

Angeline Conservation Area

Ten-Year Area Management Plan FY 2018-2027



Lisa M. Allen
Forestry Division Chief

2-5-18
Date

Angeline Conservation Area Management Plan Approval Page

PLANNING TEAM

John Ackerson, Fisheries Management Biologist

Skylar Bockman, Education Center Supervisor

Susan Farrington, Natural History Biologist

Cody Roberts, Private Land Conservationist

Brad Hadley, Conservation Agent

Dawn Henderson, Resource Science Field Station Supervisor

Preston Mabry, Wildlife Management Biologist

Eileen Eck, Resource Forester

Michael Smith, Construction and Maintenance Supervisor

OZARK REGION

RCT Chair

Brad McKel 01-16-18
Signature Date

FORESTRY DIVISION

Forest Management Chief

John Tuttle 1/30/18
Signature Date

OVERVIEW

- **Official Area Name:** Angeline Conservation Area, #9512
- **Year of Initial Acquisition:** 1940s
- **Acreage:** 39,583 acres
- **County:** Shannon
- **Division with Administrative Responsibility:** Forestry
- **Division with Maintenance Responsibility:** Forestry
- **Statements of Purpose:**
 - A. Strategic Direction**

Manage for healthy forests, the restoration and enhancement of native plant and animal communities, and provide outdoor recreational and educational opportunities.
 - B. Desired Future Condition**

The desired future condition of Angeline Conservation Area (CA) is a diverse contiguous forest/woodland landscape that provides diverse outdoor recreational opportunities for multiple user groups.
 - 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:** Angeline Conservation Area is within or contains parts of the Audubon Society Current River Watershed Important Bird Area, Current River Stream Reach Conservation Opportunity Area, Elk Restoration Zone, Current River Hills Forest/Woodland Conservation Opportunity Area, Current River Hills Glade Conservation Opportunity Area, Cave and Karst Conservation Opportunity Areas, Priority Forest Landscape, and Cave Focus Area.
 - B. Natural Areas:** Angeline Conservation Area contains the following designated natural areas: Pipestem Hollow, Alley Spring, and Spurgeon Hollow Natural Areas.
 - **Alley Spring Natural Area:** This natural area occurs on both Missouri Department of Conservation (Department) lands and adjacent lands of the Ozark National Scenic Riverways. Alley Spring, the natural area's namesake, is the seventh largest spring in Missouri. The cool waters issuing forth from Alley Spring flow through a spring branch for a half mile before entering the Jacks Fork River. Here in the spring branch, cool water (58 degrees Fahrenheit) provides habitat for

colorful Ozark fishes, including the southern redbelly dace, the Ozark sculpin, and the bleeding shiner. On the dry rocky ridges of this natural area are some of the highest quality old-growth stands of white oak and shortleaf pine woodland known in the Ozarks. These stands were spared the heavy, indiscriminate timber cutting of the Ozarks that occurred from 1880-1920. Also protected is Branson Cave, one of the most biologically diverse caves known in Missouri. The natural area conserves five species of conservation concern dependent on spring and cave natural communities.

- **Pipestem Hollow Natural Area:** This area includes a number of karst features, including caves, a losing stream, springs, and a stream down cut through dolomite bedrock. A high density of small caves within such a small area is indicative of extensive karst formation. The area contains a 1.5-mile long karst valley with 50-80-foot dolomite bluffs.
- **Spurgeon Hollow Natural Area:** The glades of Spurgeon Hollow occur along the break between the Gasconade and Eminence geologic formations. These scenic openings in the extensively wooded lands to the north of Eminence support a rich diversity of native wildflowers. One species, Bush's skullcap, is restricted to the Ozark ecoregion.

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:** Yes, records kept with the Department natural history biologist. Managers should follow the Cave Management and Recreation policy found in the Department Resource Policy Manual. All caves on this and other conservation areas are closed or restricted to public access. The fungus that causes White-nose Syndrome in bats has been documented in Missouri, resulting in the Department's White-nose Syndrome Action Plan that limits public access to protect bats.
- C. Springs:** Yes, records kept with the Department natural history biologist.
- D. Others:** Angeline CA features high quality dolomite glade and fen complexes. The fen areas are distinguished by shallow soils with groundwater forming ooze areas and spring rivulets. Both the glades and the fens in this area benefit from periodic prescribed burning to prevent and control woody plant encroachment, encourage nutrient turnover, and foster herbaceous plant health and diversity. The area also features sinkholes and at least one sinkhole shrub swamp. The area serves as a very important forested watershed protecting the water quality and high biodiversity of the Current River and the Jacks Fork River.

III. Existing Infrastructure

- Eminence District Office (seven structures), Americans with Disabilities Act (ADA) accessible
- Radio relay tower
- Flat Rock Fire Tower
- Bay Branch Shooting Range
- Lick Log Hollow Nature Trail (1 mile)
- Multiple-use (hike/horse) trail (9.5 miles)
- Multiple-use trailhead picnic area with two privies (ADA accessible)
- Four gravel parking lots
- Scenic overlook
- Gravel roads (approximately 19 miles maintained by the Department)

IV. Area Restrictions or Limitations

A. Deed Restrictions or Ownership Considerations: The National Park Service and the Department signed a Memorandum of Understanding in 1968 and 2011. This agreement established a management zone on Department lands within the Ozark National Scenic Riverways boundary. This affects approximately 400 acres near Alley Spring and Bay Branch.

