

Mule Shoe Conservation Area

Fifteen-Year Area Management Plan FY 2019-2033



John Tuttle

Forestry Division Chief

12/7/2018

Date

Mule Shoe Conservation Area Management Plan Approval Page

PLANNING TEAM

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11/20/2018

Signature

Date

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Forestry Management Chief

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OVERVIEW

- **Official Area Name:** Mule Shoe Conservation Area, #9111
- **Year of Initial Acquisition:** 1991
- **Acreage:** 2,829 acres in four separate parcels
- **County:** Hickory, Camden
- **Region:** Southwest
- **Division with Administrative Responsibility:** Forestry
- **Division with Maintenance Responsibility:** Forestry
- **Statements of Purpose:**

A. Strategic Direction

Mule Shoe Conservation Area (CA) is managed for healthy forest, woodland, and aquatic communities for future generations to use and enjoy. The area is managed to provide hunting and wildlife viewing opportunities for the public.

B. Desired Future Condition

The desired future condition of Mule Shoe CA is forested uplands, diverse natural communities, and a fully functional riparian corridor, with some woodland and early successional habitat.

- ### C. Federal Aid Statement:
- 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.

GENERAL INFORMATION AND CONDITIONS

I. Special Considerations

- #### A. Priority Areas:
- Area streams contain Niangua Darter federally designated Critical Habitat. Other priority areas include: Little Niangua River Priority Geography, Little Niangua River Stream Reach Conservation Opportunity Area, Little Niangua River Forest and Woodland Conservation Opportunity Area, Little Niangua River Glade Conservation Opportunity Area, Little Niangua River Fisheries Priority Watershed, and Little Niangua River Priority Geography.

- #### 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

III. Existing Infrastructure

- Eleven parking lots
- Two primitive camping areas
- Boat ramp (Little Niangua River gravel bar only)
- Seven wildlife watering holes (2 acres total, each less than 0.25 acres)
- Two fishing ponds (1 acre each)
- One concrete vault privy

IV. Area Restrictions or Limitations

- A. Deed Restrictions or Ownership Considerations:** None
- B. Federal Interest:** 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:** Hickory County Road 96, telephone lines, and electric co-op powerlines.
- D. Cultural Resources Findings:** Yes, records kept with the Missouri Department of Conservation (Department) environmental compliance coordinators. 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:** Establishing accurate and identifiable boundary markers is a priority for this property.

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

Management centers on providing upland wildlife habitat and hunting opportunities, while protecting water quality. Area maintenance is provided by staff within Forestry Division.

Challenges and Opportunities:

- 1) Manage forest, woodland, grassland, and glade natural communities
- 2) Control invasive species.

Management Objective 1: Enhance, restore, and protect forest and woodland natural communities.

Strategy 1: Use even-aged and uneven-aged management practices to correct deficiencies in tree composition (species and age) and/or stand structure, according to current structure, age, site index, and species composition. Maintain loose bark tree composition for bat habitat. (Forestry)

Strategy 2: Forest compartment inventory will be completed every 20 years, according to Forestry Division inventory schedule to monitor stand composition and assess needs for forest health. (Forestry)

Strategy 3: Manage or maintain woodland natural communities. Tools such as prescribed fire, herbicide applications, mechanical treatments and tree harvesting will be considered when managing woodlands and invasive woody plants. (Forestry)

Strategy 4: Implement best management practices to prevent soil erosion when using heavy equipment during site preparation or timber harvesting, according to the *Missouri Watershed Protection Practice: 2014 Management Guidelines for Maintaining Forested Watershed to Protect Streams* (Missouri Department of Conservation, 2014). (Forestry)

Management Objective 2: Enhance, restore, and protect glade natural communities.

Strategy 1: Manage glade natural communities by cutting invasive woody plants and using prescribed fire to maintain them in an open condition to enhance herbaceous and forb diversity. (Forestry)

Management Objective 3: Prevent soil erosion due to road infrastructure.

Strategy 1: Ensure roads and road-side drainages are maintained to reduce runoff, sedimentation, and erosion. (Forestry)

Management Objective 4: Control invasive species.

