

DRAFT

Sugar Creek & Montgomery Woods Conservation Areas

**Ten-Year Area Management Plan
FY 2017-2026**



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OVERVIEW

Area Name	Area Number	Year Acquired	Acreage	County	Administrative Responsibility	Maintenance Responsibility
Sugar Creek CA	7307	1973	2,603	Adair	Forestry	Wildlife, Forestry
Montgomery Woods CA	7725	1978	348	Adair, Macon	Forestry	Wildlife, Forestry

Statements of Purpose:

A. Strategic Direction

Sugar Creek Conservation Area (CA) and Montgomery Woods CA have a wide diversity of natural communities that support a diverse array of species. The management emphasis encourages healthy populations of turkey, deer, quail, and associated non-game species, while conserving and enhancing water quality, diverse natural communities (such as upland forests), and offering the public compatible outdoor recreational opportunities.

B. Desired Future Condition

The desired future condition of Sugar Creek CA and Montgomery Woods CA is healthy natural communities including upland and bottomland forests.

C. Federal Aid Statement

- Sugar Creek CA: This area, or a portion thereof, was 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.
- Montgomery Woods CA: N/A

GENERAL INFORMATION AND CONDITIONS

I. Special Considerations

Area Name	Priority Areas	Natural Areas
Sugar Creek CA	Thousand Hills Forest/Woodland Conservation Opportunity Area, Priority Forest Landscape	None
Montgomery Woods CA	None	None

II. Important Natural Features and Resources

Area Name	Species of Conservation Concern	Caves	Springs
Sugar Creek CA	Yes ¹	None	None
Montgomery Woods CA	None observed	None	None

¹ 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.

III. Existing Infrastructure

Area Name	Privy #	Parking Area #	Lake/ Ponds	Other
Sugar Creek CA	1 ¹	10 ¹	2 fishing ponds (1.5 acres total), 7 fishless/unmanaged ponds (3.5 acres total)	<ul style="list-style-type: none"> • Ironwood Hollow Trail (2-mile hiking trail with three wooden bridges and wooden steps), • Multi-Use trail (10 mile-hike/bike/horse trail), • Unstaffed shooting range (with 25-, 50-, 100-yard shooting lanes, concrete shooting benches, and concrete pad)¹, • Storage building
Montgomery Woods CA	None	1	None	Service trail (authorized vehicles only)

¹ There is one Americans with Disabilities Act (ADA) accessible parking lot located at the unstaffed shooting range.

IV. Area Restrictions or Limitations

Area Name	Deed Restrictions	Federal Interest	Ease-ments	Cultural Resources	Endangered Species	Boundary Issues
Sugar Creek CA	None	Yes ¹	Yes ³	None observed	None observed	Yes ⁵
Montgomery Woods CA	None	Yes ²	Yes ⁴	None observed	None observed	None

¹ 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.

² Federal funds may 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.

³ Two right of way easements for county roads and state highways. Two easements for utilities across the area (one for Tri-County and one for Ameren).

⁴ Easement for county road (Montgomery Woods Trail) that runs along most of the southeastern border of the area.

⁵ Establishing accurate and identifiable boundary markers is a priority for this property.

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

Sugar Creek CA

Challenges and Opportunities:

- 1) Manage the oak-hickory complex for a high quality natural community.
- 2) Control of invasive species is a high priority.
- 3) Provide high quality outdoor recreational opportunities for a wide range of stakeholders.

Management Objective 1: On appropriate sites, manage forest and woodland communities to provide healthy and diverse habitats for forest/woodland-dependent wildlife by completing are-inventory of all forest compartments by FY2024.

Strategy 1: Inventory Compartment #1 in FY2018. (Forestry)

Strategy 2: Inventory Compartment #3 in FY2020. (Forestry)

Strategy 3: Inventory Compartment #2 in FY2024. (Forestry)

Management Objective 2: Utilize a variety of sustainable forest management techniques to maintain a healthy forest community.

Strategy 1: Implement management prescriptions from the forest management plans within five years of each inventory completion. (Forestry)

Strategy 2: Follow the appropriate best management practices when conducting forestry operations, per the *Missouri Forest Management Guidelines Voluntary Recommendations for Well-Managed Forests* (Missouri Department of Conservation, 2014). (Forestry)

Strategy 3: Follow the appropriate practices per the *Watershed and Stream Management Guidelines for Lands and Waters Managed by the Missouri Department of Conservation* (Missouri Department of Conservation, 2009) and 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) (Forestry)

Management Objective 3: Actively reduce invasive species.

Strategy 1: Monitor annually for invasive species. (Forestry)

Strategy 2: Reduce invasive species using appropriate techniques including but not limited to chemical applications and mechanical thinning. (Forestry)

Management Objective 4: Provide small grain and green browse food plots to enhance habitat for a variety of wildlife.

Strategy 1: Maintain approximately 160 acres of small grain crops or idle ground through Department planted 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. (Forestry, Wildlife)

Strategy 3: Manage food plots according to sound soil conservation principles. (Forestry, Wildlife)

Strategy 4: Regularly rotate crop fields into an idle state to provide nesting and brood rearing habitat for upland birds. (Forestry, Wildlife)

Management Objective 5: Monitor natural communities to ensure healthy and diverse habitats for forest/woodland-dependent wildlife and plant species.

Strategy 1: Conduct plant and animal surveys every five years to determine health of forest and woodland communities. (Wildlife)

Montgomery Woods CA

Challenges and Opportunities:

- 1) Manage the oak-hickory complex for a high quality natural community.
- 2) Control of invasive species is a high priority.
- 3) Provide high quality outdoor recreational opportunities for a wide range of stakeholders.