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:

- Missouri highways 19 and 106 pass through the area along with secondary highways D, JJ, YY, Z, and N.
- There are several county road rights of way on the area.
- Howell-Oregon Electric Cooperative, Intercounty Electric Cooperative, and Show-Me Power Corporation have easements for power lines across this area.
- There is a mineral rights easement at the Shadow Rock Lake tract.
- There is one railroad right of way.

D. Cultural Resources Findings: Yes, records kept with 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:** Establishing accurate and identifiable boundary markers is a priority for this property.

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

Challenges and Opportunities:

- 1) Improve and restore forest/woodland habitat to achieve greater biodiversity and continue to implement sustainable forest management.
- 2) Improve old field habitat for game and non-game wildlife species.
- 3) Monitor and eradicate invasive plant and animal species.

Management Objective 1: Maintain, enhance, and restore healthy forests and woodlands.

Strategy 1: Inventory compartment according to forest inventory schedule.
(Forestry)

Strategy 2: Implement management recommendations as outlined in approved forest inventories and following the Department's *Missouri Watershed Protection Practice Recommended Practices for Missouri Forests: 2014 Management Guidelines for Maintaining Forested Watersheds to Protect Streams* (2014b).
(Forestry)

Management Objective 2: Maintain open land.

Strategy 1: Improve open land habitat on a limited basis by setting back succession in old fields for diverse wildlife use and associated diverse public use.
(Forestry, Wildlife)

Management Objective 3: Maintain biodiversity.

Strategy 1: Survey for high priority invasive species (e.g., spotted knapweed, Japanese stiltgrass, and feral hogs). Eradicate and/or control these species as possible. (Forestry, Wildlife)

Strategy 2: Restore glades, fens, and woodlands as they are identified in forest inventory process, as resources allow Use prescribed fire and other management tools as appropriate to restore these communities. (Forestry, Wildlife)

Strategy 3: Manage existing glades, fens, and woodlands. These will be managed using prescribed fire and other management tools as appropriate to restore these communities. (Forestry, Wildlife)

VI. Aquatic Resource Management Considerations

Challenges and Opportunities:

- 1) Numerous fishless ponds are located unevenly across the area.
- 2) Opportunistically create new fishless ponds for wildlife use.
- 3) Reduce sedimentation by protecting and establishing riparian corridors, and repairing and/or redesigning failing stream crossings in order to maintain and enhance water quality of the Current and Jacks Fork watersheds.

Management Objective 1: Provide habitat for amphibians and reptiles.

Strategy 1: Maintain and seek approval to construct additional fishless ponds as habitat for amphibians and reptiles, and as a source of water for other wildlife. (Forestry)

Management Objective 2: Protect and enhance the riparian corridor along the Jacks Fork (and its tributaries), Current River tributaries, springs, seeps, fens, and other unique communities associated with bottomland forest from erosion.

Strategy 1: Minimize sedimentation to the Jacks Fork and Current River tributaries from land management practices and/or road systems that will affect biodiversity of unique habitats by following the practices recommended in *Missouri Watershed Protection Practice Recommended Practices for Missouri Forests: 2014 Management Guidelines for Maintaining Forested Watersheds to Protect Streams* (Missouri Department of Conservation, 2014b), *Missouri Forest Management Guidelines: Voluntary Recommendations for Well-Managed Forests* (Missouri Department of Conservation, 2014a), and *Watershed and Stream Management Guidelines for Lands and Waters Managed by Missouri Department of Conservation* (Missouri Department of Conservation, 2009). (Forestry)

Strategy 2: Employ best management practices along multiuse trails. (Forestry, Design and Development)

Management Objective 3: Design and maintain appropriate stream crossings to allow access while minimizing impact to aquatic communities.

Strategy 1: Evaluate stream crossings as concerns arise and apply practices outlined in the Department's *Missouri Watershed Protection Practice Recommended Practices for Missouri Forests: 2014 Management Guidelines for*

Maintaining Forested Watersheds to Protect Streams (2014b) and the Department's *Watershed and Stream Management Guidelines for Lands and Waters Managed by Missouri Department of Conservation* (2009). (Fisheries, Forestry, Design and Development)

Strategy 2: Maintain an equestrian watering station to minimize negative impacts to water quality. (Forestry, Fisheries)

VII. Public Use Management Considerations

Challenges and Opportunities:

- 1) Maintain management goals while meeting high public use demands.
- 2) Enforce laws and regulations.

Management Objective 1: Provide and manage for recreational opportunities compatible with natural community management and the Department's Public Use Policy.

Strategy 1: Adapt, maintain, improve or alter existing infrastructure with appropriate approvals to provide a high-quality user experience. (Forestry, Design and Development)

Strategy 2: Maintain, improve or alter existing equestrian/multiuse trails with appropriate approvals. Engage stakeholders if creating new trails or making significant changes to the existing trail network. (Forestry, Design and Development)

Strategy 3: Promote and advance educational opportunities for stakeholders. (Outreach and Education, Forestry)

Strategy 4: Consider and utilize, where appropriate, management applications that will maintain or enhance watershed experiences and opportunities. (Forestry)

Management Objective 2: Maintain area to invite public use, consistent with area regulations and state laws.

Strategy 1: There is light but regular use of the area by locals throughout the year, with a significant increase of non-local use during the major hunting and summer tourism seasons. Public use is not to be discouraged, but access should be confined to areas of low impact to the landscape. Any unimproved roads constructed for the purpose of timber harvest and determined to be unnecessary for future management will be closed immediately post-harvest. Existing unimproved roads determined to not need altering will continue to be maintained or improved through low-impact, environmentally sensitive methods, and will have minimal right of way widths. In cases of an open trail crossing a riparian

corridor, only minimal disturbance to the riparian portion will be allowed. If a road is identified as a sensitive area through the inventory process a plan will be developed to alter or improve the trail and will be reviewed through the appropriate approval process. (Protection, Design and Development, Forestry)

Strategy 2: Special, routine, and group patrols will be conducted as necessary according to demands caused by user impact. (Protection)

VIII. Administrative Considerations

Challenges and Opportunities:

- 1) Resolve any boundary line disputes.
- 2) Inholdings and outholdings exist, creating management challenges and opportunities.
- 3) Maintain boundary lines.

