

# **DRAFT**

# **Davisdale**

# **Conservation Area**

## **25-Year Area Management Plan**

### **FY 2020-FY2044**



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## OVERVIEW

- **Official Area Name:** Davisdale Conservation Area, # 8229
- **Year of Initial Acquisition:** 1981
- **Acreage:** 2,701 acres
- **County:** Howard
- **Region:** Central
- **Division with Administrative Responsibility:** Wildlife
- **Division with Maintenance Responsibility:** Wildlife
- **Statements of Purpose:**

### A. Strategic Direction

Manage for fish, forest, and wildlife habitat and increased public access and use on Davisdale Conservation Area (CA).

### B. Desired Future Condition

The desired future condition for Davisdale CA is to protect and restore fish, forest, and wildlife habitats (and their associated plants and animals) representative of the Outer Ozark Border Subsection of the Ozark Highland Ecoregion. The old fields, grasslands, woodlands, forest, open land, riparian corridors, and wetlands habitats should be maintained and enhanced to sustain wildlife populations.

### C. Federal Aid Statement

N/A

## GENERAL INFORMATION AND CONDITIONS

### I. Special Considerations

**A. Priority Areas:** The south end of the area touches the Mid-Missouri Riverlands Forest and Woodland Conservation Opportunity Area and the Mid-Missouri Riverlands Wetland Conservation Opportunity Area. This area is a deer emphasis area.

**B. Natural Areas:** None

### II. Important Natural Features and Resources

**A. Species of Conservation Concern:** None observed.

**B. High Quality Natural Communities:** None

**C. Caves:** None

**D. Springs:** None

**E. Other:** The *Atlas of Missouri Ecoregions* (Nigh & Schroeder, 2002) indicates Davisdale CA is in the Ozark Highlands Section, Outer Ozark Border Subsection, and the Boonslick Oak Woodland/Forest Hills Landtype Association (Figure 3). Nigh notes that “Most of the region was historically covered in timber, with a high

diversity in structure from dense well-developed forest to open oak savannahs, with prairie on flat uplands.” (Nigh & Schroeder, 2002). The natural disturbances were reported as fire and herbivory.

### III. Existing Infrastructure

- Seven parking lots
- One building
- One agri-drain water control structure
- Service trails and access roads (15 miles)
- Sixteen fishing ponds and eight fishless ponds (17 acres of ponds total)
- Five cemeteries
- Three foot-traffic bridges and one concrete bridge
- Seven camping sites (adjacent to parking lots, no amenities)

### IV. Area Restrictions or Limitations

**A. Deed Restrictions or Ownership Considerations:** None

**B. Federal Interest:** Federal funds were used in the development of this area, or a portion thereof. Missouri Department of Conservation (MDC) must maintain the developed project throughout its useful life. Federal funds may also be used in the management of this land. Fish and wildlife agencies may not allow recreational activities and related facilities that would interfere with the purpose for which the State is managing the land. Other uses may be acceptable and must be assessed in each specific situation.

**C. Easements:** The former Missouri, Kansas, Texas Railroad (MKT) right of way passes thru the southern end of the area and forms the Missouri Department of Natural Resource’s Katy Trail. Four natural gas pipelines cross the northern tract of the area from west to east on a north, 70-degree east bearing.

**D. Cultural Resources Findings:** Yes, records kept with the MDC environmental compliance coordinators. Managers should follow best management practices for cultural resources found in the MDC Resource Policy Manual.

**E. Endangered Species:** None observed.

**F. Boundary Issues:** None

## MANAGEMENT CONSIDERATIONS

### V. Terrestrial Resource Management Considerations

The area consists of the following habitats: wetlands (15 acres), old field (580 acres), grasslands (189 acres) with wooded drainages, small patches of forests (750 acres) interspersed throughout, open lands (350 acres; 250 of these acres are used for permittee

cropping rotation or MDC food plots), and woodlands (800 acres). The forests and woodlands are managed as natural communities, but most of the area was heavily impacted by overgrazing before MDC purchase. Most management unit boundaries are directly related to the application of prescribed fire and where fire breaks can be established. These boundaries change from time to time to create a mosaic of habitat and various successional stages. The primary methods of managing herbaceous cover in each of the units will be prescribed fire, disking, and herbicide applications. Burn units will vary in size and shape, depending upon management objectives and habitat conditions.