Management Objective 1: On appropriate sites, manage forest and woodland communities to provide healthy and diverse habitats for forest/woodland-dependent wildlife.

Strategy 1: Inventory Compartment #1 in FY2017. (Forestry)

Management Objective 2: Utilize a variety of sustainable forest management techniques to implement forest management prescriptions to maintain a healthy forest community.

Strategy 1: Develop and implement the management prescriptions formulated from the forest inventory. (Forestry)

Strategy 2: Follow the appropriate best management practices when conducting forestry operations, per the *Missouri Forest Management Guidelines Voluntary*

Recommendations for Well-Managed Forests (Missouri Department of Conservation 2014). (Forestry)

Strategy 3: Follow the appropriate practices per the Watershed and Stream Management Guidelines for Lands and Waters Managed by the Missouri Department of Conservation (Missouri Department of Conservation, 2009) and 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). (Forestry)

Management Objective 3: Actively reduce invasive species.

Strategy 1: Monitor annually for invasive species. (Forestry)

Strategy 2: Reduce invasive species using appropriate techniques including but not limited to chemical applications and mechanical thinning. (Forestry)

Management Objective 4: Monitor natural communities to ensure healthy and diverse habitats for forest/woodland-dependent wildlife and plant species.

Strategy 1: Conduct plant and animal surveys every five years to determine health of forest and woodland communities. (Wildlife)

VI. Aquatic Resource Management Considerations

Sugar Creek CA

Challenges and Opportunities:

- 1) There are 11.2 miles of first- and second-order stream channels on Sugar Creek CA, including second-order Elm Creek. Third-order Sugar Creek flows approximately 1.2 miles through the conservation area. Excluding a few small localized areas, the riparian corridors are completely forested for all streams throughout their entire lengths on the conservation area.
- 2) Sugar Creek CA has two ponds (1.5 acres total) that are managed for fishing. They provide recreational fishing opportunities for bluegill and largemouth bass. Seven fishless ponds and ponds with unmanaged fisheries provide suitable habitat for amphibians and reptiles.

Management Objective 1: Maintain the streams on the area.

Strategy 1: Follow the guidelines of the *Watershed and Stream Management Guidelines for Lands and Waters Managed by Missouri Department of Conservation* (Missouri Department of Conservation, 2009). (Fisheries)

Strategy 2: Any field road stream crossings or riparian corridors not meeting these standards will be addressed by FY2017. (Fisheries)

Strategy 3: Replace undersized culvert at the shooting range stream crossing and stabilize stream banks to reduce downstream bank erosion and protect the shooting range infrastructure by FY2017. (Design and Development)

Management Objective 2: Monitor and manage ponds to provide sustainable and diverse fishing opportunities

Strategy 1: Control excessive aquatic macrophytes chemically or biologically to promote efficient foraging by largemouth bass. (Fisheries)

Strategy 2: Periodically inventory fish populations in Ponds 1 and 2 to assess health and recommend needed regulation changes

Strategy 3: Maintain self-sustaining largemouth bass and bluegill fisheries in Ponds 1 and 2. (Fisheries)

Strategy 4: Monitor for occurrences of invasive species. (Fisheries/Forestry)

Strategy 5: Mow, as needed, to provide accessibility for bank fishing. (Forestry)

Management Objective 3: Monitor and manage fishless ponds and ponds with unmanaged fisheries to provide suitable and diverse habitat for amphibians and reptiles.

Strategy 1: Maintain current conditions in fishless ponds, and do not stock ponds with fish. (Fisheries)

Strategy 2: Explore the feasibility of chemically removing fish from ponds designated as fishless, and, if feasible, chemically remove fish by FY2017. (Fisheries)

Montgomery Woods CA

Challenges and Opportunities:

- 1) There are 1.4 miles of first-order stream channels on Montgomery Woods CA. Third-order Little Mussel Creek flows approximately 1.1 miles along the western boundary of the conservation area. The riparian corridors are completely forested for all streams throughout their entire lengths on the conservation area.

Management Objective 1: Maintain the streams on the area.

Strategy 1: All management activities on the area will follow the guidelines in the *Watershed and Stream Management Guidelines for Lands and Waters Managed by the Missouri Department of Conservation* (Missouri Department of Conservation, 2009). (Fisheries)

VII. Public Use Management Considerations

Sugar Creek CA

Challenges and Opportunities:

- 1) Provide a wide range of outdoor recreational opportunities for the public.
- 2) Maintain 10 miles of multi-use trail, two miles of hiking trail, and the rifle and shotgun ranges.

Management Objective 1: Maintain the current facilities to a standard that invites public use and keeps area users informed of regulations.

Strategy 1: Maintain current levels of area maintenance. Keep field roads mowed and coordinate with Wildlife Division area maintenance staff to keep parking lots clean and mowed. (Forestry/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: Maintain the rifle and shotgun ranges according the 2013 Shooting Range Facility Program Manual. (Forestry/Wildlife)

Strategy 4: Develop a Standard Operating Procedures manual for the shooting range⁷. (Forestry/Wildlife)

Strategy 5: Develop an Environmental Stewardship Plan for the shooting range⁷.

Management Objective 2: Provide improved pond-fishing access for the public on all areas.

Strategy 1: Ensure field trails leading to the fishing pond dams are mowed according to area maintenance standards. (Forestry)

Montgomery Woods CA

Challenges and Opportunities:

- 1) Provide a wide range of outdoor recreational opportunities for the public on Montgomery Woods CA.