Management Objective 1: Resolve boundary line disputes as they arise.

Strategy 1: Request surveys as needed. (Forestry)

Management Objective 2: Maintain boundary lines.

Strategy 1: Annually maintain boundary lines on a five-year rotating schedule. (Forestry)

Lands Proposed for Acquisition:

When available, inholdings 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

All strategies for this management plan are considered ongoing.

	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27
Terrestrial Resources Management										
<i>Objective 1</i>										
Strategy 1										
Compartments	22, 30	14, 19	16,20	12,33	2,28	17,18,37	34,35	4,25	6,23	10,11

APPENDICES

Area Background:

In the pre-settlement era, from 1580 to 1700, Angeline Conservation Area (CA) had a very low human population and was forested with shortleaf pine, various oaks, and hickories. From 1701 to 1820, the area was repopulated by Native Americans and by 1820 the area was starting to be settled by European Americans. The population recorded a peak in the early 1900s when a large lumber mill was located in West Eminence. The Missouri Mining and Lumber mill operated from 1909 to 1927 and most of the shortleaf pine was harvested during this period on Angeline CA. Smaller mills operated during and after this period and mainly cut oak timber. After the large mill shut down, some of the land was sold to farmers and some sold to other timber companies. Moss Tie Company acquired much of the Missouri Mining and Lumber land and later sold the land to Kerr-McGee Corporation, who continued to harvest the timber on a 15- to 20-year cycle. As a result of the open range grazing practices, much of the area was grazed by livestock. Fire, started by neighboring landowners, was used to promote grass production. Substance farming of row crops and livestock occurred throughout Angeline CA; many of these areas have now reverted back to old fields. With the purchase of the Clow and Alley Spring tracts, those areas were protected from destructive grazing and fire. The same is true of the Kerr-McGee land purchased much later in 1995. Open range grazing was closed in 1969 and fire control efforts have continued to reduce the acreage burned by arson fires. Currently, prescribed fire and timber harvesting is being applied to maintain healthy and diverse glades, woodlands, and forests on various rotations based on management objectives. Fire suppression efforts are still in place to reduce destructive fire activity.

Current Land and Water Types:

Land/Water Type	Acres	Miles	% of Area
Forest and Woodland	39,394		99
Glade	112		< 1
Old Field	77		< 1
Total	39,583		100
Stream Frontage		29.75	

Public Input Summary:

The draft Angeline Conservation Area Management Plan was available for a public comment period March 1–31, 2017. The Missouri Department of Conservation received comments from 10 respondents (Appendix A). The Angeline 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 Angeline Conservation Area Management Plan public comment period.

Suggests planting more tree and shrub species which will be beneficial to bears and other wildlife species.

The Department employs management practices to best maintain the health of our various ecosystems and provide healthy populations of native vegetation. Forest and old field management provides early successional habitat that favor forbs, shrubs, vines, and trees that provide forage for bears and other wildlife in spring and summer. Later in the season, mast is provided by oak and hickory trees.

Opposes prescribed burning activities.

Under the right circumstances, prescribed burning is a useful and effective tool for managing and maintaining natural communities. Prescribed burning can be used as a tool for prairie, glade, and woodland management; the control of invasive species; and for the improvement of wildlife habitat. Prescribed burning provides increased forage for wildlife.

Concerned this plan does not discuss more detailed outdoor land use related to users who hunt and fish.

With the exception of Lick Log Nature Trail, hunting is allowed on all of Angeline CA during legal seasons. The first goal of the Department is to ensure healthy and sustainable forest, fish, and wildlife resources. All of our management decisions reflect this. The Department manages the area for variety of recreational opportunities by multiple user groups. For more specific information regarding fishing and hunting, refer to statewide hunting and fishing guidelines and regulations, the *Wildlife Code of Missouri*, the Fall Deer and Turkey Booklet, and the Spring Turkey Booklet. If you have specific inquiries contact the area manager at the Eminence office.

Suggests adding fishing ponds.

There are no current plans to add fishing ponds to Angeline CA. Fishing is allowed on local rivers with proper licenses. Refer to statewide fishing guidelines and regulations for more information.

Suggests not allowing all-terrain vehicles and off-road vehicles, except in case of emergencies on the area.

All-terrain and off-road vehicle use is restricted to public roads and department trails open to vehicular use.

Suggests better educating users about the importance of Angeline CA and impacts of all-terrain vehicles and off-road vehicles to natural resources.

The Department strives to maintain areas for healthy fish, forest, and wildlife, and has regulations that limit all-terrain vehicles and off-road vehicles to use only on public roads and department trails that are already open to vehicular use. There are educational efforts such as news releases and educational programs to inform public of the importance of conservation and area resources.

Suggests adding better signage to the equestrian trail head from Highway 19 and country road.

Thank you for the suggestion. The Department's Angeline CA management team will assess signage and make improvements as necessary.

Suggests adding a numbering system to the area map with corresponding numbers on trail signs to aid in navigation.

The Department's Angeline CA management team will assess signage and make improvements as deemed necessary. There is currently a color-coded multi-use trail system in place that corresponds to trail maps located on the public area webpage as well as in the area plan.