**Challenges and Opportunities:**

- 1) Manage the wetlands, old fields, grasslands, and the open land to maintain early successional habitat.
- 2) Manage the forests and woodlands, using best management practices to ensure forest health and sustainability.
- 3) Manage the Davisdale CA deer population in a manner that meets expectations as a Deer Emphasis Area.
- 4) Participate in the national mourning dove program to obtain information for population modeling and management.

**Management Objective 1: Manage and maintain various successional stages within wetlands, old fields, grasslands, open lands, forests, and woodlands to maintain or increase floral and structural diversity for the benefit of wildlife species, with specific emphasis on white-tailed deer habitat.**

Strategy 1: Maintain open land acres to provide a diversity of successional stages using prescribed burning, herbicide application, disking, and rotational food plotting, and row cropping activities. (Wildlife)

Strategy 2: Create and maintain quality year-round forage for white-tailed deer by maintaining diverse row crop, food plot, and green browse programs, where approximately 250 acres are in row-crop or MDC managed plots annually. These acres are to supplement natural community management efforts in the interest of providing quality year-round white-tailed deer and small game habitat. (Wildlife)

Strategy 3: Decrease invasive non-native herbaceous and woody species through prescribed burning, mechanical control, and herbicide application. (Wildlife)

Strategy 4: Maintain at least 20 acres of summer and fall supplementary feeding habitat for mourning doves annually. (Wildlife)

**Management Objective 2: Manage and maintain healthy woodland and forest communities to support wildlife diversity.**

Strategy 1: Manage forest, woodland, and savanna natural communities to ensure their health by using a variety of tools including, but not limited to, timber harvest, forest firewood cutting, tree planting, seeding, and prescribed fire.

(Forestry, Wildlife)

Strategy 2: Complete forest inventory as scheduled (Compartment 1 in 2025 and Compartment 2 in 2026) to monitor stand health, structure, and stocking.

(Forestry, Wildlife)

Strategy 3: Implement forest management applications within five years of individual compartment inventories. (Forestry, Wildlife)

Strategy 4: Create and retain standing dead, loose-bark trees for bat habitat, as described in the *Missouri Forest Management Guidelines: Voluntary Recommendations for Well-Managed Forests* (MDC, 2014b). (Forestry, Wildlife)

Strategy 5: Implement best management practices to prevent soil erosion when conducting forest management. Follow recommendations per the *Missouri Watershed Protection Practice Recommended Practices for Missouri Forests: 2014 Management Guidelines for Maintaining Forested Watersheds to Protect Streams* (MDC, 2014b) and the *Missouri Forest Management Guidelines: Voluntary Recommendations for Well-Managed Forests* (MDC, 2014a). (Forestry, Wildlife)

**Management Objective 3: Use monitoring practices advised by MDC’s Resource Science Division to ensure a healthy, growing, and balanced white-tailed deer population.**

Strategy 1: Conduct three deer surveys annually and use the Distance program to estimate the deer population per square mile. (Wildlife, Resource Science)

Strategy 2: White-tailed deer population density will be maintained above the county estimated deer population of 31 deer/square mile in 2017. The area’s density estimate for 2017 was in the low 40s per square mile. (Wildlife, Resource Science)

Strategy 3: Review deer survey and harvest data annually and propose regulation changes as needed. (Wildlife, Resource Science)

Strategy 4: Annually monitor and review managed hunts for hunter success and satisfaction and make changes as needed. (Wildlife, Resource Science)

**Management Objective 4: Improve the reliability of future dove hunting regulation decisions.**

Strategy 1: Trap and band at least 100 mourning doves annually on Davisdale CA, as part of a mourning dove banding program. Contribute data to MDC’s Resource Science Division for inclusion into the national dove program. (Wildlife, Resource Science)

**Management Objective 5: Reduce invasive species on the area.**

Strategy 1: Reduce invasive plants like reed canary grass, fescue, teasel, and sericea lespedeza by using appropriate control techniques, including, but not limited, to application of herbicide. (Wildlife)

