

DRAFT

Deer Ridge

Conservation Area

Ten-Year Area Management Plan
FY 2017-2026



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OVERVIEW

- **Official Area Name:** Deer Ridge Conservation Area, # 5703
- **Year of Initial Acquisition:** 1957
- **Acreage:** 6,955 acres
- **County:** Lewis
- **Division with Administrative Responsibility:** Forestry
- **Division with Maintenance Responsibility:** Forestry
- **Statements of Purpose:**

A. Strategic Direction

The primary management emphasis for Deer Ridge Conservation Area (CA) is to provide diverse habitat for fish and wildlife through sound management practices, while offering the public compatible outdoor recreational opportunities.

B. Desired Future Condition

The desired future condition of Deer Ridge CA is a mosaic of diverse forest, woodland, and wetland communities that provide high-quality habitat for a variety of wildlife species. The areas immediately surrounding the North Fabius River and Deer Ridge Lake will be healthy forest and wetland communities that contribute to healthy watersheds for each system.

C. Federal Aid Statement

- This area, or a portion thereof, was developed with Wetland Reserve Program funds to provide wetland habitat through perpetual easements.
- This area, or a portion thereof, was also acquired with Pittman-Robertson Wildlife Restoration funds to restore and manage wildlife, conserve and restore suitable wildlife habitat and provide public access for hunting or other wildlife-oriented recreation.
- This area, or a portion thereof, was acquired with federal funds and donated to the State to provide fish and wildlife benefits and land conservation.

GENERAL INFORMATION AND CONDITIONS

I. Special Considerations

- A. **Priority Areas:** Deer Ridge Forest and Woodland Conservation Opportunity Area
- B. **Natural Areas:** None

II. Important Natural Features and Resources

- A. **Species of Conservation Concern:** Species of conservation concern are known from this area. Area managers should consult the Natural Heritage Database annually and review all management activities with the natural history biologist.

B. Caves: None

C. Springs: None

D. Other: The area lies within the Wyaconda River Dissected Till Plains Subsection and includes two subsections. The subsections are the Fabius River Prairie/Woodland Dissected Plains and the Northeast Missouri Alluvial Plains Landtype Associations (Nigh & Schroeder, 2002).

III. Existing Infrastructure

- Deer Ridge Lake (48-acre fishing lake)
- Concrete boat ramp
- Water hydrant
- Fishing dock (Americans with Disabilities Act [ADA] accessible)
- James B. Jenkins Shooting Range (unstaffed rifle, shotgun, and archery ranges)
- Three small picnic shelters
- Nine parking lots
- Four primitive individual campsites
- Seven privies (ADA accessible)
- 33 fishless ponds (15 acres total)
- Six wetland units enrolled in the Wetland Reserve Program (WRP)
- Multi-use hike/bike/horse trail (17.4 miles)

IV. Area Restrictions or Limitations

A. Deed Restrictions or Ownership Considerations: None

B. Federal Interest:

- The wetland conservation easements permanently prohibit use of the affected land as cropland and require permanent maintenance of the wetland conditions, except in the case of natural disaster. No change can be made in the easement without a written request to and written consent by the Natural Resources Conservation Service Chief.
- Uses of land acquired with federal funds may not interfere with the purpose for which it was acquired.
- 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:

- Lewis County Rural Electric Association overhead electric lines
- Northeast Electric Cooperative overhead electric lines

- Consolidated Public Water Supply District #1 of Clark County buried water line
 - Mark Twain Rural Telephone Company buried telephone line
 - U.S. Department of Agriculture Natural Resources Conservation Service perpetual easement on Wetland Reserve Program sites
 - U.S. Department of Agriculture Farmers Home Administration Conservation Easement
- D. Cultural Resources Findings:** Yes, records kept with Missouri Department of Conservation (Department) environmental compliance specialist. Managers should follow best management practices for cultural resources found in the Department Resource Policy Manual.
- E. Endangered Species:** Endangered species are known from this area. Area managers should consult the Natural Heritage Database annually and review all management activities with the natural history biologist.
- F. Boundary Issues:** None

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

Challenges and Opportunities:

- 1) For management purposes, the 5,800 acres of woodland and forest lands on Deer Ridge CA have been split into seven compartments (Figure 3). Each compartment is on a 15-year forest inventory cycle. Since 2003, Compartments 2, 3, 4, 6, and 7 have been inventoried.
- 2) Since 2005, 1,758 acres of Compartments 2, 3, 4, and 7 have received a combination of tree harvest and tree thinning applications. These actively managed areas have responded with increased growth of understory plants, increased early successional forest and woodland habitat, and improved tree health and growth.
- 3) Compartments 2, 4, and 6 have 810 acres of woodlands and savanna that are treated with prescribed burns every two to three years (Figure 5). The use of prescribed fire in these areas has reduced the amount of undesirable small woody plants, including invasive species such as autumn olive and honeysuckle. The reduction of small woody plants has allowed herbaceous plant species to fully develop and thrive within these areas.
- 4) Control of invasive species, such as autumn olive and honeysuckle, continues to be a challenge on the area. A large amount of effort has been expended toward the reduction of these two species. The majority of autumn olive plants that were planted in the 1970s have been bulldozed, piled up, and burned. Contractors

performing forest thinning have been required to cut and spray autumn olive that is 4 feet and taller within their designated areas. Some very large thickets of autumn olive remain in certain locations. The eradication or control of these species and other invasive species will continue to be a challenge in the future.

- 5) The open land portions of Deer Ridge CA provide the opportunity to supplement natural food supplies through cropping. Management of the open lands also provides cover for wildlife to sustain and, in some cases, attract wildlife, creating more hunting and viewing opportunities for area users. Cropping is also used to set back succession and make areas attractive for ground nesting birds. Fescue tends to invade on upland sites and reed canary grass encroaches in the bottomland.

Management Objective 1: Continue to improve the health of forest and woodland communities to benefit wildlife and increase diversity of natural communities.