Strategy 1: Monitor area for invasive species periodically and use appropriate strategies for control, including, but not limited to, mechanical removal, herbicide application, or prescribed fire. (Forestry)

VI. Aquatic Resource Management Considerations

Management centers on promoting watershed protection and preventing activities from compromising streambank integrity. Area maintenance is provided by staff within Forestry Division.

Challenges and Opportunities:

- 1) Prevent excessive streambank erosion.
- 2) Maintain riparian corridors.

Management Objective 1: Protect and enhance watershed and aquatic habitat.

Strategy 1: Employ appropriate best management practices associated with management and enhancement projects. (Forestry, Fisheries)

Management Objective 2: Maintain riparian corridors, as specified in the Department's *Watershed and Stream Management Guidelines (2009)*.

Strategy 1: Allow natural vegetative processes to continue. (Forestry, Fisheries)

Strategy 2: Establish forested riparian buffers of at least 180 feet along all perennial streams through direct planting of woody species or natural regeneration. (Forestry, Fisheries)

Strategy 3: Plant cool-season grass fields within floodplain with bottomland hardwood trees to restore bottomland hardwood forest conditions.

VII. Public Use Management Considerations

Challenges and Opportunities:

- 1) Keep the public informed of opportunities available at this area.
- 2) Maintain the area in a desirable condition.

Management Objective 1: Maintain suitable public access.

Strategy 1: Ensure existing parking lots and roads are maintained to Department standards. (Forestry)

Management Objective 2: Continue to inform the public of opportunities at this area.

Strategy 1: Maintain signage at Mule Shoe CA in accordance with Department policy. (Forestry, Fisheries, Outreach and Education)

Strategy 2: Work with local media specialist to highlight special opportunities on the area. (Forestry, Fisheries, Outreach and Education)

Strategy 3: Maintain up-to-date information about Mule Shoe CA on the Department's *Conservation Atlas* webpage. (Forestry, Fisheries, Outreach and Education)

Management Objective 3: Provide recreational and educational opportunities for the public.

Strategy 1: Issue trapping permits through the special use permitting process. (Forestry)

Management Objective 4: Establish and maintain clear area boundary lines.

Strategy 1: Unknown boundary lines should be established through surveying and by clearly marking them.

Strategy 2: Maintain boundary signage and paint as needed. (Forestry)

VIII. Administrative Considerations

Challenges and Opportunities:

- 1) When available, evaluate land acquisition opportunities.

Lands Proposed for Acquisition:

When available, 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 TIME TABLE

Strategies are considered ongoing unless listed in the following table:

	Fiscal Year														
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Terrestrial Resource Management Considerations															
<i>Objective 1</i>															
Strategy 2		X	X								X				
Aquatic Resource Management Considerations															
<i>Objective 2</i>															
Strategy 3				X											
Public Use Management Considerations															
<i>Objective 4</i>															
Strategy 2		X					X					X			

APPENDICES

Area Background:

Mule Shoe Conservation Area (CA) was purchased by the Department to provide upland wildlife habitat for public use and watershed protection. Open areas are managed to provide wildlife habitat through planting of crops and manipulation of grassland areas to maintain early successional habitats. Forest areas are managed through a combination of selective tree harvesting and pre-commercial thinning to produce wildlife habitat and maintain forest health.

Area Location: Four tracts are found to the west of Camdenton and lying north of US Highway 54 in the northeast corner of Hickory County.

Current Land Types:

Land/Water Type	Acres	Miles	% of Area
Forest	2,371		84
Grassland	172		6
Woodland	163		6
Glade	123		4
Total	2,829		100
Permanent Stream Frontage – Little Niangua River		2.7	
Permanent Stream Frontage – Starks Creek		0.8	

Public Input Summary:

The draft Mule Shoe Conservation Area Management Plan was available for a public comment period May 1–31, 2018. The Missouri Department of Conservation received comments from eight respondents (Appendix A). The Mule Shoe Conservation Area Planning Team carefully reviewed and considered these ideas as they finalized this document. A brief summary of public input themes, including how they were incorporated or why they were not, can be found below. Rather than respond to each individual comment, comments are grouped into general themes and are addressed collectively.

Department responses to themes and issues identified through the Mule Shoe Conservation Area Management Plan public comment period.

