

Big Creek Conservation Area

25-Year Area Management Plan FY 2020-2044



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Wildlife Division Chief

7/25/2019

Date

Big Creek Conservation Area Management Plan

PLANNING TEAM

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OVERVIEW

- **Official Area Name:** Big Creek Conservation Area (CA), #8041
- **Year of Initial Acquisition:** 1980
- **Acreage:** 1,064 acres
- **County:** Adair
- **Region:** Northeast
- **Division with Administrative Responsibility:** Wildlife
- **Division with Maintenance Responsibility:** Wildlife
- **Statements of Purpose:**

A. Strategic Direction

The Missouri Department of Conservation (MDC) manages Big Creek Conservation Area (CA) to provide diverse habitat for fish and wildlife through sound management practices, while offering the public compatible outdoor recreational opportunities. Special emphasis is placed on savanna and woodland management, public recreation, and surface water protection for Forest Lake.

B. Desired Future Condition

The desired future condition of Big Creek CA is quality grassland, savanna, woodland, and forest natural communities with public fishing opportunities in several ponds on the conservation area.

C. Federal Aid Statement

N/A

GENERAL INFORMATION AND CONDITIONS

I. Special Considerations

- A. **Priority Areas:** Thousand Hills Forest and Woodland Conservation Opportunity Area, Forest Lake Priority Watershed
- B. **Natural Areas:** None
- C. **Other:** Big Creek CA is adjacent to Thousand Hills State Park.

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. **High Quality Natural Communities:** None
- C. **Caves:** None
- D. **Springs:** None

III. Existing Infrastructure

- Three parking areas
- Three fishing ponds (1.5 acres total)
- Seven fishless ponds (3 acres total)
- Thousand Hills Trail (0.7-mile hike/bike trail)

IV. Area Restrictions or Limitations

A. Deed Restrictions or Ownership Considerations: None

B. Federal Interest: 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.

C. Easements: There are two powerline easements with Ameren Electric. There is a trail easement with Missouri Department of Natural Resources.

D. Cultural Resources Findings: Yes, records kept with environmental compliance coordinators. Managers should follow best management practices for cultural resources found in the Missouri Department of Conservation (MDC) 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) Manage quality grassland, savanna, woodland, and forest habitats.
- 2) Control invasive species.

Management Objective 1: Manage old fields to provide early successional habitat.

Strategy 1: Remove undesirable woody vegetation from old fields using mechanical and chemical techniques. (Wildlife)

Strategy 2: Use management techniques, including, but not limited to, prescribed fire to maintain early successional habitat and inhibit woody encroachment. (Wildlife)

Management Objective 2: Manage forest, woodland, and savanna habitats to provide quality habitats at Big Creek CA.

Strategy 1: Complete forest inventory in FY2024. (Forestry)

Strategy 2: Implement management prescriptions from forest management plans within five years of the inventory completion, utilizing a variety of sustainable forest management techniques to promote healthy forest and woodland communities, including, but not limited to, timber harvesting, forest thinning, tree planting, seeding, and prescribed burning, with priority given to the stands that will meet the management emphasis. (Forestry, Wildlife)

Strategy 3: Utilize best management practices during forest management, as described in MDC's manuals: *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) when conducting silvicultural operations. (Forestry, Wildlife)

Strategy 4: Continuously monitor forests and woodlands for the presence of tree insect and disease outbreaks, and take appropriate actions as needed. (Forestry, Wildlife)

Management Objective 3: Monitor terrestrial species of conservation concern on Big Creek CA.

Strategy 1: Monitor every 8 to 10 years the populations of all federally-listed species and habitats to maintain current records in MDC's Heritage Database. (Wildlife)

Strategy 2: Based on monitoring results, implement or adjust habitat management, such as timing of prescribed fire and tree thinning, control of invasive species, etc. to enhance habitat of federally-listed species. (Wildlife)

Management Objective 4: Reduce invasive plants on the area.

Strategy 1: Use a combination of prescribed fire, mechanical removal, and herbicide applications to reduce invasive plants, such as sericea lespedeza, fescue, reed canary grass, autumn olive, and birdsfoot trefoil. (Wildlife)

V. Aquatic Resource Management Considerations

Challenges and Opportunities:

- 1) Maintain fishing opportunities for future generations.
- 2) Maintain water quality and quantity of the streams and ponds to support a healthy ecosystem.