Concerned about the number of equestrian users on the area.

Equestrian users are restricted to designated multiple use trails or public roadways. Groups of 10 or more must obtain a special use permit. Regulations are in place to minimize damage to areas surrounding equestrian usage.

Suggests expanding, upgrading, and maintaining equestrian trails.

Maintaining the multiple use trails is a current and ongoing initiative that is detailed in the Angeline CA Management Plan. Currently, there are no plans to expand the multiple-use trails. In addition to the 9.5 miles of trail open to equestrian use that the Department provides, there are 25 miles of National Park Service Ozark National Scenic Riverways horse trails located adjacent to the Angeline CA.

Supports the utilization of low-impact methods to discourage soil and stream bank erosion.

The Department's Angeline CA management team agrees that these resources need protection. Best management practices to minimize disturbance to soil, wetland, and riparian areas are

employed during any kind of work and are detailed in this area plan as well as in the Department's *Missouri Watershed Protection Practices* booklet (2014b). These are available at the Eminence office located on Highway 19.

Suggests adding barriers to trails with erosion issues and signs that explain their purpose.

Trails with significant erosion issues will be addressed and either mitigated, rerouted, or closed and signed properly.

Suggests rerouting Fox Pen Road Access Trail to avoid further erosion.

The Department's Angeline CA management team plans to continue to monitor erosion, perform maintenance and repair damage, and make any changes to the trail routing system, as is determined to be needed. Any closures or changes will be signed.

Suggests creating a "cutoff" trail to reduce strain on equestrian users on the trail located between County Road 203 and Lick Log Falls.

The Falls Trail is currently a multiple-use trail that runs between Lick Log Falls and County Road 203.

Suggests adding 3 to 4 miles of multiple use trails between County Road 208 and fire roads 239 and 330.

There are currently no plans to add infrastructure, including additional miles of trail in the area, as it is currently being managed for other initiatives such as glade and woodland conservation.

Suggests opening multi-use trails to hiking and equestrian use during firearms deer hunting seasons and spring turkey hunting seasons.

Equestrian use on the 9.5-mile multiple-use trails is prohibited during the fall firearms deer season and spring turkey hunting seasons to reduce conflicts between the diverse user groups. The area is maintained for multiple use and is open to equestrian usage the rest of the year outside of these seasons.

Suggests posting "no hunting" signs year-round on multiple use trails.

Per Department regulations, hunting is allowed on multiple-use trails on Angeline CA during the fall deer firearms season and the spring turkey season.

Opposes closing any existing roads.

There are currently no initiatives to close any public roads and Department trails except in the case of temporary maintenance or repair. Roads or Department trails with issues will be addressed and either mitigated, rerouted, or temporarily closed and signed properly.

Supports acquiring privately-owned inholdings when available.

Adjacent land may be considered for acquisition from willing landowners, when available, if the tract improves area access, provides public use opportunities, or meets Department priorities.

References:

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

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

Figure 3: Aerial Map

Figure 4: Topographic Map

Figure 5: Compartment Map

Figure 6: Land Cover Map

Figure 1: Area Map

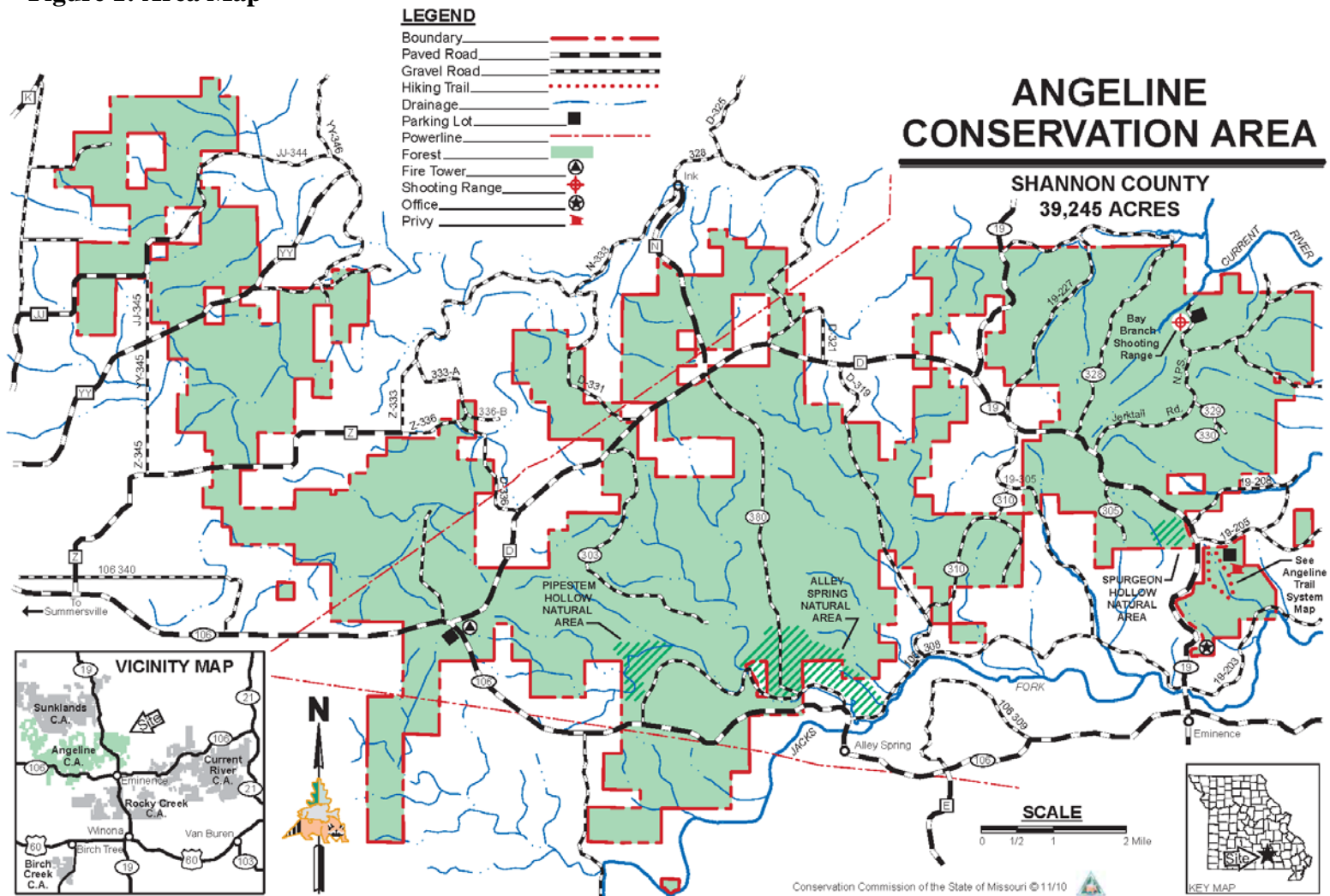


Figure 2: Trail System

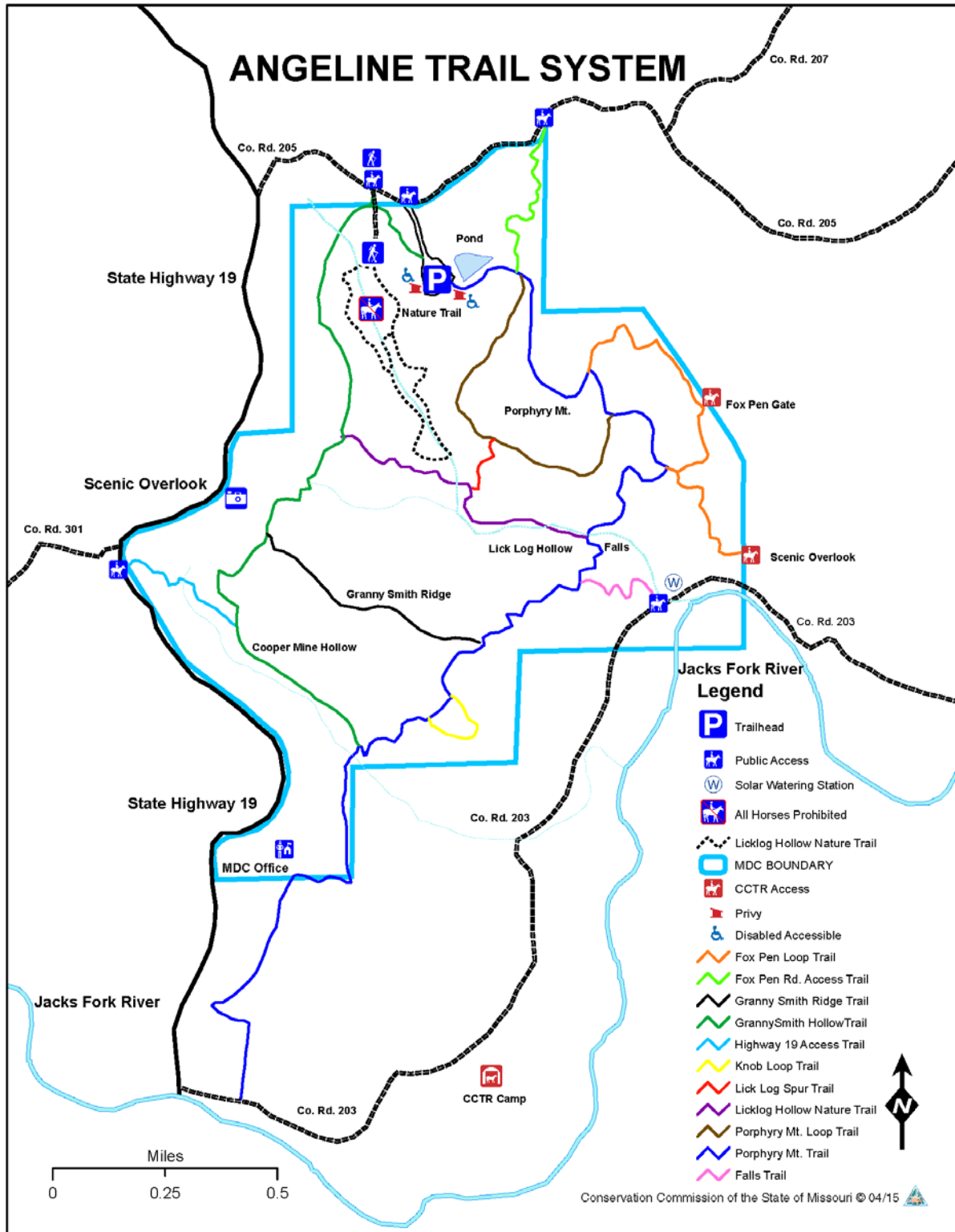


Figure 3: Aerial Map

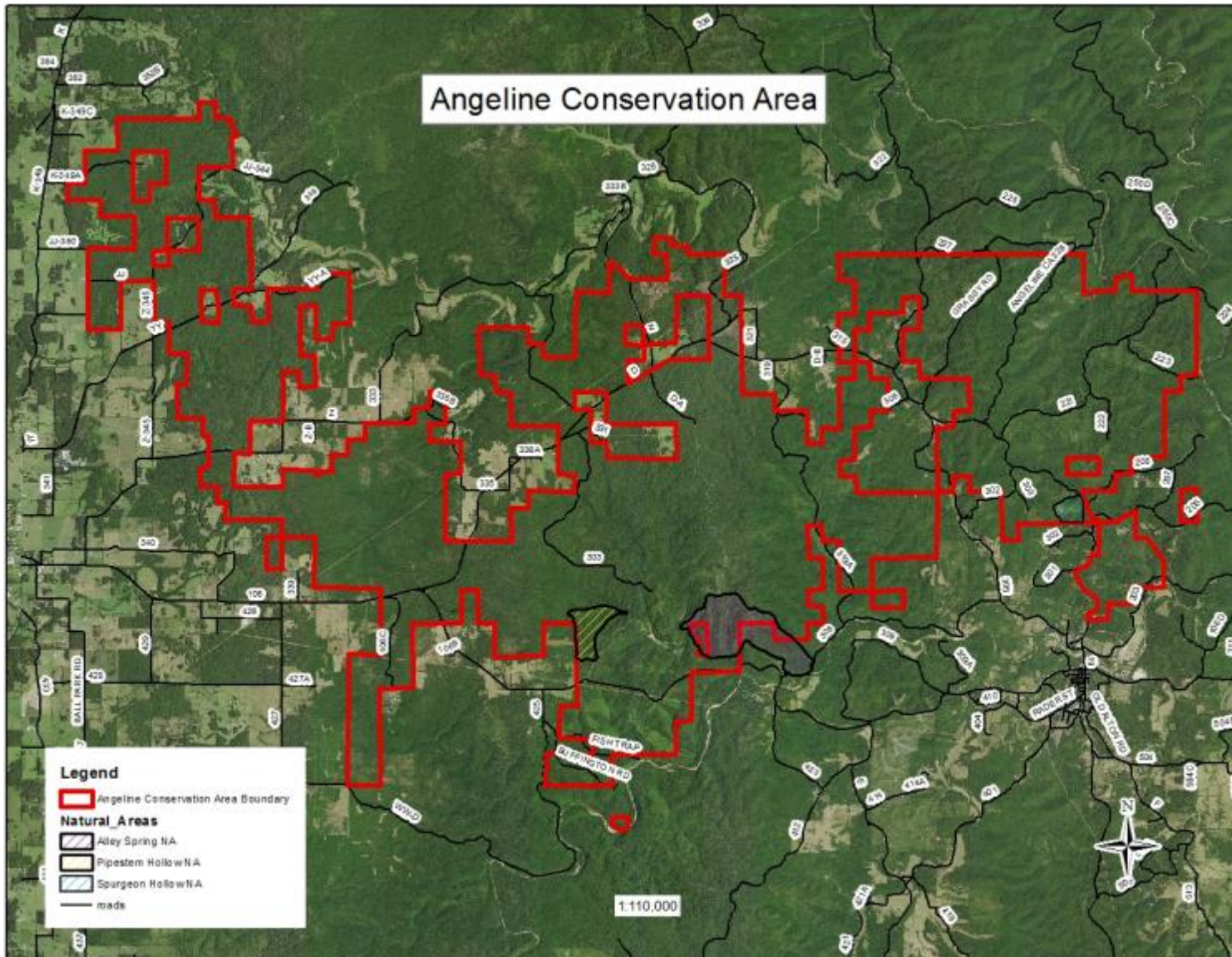


Figure 4: Topographic Map

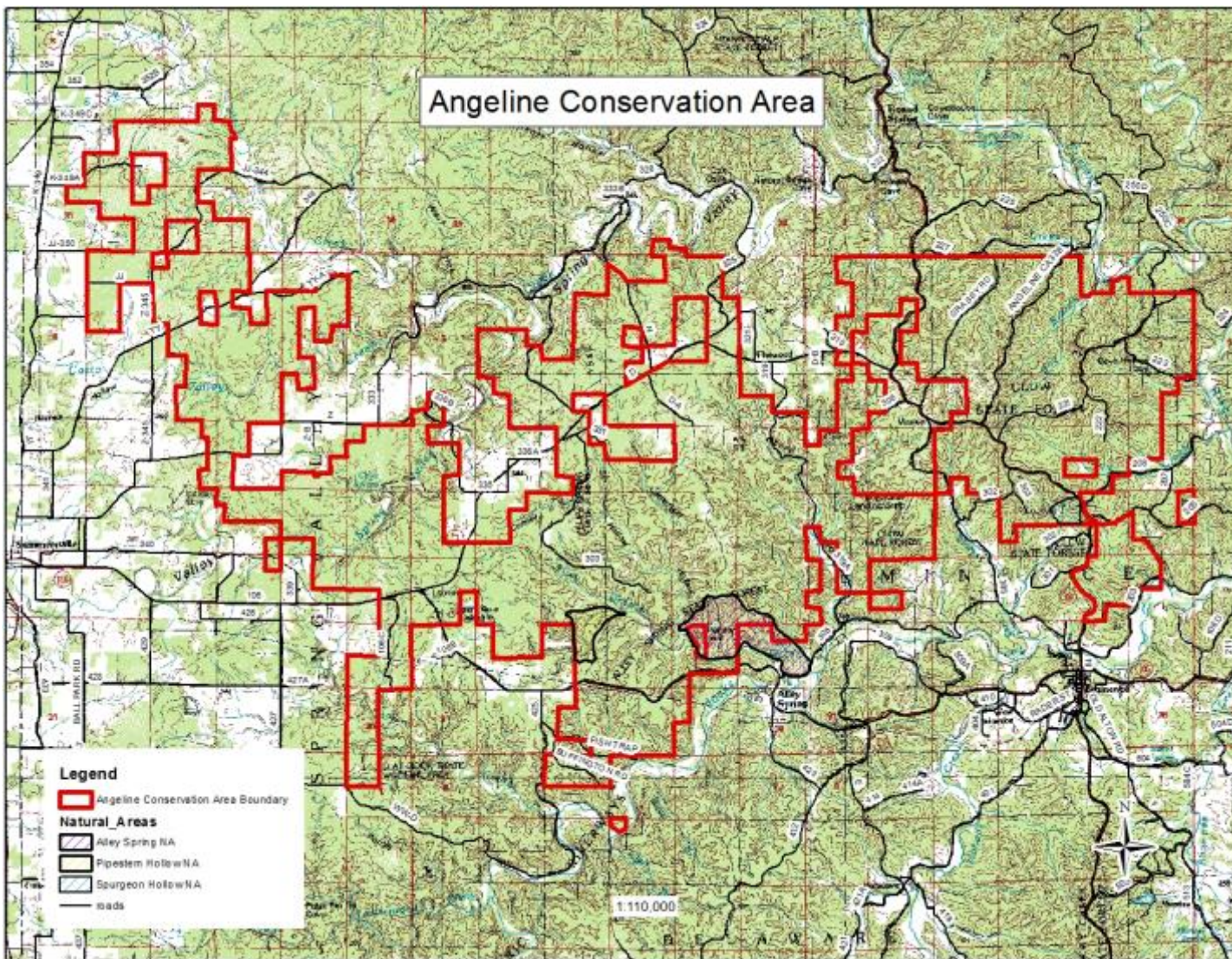


Figure 5: Compartment Map

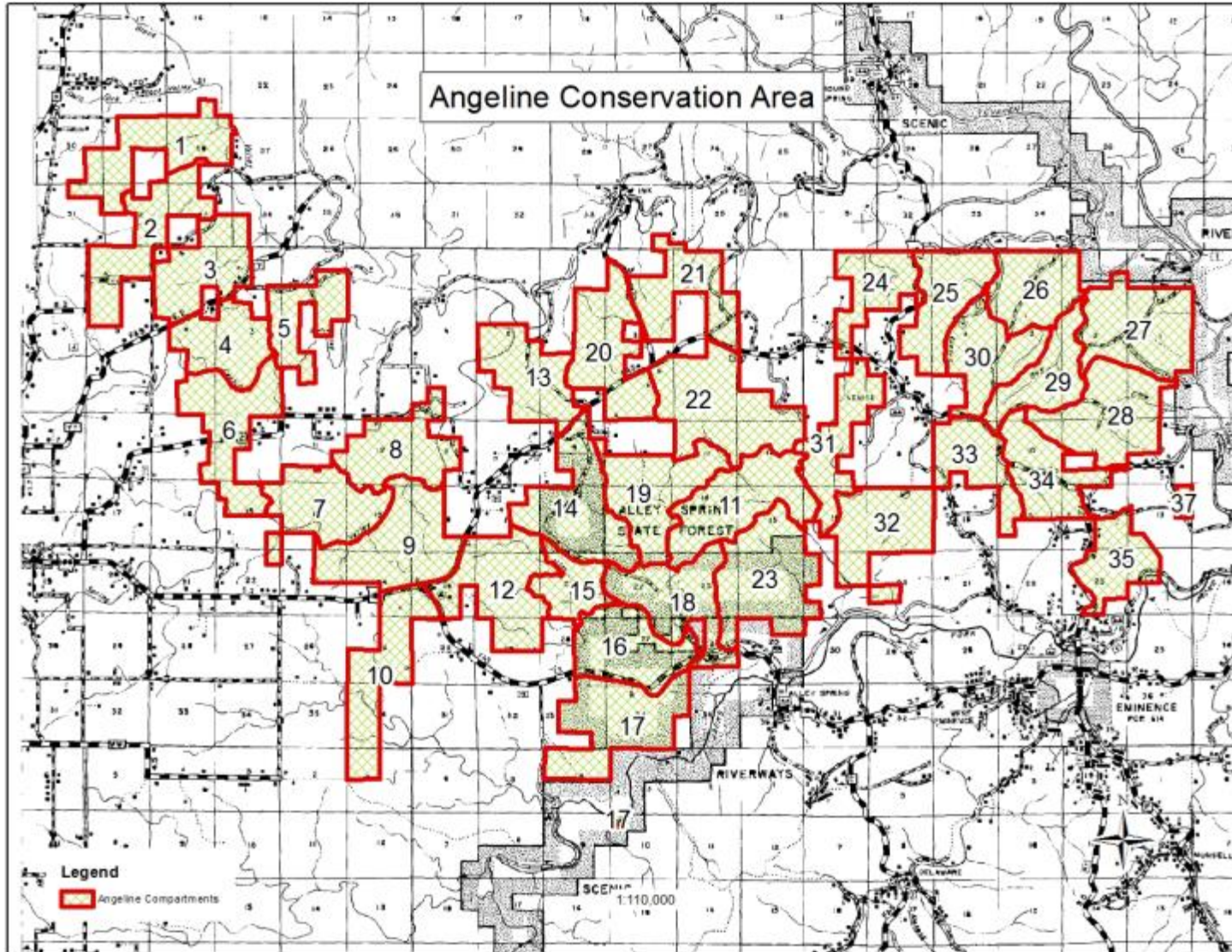
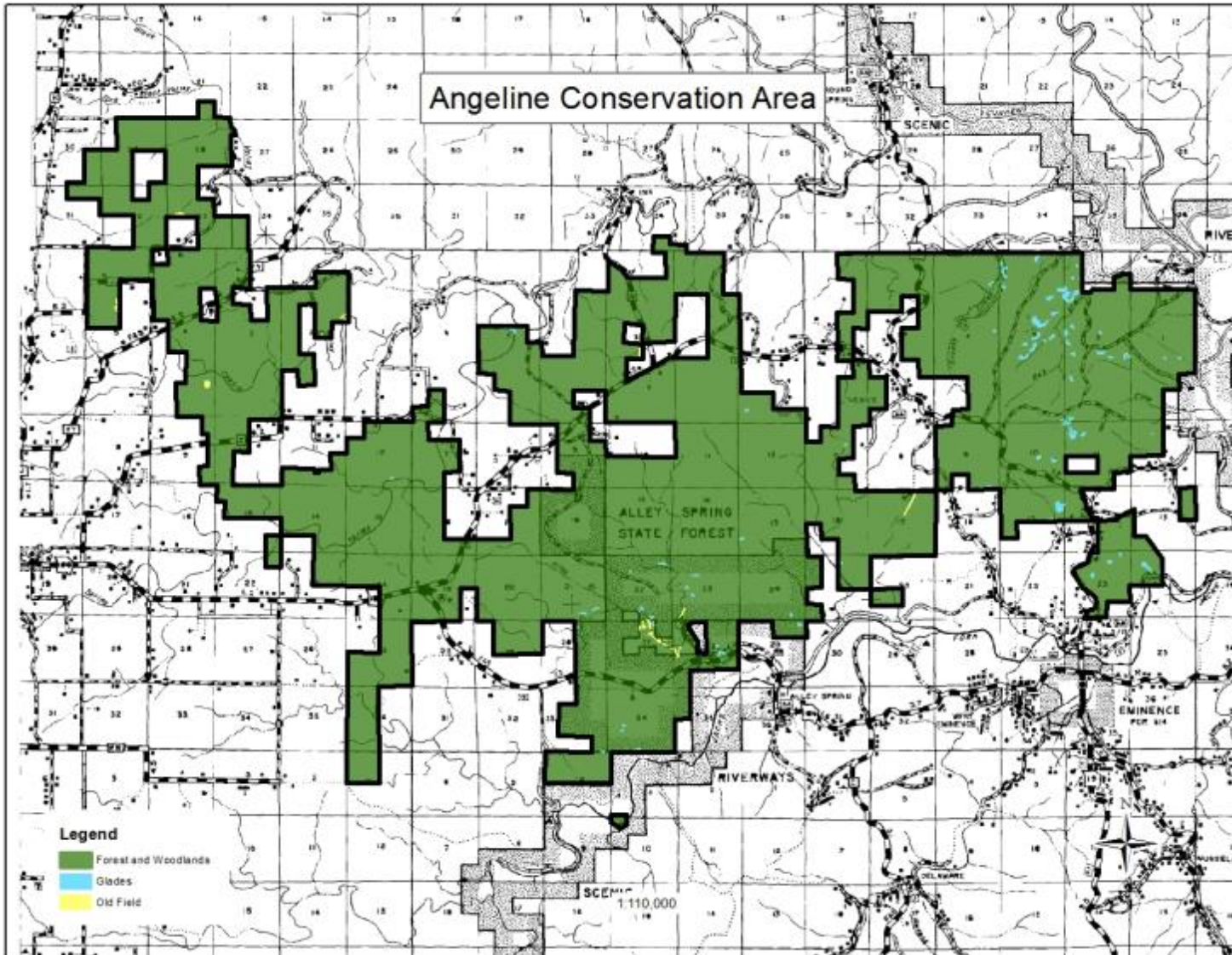


Figure 6: Land Cover Map



Appendix A. Angeline Conservation Area Management Plan Public Comments

Received during public comment period (March 1–31, 2017):