Terrestrial Resource Considerations

Opposes how the area has been allowed to become overgrown (e.g., fields and banks along fishing ponds have become overgrown in the past 30 years).

The Department’s primary purpose with open lands is to create a variety of habitat types on the area for wildlife. Open hay fields provide very little in the way of useful habitat. By letting fields grow more brush and weeds wildlife has more usable habitat and cover. Some marginal fields are allowed to return to natural woody cover while other fields are mowed or burned on a three-year

rotation to maintain their open condition but keep a mix of woody and grassy cover. Some of the areas along the river have been planted to trees and allowed to grow up to protect streambanks from erosion.

Opposes that the cedar grove was cut down and left as-is; feels that this area poses a safety hazard.

Eastern red cedar is considered an undesirable invader of natural open glades. The cedars are cut and allowed to cure for several years and prescribed fire is reintroduced into the stand to remove the dead cedar tops and stimulate native grasses and other glade plants that would naturally occur here. The first burn of the cut cedar was conducted in February 2018.

Would like to see sericea lespedeza controlled better at the area. Suggests that mowing on the area serves to spread this species.

Sericea lespedeza is a serious problem in open lands across the state, not only on Department lands. Department staff try to clean off mowing equipment before moving to new areas so as not to spread seed to areas that are not infected by this invasive weed. Herbicide is also used as time and equipment is available to kill weeds, but it takes several years to bring under control and follow up spraying is necessary as seeds from previous years germinate.

Suggests managing the area to promote quail populations (e.g., provide better brooding areas, grain food plots, and covey headquarters).

Periodic prescribed burning on planted native warm season grass fields and existing native warm season grass fields and glades promotes ground nesting bird populations including quail. Mule Shoe CA is not a quail emphasis area at this time but does fall in the Little Niangua priority geography that places emphasis on watershed and riparian corridor management.

Suggests liming the fields and hedge rows to promote healthy soils on the area.

Lime and fertilizer are normally used to return nutrients to soils where agricultural products and grazing remove vegetation from the area. Since our open lands are managed through mowing and burning, nutrients are returned to the soil through natural decay of vegetation that is cut and left on the ground.

Would like to know what will be done to reduce armadillo on the area.

The Department has no plans at this time to manage armadillos.

Aquatic Resource Considerations

Suggests that the plan incorrectly states that there are “No natural springs.” States that there are three springs on the property.

The planning team acknowledges that some small and seasonal springs that may occur on the area might have been overlooked. Area staff always welcome information on locations of springs

and will try to map them during forest inventory and subsequent planning. Before any management is applied to the area a thorough inventory of natural features including springs and riparian areas is conducted and protections are put into place to protect these features.

Public Use Considerations

Suggests providing horseback riding trails on the area.

Adding multi-use trails for horseback riding would increase interference with existing area uses and could negatively impact sensitive wetland habitats and aquatic species of conservation concern. Horseback riders can pursue this recreational opportunity on Lead Mine Conservation Area (26 miles away) or Bolivar Landing Park (31 miles away).

Suggests providing equestrian primitive camping areas at Mule Shoe CA.

Equestrian camping and riding is allowed on other public lands nearby (see comment above).

Suggests spending more time maintaining the area (e.g., picking up trash, clearing downed limbs).

Area staff work to keep areas looking neat and safe for all area users. Trails are mowed yearly to keep encroaching vegetation in control. High use areas such as campgrounds and parking lots are visited regularly to mow grass and remove trash.

Suggests reducing the number of deer hunting days on the area to increase deer abundance on the area (has observed a decline in deer abundance over the years).

Deer population studies could be initiated on the area prior to changing deer regulations if deemed necessary.

Administrative Considerations

Suggests spacing area boundary signs closer and replacing them where they are absent (e.g., signs are absent near the County Road 66 side). Suggests installing something more permanent to keep trespassers out of neighboring properties.

Area staff paint and sign area boundaries on a 5-year rotation. The Department works with neighboring landowners to cost share on fencing along boundaries where fencing is desired by neighbors as budget allows. Contact the Mule Shoe CA area manager for information on this program.