Management Objective 1: Maintain the current facilities to a standard that invites public use and keeps area users informed of regulations.

Strategy 1: Maintain current levels of area maintenance. Keep field roads mowed and coordinate with Wildlife Division area maintenance staff to keep parking lots clean and mowed. (Forestry/Wildlife)

VIII. Administrative Considerations

Challenges and Opportunities:

- 1) Maintain the current facilities to provide a wide range of outdoor recreational opportunities for stakeholders to participate.
- 2) Consider land acquisition, when available.

Management Objective 1: 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 2: 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 3: 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)

Lands Proposed for Acquisition:

When available, inholdings and/or adjacent land 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 Department priorities, as identified in the annual Department land acquisition priorities, may be considered.

MANAGEMENT TIMETABLE

Strategies are considered ongoing unless listed in the following table:

	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26
Sugar Creek CA										
Terrestrial Resources Management										
<i>Objective 1</i>										
Strategy 1		X								
Strategy 2				X						
Strategy 3								X		
<i>Objective 2</i>										
Strategy 1			X	X	X	X	X	X	X	X
<i>Objective 5</i>										
Strategy 1					X					X
Aquatic Resources Management										
<i>Objective 1</i>										
Strategy 1	X									
Strategy 2	X									
<i>Objective 3</i>										
Strategy 2	X									
Public Use Management										
<i>Objective 1</i>										
Strategy 4	X									
Strategy 5	X									
Montgomery Woods CA										
Terrestrial Resources Management										
<i>Objective 1</i>										
Strategy 1	X									
<i>Objective 2</i>										
Strategy 1		X	X	X	X	X				
<i>Objective 4</i>										
Strategy 1					X					X

APPENDICES

References:

Missouri Department of Conservation. (1989). *Sugar Creek State Forest area plan*.

Missouri Department of Conservation. (1995). *Montgomery Woods Conservation Area limited area plan*.

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). *Shooting range facility program manual*.

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

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

Appendices:

Appendix 1. Montgomery Woods CA/ Sugar Creek Location Map

Appendix 2. Sugar Creek CA Background

Appendix 3. Sugar Creek CA Area Map

Appendix 4. Sugar Creek CA Land Type/Easement Map

Appendix 5. Sugar Creek CA Compartment Map

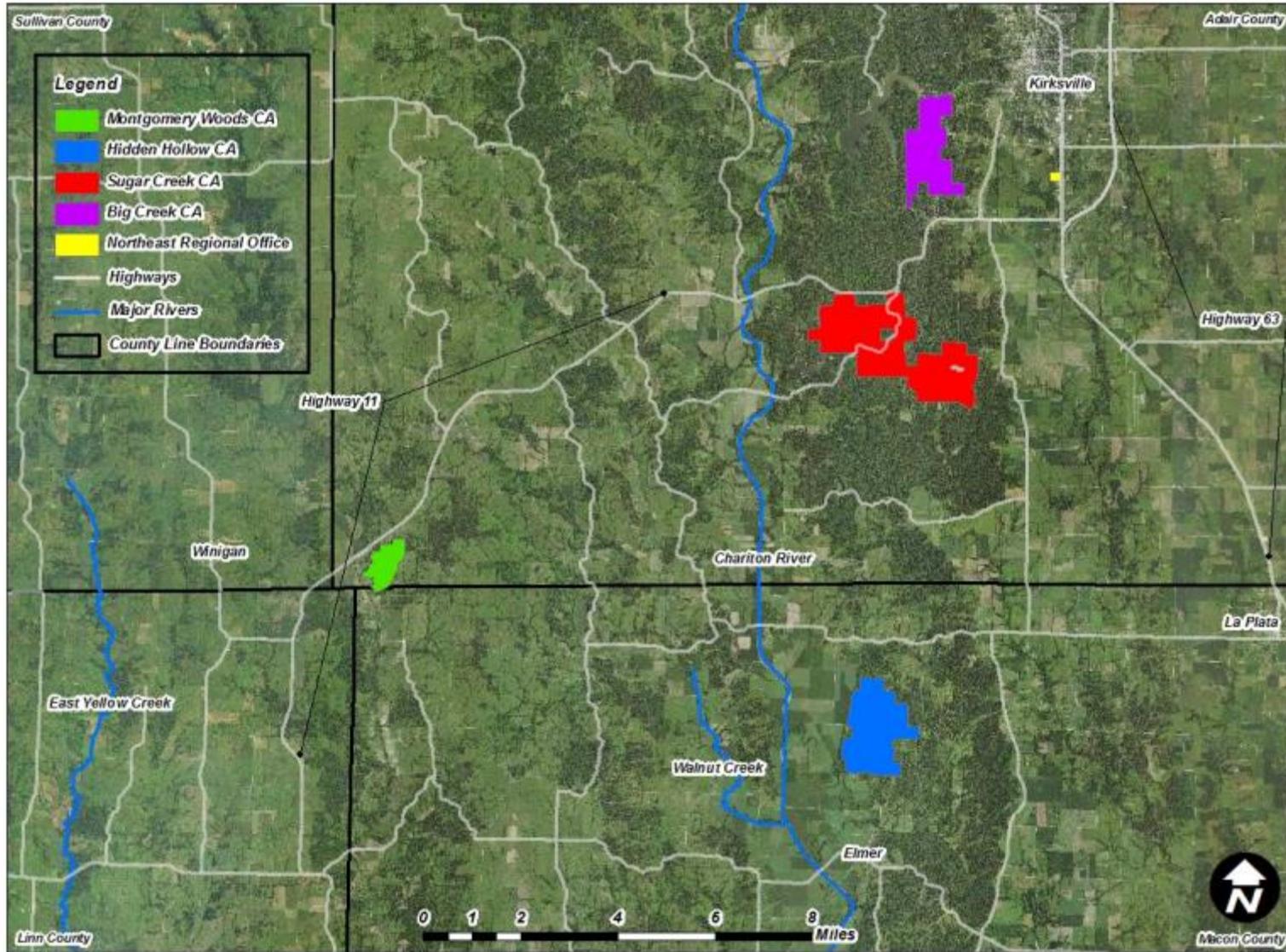
Appendix 6. Montgomery Woods CA Background