Strategy 1: Inventory forest compartments according to the forest inventory schedule for Deer Ridge CA. (Forestry)

Strategy 2: Utilize a variety of sustainable forest management techniques to promote healthy forest and woodland communities including, but not limited to, timber harvesting, forest thinning, firewood cutting, salvage cuttings, tree planting, seeding and prescribed burning. (Forestry)

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

Strategy 4: Utilize best management practices during forest management as described in the Department's manuals: *Missouri Watershed Protection Practices Recommended for Missouri Forests: 2014 Management Guidelines for Maintaining Forested Watersheds to Protect Streams Manual* (Missouri Department of Conservation, 2014b) and the *Missouri Forest Management Guidelines: Voluntary Recommendations for Well-Managed Forests* (Missouri Department of Conservation, 2014a). (Forestry)

Strategy 5: Maintain aesthetics near the trail, timber harvest activities should be consistent with aesthetic recommendations in the *Missouri Forest Management Guidelines: Voluntary Recommendations for Well-Managed Forests* (Missouri Department of Conservation, 2014a). (Forestry)

Management Objective 2: Implement management to maintain or enhance species of conservation concern on Deer Ridge CA.

Strategy 1: Monitor populations of all state and federally endangered species every 10 years or more, or as often as needed, to maintain current records in the Department's database. (Wildlife)

Strategy 2: Implement woodland and riparian best management practices specifically to benefit species of conservation concern. (Wildlife)

Management Objective 3: Educate area users about the benefits of healthy forest and woodland management.

Strategy 1: Offer educational opportunities to Department staff that are unfamiliar with forest and woodland management so they can confidently address area user questions. (Forestry)

Strategy 2: Post “Healthy Woods” signs adjacent to actively managed forest and woodland areas. (Forestry)

Strategy 3: Post general information on Atlas database about when and where to expect active forest and woodland management. (Forestry)

Strategy 4: Post general information on bulletin boards about why active forest and woodland management benefit conservation areas. (Forestry)

Management Objective 4: Utilize cropping to provide early successional habitat and high energy food sources for wildlife

Strategy 1: Use permittee farmers to economically manage 425 acres of crops and food plots. (Wildlife)

Strategy 2: Establish food plots with a variety of crops (e.g., grain, forage and green browse). Seek to provide food for wildlife throughout the seasons. (Wildlife)

Strategy 3: Utilize a variety of management techniques to eliminate or control undesirable grasses, provide bare ground, encourage annual forbs and promote areas of shrubby growth. Techniques will include, but are not limited to, spraying, prescribed burning, mechanical treatments, woody cover removal, disking, mowing, haying, grazing, planting and seeding. (Wildlife)

Strategy 4: Explore the use of wildlife friendly cover crops and incorporate them into the permittee crop system. (Wildlife)

Strategy 5: Establish field borders by edge feathering, applying herbicide, and/or planting grass/legume borders that would create nesting and brood-rearing cover. (Wildlife)

Management Objective 5: Reduce invasive species.

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

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

Strategy 5: Seek opportunities to use volunteer groups to help control the spread of invasive species. (Forestry, Wildlife)

VI. Aquatic Resource Management Considerations

Challenges and Opportunities:

- 1) There are eight wetland pools each with a concrete water control structure located on Deer Ridge CA. Six of the pools were built through the Wetland Reserve Program prior to the Department's purchase of those tracts in the early 1990s. The other two pools were developed with Department funds. One lays within the Wetland Reserve Program easement and the other is outside the easement. These pools are flooded opportunistically with seasonal rainfall.
- 2) Deer Ridge Lake is a 48-acre impoundment located within Deer Ridge CA. The lake drains approximately 580 acres (12:1 ratio) of land, most of which lies within the boundaries of the conservation area. Average depth of the lake is 9.2 feet and maximum is 27 feet. The lake was stocked initially in 1960 and opened to fishing in 1962. Due to undesirable fish community structure and poor fishing, Deer Ridge Lake was renovated in 1995, following a drawdown of just over 10 feet.

The lake was restocked in 1996 with largemouth bass, bluegill, redear sunfish, hybrid sunfish, black crappie, and channel catfish. Golden shiners and fathead minnows were also stocked to provide additional forage. A 15-inch minimum length limit on largemouth bass was implemented with the goal of producing a quality panfish fishery. A high-density largemouth bass population quickly developed, which was the intent of the regulation. However, the panfish did not respond as predicted and a quality panfish fishery did not develop. The 15-inch minimum length limit was removed and replaced with a 12- to 15-inch slot length limit in March 2009. Today, the density of largemouth bass remains above management objectives. The bluegill population is near management objectives and provides quality angling opportunities, and after several years of increased stocking rate, the channel catfish population provides anglers a good opportunities.

- 3) There are 33 fishless ponds on Deer Ridge CA that provide important fish-free habitat for reptiles and amphibians and wildlife-watering holes.
- 4) There are 5.8 miles of stream frontage along the North Fabius River and 1 mile of stream frontage along the Middle Fabius River on the area. There are also 3.5

miles of Cooper Branch that flow through the area. The North Fabius River is degraded and characterized by shifting sand and silt beds, shallow water with occasional deep pools, and tall eroding banks. The Middle Fabius River and Cooper Branch are less impacted and provide some angling opportunities for riverine species.

Management Objective 1: Manage the existing wetland units as seasonally flooded herbaceous wetlands.

Strategy 1: Provide habitat for migratory birds and resident wetland wildlife using management techniques, including, but not limited, to burning, disking, mowing, cropping, and water-level manipulations. (Wildlife)

Management Objective 2: Monitor and manage Deer Ridge Lake to provide sustainable and diverse fishing opportunities.

Strategy 1: Periodically inventory fish populations to assess health and recommend needed regulation changes. (Fisheries)

Strategy 2: Encourage harvest of small bass with the appropriate signage. (Fisheries)

Strategy 3: Control excessive aquatic plants chemically or biologically to promote efficient foraging by largemouth bass. (Fisheries)

Strategy 4: Implement strategies to maintain adequate predatory control on bluegill. (Fisheries)

Strategy 5: Maintain moderate density of largemouth bass to exert predatory control over small crappie to prevent overpopulation. (Fisheries)

Strategy 6: Encourage anglers to harvest crappie up to their daily limit of 30. (Fisheries)

Strategy 7: Maintain annual fall channel catfish stocking rate of 10 per acre. (Fisheries)

Management Objective 3: Provide suitable habitat for amphibians and reptiles in ponds with no fisheries management potential.

Strategy 1: Do not stock ponds that provide no long-term fisheries management options. (Fisheries)

Management Objective 4: Establish or maintain a forested corridor along all streams on the area.