Strategy 2: Extra care will be taken to clean off mower decks to minimize the movement of invasive species around the area or to other conservation areas. (Wildlife)

Strategy 3: Continue efforts by contractors to eradicate autumn olive and honeysuckle during forest management activities where possible. (Wildlife, Forestry)

Strategy 4: Watch for and attempt to eradicate new populations of invasive species. (Forestry, Wildlife)

**VI. Aquatic Resource Management Considerations**

There are three named streams and their sub-drainages that flow within the Davisdale CA boundaries. Management of these streams will be directed at maintaining stable streambanks and water quality.

The three named streams are described as follows:

- 1) Pipes Branch is a second-order intermittent stream located in the northeast part of the area. About 0.25 miles of the stream are located within the boundaries.
- 2) Eaton Branch is a second-order intermittent stream located on the northwest part of the area. There are approximately 1.3 miles of stream that flow within the boundaries.
- 3) Salt Creek is a fourth-order perennial stream located along the southern boundary. Salt Creek is the largest stream on the area and travels approximately 1.6 miles on the area and another 2.5 miles off the area until it joins the Missouri River.

There are also 24 ponds on the area, ranging in size from 0.25 acres to 2.5 acres. Of these, 16 ponds are managed for fishing while the other eight are managed as fishless ponds.

**Challenges and Opportunities:**

- 1) Prevent excessive streambank erosion.
- 2) Maintain or improve angling opportunities.
- 3) Enhance or maintain aquatic vegetation.
- 4) Maintain fishless ponds.

**Management Objective 1: Ensure that Davisdale CA demonstrates watershed, riparian corridor, and stream management practices according to the recommended management guidelines.**

Strategy 1: Maintain a forested corridor through natural regeneration or planting along all streams. A minimum width of 200 feet from top of bank will be maintained along Salt Creek (100 feet on each side of stream). A minimum width of 100 feet from top of bank along all other streams on the area should be maintained, where not limited by area boundary, access road, parking lot, or utility easement along Pipes and Eaton branches. All stream corridors will be managed following the *Watershed and Stream Management Guidelines for Lands and Waters Managed by Missouri Department of Conservation* (MDC, 2009). (Wildlife, Fisheries)

Strategy 2: Maintain public use facilities (such as parking lots) so they have minimal impact on streams and riparian corridors, i.e., all facilities should be located outside of the riparian corridor. (Fisheries, Wildlife)

Strategy 3: Enhance watershed and improve instream habitat according to the *Watershed and Stream Management Guidelines for Lands and Waters Managed by Missouri Department of Conservation* (MDC, 2009). (Fisheries)

Strategy 4: Inspect all streambank stabilization practices annually until woody vegetation is well established and undertake appropriate corrective and maintenance activities as needed. (Fisheries)

Strategy 5: Periodically monitor area terrestrial and aquatic habitat conditions to ensure that best management practices are used to limit erosion and sediment input into streams. (Fisheries, Wildlife)

**Management Objective 2: Maintain or improve public angling opportunities on Davisdale CA ponds.**

Strategy 1: Conduct spring electrofishing surveys on a minimum of two area ponds each year to monitor fish population status. (Fisheries)

Strategy 2: Stock channel catfish every three years in ponds that are easily accessible to the public. (Fisheries)

Strategy 3: Add brush piles to each pond where cover is limited (i.e., no other brush piles or very limited submerged vegetation). (Fisheries)

Strategy 4: Provide public access to area ponds by keeping field roads maintained and aquatic vegetation controlled. (Wildlife, Fisheries)

**Management Objective 3: Enhance diversity and quality of aquatic vegetation.**

Strategy 1: Monitor and control nuisance aquatic plants annually. (Fisheries)

Strategy 2: Maintain aquatic vegetation at less than 30 percent coverage, especially on ponds easily accessible to the public. (Fisheries)

Strategy 3: Plant native aquatic plant species from seed or cage plantings to improve diversity as needed. (Fisheries)

**Management Objective 4: Maintain and protect fishless ponds.**

Strategy 1: Renovate shallow ponds, as needed, to create habitat for amphibians and reptiles. (Fisheries, Design and Development)

Strategy 2: Reduce dam height to the appropriate level on fishless ponds that are too deep to support amphibians and reptiles and too shallow to support a healthy fish population. (Fisheries, Design and Development)

**VII. Public Use Management Considerations**

**Challenges and Opportunities:**

- 1) Provide quality hunting, fishing, and managed hunt opportunities.
- 2) Provide access and information to the area users on regulations and recreational opportunities.
- 3) Provide outdoor educational opportunities and interpretive programs.
- 4) Work with willing neighbors and private landowners to educate them about habitats and management practices.