Appendix 7. Montgomery Woods CA Area Map

Appendix 8. Montgomery Woods Land Type/Easement Map

Appendix 9. Montgomery Woods CA Compartment Map

Appendix 1. Montgomery Woods CA/ Sugar Creek CA Location Map



Appendix 2. Sugar Creek CA Background

Sugar Creek Conservation Area is located in Adair County, four miles southwest of Kirksville. The Missouri Department of Conservation acquired the original 72 acres of this area as a forest fire lookout tower site, but the tower was never built. Known then as "Kirksville Woods," this small area was combined with a 2,536-acre tract, purchased in 1974, to create Sugar Creek Conservation Area.

The area is primarily forested with a few open fields on ridges and along Sugar Creek. Both Sugar Creek and Elm Creek run through the area.

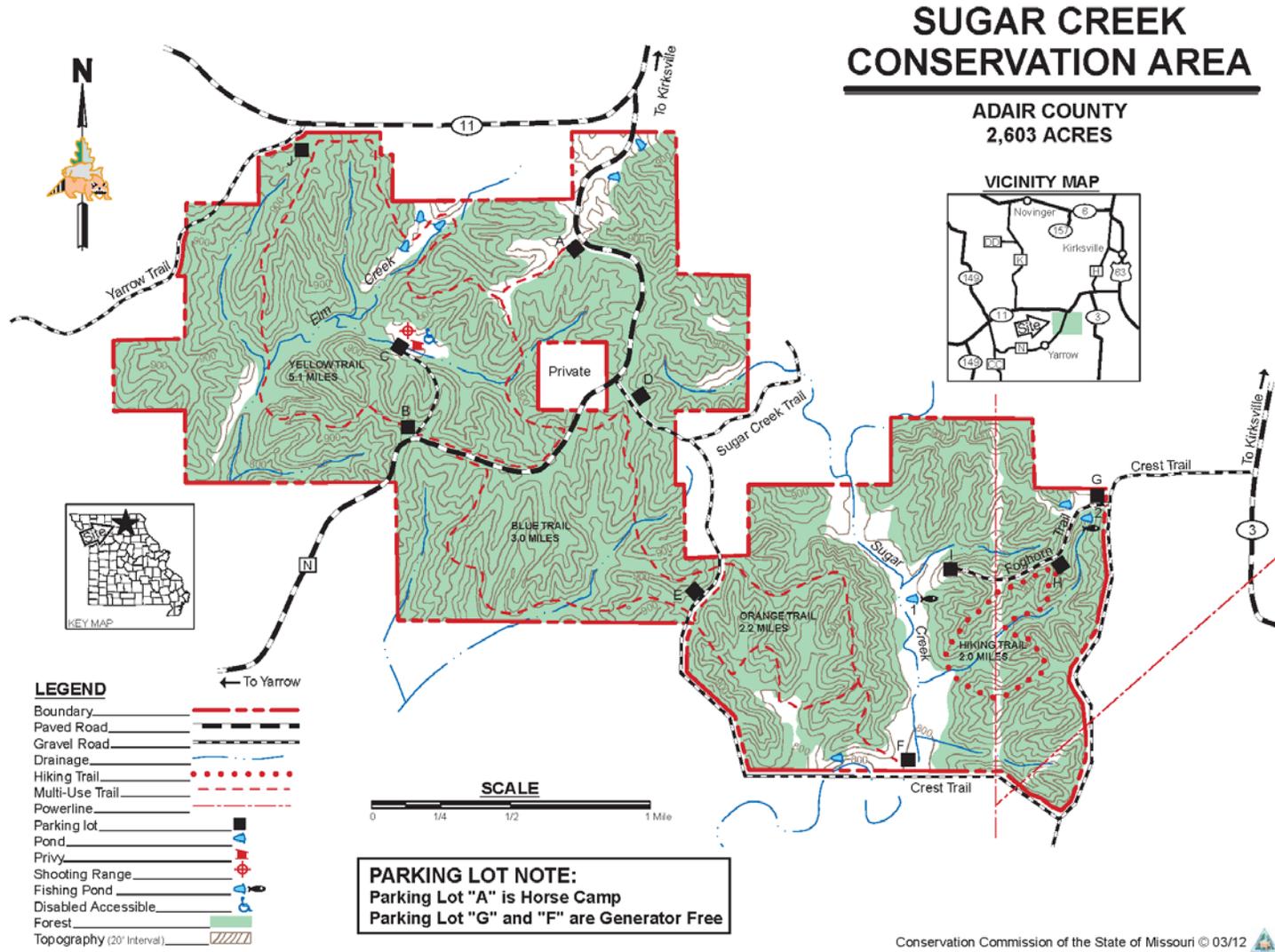
Around the early 1900s, thousands of acres of the region's forests, including this area, were cleared to meet the great demand for mine props and timbers for the coal mining industry in northeast Missouri. Subsequent tree sprouting was contained by grazing goats, and part of the area was known as the "goat ranch." Most of the area was allowed to revert to trees, which accounts for the large continuous stand of similar-age trees.

