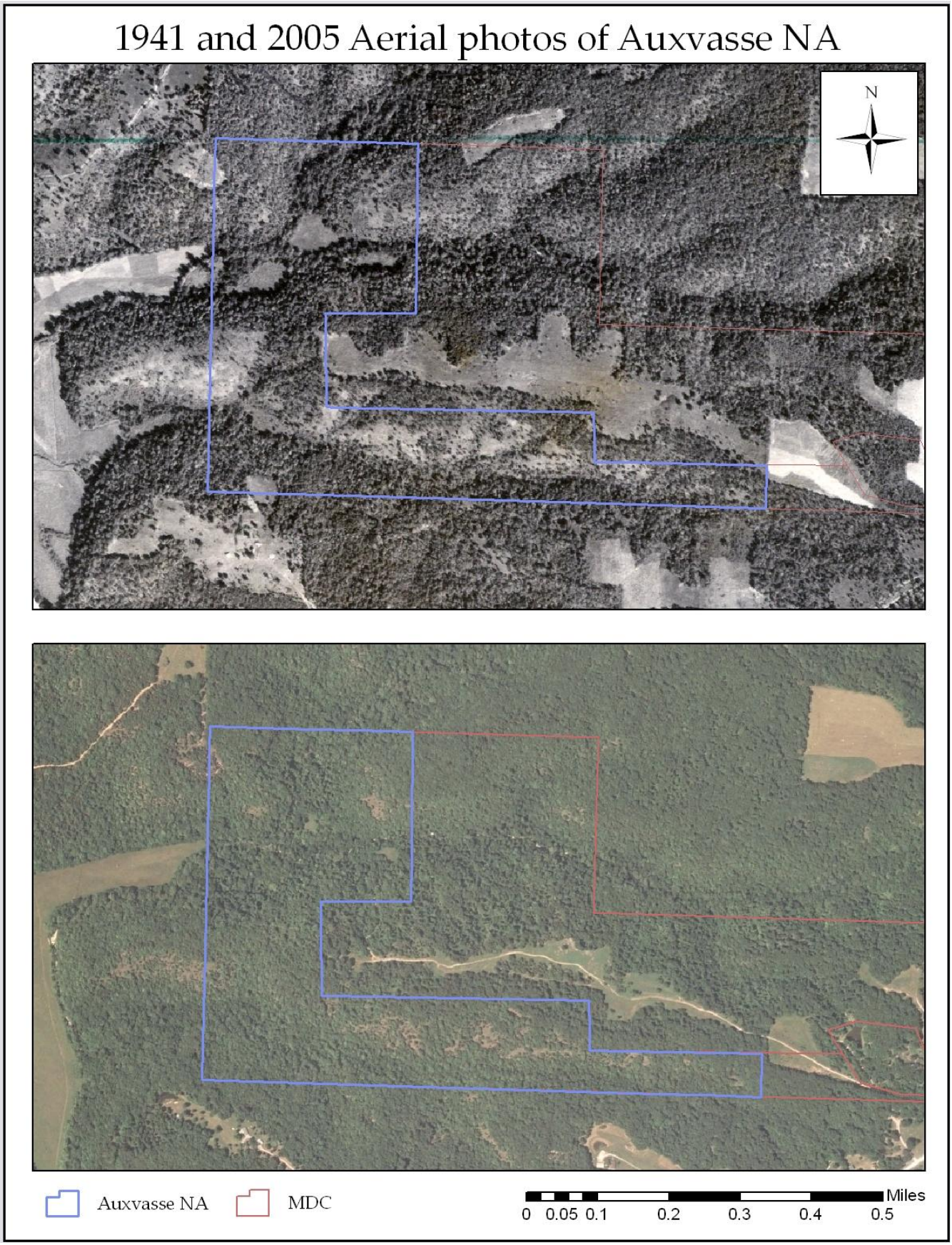

Figure 5. Aerial photos of Auxvasse NA from 1941 and 2005.

Photographs:

Photo 1. Mesic limestone/dolomite forest

Photo 2. Mesic bottomland forest.

Photo 3. Mesic bottomland forest ground flora.

Photo 4. Dolomite glade with yellow coneflower (*Echinacea paradoxa*) in bloom.

Photo 5. Giant swallowtail (*Heraclides cresphontes*) feeding on yellow coneflower (*Echinacea paradoxa*).

Photo 6. Pale purple or glade coneflower (*Echinacea pallida* or *E. simulata*) on a dolomite glade.

Photo 7. Dry dolomite woodland

Photo 8. Open grown chinquapin oak (*Quercus muhlenbergii*) in dry dolomite woodland.

Photo 9. Sandstone glade.

Photo 10. Striped bark scorpion (*Centruroides vittatus*) on a dolomite glade.

Photo 11. Black widow spider (*Latrodectus* sp.) on a dolomite glade.

Photo 12. Deer mouse (*Peromyscus maniculatus*) on a a dolomite glade.