Suggests adding information to the plan about existing area buildings. Would like to know whether the house and barn on the area will be removed.

The house and garage on the area will be removed as soon as budget, crews, and equipment become available to accomplish that task. The pole barn will be left for temporary storage of equipment being used in area maintenance.

Other Considerations

Loves going to Mule Shoe CA. Enjoys hunting, fishing, and hiking at the area. Appreciates how the area is currently managed.

The Area Planning Team appreciates this comment and will continue to manage the area to maintain healthy natural communities of mixed oak-hickory forest, glades and river bottom forest for Missouri's fish, forests, and wildlife, as well as for people to enjoy these natural resources.

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. (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

Maps:

Figure 1: Area Map

Figure 2: Land Cover Map

Figure 3: Vicinity Map

Figure 4: Easement Map

Additional Appendices:

Appendix A: Mule Shoe Conservation Area Management Plan Public Comments

Figure 1: Area Map

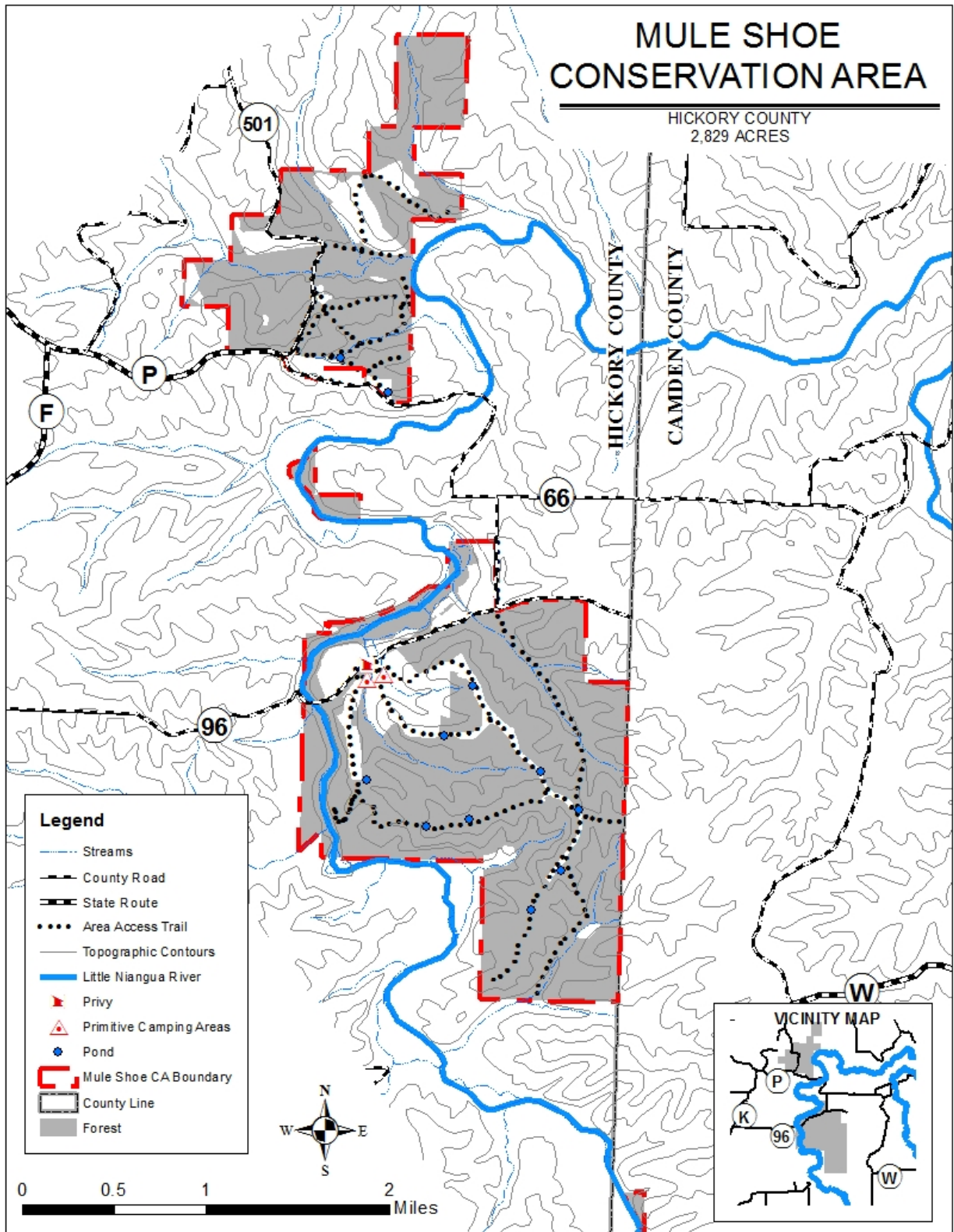


Figure 2: Land Cover Map

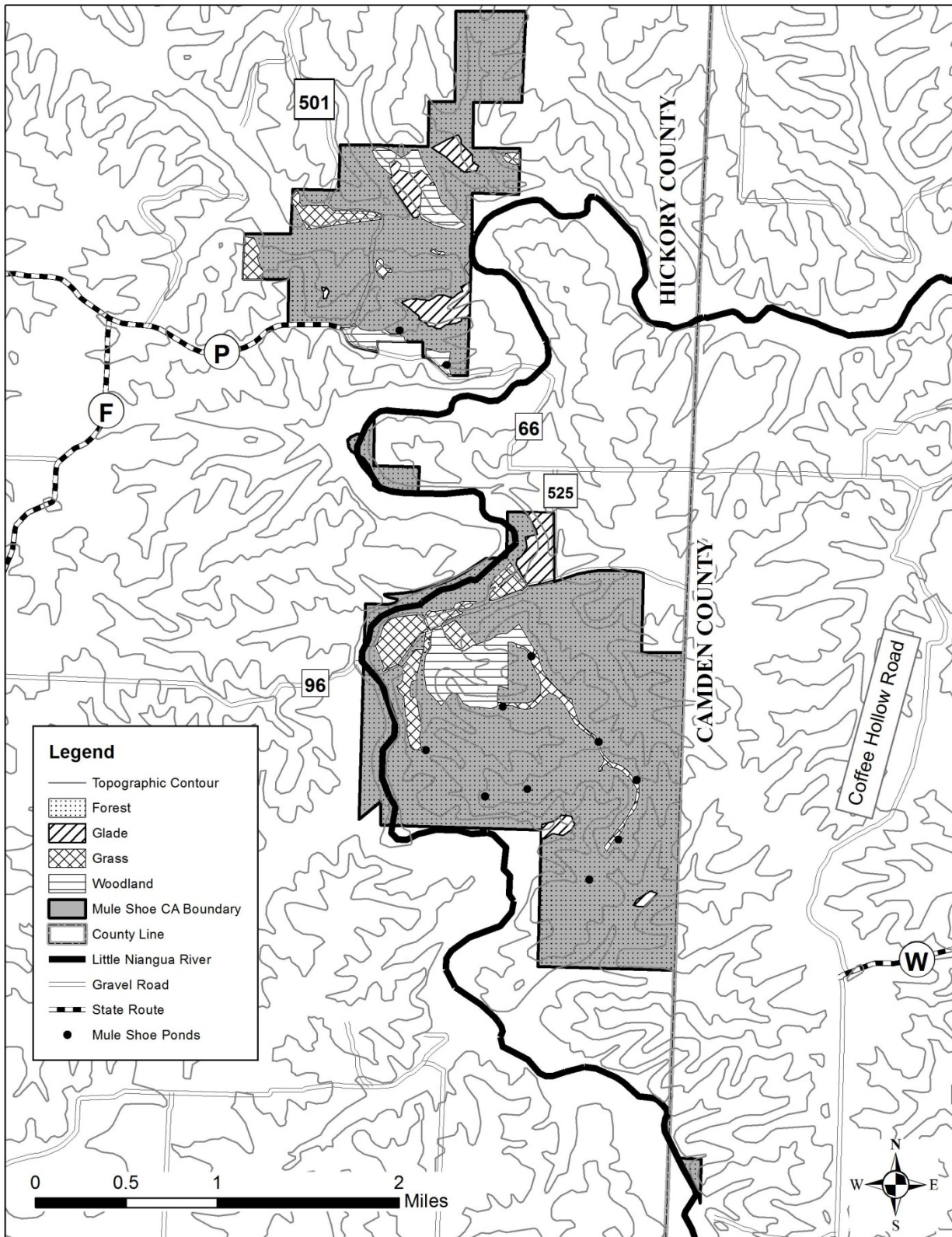


Figure 3: Vicinity Map

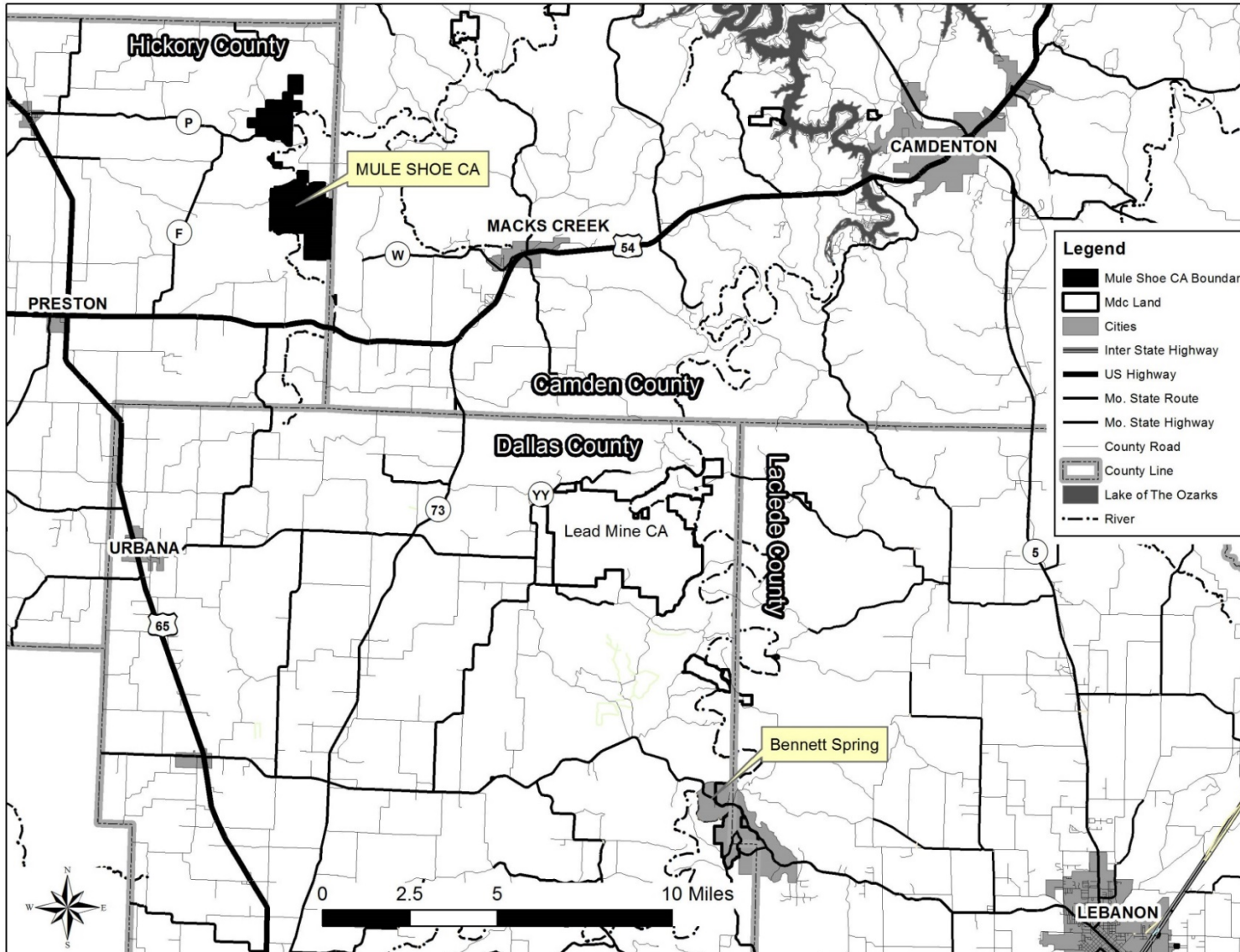
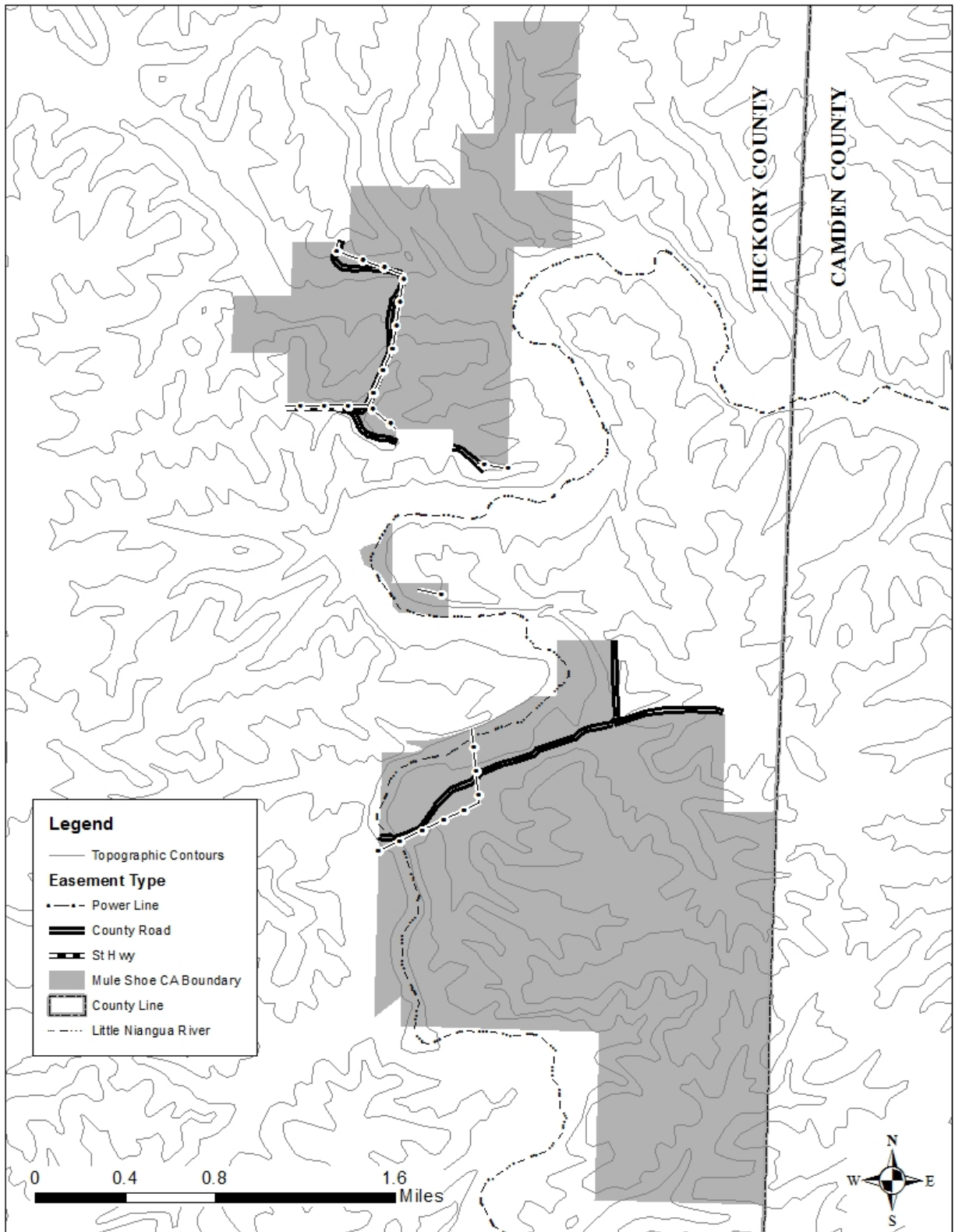


Figure 4: Easement Map



Appendix A: Mule Shoe Conservation Area Management Plan Public Comments

Received during public comment period (May 1–31, 2018):