Strategy 1: Maintain a forested corridor through natural regeneration or planting. A minimum width of 200 feet from top of bank should be maintained along the North Fabius and Middle Fabius rivers. 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. Where access roads or parking lots are in the stream corridor, they should be relocated outside of the corridor if feasible. (Forestry, Wildlife)

Strategy 2: Inspect riparian corridors along all agricultural fields every three years to determine the need for field adjustments. (Wildlife)

Strategy 3: All management activities on Deer Ridge CA should follow the *Watershed and Stream Management Guidelines for Lands and Waters Managed by the Missouri Department of Conservation* (Missouri Department of Conservation, 2009). Any field road stream crossings or riparian corridors not meeting these standards will be corrected by 2018. (Wildlife, Forestry)

VII. Public Use Management Considerations

Challenges and Opportunities:

- 1) Deer Ridge CA offers numerous public use opportunities, including fishing, hunting, furbearer trapping, target shooting, camping, picnicking, bird watching, hiking, biking, and horseback riding. Hunting is one of the main reasons many people visit the area in the fall. The area attracts hunters from across the country during the archery and firearms deer seasons. Spring and fall turkey seasons also attract hunters to the area. Some waterfowl hunting occurs on the area's natural and constructed wetlands. Small game hunting opportunities exist for squirrels, quail, and rabbit. Summer and early fall attract the largest number of visitors on the multi-use trail. During this time, horseback riders frequent the trail with groups ranging up to 30 people. Deer Ridge Lake provides a popular place for anglers. The fish resources are managed to offer quality fishing for largemouth bass, bluegill, black crappie, and channel catfish.
- 2) Deer Ridge CA has four camping areas with privies: Levengood Camp, Lake Camp, Fox Camp, and Horse Camp. These campgrounds have individual gravel camping pads, picnic tables, and fire rings. Potable water is provided via a hydrant at the shooting range. Three picnic shelter houses are provided near the lake.
- 3) There is an extensive network of multi-use trails on Deer Ridge CA, which are used by horseback riders, hikers, and hunters. These trails receive a low level of maintenance and are also used by staff to access remote parts of Deer Ridge CA. Recently, color coded signs were installed to better facilitate public use and best management practices have been implemented to reduce soil erosion. A few small sections of trails continue to have problems with soil erosion due to horse traffic on poorly located trails.
- 4) Deer Ridge CA is used for several special events each year, including a 4-H shooting sports event and a conservation field day for area students.

Management Objective 1: Provide quality hunting for a wide variety of species. Manage for a variety of small game species and waterfowl, where appropriate habitat exists.

Strategy 1: Manage the area's diverse habitats for a variety of wildlife species. (Wildlife)

Management Objective 2: Furnish target-shooting opportunities to area users.

Strategy 1: Maintain the firearms range according the *2013 Shooting Range Facility Program Manual* (Missouri Department of Conservation, 2013) (Forestry, Outreach and Education, Design and Development)

Strategy 2: Explore ideas to improve the shooting range with the Lewis County 4-H. (Outreach and Education, Forestry)

Strategy 3: Evaluate the safety and accessibility of the range to all users. Submit appropriate requests for capital improvement and/or small construction projects as necessary. (Outreach and Education, Design and Development, Forestry)

Management Objective 3: Maintain the current facilities to a standard that invites public use and keeps area users informed of regulations.

Strategy 1: Annually mow the trails to maintain and prevent encroachment of brush onto trail system. Keep field roads mowed and parking lots clean and mowed. (Wildlife)

Strategy 2: Maintain the multi-use trail (hiking, biking, and horseback riding) and hiking trail following the appropriate best management practices outlined in the *Missouri Watershed Protection Practice Recommended Practices for Missouri Forests: 2014 Management Guidelines for Maintaining Forested Watersheds to Protect Streams* (Missouri Department of Conservation, 2014) and the appropriate standards per the *Watershed and Stream Management Guidelines for Lands and Waters Managed by Missouri Department of Conservation* (Missouri Department of Conservation, 2009). (Forestry, Wildlife)

Strategy 3: Inspect trails annually for excessive soil erosion. (Forestry)

Strategy 4: Reroute or close segments of the trail system that have unmanageable issues with soil erosion. (Forestry)

Strategy 5: Provide designated basic camping and picnic areas. (Forestry)

Strategy 6: Maintain parking lots and access points around the lake in an aesthetically pleasing level year-round and maintain remote parking lots that are used for hunting at a lower maintenance level. Prior to the hunting seasons, mow these areas so they are user-friendly and aesthetically pleasing. (Forestry)

VIII. Administrative Considerations

Challenges and Opportunities:

- 1) Public access to the southern tract of Deer Ridge CA adjacent to the Middle Fabius River has been a problem for several years. Traditionally Department staff has been able to access the tract through a private landowner. However, the public is required to park along the side of the state highway and walk down a steep incline to access the area.

Management Objective 1: Provide the public with inviting access to all tracts of Deer Ridge CA.

Strategy 1: Construct a new road access and parking lot off State Highway H near the Middle Fabius River as approved in the FY16 Expenditure Plan. (Design and Development)

Management Objective 2: Facilitate a good working relationship with neighboring land owners.

Strategy 1: Promote habitat management on neighboring landowner properties. (Private Land Services, Forestry)

Management Objective 3: Maintain clearly identified property lines.

Strategy 1: Inspect and maintain boundaries on a regular cycle. (Forestry)

Strategy 2: Resolve boundary issues with adjoining landowners as they arise. (Forestry)

Strategy 3: Determine and clearly mark all area boundaries. (Forestry)

Strategy 4: Ensure this area remains on the survey list until completed. (Forestry)

Management Objective 4: Cooperatively patrol the area and report unauthorized activities.

Strategy 1: Regularly patrol and enforce the wildlife code, with emphasis on off-trail abuse, vandalism, littering and response to public complaints. (Protection, Forestry)

Management Objective 5: Inform public about area regulations.

Strategy 1: Maintain signs according to Department policy. (Forestry)

Strategy 2: Maintain accurate and timely information on the Department's Atlas Database. Review information annually. (Forestry)

APPENDICES

Area Background:

In the mid-1950s, local citizens in the Lewis County area collected funds to develop a community lake. These citizens went from door to door throughout the county and collected enough funds to purchase approximately 250 acres of land and built a lake. Following this success, more efforts continued by local citizens, such as James Jenkins, who searched for willing sellers who might sell additional acreage to the Missouri Department of Conservation. Over the next 20 years, the size of Deer Ridge CA grew to over 4,000 acres. Then again in the 1990s local citizens gathered 500 signatures on a petition to show public support for the purchase of 2,000 acres of private land which later became another addition to Deer Ridge CA.