MISSOURI NATURAL AREAS COMMITTEE
NATURAL AREA MANAGEMENT RECOMMENDATIONS

Area Name: Auxvasse Natural Area

Administrative Agent: Missouri Department of Conservation, Wildlife Division, Reform Conservation Area

Management Goal (including management of buffer land): To restore, conserve, and maintain the natural integrity of the significant dolomite glades and associated natural communities.

Ecological Management Objectives (Prescribed Burns, Exotic Species Control, Monitoring, Selective Cutting, Mowing):

Objective 1: Restore and maintain the dolomite glade and dry dolomite woodland natural communities.

Strategies:

1. Continue to apply prescribed fires to the high-quality dolomite glade/woodland complex in the south half of the natural area.
2. Conduct burns during various seasons of the year as appropriate to promote growth of different groups of plant species. Winter, spring, summer and fall burns would all be appropriate at Auxvasse Natural Area. Burning season should be altered by area manager based upon burn responses and desired future effects. However, most burns will typically occur in winter and early spring.
3. Prescribed burns should occur about every third or fourth year for at least the first three burns on the area until the glade and woodland structure is more open. After that time a burn every fifth year may suffice to maintain the glade and woodland community.
4. Conduct burns under low to moderate intensities to avoid significant crown scorch to the old age oaks on the area. Utilize mechanical and chemical control of woody stems > 1.5 inches dbh. Use fire to deaden stems < 1.5 inches dbh.
5. Slowly thin red cedar and hardwood invasion from the understories of the glades and woodlands. Allow prescribed fires to deaden smaller stemmed woody invasive species. Over the next decade, reduce red cedar and other invasive native woody plant species cover in the understory by over 50%. In the glade openings themselves, slowly remove all but large (>10 inch dbh) red cedar stems. Limb-up larger diameter red cedars to allow for underburning.
6. Be mindful of excessive slash fuel buildup during thinning operations. Note that while the open glades and associated open woodlands may behave like a fuel model 2 (National Wildfire Coordinating Group standard fuel models used in BEHAVE wildfire prediction software), glades and woodlands with large amounts of slash will more likely act like a fuel model 11 or 12. Closed woodlands and forests typically are fuel model 9, but some areas that had the high grade logging may act like a fuel model 6. Managing fuel loading during the restoration phase of Auxvasse NA will be critical.
7. Utilize MDC's *Forest Land Management Guide: Prescribed Fire* by George Hartman and Chapter Two, Ecological Management, in the *Terrestrial Natural Communities of Missouri* by Paul Nelson as technical guidelines to use for restoring the glades and woodlands via prescribed fire and thinning.

Objective 2: Utilize forest inventory data to guide decision making on restoration of woodland and forest natural communities.

Strategies:

1. Complete first forest inventory.

2. Utilize results and discussions from the first inventory on the tract to inform/guide recovering the woodland and forest communities from the last high grade logging event.
3. Utilize inventory results to assist with management prescriptions to maintain regeneration and recruitment of overstory tree species.
4. Re-inventory wooded communities as deemed appropriate by Forestry Division staff to assess changes in stand structure.

Objective 3: Work with adjacent landowners as appropriate in allowing for efficient, safe and effective prescribed burn units. Also, seek protection of adjacent glade acreage to the west of the natural area via MDC fee simple purchase, conservation easement, and or cooperative management agreements.

Objective 4: Utilize simple visual monitoring during annual status report visits to assess natural area for invasion by non-native, invasive plant species. In particular, keep a look out for sericea lespedeza, sweet clovers, and teasel. If populations of these species become established in the natural area, utilize control methods (chemical, mechanical, burning) as appropriate.

<u>Development Objectives</u> (Additional Land, Access, Parking, Trails, Interpretation, Signs):

Objective 1: Provide for eventual better public access to the natural area. The natural area is currently landlocked from good public access.

Strategies:

1. Maintain the current field access road/fire line that runs east-west across the natural area. This lane could be used as a future hiking trail for public access.
2. When the Marchesi life estate is completed and total ownership is vested in MDC, then consider constructing a hiking trail/access lane that links a nearby existing parking lot on CR 428 within Reform CA to the Auxvasse NA.

Objective 2: Protect the glades from root digging, animal poaching, rock flipping and ATV use.

Objective 3: Maintain current Right-of-Way easement for management access from CR 428.

Objective 4: Post natural area signs along the boundary within a year of designation.

Objective 5: Ensure that the Marchesi's follow the regulations of their life estate with MDC.

Objective 6: Expand the natural area as appropriate and practical.

Strategies:

1. Seek acquisition of additional glade property to the west of the current natural area.
2. Add Marchesi life estate property to the current natural area when the life estate is completed.

<u>Recreational Uses</u> (Picnicking, Camping, Collecting Plant Materials, Hunting, Trapping, Fishing):

Objective 1: Protect the area from incompatible and illegal uses, particularly root digging, glade animal poaching and ATV use.