**Management Objective 1: Provide quality hunting and fishing opportunities for area users.**

Strategy 1: Annually review area regulations. (Wildlife, Fisheries, Protection)

Strategy 2: Conduct wildlife management techniques to manipulate habitats to increase the wildlife population carrying capacity on the area. This will allow area users to enjoy wildlife at the conservation area. (Wildlife)

Strategy 3: Annually conduct deer surveys to aide in providing quality hunting opportunities. (Wildlife)

Strategy 4: Annually provide a youth-only managed deer hunt and a managed deer hunt as needed to help achieve population objectives on the area. (Wildlife)

**Management Objective 2: Provide access and information to area users on regulations, changes at the area, and other opportunities the area offers.**

Strategy 1: Provide and inform area users of regulation changes and recreational opportunities via MDC's website and news releases, as necessary. (Wildlife)

Strategy 2: Provide recreational opportunities on the area by issuing Special Use Permits as needed. (Wildlife)

Strategy 3: Maintain area parking lots and informational bulletin boards in a manner that invites public use. (Wildlife)



## VIII. Administrative Considerations

### **Challenges and Opportunities:**

- 1) Maintain and improve bridges and building facilities and other infrastructure as needed.
- 2) Consider land acquisition, when available.

### **Management Objective 1: Improve and maintain area infrastructure.**

Strategy 1: Inspect area infrastructure regularly and work to resolve any issues.  
(Wildlife, Design and Development)

Strategy 2: Maintain boundary lines by marking them as needed. (Wildlife).

### **Lands Proposed for Acquisition:**

When available, adjacent land acreage may be considered for acquisition from willing sellers. Tracts that improve area access, provide public use opportunities, contain unique natural communities and/or species of conservation concern, or meet other MDC priorities, as identified in the annual MDC land acquisition priorities, may be considered.



## APPENDICES

### Area Background:

The Davisdale Conservation Area (CA), once one of the larger single-land holdings of Howard County, was composed of smaller farmsteads purchased by Charles Davis. The river hills of the area's south end are the first high ground to rise from the Missouri River's floodplain and offer a spectacular view.

At one time, Davisdale CA was comprised of several small farms with more than a dozen homes. One of these was built around 1830 by Ephraim Turner, who likely cast the bricks for his two-story home right on the area. Turner, as was typical of county landowners, had a diversified operation, including horses, oxen, dairy and beef cattle, swine, sheep, and grain, including wheat, oats, and corn. Like many of his neighbors, he raised tobacco as a cash crop just as they had in their native Kentucky. Extensive tall fescue and clover pastures were established and bred cows overwintered and calved on Davisdale CA. Cows and calves grazed at Davisdale CA through the summer and fall, and then were driven to feed lots at what is now the Franklin Island CA. Grain for the feed lots was grown in the fertile river bottoms of the area. At the time of MDC's purchase, the area was predominantly fescue pasture with timber and other woody growth present only on side slopes and in narrow drainages.

### Current Land and Water Types:

Land /Water Type	Acres	% of Area	Miles
Woodland	800	30	
Forest	750	28	
Old Field	580	21	
Open Land	350	13	
Grassland	189	7	
Open Water	17	<1	
Wetland	15	<1	
<b>Total</b>	<b>2,701</b>	<b>100</b>	
Stream Frontage			3

**References:**

Missouri Department of Conservation. (2009). *Watershed and stream management guidelines for lands and waters managed by Missouri Department of Conservation*. Jefferson City, MO: Missouri Department of Conservation.