<p>The plan as outlined is very appropriate for this land. Your priorities as outlined fall in step with my vision for the area.</p>
<p>I am an avid trail rider and hope that equestrian primitive camp sites will be included and that horseback riding on trails is permitted.</p>
<p>lime the fields and hedge rows healthy soil equals healthy plants equals animals</p>
<p>I own land that butts up to Mule Shoe. Love the area there. What can be done with the massive take-over of the Armadella species?</p>
<p>The area within the boundaries of County Road 501, County Road 66 and Starks Creek was purchased from Harris Farms, Inc. several years ago. This property belonged to my wife's family. I have been hunting and hiking this property for over 30 years and have seen many undesirable changes since the MDC took over its care and control. Areas that were once wide open beautiful fields where deer and turkey grazed are now so overgrown its nearly impossible to walk across them. The banks of the "fishing ponds" are barely accessible due to thick brush. A cedar grove used as a bedding area for deer was cut down and left to rot, making it difficult and unsafe to walk through. These are my biggest issues that your plans appear to address, but to this point, the conditions have deteriorated from what they once were. Two other items listed in the plan that I want to comment on are natural springs and boundary markers. First, the plan states that there are no natural springs on the Mule Shoe CA property. There are actually 3 known springs on this property, 2 are within the western pond, 1 just west of the pond. That is why my wife's grandfather built the pond in that location. That pond rarely gets very low and has never dried up. Second, our property borders the CA property on the County Road 66 side. The boundary markers are spread out and, in some areas, gone. This has led to some unintended trespassing. We have in the past put up our own signage. Like your signs, they get destroyed. Perhaps something more permanent can be installed. I completely support the MDC in their efforts to maintain public land for our future generations to enjoy. However, it appears to me that there isn't enough manpower to maintain what you have. I hunt this property exclusively. I know every inch of it and worked to maintain it before the MDC purchased it. I still pick up trash when in the field and clear trails of downed limbs in an effort to keep it safe for those using it. I will always love this property and will continue to use it and do what I can to preserve it. I would be happy to take a hike with one of your workers to show them around sometime. Thank you for your time and commitment to preserve our natural resources.</p>
<p>This plan says nothing about existing buildings. We assume the house and barn will be removed at some point.</p>
<p>This is a nice conservation area. Keep doing what you're doing!</p>
<p>Thanks for the opportunity to comment on things happening at the Muleshoe conservation area. What a beautiful site for anyone to observe nature and its grandeur. Without knowing the prior plans over the last 30 years or so, it is difficult to judge whether the upcoming plan is truly</p>

ambitious or whether it is a statement of listed management correctness. One shortcoming I have personally observed in controlling invasive species is the spread of *Serecia lespedeza* on the area. It seems the Department mowings have served to spread *Serecia* up and down the main roadways and side trails to a point where it would be difficult to isolate it now. Another observation I have made since the department took ownership of the property is that from time to time a few quail have used the area as evidenced by my sighting them twice and having heard them calling several times. I know that almost 3000 acres of real estate is a good size chunk and that quail are very secretive with their movements and signaling, especially when their numbers are very, very low. When I consider having spent upwards of between 2 and 3 thousand hours on the area and about equal time now on our adjoining 200-acre farm. Strikes me as a missed opportunity when there isn't a more regular observance of quail. With all the available bottoms in the area it seems there is a huge opportunity to introduce some better brooding areas, grain food plots and covey headquarters locations on the property, this past fall having witnessed a well-sized covey on our property, I was once again enthused to keep up with our work to enhance for quail. As for the steady drop in deer numbers, and they are nowhere near what they were when MDC took control, why not provide some relief in the hunting seasons. How many days in the four months from September 15th to January 15th are does illegal to hunt? What if MDC took action to allow bow hunting only for one or two years on the area. Given that managing large game species becomes very complex when trying to be fair with every type of enthusiast out there but it seems there is a lack of willingness to apply restrictions to increase deer populations in certain instances, and a tendency to liberate rules, methods and seasons to satisfy everyone in the short-term. Truth is, we have always enjoyed our time on mule shoe. We have so many good memories hunting, fishing, and hiking there which keeps bringing us back hoping to re-live experiences we've had in the past. I want coming generations to experience some of the same.