Current Land and Water Types:

Land/Water Type	Acres	Miles	% of Area
Forest and Woodland	5,800		83
Open Land	425		6
Old Field	360		5
Wetland	225		3
Grassland non-prairie	93		1
Lakes/Ponds	48		1
Parking Lots, Roads and Adjacent Mowed Areas	4		<1
Total	6,955		100
Stream Frontage		10.3	

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. (2013). *2013 shooting range facility program manual*. 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: Conservation Commission of the State of Missouri.

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

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: Multi-use Trails

Figure 3: Aerial Map with Forest Management Compartments

Figure 4: Natural Community Types Map

Figure 5: Prescribed Burn Areas

Figure 6: Land Type Map

Figure 7: Wetland Map

Figure 8: Easements Map

Figure 1: Area Map

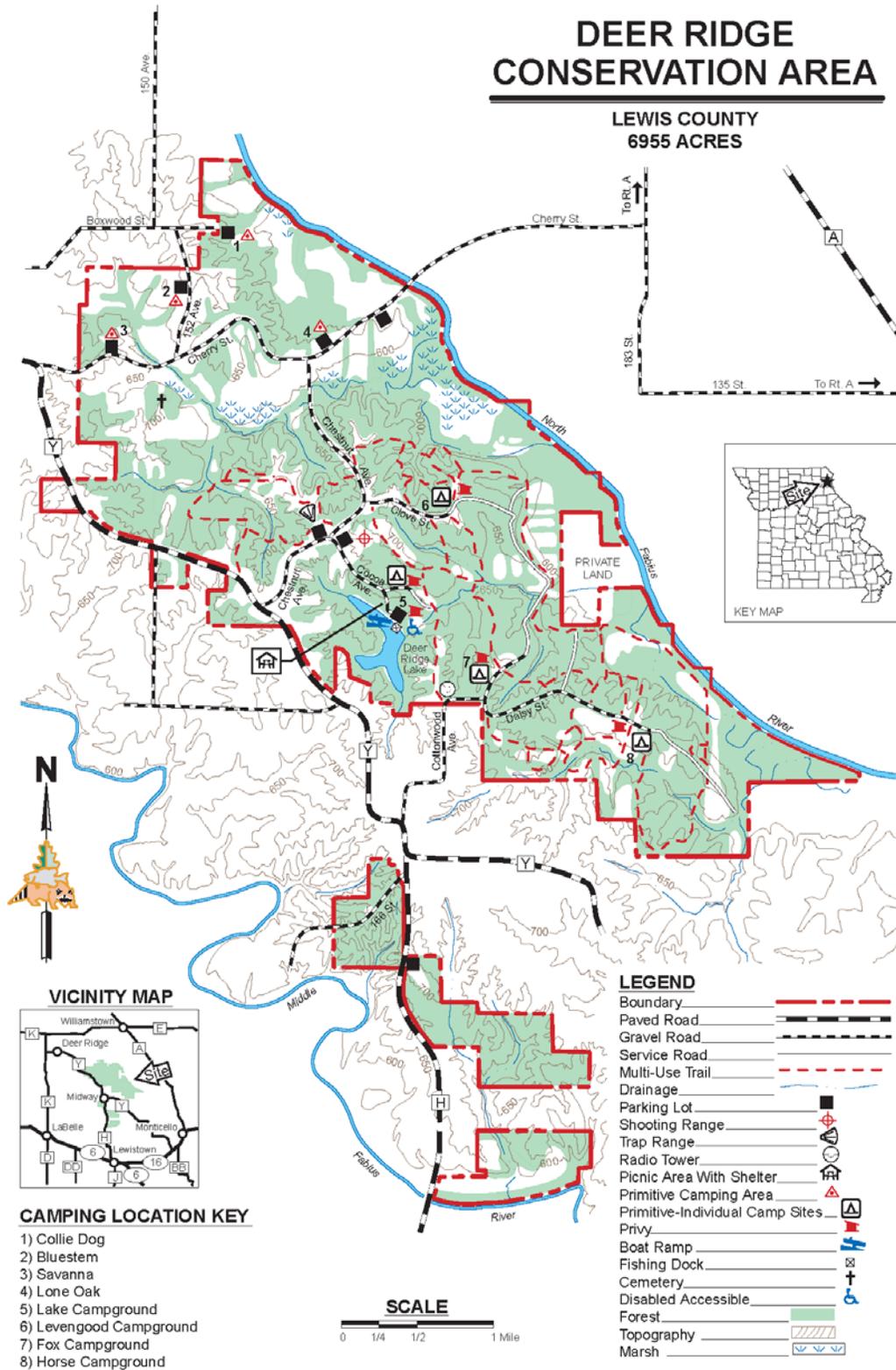