Management Objective 1: Maintain self-sustaining largemouth bass and bluegill fisheries in Big Creek CA Ponds 5, 6, and 7.

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

Strategy 2: Survey Ponds 5, 6, and 7 every 5 to 10 years to evaluate fish communities beginning in FY20. (Fisheries)

Management Objective 2: Maintain a put-grow-and-take fishery for channel catfish in Big Creek CA Ponds 5 and 6.

Strategy 1: Stock Ponds 5 and 6 with channel catfish every three years beginning in FY21. (Fisheries)

Management Objective 3: In fishless ponds and ponds lacking viable fish populations, provide suitable habitat for amphibians and reptiles at Big Creek CA.

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

Management Objective 4: Improve long-term stream stability and ecological function of Big Creek and its tributaries on Big Creek CA, following *Watershed and Stream Management Guidelines for Lands and Waters Managed by the Missouri Department of Conservation (MDC, 2009)* to benefit stream communities and water quality in Forest Lake downstream.

Strategy 1: Maintain, and monitor a minimum 100-foot wide, wooded riparian corridor on all lands bordering Big Creek. (Wildlife, Fisheries)

Strategy 2: Establish, maintain, and monitor a minimum 50-foot wide, permanently vegetated riparian corridor, consistent with habitat type through which tributaries flow, on all lands bordering Big Creek tributaries on Big Creek CA. (Wildlife, Fisheries)

Strategy 3: Inspect all stream crossings to ensure they meet design specifications for light equipment crossings. Crossings that do not meet specifications should be eliminated or corrected as funding allows. (Wildlife, Fisheries, Design and Development)

VI. Public Use Management Considerations for Big Creek CA Areas

Challenges and Opportunities:

- 1) Maintain area so that it is inviting for public use.
- 2) Keep the public informed of area regulations and special events.
- 3) Provide public access to area fishing resources.
- 4) Enforce area regulations.

Management Objective 1: Maintain the current infrastructure to established maintenance standards so that the conservation area is inviting for public use.

Strategy 1: Maintain current levels of area maintenance. Keep field roads mowed to improve area access. (Wildlife)

Strategy 2: Maintain portion of Thousand Hills Trail that occurs on Big Creek CA following best management practices to reduce erosion. (Wildlife)

Management Objective 2: Provide improved pond-fishing access for the public to the stocked ponds on Big Creek CA.

Strategy 1: Ensure field trails leading to the dams of stocked ponds are mowed according to area maintenance standards. (Wildlife)

Management Objective 3: Enforce area regulations and inform area users of area regulations.

Strategy 1: Regularly patrol and enforce the *Wildlife Code of Missouri* at Big Creek CA, with emphasis on enforcing area hours of closure. (Protection)

Strategy 2: Through personal contacts, partner with neighbors in observing and reporting unauthorized uses of the areas. (Protection, Wildlife)

Strategy 3: Inform conservation area users of area regulations through contact with area personnel, providing up-to-date information about the area on MDC's website, and keeping area regulations posted on area bulletin boards. (Wildlife)

VII. Administrative Considerations

Challenges and Opportunities:

- 1) Develop a strong positive working relationship with adjacent neighbors.
- 2) Consider land acquisition, when available.

Management Objective 1: Maintain clearly identified property lines.

Strategy 1: Inspect and maintain boundaries on a five-year cycle. (Wildlife)

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

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 MDC priorities as identified in the annual MDC land acquisition priorities, may be considered.

MANAGEMENT TIMETABLE

Strategies are considered ongoing unless listed in the following table:

	Fiscal Year																									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
Terrestrial Resource Management Considerations																										
<i>Objective 2</i>																										
Strategy 1					X																					
Strategy 2							X	X	X	X	X															
<i>Objective 3</i>																										
Strategy 1	X									X								X								X
Aquatic Resource Management Considerations																										
<i>Objective 1</i>																										
Strategy 2	X					X					X					X					X					
<i>Objective 2</i>																										
Strategy 1		X			X			X			X			X			X			X				X		

APPENDICES

Area Background:

Big Creek CA is located in Adair County, 5 miles southwest of Kirksville. The land, which was known as the Thousand Hills Farm, was purchased in 1980 and borders Thousand Hills State Park. Big Creek CA and Thousand Hills State Park share 3 miles of area boundaries.