Objective 2: Allow recreational use of the area as specified in the MDC <u>Wildlife Code</u> Section 4.115 regulations.

Strategies:

1. Once the Marchesi life estate is ended, it is recommended that the area be open to hunting, fishing and trapping as determined by area manager and Protection Division staff.

2. Hiking, bird watching, nature study and nature photography will be compatible uses.

Research Uses and Needs:
Collection of plants or animals for research purposes will require an MDC collector's permit as per the Wildlife Code. Basic photo monitoring and qualitative descriptions of the restoration of the natural communities would be useful. Monitoring results/notes should reside in the Natural History Biologist files.

Date Submitted: **Committee Approval Date:**

Prepared By: Lydia Miramontes, John George, and Mike Leahy

Plant Lists

Compiled from site visits by Gary Reese, Tim Nigh, Greg Gremaud, Tim Smith, Karen Kramer, Mike Leahy, John George, and Lydia Miramontes, 1982-2006.

Taxonomic References used: Steyermark (1963), Yatskievych (1999), and Yatskievych and Turner (1990). Species in **bold** indicate non-native flora.

Complete Plant List

Acalypha gracilens	slender three-seeded mercury
Acer negundo	box elder
Acer saccharum	maple
Acer saccharum	sugar maple
Achillea millefolium	**yarrow**
Adiantum pedatum	maidenhair fern
Aesculus glabra	Ohio buckeye
Agrimonia pubescens or rostellata	downy agrimony
Agrimonia sp.	agrimony
Allium canadense	wild garlic
Ambrosia artemisiifolia	common ragweed
Amelanchier arborea	service berry
Amorpha canescens	lead plant
Andropogon gerardii	big bluestem
Anemone virginiana	thimbleweed
Anemonella thalictroides	rue anemone
Antennaria plantaginifolia	pussytoes
Aplectrum hyemale	putty root orchid
Apocynum cannabinum	Indian hemp
Apocynum medium	dogbane
Apocynum sp.	dogbane
Arabis canadensis	sicklepod
Aristolochia serpentaria	Virginia snakeroot
Asarum canadense	wild ginger
Asclepias quadrifolia	whorled milkweed
Asclepias stenophylla	narrow-leaved milkweed
Asclepias tuberosa	butterfly weed
Asclepias verticillata	whorled milkweed
Asclepias viridiflora	green milkweed
Asclepias viridis♦	green-flowered milkweed
Asimina triloba	pawpaw
Asplenium platyneuron	ebony spleenwort
Aster anomalous	soft blue aster
Aster cordifolius	aster
Aster laevis	smooth aster
Aster oblongifolius	aromatic aster
Aster patens	spreading aster
Aster pilosus	white heath asther
Aster sericeus	silky aster
Aster turbinellus	aster
Astragalus crassicarpus	ground plum
Aureolaria grandiflora	big-flowered gerardia
Aureolaria sp.	false foxglove
Baptisia alba	white wild indigo
Barbarea vulgaris	**yellow rocket**
Blephilia ciliata	Ohio horse mint
Botrychium dissectum	cut-leaf grape fern
Bouteloua curtipendula	sideoats grama
Brickellia eupatorioides	false boneset
Bromus pubescens	Canada brome
Bumelia lanuginosa	woolly buckthorn
Cacalia atriplicifolia	pale Indian plantain

287 native species	6 exotic species
Cacalia muhlenbergii	great Indian plantain
Cacalia plantaginea	Indian plantain
Camassia scilloides	wild hyacinth
Campsis radicans	trumpet creeper
Cardamine concatenata	toothwort
Cardamine parviflora	small-flowered bitter cress
Carex albursina	white bear sedge
Carex cephalophora	sedge
Carex complanata	sedge
Carex crawei	sedge
Carex eburnea	sedge
Carex meadii	sedge
Carex retroflexa	sedge
Carex umbellata	sedge
Carpinus caroliniana	musclewood
Carya ovata	shagbark hickory
Carya texana	black hickory
Castilleja coccinea	Indian paintbrush
Ceanothus americanus	New Jersey tea
Celtis occidentalis	hackberry
Celtis tenuifolia	dwarf hackberry
Chaerophyllum procumbens	wild chervil
Chamaecrista fasciculata	showy partridge pea
Chamaesyce maculata	prostrate spruge
Chasmanthium latifolium	sea oats
Cheilanthes lanosa	hairy lip fern
Circium sp.	thistle
Cladina sp.	reindeer lichen
Cladonia cristatella	British soldiers
Claytonia virginica	spring beauty
Collinsia verna	blue eyed Mary
Comandra umbellata	bastard toadflax
Coreopsis palmata	finger coreopsis
Coreopsis tripteris	tall coreopsis
Cornus amomum	swamp dogwood
Cornus florida	flowering dogwood
Corydalis flavula	pale corydalis
Croton monanthogynus	one-seeded croton
Crotonopsis elliptica	rushfoil
Cypripedium calceolus*	yellow lady's slipper
Cystopteris fragilis	fragile fern
Dalea candida	white prairie clover
Dalea purpurea	purple prairie clover
Delphinium tricorne	dwarf larkspur
Desmanthus illinoensis	prairie mimosa
Desmodium cuspidatum	longleaf tick clover
Desmodium glutinosum	large flowered tick clover
Desmodium nudiflorum	tick clover
Dicentra cucullaria	dutchman's breeches
Dichanthelium acuminatum	panic grass
Dichanthelium boscii	panic grass
Diodia teres	rough buttonweed
Dioscorea sp.	yam