Figure 2: Multi-Use Trails

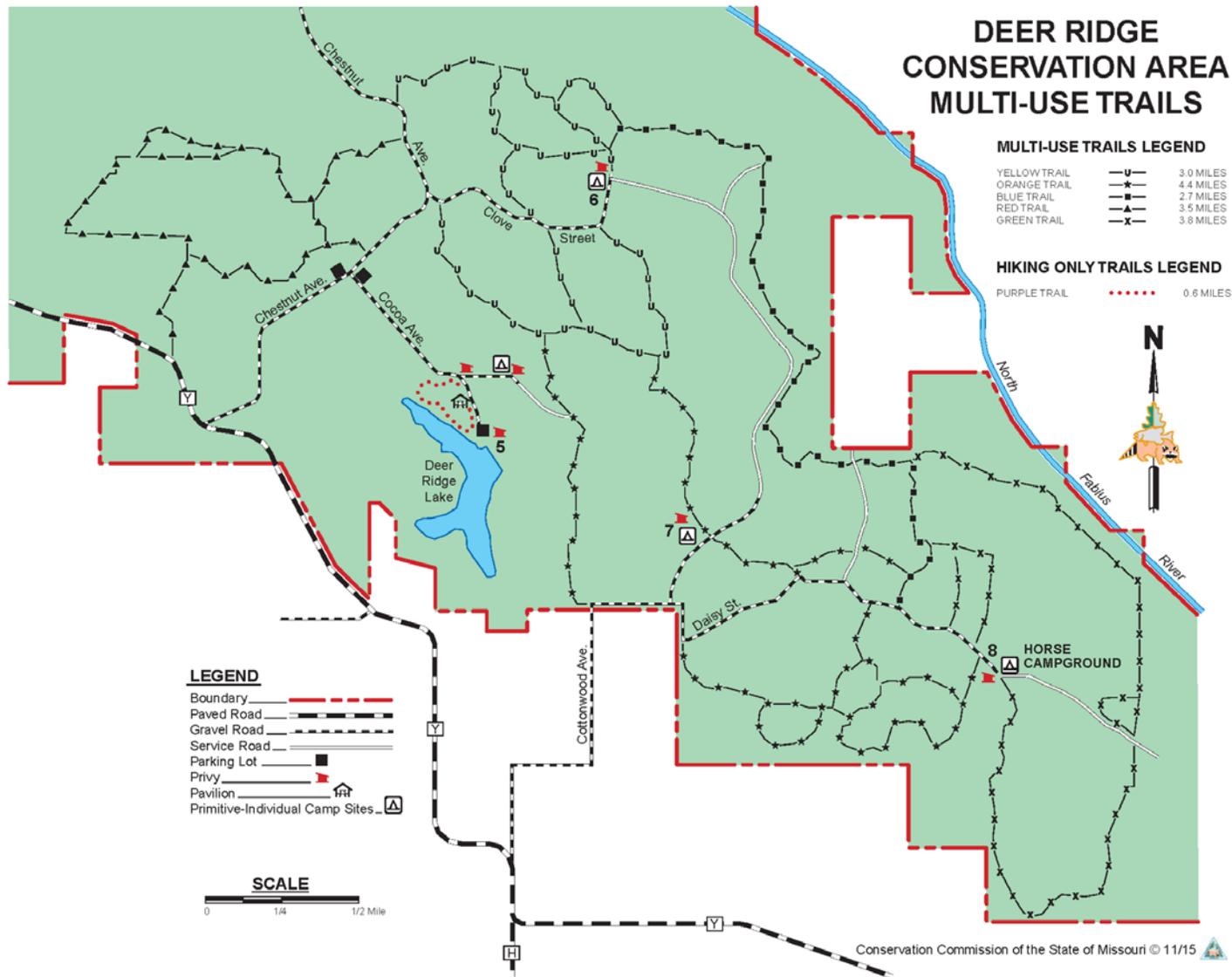


Figure 3: Aerial Map with Forest Management Compartments

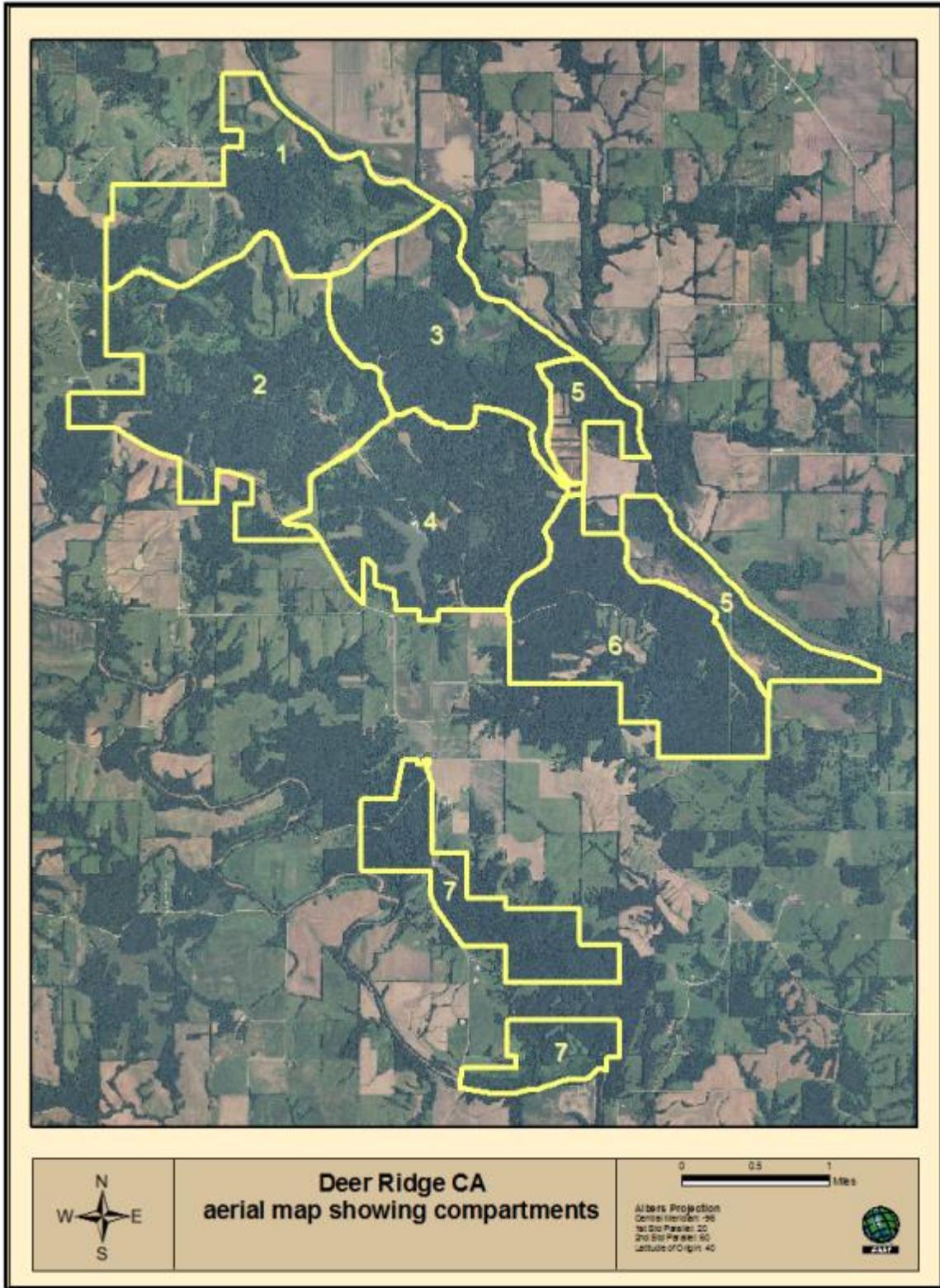


Figure 4: Natural Community Types

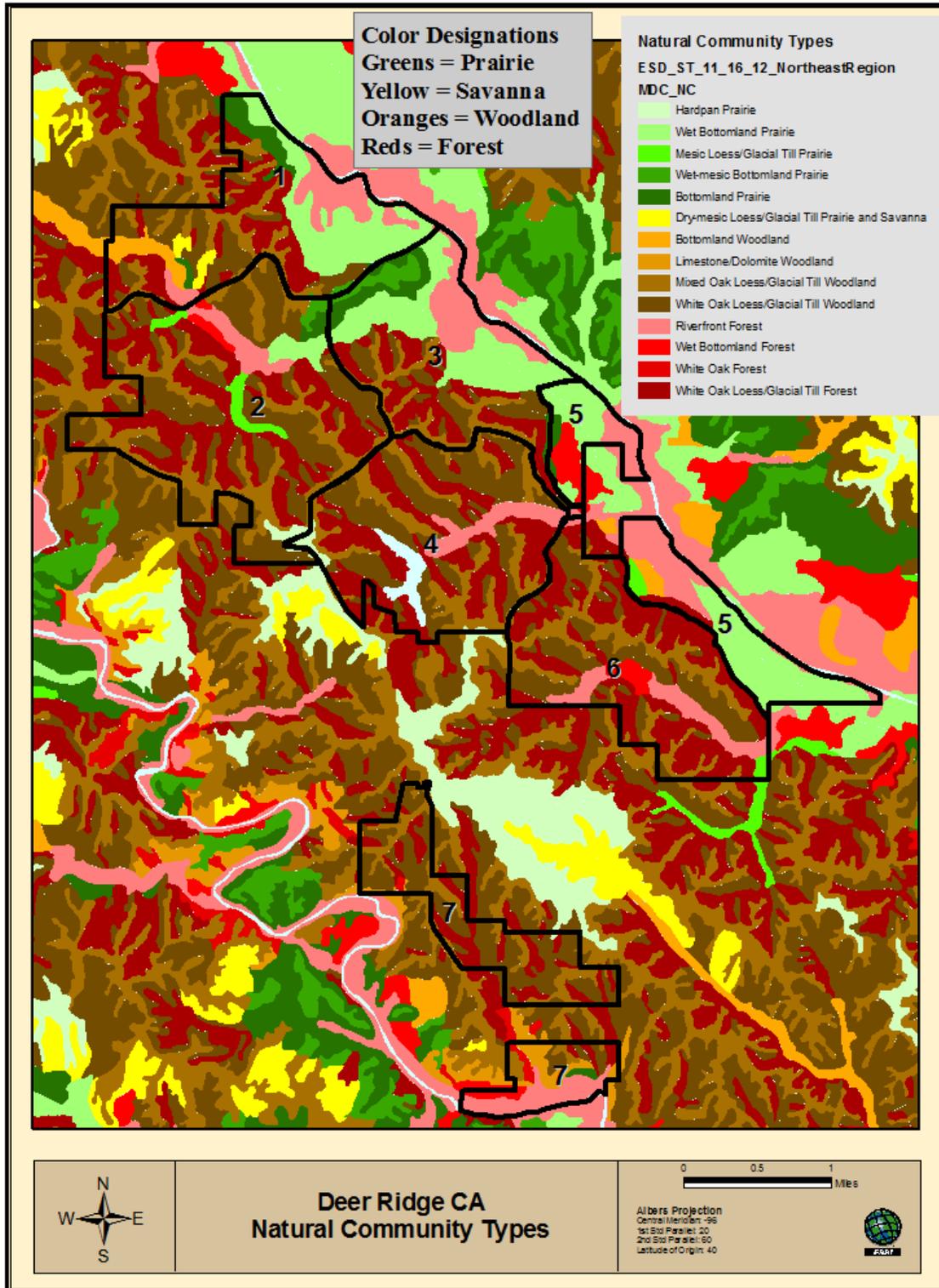


Figure 5: Prescribed Burn Areas