Big Creek CA lies within the north Missouri glaciated region, where surface geology consists of deposits of sand and glacial till. The area has a history of coal mining, and the strip pits left from mining are now filled with water and are shown on the area map as ponds.

MDC manages the forest, fish, and wildlife resources of this area to provide for public recreation and to protect soil and water quality. Savanna/woodland/forest management and prescribed burning are used to improve wildlife habitat.

Current Land and Water Types:

Land/Water Type	Acres	% of Area	Miles
Woodland	557	52	
Forest	174	16	
Savanna	144	14	
Old Field	109	10	
Grassland	49	5	
Open Land	24	2	
Open Water	5.5	<1	
Infrastructure	1.5	<1	
Total	1,064	100	
Intermittent Stream Frontage – Big Creek			2.5

Public Input Summary:

The draft Big Creek Conservation Area Management Plan was available for a public comment period December 1–31, 2018. MDC received five comments from three respondents (Appendix A). The Big Creek 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.

MDC responses to themes and issues identified through the Big Creek Conservation Area Management Plan public comment period.

Aquatic Resource Considerations

Is concerned about the receding water at the area. Fishing is no longer possible at Forest Lake from the parking lot trail on Michigan. Wonders if dredging or a controlled burn would improve access to the lake.

The land in question is owned and managed by the Missouri Department of Natural Resources. The lake itself is owned by the City of Kirksville. MDC does not own any of the property north of the parking lot on Michigan Street.

Public Use Considerations

Suggests adding hiking/biking trails that connect with Thousand Hills State Park and Rainbow Basin Trail.

There is a trail head for Thousand Hills Trail in the parking lot at the end of Rainbow Basin Trail that connects Big Creek CA to the south end of Thousand Hills State Park. There is no access on the north end of the area to connect Big Creek CA and Thousand Hills State Park due to private ownership of the land.

Is interested in using the area to host a triathlon or “adventure race.”

Currently there is a 10K run/walk in the summer and a trail half marathon in the fall held on the area. New events will be carefully considered as we balance our mission to care for Missouri’s forest, fish, and wildlife resources with the impact additional public use will bring.

Appreciates that the grassy roads were mowed during the summer (and not just during hunting season). Enjoys bird watching and hiking on these roads.

MDC staff try to keep areas maintained to a high level, especially on high public use areas such as Big Creek CA. Weather and other priorities can affect this at times, but we try to keep the areas as accessible and well maintained as possible.

Administrative Considerations

Appreciates maintenance done at an area parking lot and gravel road to make the area accessible.

MDC staff try to keep areas maintained to a high level, especially on high public use areas such as Big Creek CA. Weather and other priorities can affect this at times, but we try to keep the areas as accessible and well maintained as possible. MDC also works with county road districts in maintaining gravel roads leading to conservation areas.

References:

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

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 practice recommended practices for Missouri forests: 2014 management guidelines for maintaining forested watersheds to protect streams*. Jefferson City, MO: Conservation Commission of the State of Missouri.

Maps:

Figure 1: Area Map

Figure 2: Land Cover Map

Figure 3: Easement Map

Additional Appendices:

Appendix A: Big Creek Conservation Area Management Plan Public Comments

Figure 1: Area Map

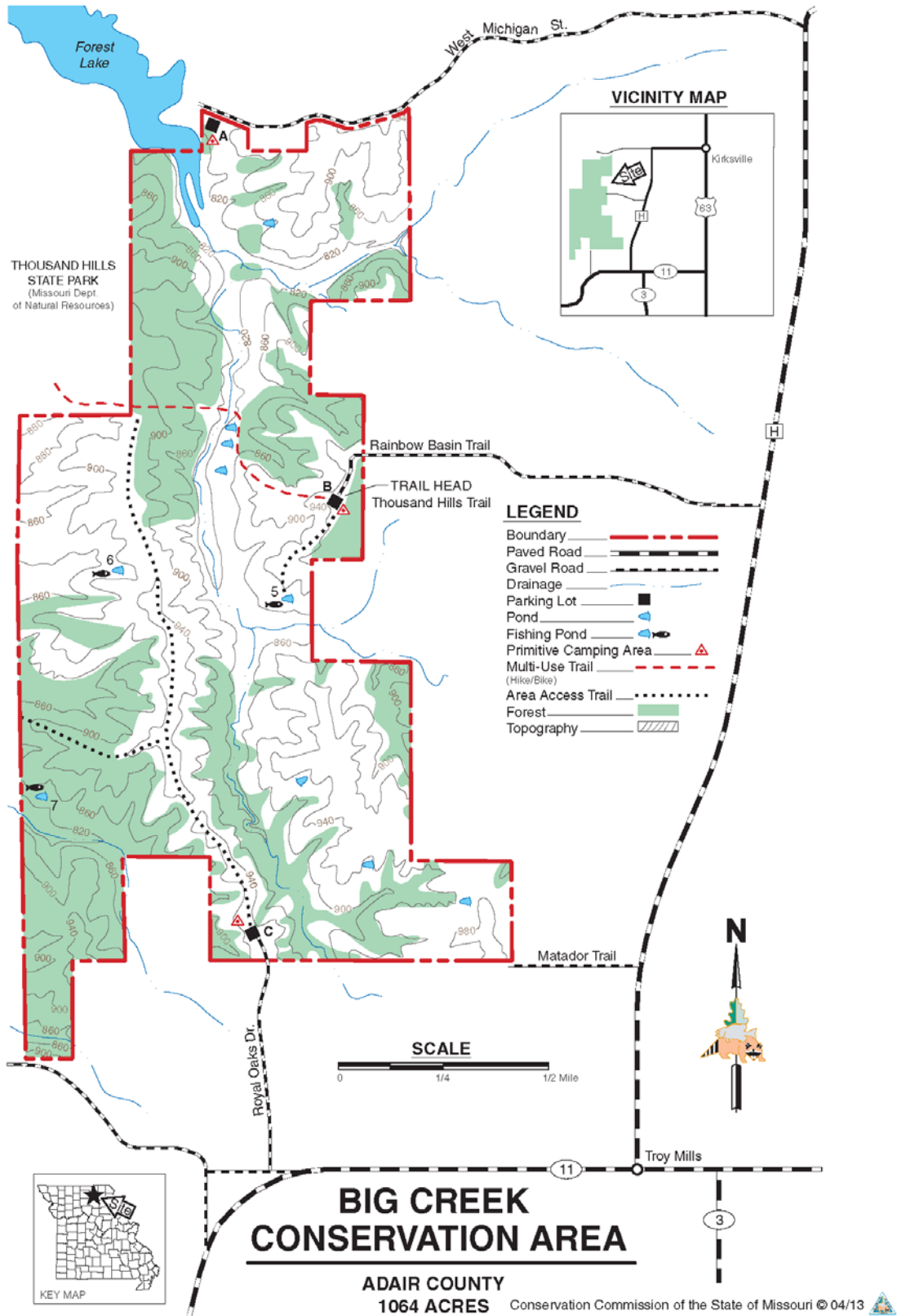