Diospyros virginiana	persimmon
Dirca palustris	leatherwood
Dodecatheon meadia	shooting star
Draba cuneifolia	whitlow grass
Echinacea pallida or E. simulata	pale purple coneflower or glade coneflower
Echinacea paradoxa	purple coneflower
Eleocharis compressa	spike rush
Elymus canadensis	Canada wild rye
Elymus sp.	wild rye
Erigenia bulbosa	harbinger of spring
Erigeron pulchellus	robin's plantain
Erigeron strigosus	daisy fleabane
Erythronium americanum	yellow trout lily
Eupatorium altissimum	tall thoroughwort
Euphorbia corollata	flowering spurge
Euphorbia dentata	toothed spurge
Fimbristylis puberula	Fimbristylis
Fragaria virginiana	wild strawberry
Fraxinus americana	white ash
Fraxinus quadrangulata	blue ash
Galium aparine	cleavers
Galium circaezans	wild licorice
Galium concinnum	galium
Gentiana puberula	downy gentian
Geranium maculatum	wild geranium
Geum canadense	white avens
Geum sp.	avens
Gillenia stipulata	Indian physic
Gleditsia triacanthos	honey locust
Hedyotis crassifolia	small bluets
Hedyotis nigricans	narrow-leaved bluets
Helianthus hirsutus	bristly sunflower
Helianthus rigidus	stiff sunflower
Heliopsis helianthoides	false sunflower
Heliotropium tenellum	heliotrope
Heuchera richardsonii	alum root
Heuchera sp.	alum root
Hexalectris spicata	crested coral root
Hybanthus concolor	green violet
Hydrastis canadensis	golden seal
Hydrophyllum sp.	waterleaf
Hydrophyllum virginianum	Virginia waterleaf
Hypericum sphaerocarpum	St. John's wort
Hypoxis hirsuta	star grass
Ilex decidua	possum haw
Ipomoea pandurata	wild potato vine
Ipomoea sp.	morning glory
Juglans nigra	black walnut
Juniperus virginiana	red cedar
Krigia dandelion	potato dandelion
Krigia sp.	dandelion
Krigia virginica	dwarf dandelion
Lamium purpureum	**dead nettle**
Lechea tenuifolia	pinweed
Lespedeza violacea	prairie bush clover
Leucospora multifida	conobea
Liatris aspera	blazing star
Liatris cylindracea	blazing star
Lindera benzoin	spicebush
Linum sulcatum	grooved flax
Lithospermum canescens	puccoon
Lobelia spicata	spiked lobelia
Luzula bulbosa	wood rush
Lysimachia lanceolata	loosestrife
Matelea decipiens	climbing milkweed
Melilotus sp.	sweet clover
Menispermum canadense	moonseed
Mirabilis albida	white four-o'clock
Monarda bradburiana	beebalm
Nothoscordum bivalve	false garlic
Nuttalanthus texanis	Southern blue toadflax
Oenothera macrocarpa	Missouri primrose
Onosmodium subsetosum	marbleseed
Ophioglossum engelmannii	adder's tongue
Opuntia humifusa	eastern prickly pear
Orbexilum pedunculatum	Sampson's snakeroot
Orobanche uniflora	one-flowered cancer-root
Osmorhiza sp.	sweet cicely
Ostrya virginiana	iron wood
Oxalis violacea	violet wood sorrel
Panax quinquefolius	ginseng
Panicum virgatum	switch grass
Parthenium hispidum	American feverfew
Parthenium integrifolium	wild quinine
Pellaea atropurpurea	purple cliff brake
Penstemon digitalis	smooth beard-tongue
Penstemon pallidus	pale beard-tongue
Penstemon tubiflorus	white wand beard-tongue
Phacelia sp.	phacelia
Phlox divaricata	blue Phlox
Phlox pilosa	prairie phlox
Physalis sp.	ground cherry
Physalis heterophylla	clammy ground cherry
Physalis virginiana	ground cherry
Physocarpus opulifolius	ninebark
Physostegia virginiana	obedient plant
Plantago virginica	hoary plantain
Platanus occidentalis	sycamore
Podophyllum peltatum	May apple
Polygala verticillata	whorled milkweed
Polygonum virginianum	Virginia knotweed
Polystichum acrostichoides	Christmas fern
Potentilla simplex	common cinquefoil
Prenanthes alba	white lettuce
Prunus mexicana	big tree plum
Psoralidium tenuiflorum	scurfy pea
Ptelea trifoliata	common hop tree
Pycnanthemum tenuifolium	slender mountain mint
Quercus alba	white oak
Quercus bicolor	swamp white oak
Quercus marilandica	black jack oak
Quercus muhlenbergii	chinquapin oak
Quercus rubra	northern red oak
Quercus shumardii	shumard oak
Quercus stellata	post oak
Quercus velutina	black oak
Ranunculus hispidus	hispid buttercup
Ranunculus micranthus	crowfoot
Ratibida pinnata	grayhead prairie coneflower
Rhamnus caroliniana	Carolina buckthorn
Rhamnus lanceolata	buckthorn