Missouri Department of Conservation. (2014a). *Missouri forest management guidelines: Voluntary recommendations for well-managed forests*. Jefferson City, MO: Missouri Department of Conservation.

Missouri Department of Conservation. (2014b). *Missouri watershed protection practice recommended practices Missouri forests: 2014 management guidelines for maintaining forested watersheds to protect streams*. Jefferson City, MO: Missouri Department of Conservation.

Nigh, T. A., & Schroeder, W. A. (2002). *Atlas of Missouri ecoregions*. Jefferson City, MO: Missouri Department of Conservation.

**Maps:**

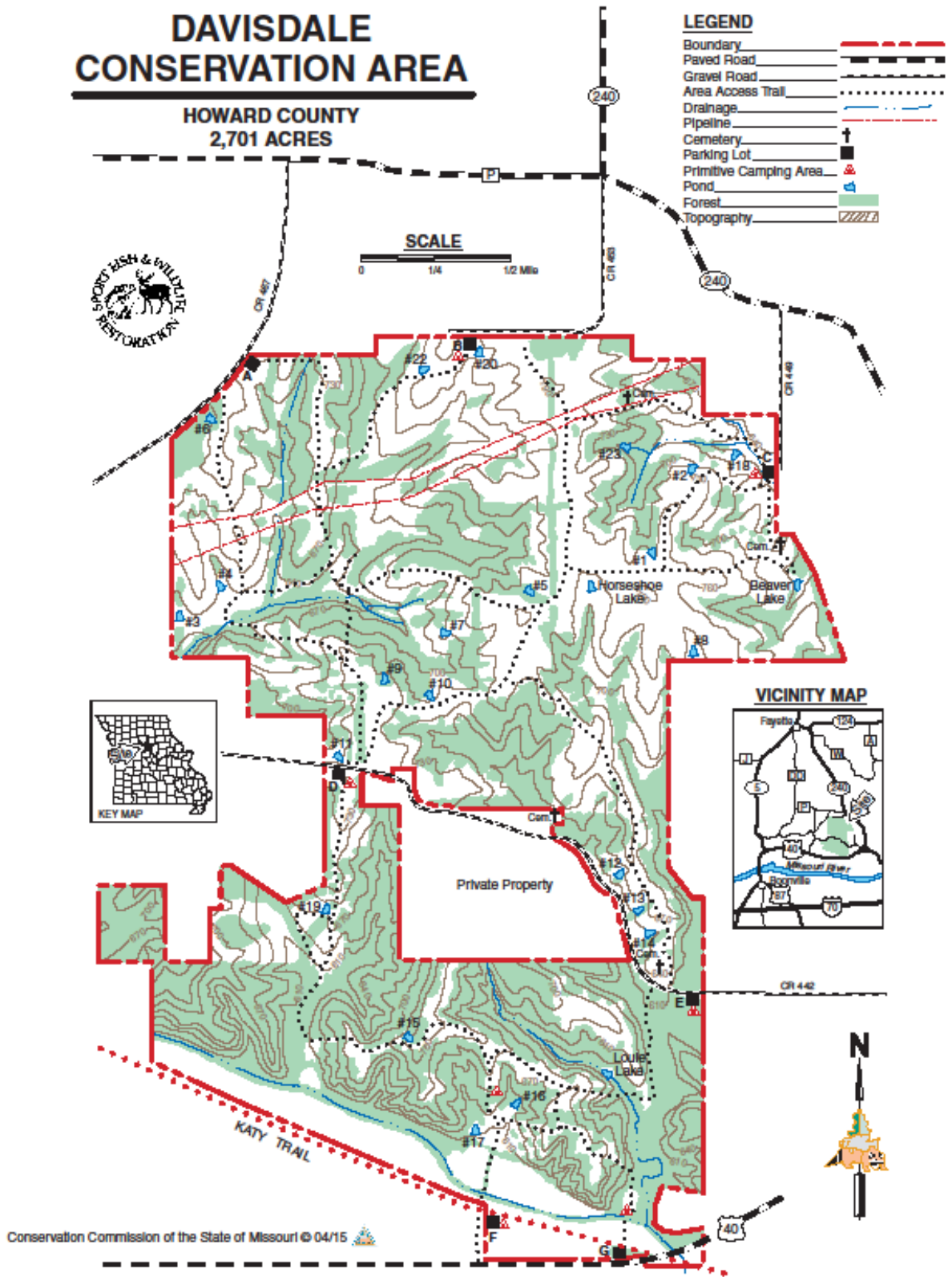
Figure 1: Area Map

Figure 2: Land Cover Map

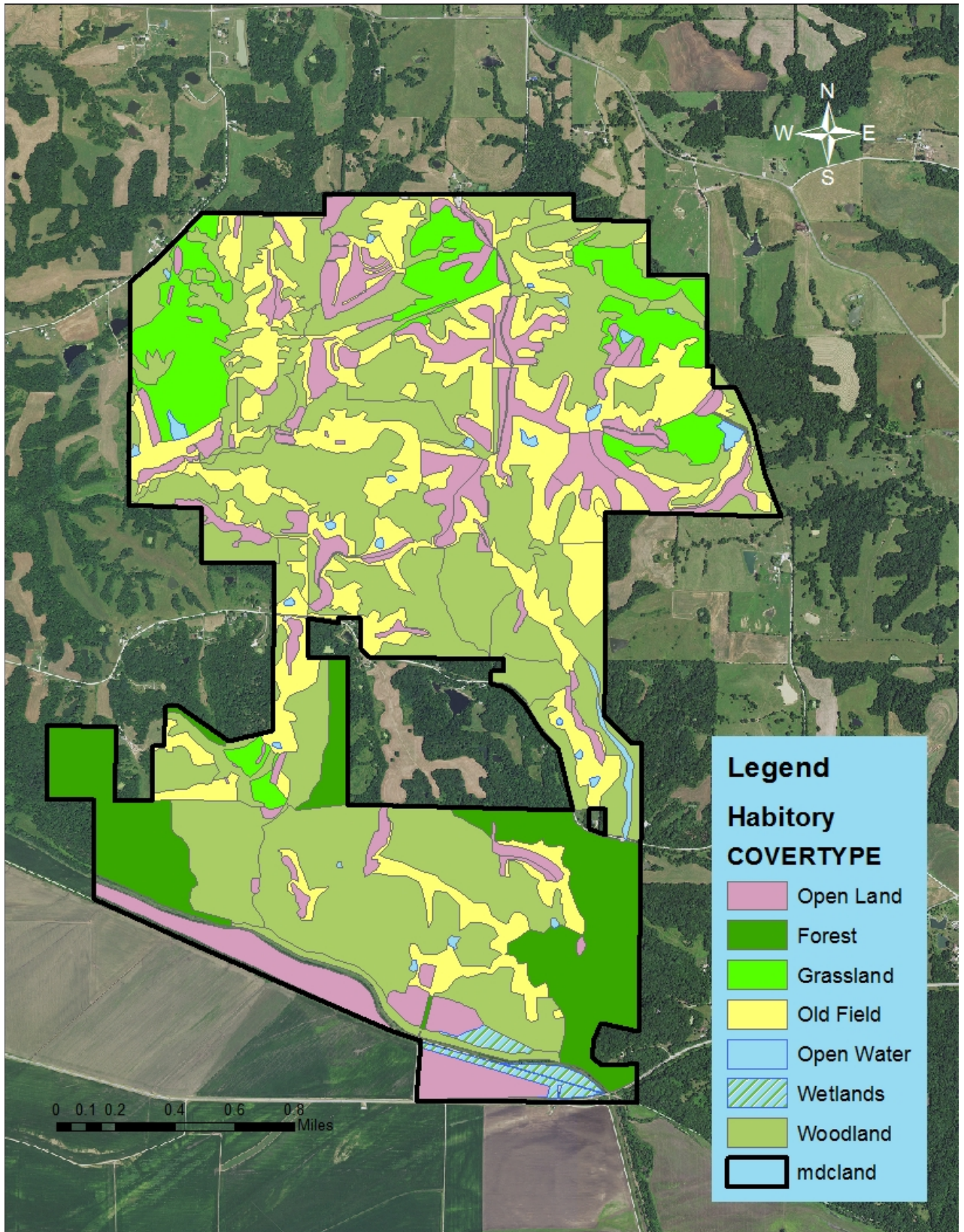
Figure 3: Boonslick Oak Woodland/Forest Hills Landtype Association