Figure 2: Land Cover Map

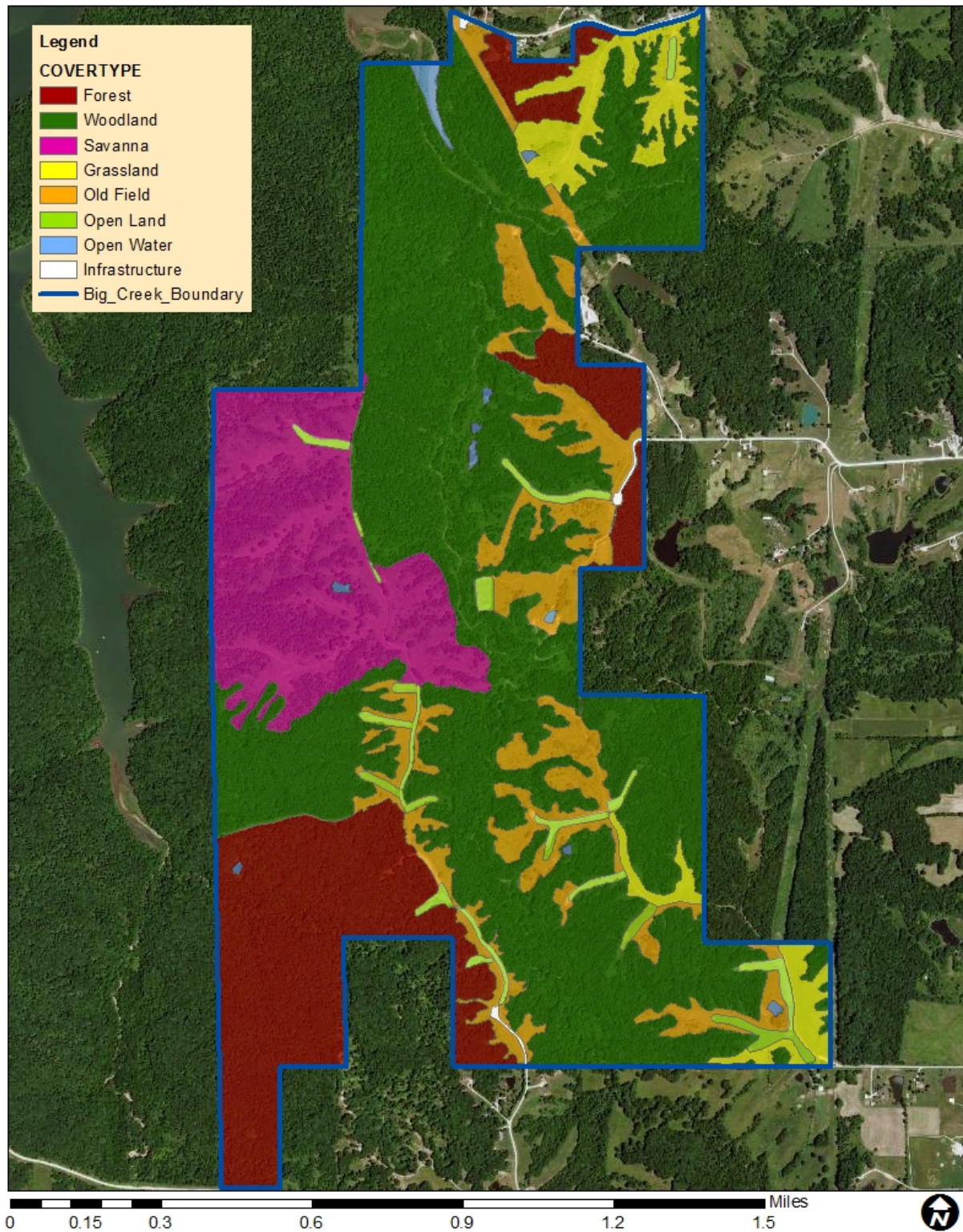
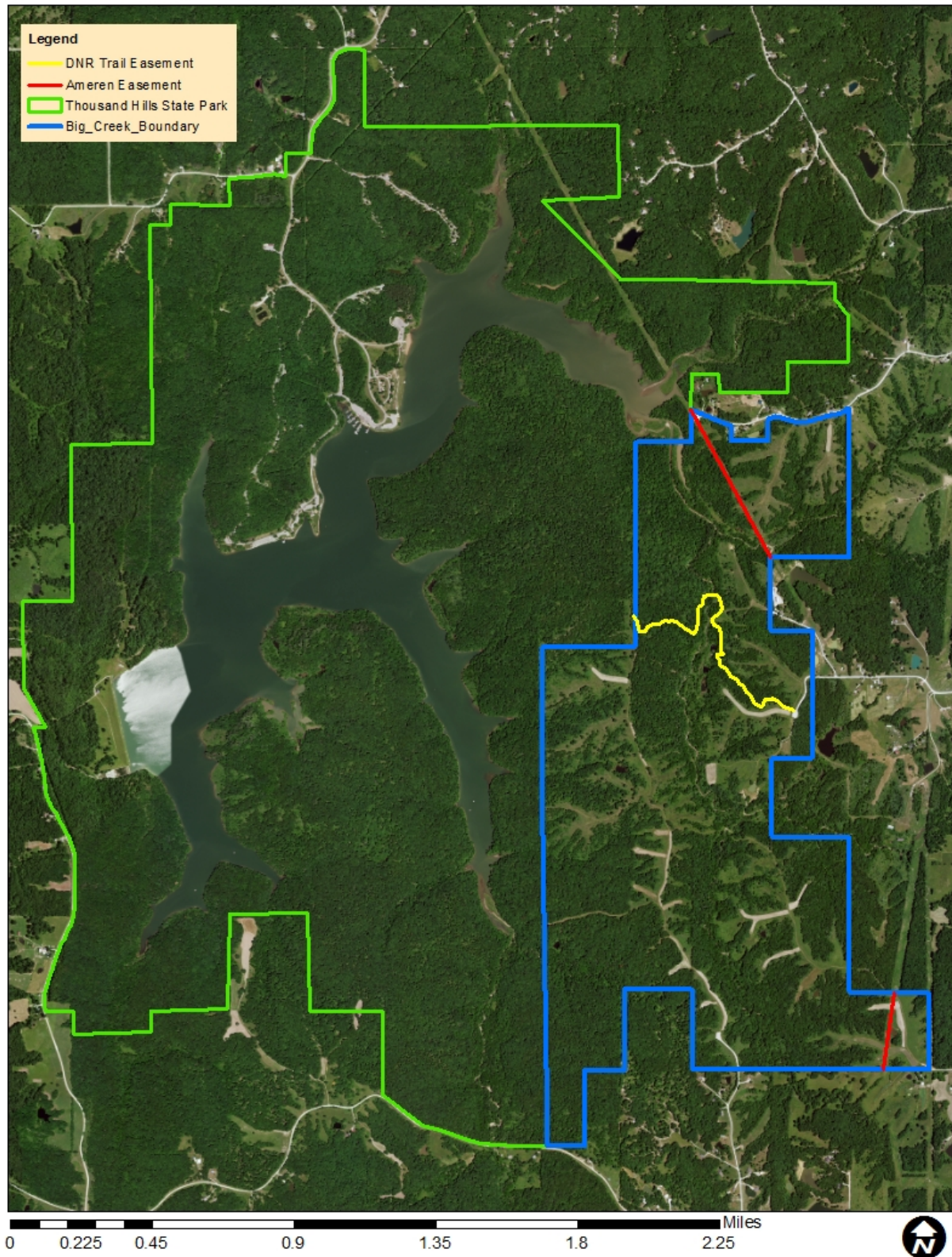