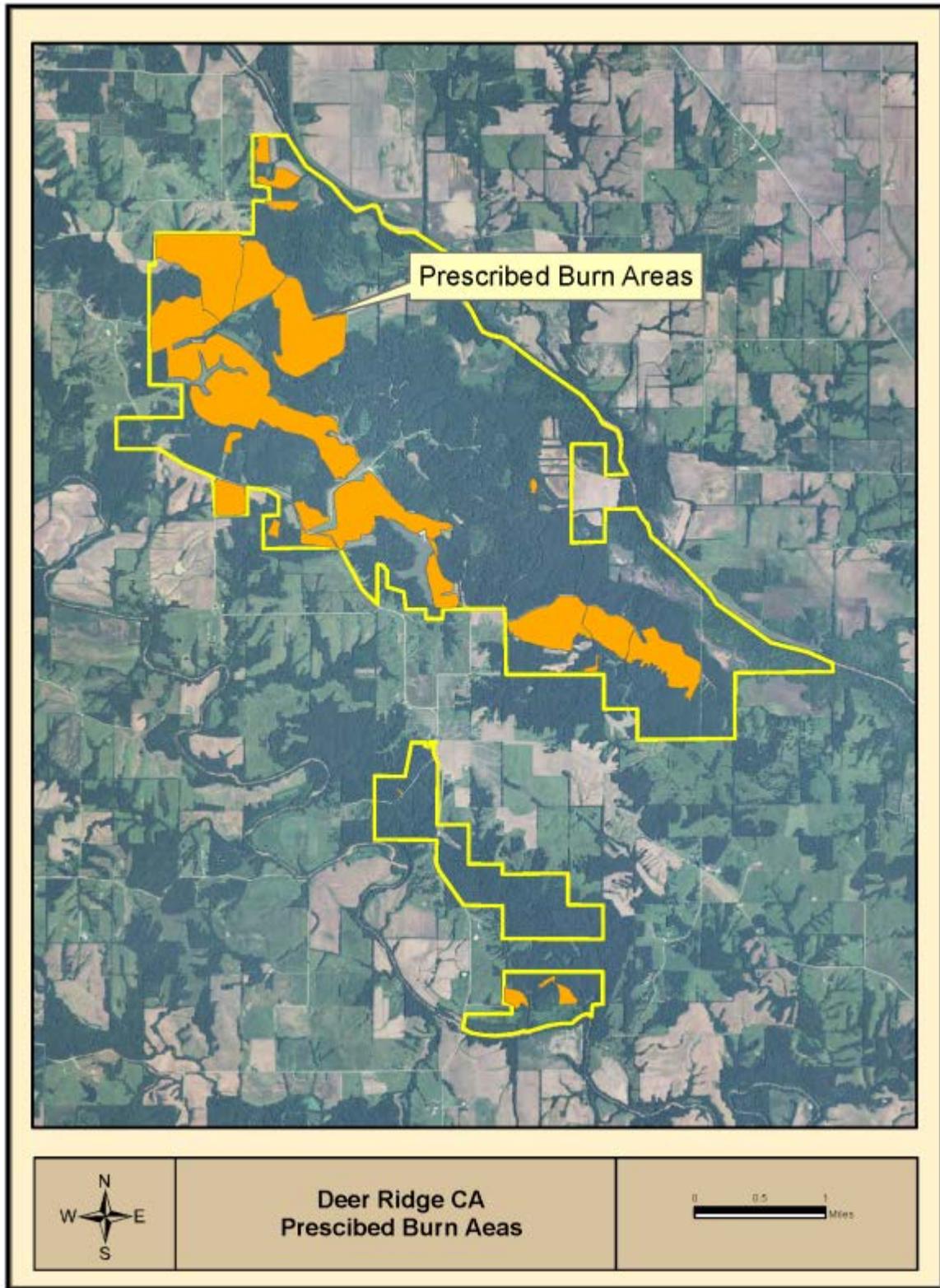


Figure 6: Land Types

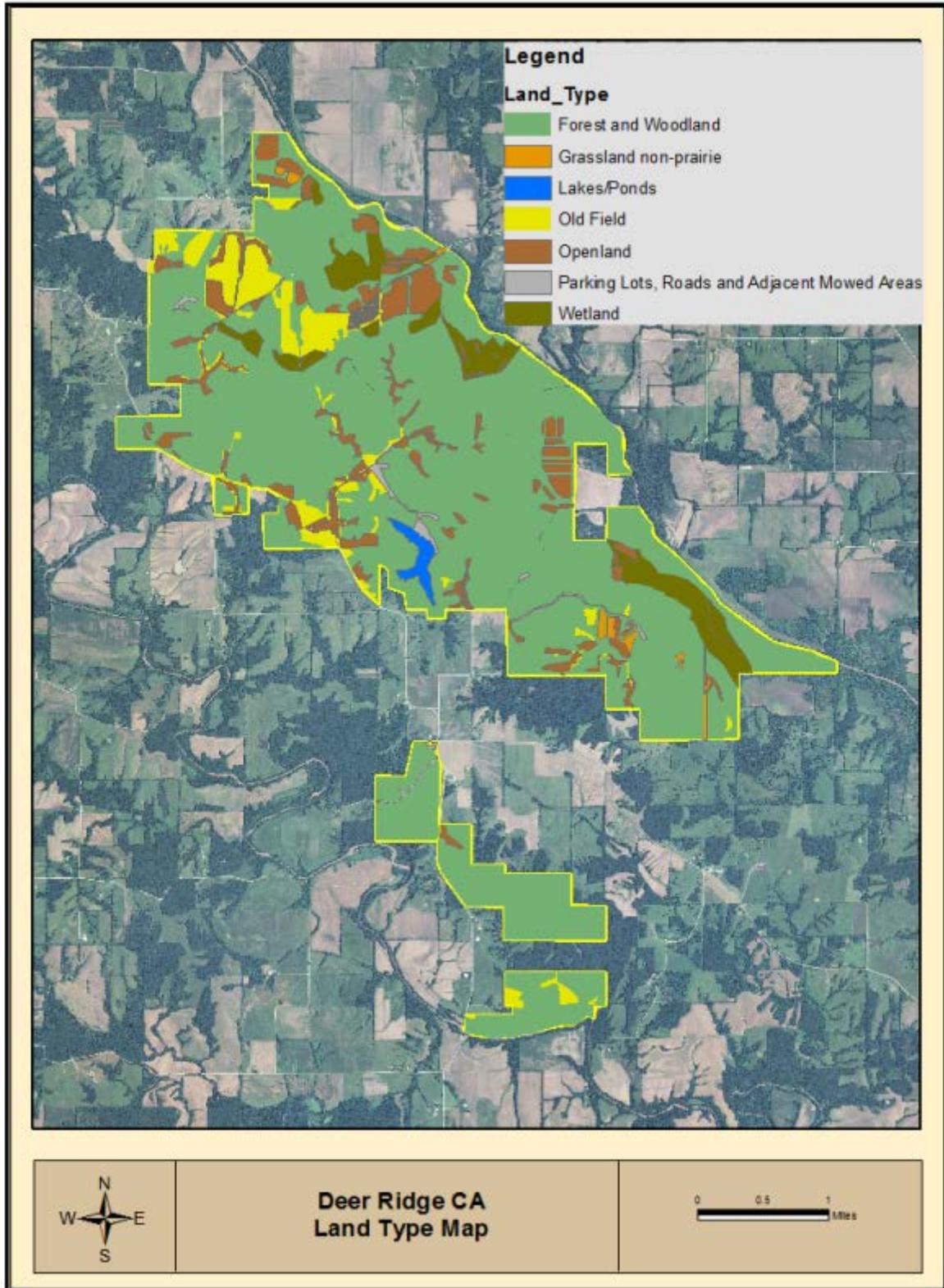


Figure 7: Wetland Map

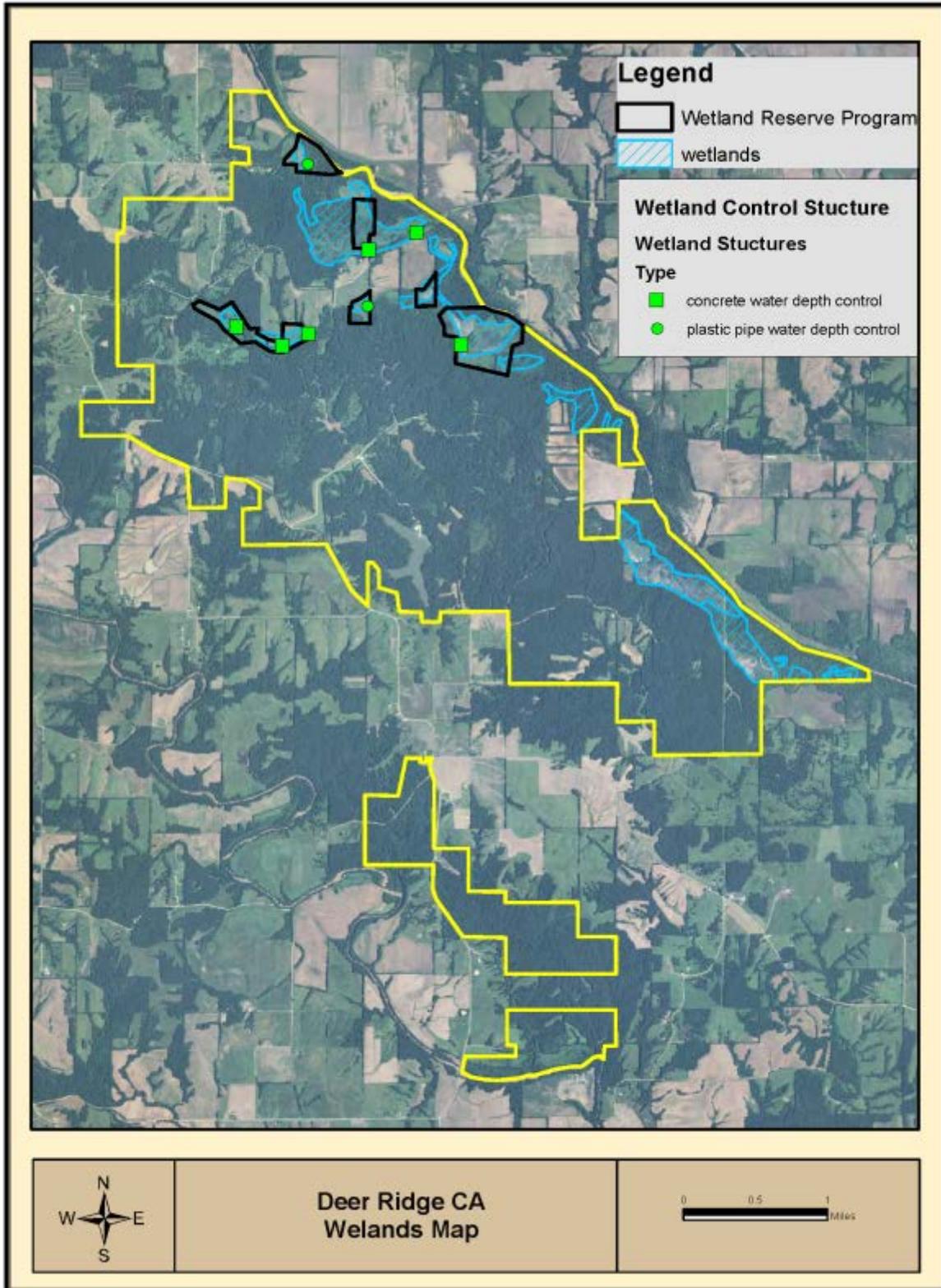
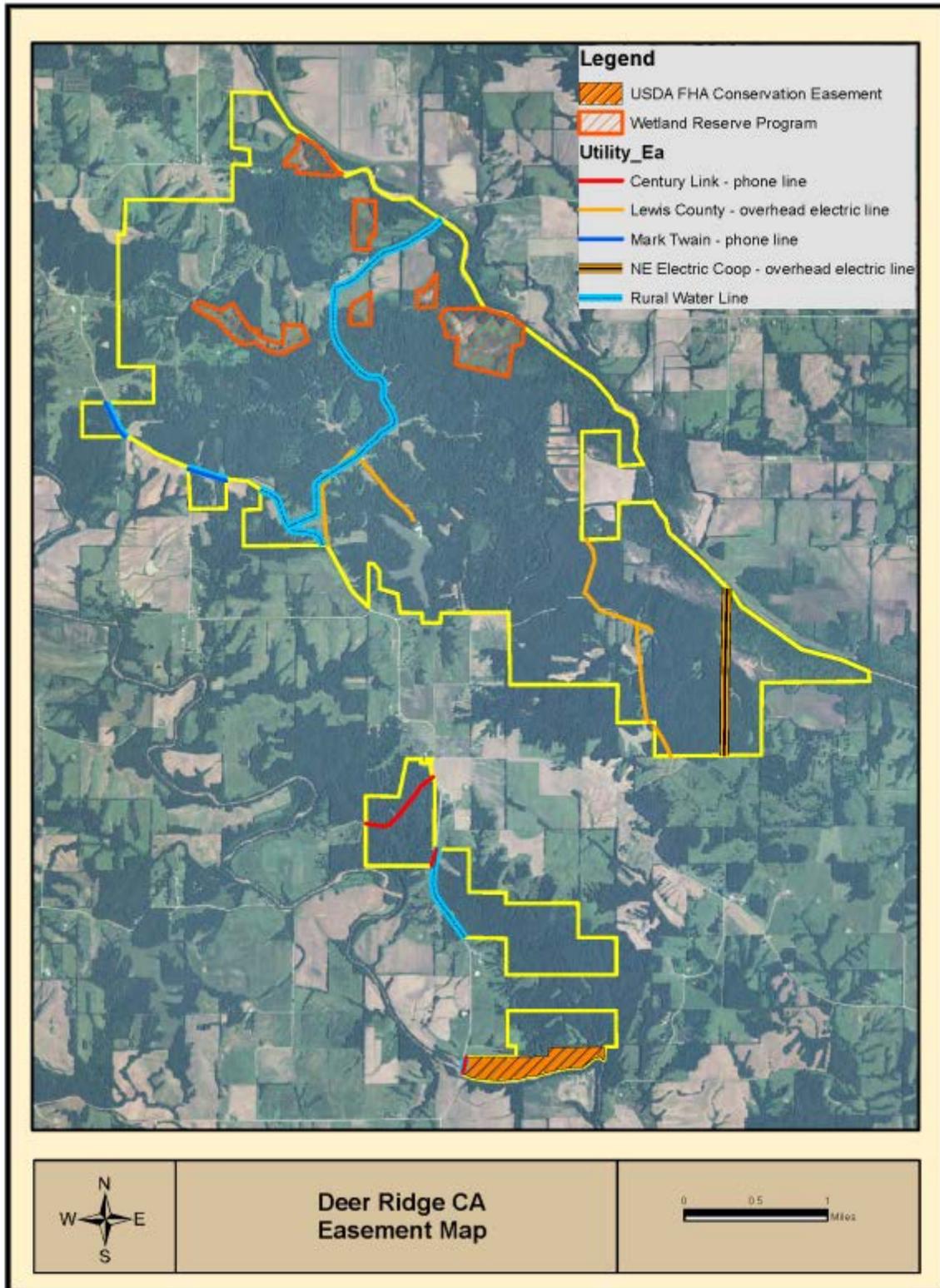


Figure 8: Easements Map



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