Wildlife management practices include crop fields to serve as food sources for wildlife. Forest management practices include precommercial and/or commercial harvest and forest thinning, all of which provide improved wildlife habitat. White-tailed deer and wild turkey are abundant on the area, as are numerous songbirds and a variety of mammals.

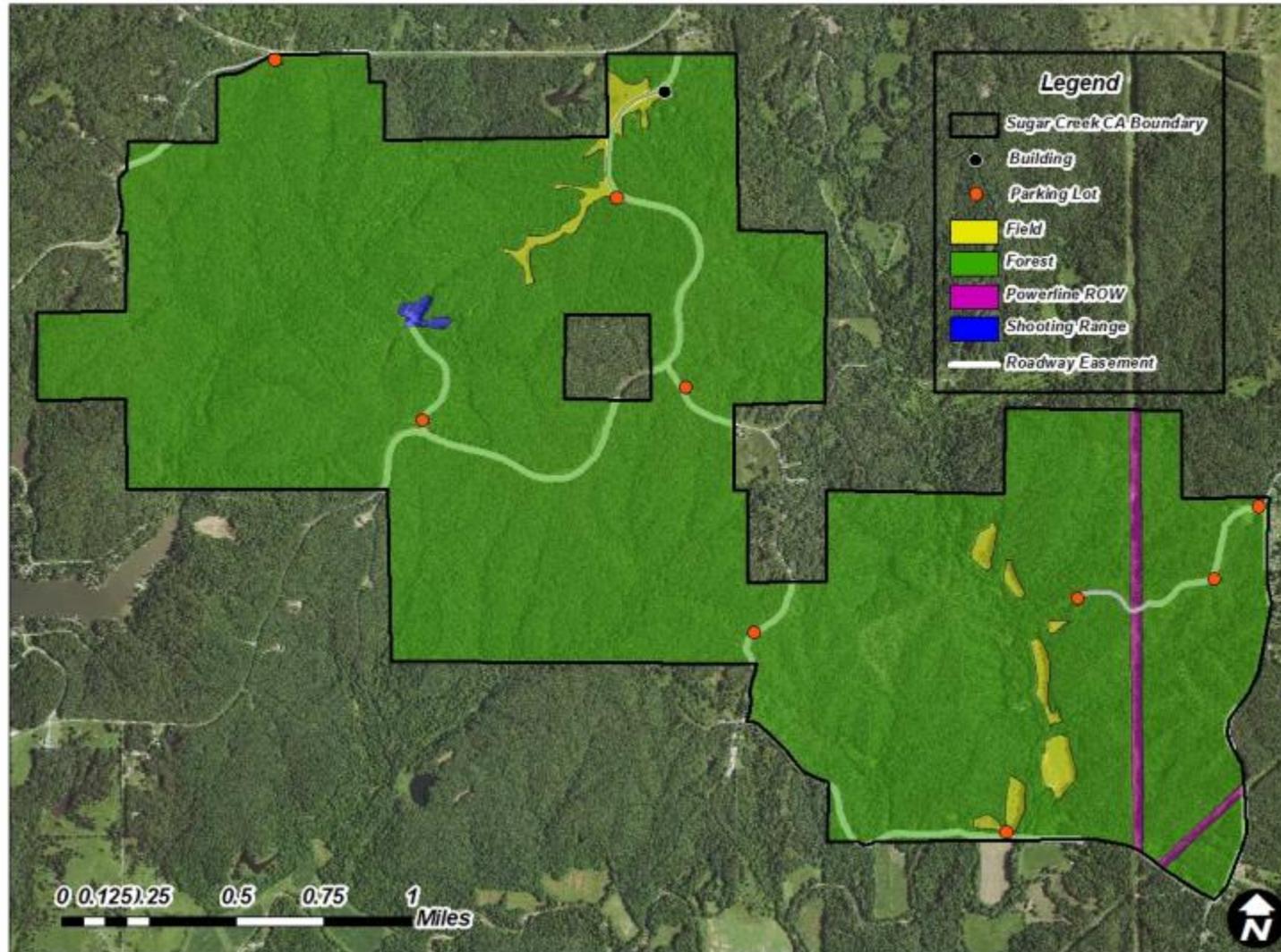
Current Land and Water Types:

Land/Water Type	Acres	Miles	% of Area
Upland Forest	2,439		79
Old Fields/Upland Fields	164		20
Roads/Administrative	1		1
Total	2,603		100
Stream Frontage		12.4	