Rhus aromatica	fragrant sumac
Rosa carolina	pasture rose
Rosa multiflora	**multiflora rose**
Rosa setigera	prairie rose
Rudbeckia laciniata	goldenglow
Rudbeckia missouriensis	Missouri coneflower
Ruellia humilis	wild petunia
Sabatia angularis	rose pink
Sambucus canadensis	elderberry
Sanguinaria canadensis	bloodroot
Sanicula canadensis	black snakeroot
Schizachyrium scoparium	little bluestem
Schrankia nuttallii	sensitive brier
Scirpus pendulus	nodding bulrush
Scutellaria parvula	small skullcap
Senecio obovatus	squaw weed
Silene stellata	starry campion
Silphium integrifolium	rosinweed
Silphium laciniatum	compass plant
Silphium terebinthinaceum	prairie dock
Sisyrinchium campestre	prairie blue-eyed grass
Smilax hispida	bristly greenbrier
Solidago petiolaris	goldenrod
Solidago rigida	stiff goldenrod
Solidago ulmifolia	elm-leaved goldenrod
Sorghastrum nutans	Indian grass
Sporobolus asper	rough dropseed
Sporobolus heterolepis	prairie dropseed
Sporobolus neglectus	poverty grass
Staphylea trifolia	bladdernut
Stellaria sp.	**chickweed**
Stylosanthes biflora	pencil flower
Symphoricarpos orbiculatus	buckbrush
Taenidia integerrima	yellow pimpernel
Talinum sp.	fame flower
Thaspium barbinode	meadow parsnip
Thaspium trifoliatum	meadow parsnip
Tilia americana	basswood
Tradescantia ohiensis	Ohio spiderwort
Tradescantia subaspera	spiderwort
Tradescantia virginiana	spiderwort (dwarf)
Trichostema brachiatum	false pennyroyal
Tridens flavus	purpletop
Trillium sp.	trillium
Trillium viride	green trillium
Triodanis perfoliata	Venus' looking glass
Triosteum illinoense	horse gentian
Triosteum sp	horse gentian
Tripsacum dactyloides	eastern gama grass
Ulmus americana	American elm
Ulmus rubra	slippery elm
Uvularia grandiflora	bellwort
Veratrum woodii	false hellebore
Vernonia baldwinii	ironweed
Viburnum rufidulum	southern black haw
Viola pedata	bird's foot violet
Viola pensylvanica	smooth yellow violet
Viola rafinesqii	**Johnny jump-up**
Viola sororia	common violet
Viola striata	cream violet
Viola triloba	cleft violet
Vitis sp.	grape
Woodsia obtusa	blunt-lobed cliff fern
Zanthoxylum americanum	prickly ash
Zizia aptera	golden Alexanders
Zizia aurea	golden Alexanders

♦ There is no county record for this species. If found, submit a voucher specimen.

Dolomite Glade Plant List

Acalypha gracilens	slender three-seeded mercury
Acer saccharum	maple
Agrimonia pubescens or rostellata	downy agrimony
Allium canadense	wild garlic
Ambrosia artemisiifolia	common ragweed
Amorpha canescens	lead plant
Andropogon gerardii	big bluestem
Anemone virginiana	thimbleweed
Anemonella thalictroides	rue anemone
Antennaria plantaginifolia	pussytoes
Apocynum cannabinum	Indian hemp
Apocynum medium	dogbane
Arabis canadensis	sicklepod
Aristolochia serpentaria	Virginia snakeroot
Asclepias quadrifolia	whorled milkweed
Asclepias stenophylla	narrow-leaved milkweed
Asclepias tuberosa	butterfly weed
Asclepias verticillata	whorled milkweed
Asclepias viridiflora	green milkweed
Asclepias viridis♦	green-flowered milkweed
Asplenium platyneuron	ebony spleenwort