Figure 3: Easement Map



Appendix A: Big Creek Conservation Area Management Plan Public Comments

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

I live adjacent to big creek and am concerned about the receding water. You can no longer fish from the trails leading from the parking lots. The dry lake bed has turned into a willow field. Would a control burn be feasible to improve the chances that the water may return. The area seems not to be utualized to its potential. Could bike trails be added to the area. A bike trail to 1000 hills state park on the north side of the lake would make a bike trail all the way around lake. Another trail to Rainbow basin would improve the access to the area. I love this area and would like to see more people enjoy it. The parking lot is well ;maintained and I really appreciated that some of the grassy roads were mowed during the summer this year not just in Hunting Season I use them regularly.

continued : You can no longer fish at Forest LAKE from the parking lot trail on Michigan would dredging be a possibility to allow water access again.

I submitted a comment earlier but I wanted to thank you for mowing the grassy trails during the summer this year as well as during hunting season. They are great for bird watching and short distance hiking. Also thank you for maintaining the parking lot and helping with road access. Without your help the gravel road would be inaccessible in a short time. Thanks again for all you do!!

I would propose a mountain bike trail system be considered for this area. Several local bikers have expressed interest in this and would like to see it tied into the 1000 Hills mountain bike trail. We would be glad to have a meeting to discuss the trail system if the State is interested.

I am a day late, but was hoping to still add comment to the Big Creek Conservation Area. As an avid cyclist and hiker, I would like to participate in discussions regarding additional trails for these uses. I am also a local race director for triathlon and urban adventure races. I am considering looking into hosting a traditional adventure race in the future.