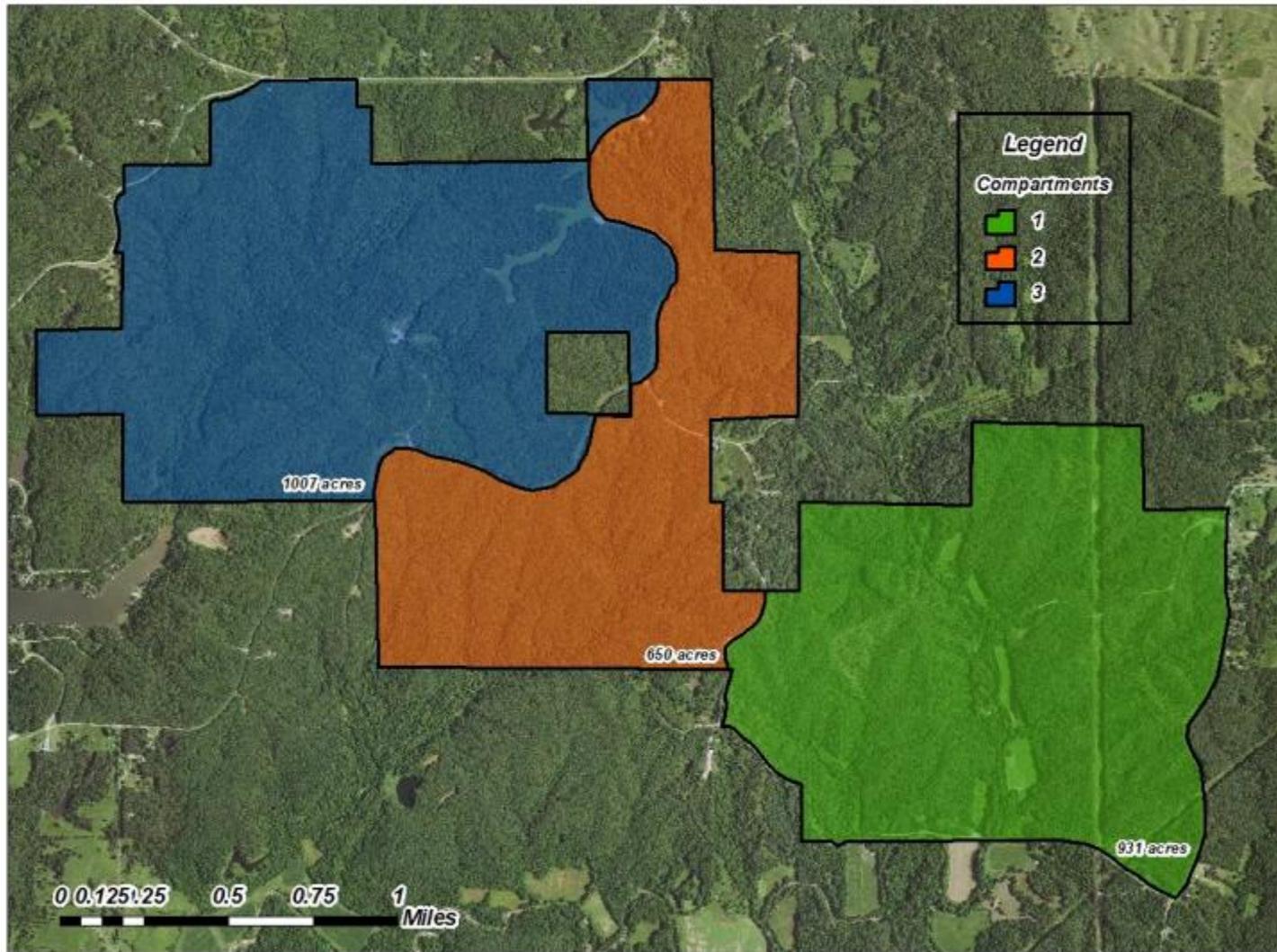
Appendix 3. Sugar Creek CA Map



Appendix 4. Sugar Creek CA Land Type/Easement Map



Appendix 5. Sugar Creek CA Compartment Map



Appendix 6. Montgomery Woods CA Background

Montgomery Woods Conservation Area is located in the southwest part of Adair County and a small portion of Macon County. It was acquired in 1978 from the Montgomery heirs with monies from the general revenue fund. This area was originally inventoried in 1981, and again in 1991 and 2003. This area consists mainly of oak-hickory forest, located on steep hills and ridge tops, with scattered patches of bottomland forest, located along Little Mussel Creek. This 348-acre area is surrounded by pasture and crop land. This tract provides a refuge for forest wildlife species. Little Mussel Creek is the only water on the tract.

Forest management practices include precommercial and/or commercial harvest and forest thinning, all of which provide improved wildlife habitat. White-tailed deer and wild turkey are abundant on the area, as are numerous songbirds and a variety of mammals.

Current Land and Water Types:

Land/Water Type	Acres	Miles	% of Area
Upland Forest	348		100
Stream Frontage		1.3	