193 native species

Aster anomalous	soft blue aster
Aster cordifolius ssp. sagittifolius	aster
Aster laevis	smooth aster
Aster oblongifolius	aromatic aster
Aster patens	spreading aster
Aster pilosus	white heath aster
Aster sericeus	silky aster
Aster turbinellus	aster
Astragalus crassicarpus	ground plum
Aureolaria grandiflora	big-flowered gerardia
Baptisia alba	white wild indigo
Blephilia ciliata	Ohio horse mint
Botrychium dissectum	cut-leaf grape fern
Bouteloua curtipendula	sideoats grama
Brickellia eupatorioides	false boneset
Bromus pubescens	Canada brome
Bumelia lanuginosa	woolly buckthorn
Cacalia plantaginea	Indian plantain
Camassia scilloides	wild hyacinth
Campsis radicans	trumpet creeper

Cardamine parviflora var. arenicola	small-flowered bitter cress
Carex complanata	sedge
Carex crawei	sedge
Carex eburnea	sedge
Carex meadii	sedge
Carex umbellata	sedge
Castilleja coccinea	Indian paintbrush
Ceanothus americanus	New Jersey tea
Celtis tenuifolia	dwarf hackberry
Chamaecrista fasciculate	showy partridge pea
Chamaesyce maculata	prostrate spruge
Chasmanthium latifolium	sea oats
Claytonia virginica	spring beauty
Comandra umbellata	bastard toadflax
Coreopsis palmata	finger coreopsis
Coreopsis tripteris	tall tickseed
Cornus amomum	swamp dogwood
Cornus florida	flowering dogwood
Croton monanthogynus	one-seeded croton
Dalea candida	white prairie clover
Dalea purpurea	purple prairie clover
Desmanthus illinoensis	prairie mimosa
Desmodium cuspidatum	longleaf tick clover
Desmodium nudiflorum	tick clover
Dichanthelium acuminatum	panic grass
Dichanthelium boscii	panic grass
Dioscorea sp.	yam
Diospyros virginiana	persimmon
Dodecatheon meadia	shooting star
Draba cuneifolia	whitlow grass
Echinacea pallida or E. simulata	pale purple coneflower or glade coneflower
Echinacea paradoxa	purple coneflower
Eleocharis compressa	spike rush
Elymus canadensis	Canada wild rye
Erigeron pulchellus	robin's plantain
Erigeron strigosus	daisy fleabane
Eupatorium altissimum	tall thoroughwort
Euphorbia corollata	flowering spurge
Euphorbia dentata	toothed spurge
Fimbristylis puberula	Fimbristylis
Fragaria virginiana	wild strawberry
Fraxinus americana	white ash
Galium circaezans	wild licorice
Gentiana puberula	downy gentian
Hedyotis nigricans	narrow-leaved bluets
Helianthus hirsutus	bristly sunflower
Helianthus rigidus	stiff sunflower
Heliopsis helianthoides	false sunflower
Heliotropium tenellum	heliotrope
Heuchera richardsonii	alum root
Hexalectris spicata	crested coral root
Hybanthus concolor	green violet
Hypericum sphaerocarpum	round-fruited St. John's-wort
Hypoxis hirsuta	star grass
Ilex decidua	possum haw
Ipomoea pandurata	wild potato vine
Ipomoea sp.	morning glory
Juniperus virginiana	red cedar
Krigia sp.	dandelion
Lespedeza violacea	prairie bush clover
Leucospora multifida	conobea
Liatris aspera	blazing star
Liatris cylindracea	blazing star
Linum sulcatum	grooved flax
Lithospermum canescens	puccoon
Lobelia spicata	spiked lobelia
Lysimachia lanceolata	loosestrife
Matelea decipiens	climbing milkweed
Mirabilis albida	white four-o'clock
Monarda bradburiana	beebalm
Nothoscordum bivalve	false garlic
Oenothera macrocarpa	Missouri primrose
Onosmodium subsetosum	marbleseed
Ophioglossum engelmannii	Engelmann's adder's tongue
Opuntia humifusa	eastern prickly pear
Orbexilum pedunculatum	Sampson's snakeroot
Ostrya virginiana	hop hornbeam
Oxalis violacea	violet wood sorrel
Panicum virgatum	switch grass
Parthenium hispidum	American feverfew
Parthenium integrifolium	wild quinine
Pellaea atropurpurea	purple cliff brake
Penstemon digitalis	smooth beard-tongue
Penstemon pallidus	pale beard-tongue
Penstemon tubiflorus	white wand beard-tongue
Phlox pilosa	prairie phlox
Physalis sp.	ground cherry
Physalis heterophylla	clammy ground cherry
Physalis virginiana	ground cherry
Physocarpus opulifolius	ninebark
Physostegia virginiana	obedient plant
Polygala verticillata	whorled milkweed
Potentilla simplex	common cinquefoil
Prenanthes alba	white lettuce
Psoralidium tenuiflorum	scurfy pea
Ptelea trifoliata	common hop tree
Pycnanthemum tenuifolium	slender mountain mint
Quercus muhlenbergii	chinquapin oak
Quercus stellata	post oak
Quercus velutina	black oak
Ranunculus micranthus	crowfoot
Ratibida pinnata	grayhead prairie coneflower
Rhamnus caroliniana	Carolina buckthorn
Rhamnus lanceolata	buckthorn
Rhus aromatica	fragrant sumac
Rosa carolina	pasture rose
Rosa setigera	prairie rose
Rudbeckia laciniata	goldenglow
Rudbeckia missouriensis	Missouri coneflower
Ruellia humilis	wild petunia
Sabatia angularis	rose pink
Sanicula canadensis	black snakeroot
Schizachyrium scoparium	little bluestem
Schrankia nuttallii	sensitive brier
Scirpus pendulus	nodding bulrush
Scutellaria parvula	small skullcap
Senecio obovatus	squaw weed
Silene stellata	starry campion
Silphium integrifolium	rosinweed
Silphium laciniatum	compass plant