Figure 4: Area Infrastructure and Easement Map

Figure 1: Area Map



**Figure 2: Land Cover Map**



**Figure 3: Boonslick Oak Woodland/Forest Hills Landtype Association Map**

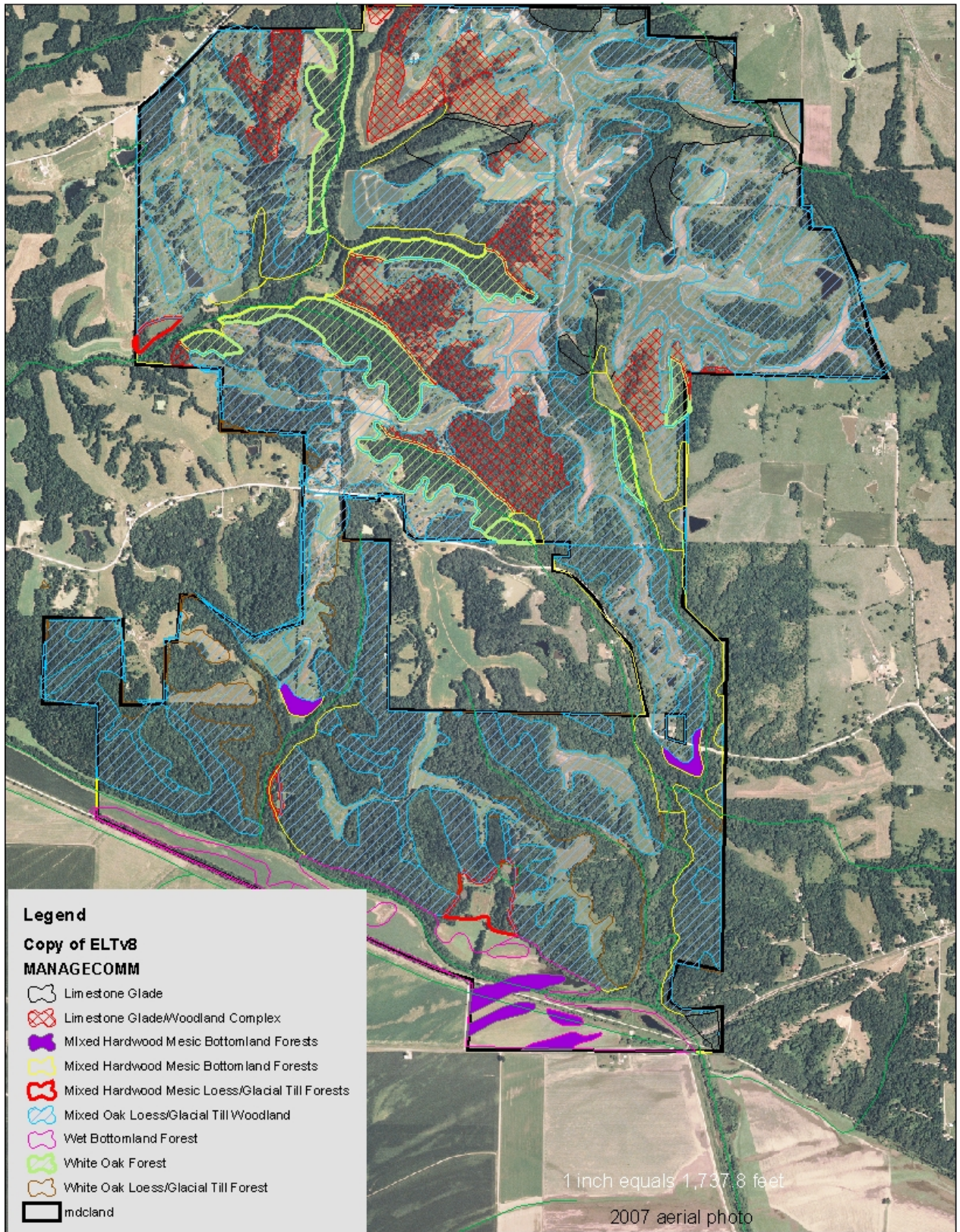
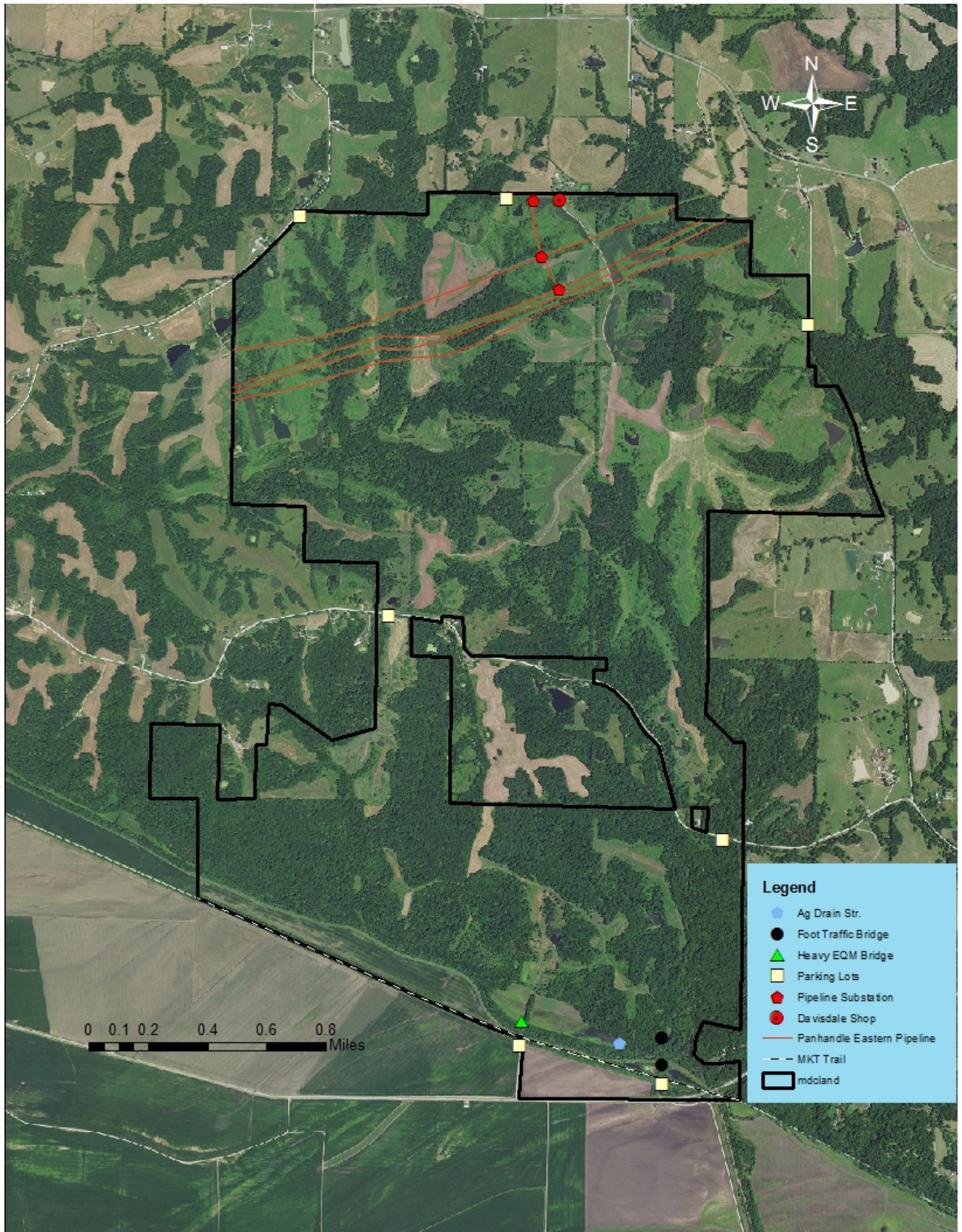


Figure 4: Area Infrastructure and Easement Map





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