Appendix 7. Montgomery Woods CA Area Map

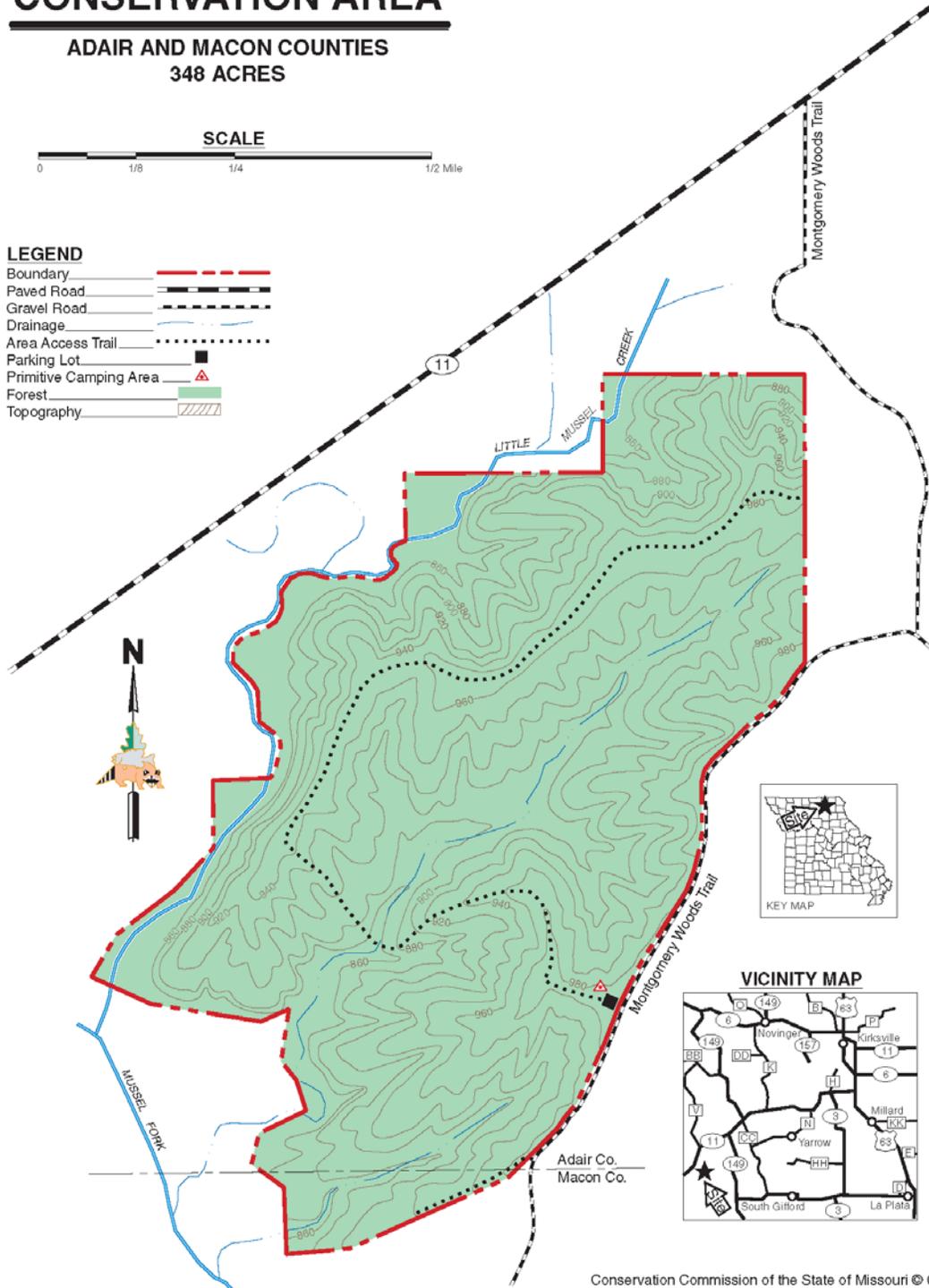
MONTGOMERY WOODS CONSERVATION AREA

ADAIR AND MACON COUNTIES
348 ACRES

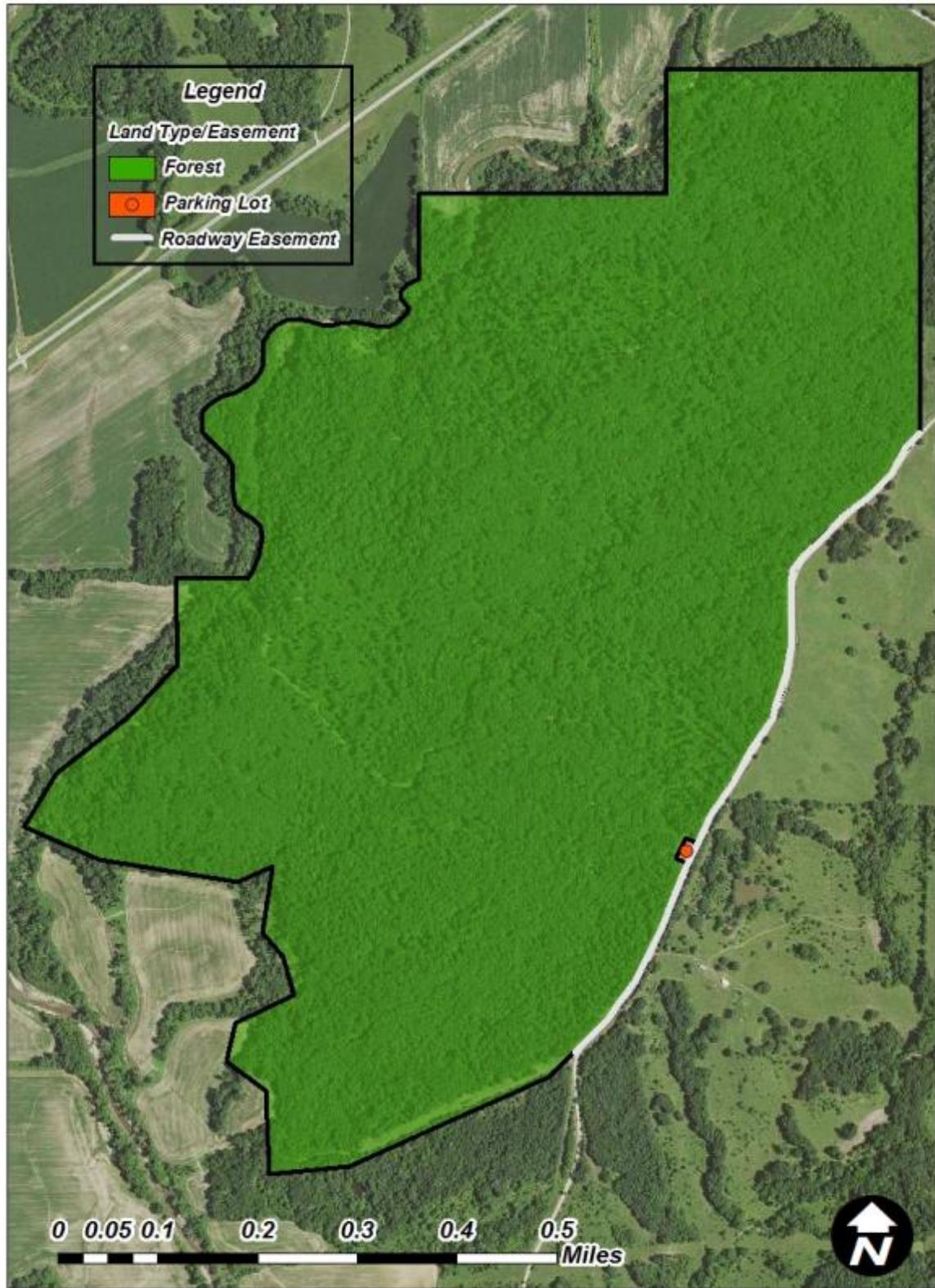


LEGEND

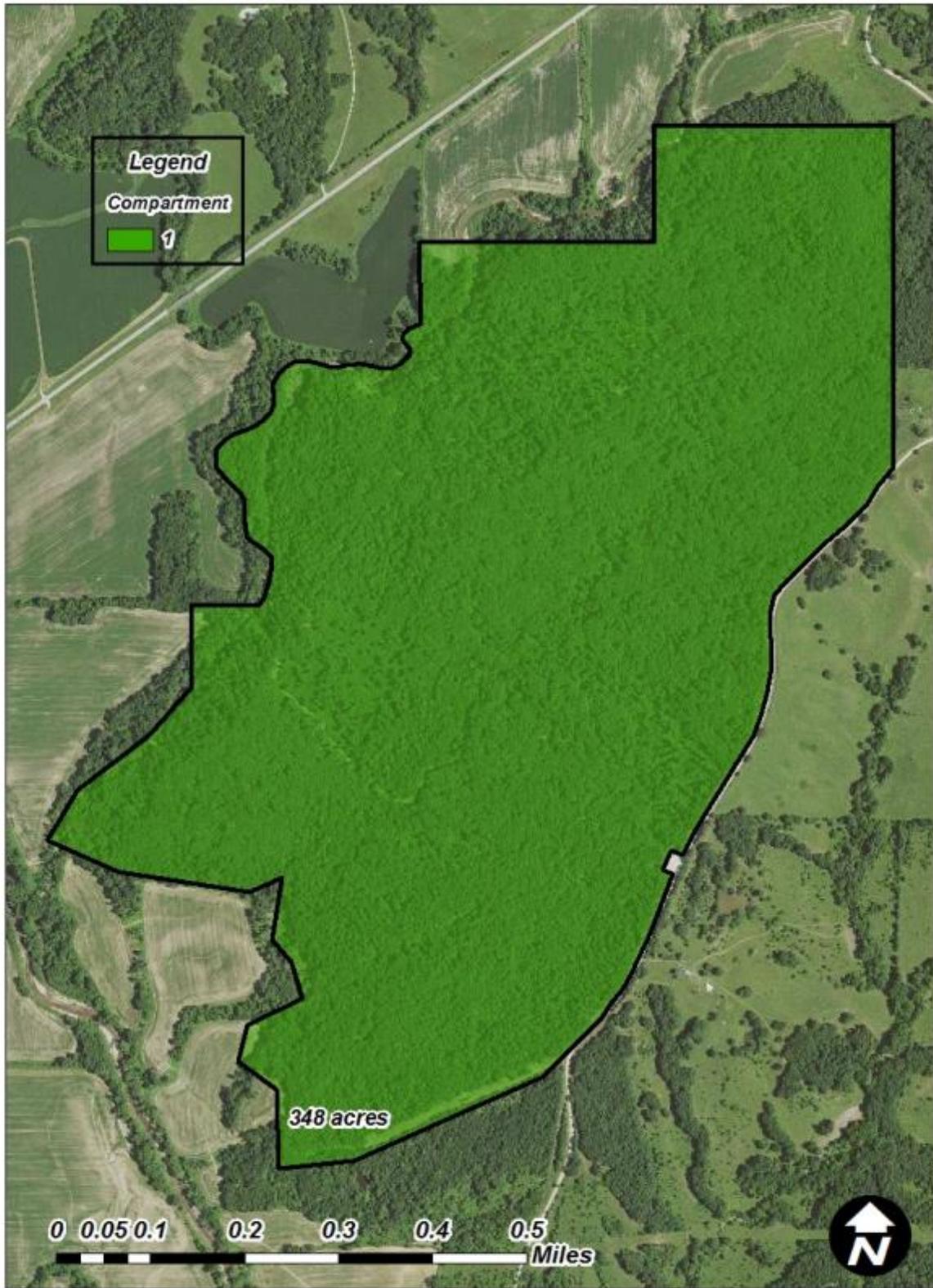
- Boundary
- Paved Road
- Gravel Road
- Drainage
- Area Access Trail
- Parking Lot
- Primitive Camping Area
- Forest
- Topography



Appendix 8. Montgomery Woods CA Land Type/Easement Map



Appendix 9. Montgomery Woods CA Compartment Map



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