Silphium terebinthinaceum	prairie dock
Sisyrinchium campestre	prairie blue-eyed grass
Smilax hispida	bristly greenbrier
Solidago petiolaris	goldenrod
Solidago rigida	stiff goldenrod
Solidago ulmifolia	elm-leaved goldenrod
Sorghastrum nutans	Indian grass
Sporobolus asper	rough dropseed
Sporobolus heterolepis	prairie dropseed
Sporobolus neglectus	poverty grass
Stylosanthes biflora	pencil flower
Symphoricarpos orbiculatus	buckbrush
Taenidia integerrima	yellow pimpernel
Thaspium barbinode	meadow parsnip
Thaspium trifoliatum	meadow parsnip
Tradescantia ohiensis	spiderwort
Tradescantia subaspera	spiderwort
Tradescantia virginiana	dwarf spiderwort
Trichostema brachiatum	false pennyroyal
Tridens flavus	purpletop
Triodanis perfoliata	Venus' looking glass
Triosteum illinoense	horse gentian
Tripsacum dactyloides	eastern gama grass
Veratrum woodii	false hellebore
Vernonia baldwinii	ironweed
Viburnum rufidulum	southern black haw
Viola pedata	bird's foot violet
Viola sororia	common violet
Viola triloba	cleft violet
Zanthoxylum americanum	prickly ash
Zizia aptera	golden Alexanders
Zizia aurea	golden Alexanders

Bottomland Forest Plant List

39 native species	3 exotic species
Acer negundo	box elder
Acer saccharum	sugar maple
Aesculus glabra	Ohio buckeye
Allium canadense	wild garlic
Aplectrum hyemale	putty root orchid
Asimina triloba	pawpaw
Barbarea vulgaris	**yellow rocket**
Cacalia muhlenbergii	great Indian plantain
Carpinus caroliniana	musclewood
Carya ovata	shagbark hickory
Celtis occidentalis	hackberry
Chaerophyllum procumbens	wild chervil
Cirsium sp.	thistle
Collinsia verna	blue eyed Mary
Corydalis flavula	pale corydalis
Cystopteris fragilis	fragile fern
Dirca palustris	leatherwood
Erigenia bulbosa	harbinger of spring
Erythronium americanum	yellow trout lily
Fraxinus americana	white ash
Gleditsia triacanthos	honey locust
Hybanthus concolor	green violet
Hydrophyllum virginianum	Virginia waterleaf
Juglans nigra	black walnut
Melilotus sp.	**sweet clover**
Menispermum canadense	moonseed
Oenothera macrocarpa	Missouri primrose
Phlox divaricata	blue Phlox
Platanus occidentalis	sycamore
Podophyllum peltatum	may apple
Quercus bicolor	swamp white oak
Quercus shumardii	shumard oak
Ranunculus hispidus	hispid buttercup
Rosa multiflora	**multiflora rose**
Rudbeckia laciniata	wild golden glow
Sambucus canadensis	elderberry
Smilax hispida	bristly greenbriar
Symphoricarpos orbiculatus	coralberry
Trillium sp.	trillium
Ulmus rubra	slippery elm
Viola striata	cream violet
Vitis sp.	grape

Dry Dolomite Woodland Plant list

66 native species	
Acer saccharinum	sugar maple
Agrimonia sp.	agrimony
Amelanchier arborea	service berry
Amorpha canescens	lead plant
Anemonella thalictroides	rue anemone
Antennaria plantaginifolia	pussytoes
Apocynum sp.	dogbane
Asclepias verticillata	whorled milkweed
Astragalus crassicarpus	ground plum
Aureolaria sp.	false foxglove
Carex cephalophora	sedge
Carex eburnea	sedge
Carex retroflexa	sedge
Carya sp.	hickory
Chasmanthium latifolium	sea oats
Claytonia virginica	spring beauty
Coreopsis palmata	finger coreopsis
Coreopsis tripteris	tall coreopsis
Cypripedium calceolus	yellow lady's slipper
Delphinium tricorne	dwarf larkspur
Desmodium glutinosum	tick trefoil
Elymus virginicus	Virginia wild rye
Erigeron pulchellus	robin's plantain
Fraxinus americana	white ash
Galium circaezans	wild licorice
Geum canadense	white avens
Geum sp.	avens
Gillenia stipulata	Indian physic
Helianthus hirsutus	woodland sunflower
Heuchera sp.	alum root
Hexalectris spicata	crested coral root orchid
Hybanthus concolor	green violet
Hydrastis canadensis	golden seal
Hypericum sphaerocarpum	St. John's wort
Juglans nigra	black walnut
Juniperus virginiana	eastern red cedar
Liatris aspera	blazing star
Lithospermum canescens	hoary puccoon
Lonicera flava	yellow honeysuckle
Matelea decipiens	climbing milkweed

Monarda bradburiana	bergamot
Monarda fistulosa	wild bergamot
Muhlengergia sobilifera	muhly
Nothoscordum bivalve	false garlic
Ophioglossum engelmanii	adder's tongue
Orobanche uniflora	one-flowered cancer-root
Ostrya virginiana	ironwood
Oxalis violacea	violet wood sorrel
Parthenium integrifolium	wild quinine
Polystichum acrostichoides	Christmas fern
Quercus alba	white oak
Quercus muhlenbergii	chinquapin oak
Quercus stellata	post oak
Ratibida pinnata	grayhead prairie coneflower
Rhus aromatica	fragrant sumac
Rosa carolina	pasture rose
Sanguineria canadensis	bloodroot
Silene stellata	starry campion
Silphium terebinthinaceum	prairie dock
Smilax bona-nox	greenbrier
Solidago ulmifolia	elm-leaved goldenrod
Stylosanthes biflora	pencil flower
Taenidia integerrima	yellow pimpernel
Tradescantia ohiensis	spiderwort
Trillium viride	green trillium
Vernonia sp.	ironweed

Mesic Limestone/Dolomite Forest Plant List

54 native species	2 exotic species
Acer saccharum	sugar maple
Adiantum pedatum	maidenhair fern
Aesculus glabra	Ohio buckeye
Amelanchier arborea	service berry
Asarum canadense	wild ginger
Cacalia atriplicifolia	pale Indian plantain
Cardamine concatenata	toothwort
Carex albursina	white bear sedge
Carya ovata	shagbark hickory
Celtis occidentalis	hackberry
Claytonia virginica	spring beauty
Cornus florida	flowering dogwood
Corydalis flavula	pale corydalis
Cystopteris fragilis	fragile fern
Delphinium tricorne	dwarf larkspur
Dicentra cucullaria	dutchman’s breeches
Elymus sp.	
Fraxinus americana	white ash
Fraxinus quadrangulata	blue ash
Galium aparine	cleavers
Galium concinnum	galium
Geranium maculatum	wild geranium
Geum canadense	white avens
Hydrastis canadensis	golden seal
Hydrophyllum sp.	waterleaf
Juniperus virginiana	eastern red cedar
Lamium purpureum	**dead nettle**
Lindera benzoin	spicebush
Monarda bradburiana	beebalm
Nothoscordum bivalve	false garlic
Osmorhiza sp.	
Ostrya virginiana	iron wood
Oxalis violacea	violet wood sorrel
Panax quinquefolius	ginseng
Phlox divaricata	blue phlox
Podophyllum peltatum	May apple
Polygonum virginianum	Virginia knotweed
Prunus mexicana	big tree plum
Quercus alba	white oak
Quercus rubra	northern red oak
Quercus stellata	post oak
Rhus aromatica	fragrant sumac
Rosa carolina	pasture rose
Rudbeckia laciniata	goldenglow
Sanguinaria canadensis	bloodroot
Sanicula sp.	snakeroot
Staphylea trifolia	bladdernut
Stellaria sp.	**chickweed**
Symphoricarpos orbiculatus	buckbrush
Tilia americana	basswood
Tradescantia sp.	spiderwort
Triosteum sp	horse gentian
Ulmus americana	American elm
Uvularia grandiflora	bellwort
Veratrum woodii	false hellebore
Viola pensylvanica	smooth yellow violet

Sandstone Glade Plant List

19 native species	2 exotic species
Achillea millefolium	**yarrow**
Chasmanthium latifolium	sea oats
Cheilanthes lanosa	hairy lip fern
Hedyotis crassifolia	small bluets
Krigia dandelion	potato dandelion
Krigia virginica	dwarf dandelion
Luzula bulbosa	wood rush
Lechea tenuifolia	pinweed
Northoscordum bivalve	false garlic
Nuttalanthus texanis	southern blue toadflax
Opuntia humifusa	eastern prickly pear
Phacelia sp.	phacelia
Plantago virginica	hoary plantain
Quercus marilandica	black jack oak
Woodsia obtusa	blunt-lobed cliff fern
Viola rafinesqii	**Johnny jump-up**
Tradescantia sp.	spiderwort
Triodanis perfoliata	Venus’ looking glass
Uvularia sp.	bellwort

Lichen Species

Dolomite Glade	
Cladonia cristatella	British soldiers
Sandstone glade	
Cladina sp.	reindeer lichen