Outdoor land use is not discussed in any detail and should be. Other than hiking and bird watching the area supports wildlife that should be discussed in terms of hunting and methods plus fishing. While it is understandable that access across pristine areas be limited, foot access and trails should be discussed in terms of being able to participate in hunting, fishing and perhaps camping. Concepts of non-fishing lakes for the protection of a couple of species appears misguided as these species should be able to propagate with other land use. My recommendation is to set aside specific portions of water bodies for limited access and use while enabling outdoor enthusiasts at least a portion of the area for fishing and bird watching.

Angeline is much larger than most CA's in Missouri yet it appears that the 10 year plan is more focused on protection than multiple use. There are many projects going on with sensitive species being encouraged to expand populations. These are not discussed in detail with regarding to area restrictions and acreage withdrawal from public use.

In general the plan is heavily biased with protectionism and that is at the expense of most of the population of Missouri. Try a more balanced approach and you will receive more support for the planning initiative.

** ***, Biologist

This immense acreage should be planted with numerous tree and shrub species which provide a multitude of food sources that will accommodate and supplement the nutritional needs of bears and other animal and bird species at times of the year when acorn and hickory mast is generally not available. In addition to, and as a supplement to oak/hickory mast, other species of off-season food source plants should be planted and nurtured wherever feasible in the Area. As a suggestion, I will list a number of food species that will benefit bears- from the time they come out of hibernation in the spring until they once again go into hibernation in the fall of the year. In no particular order, the MDC should consider planting: crab apples, persimmons, both red and white mulberries, gooseberries, red clover, blackberries, sun flowers, raspberries, chokecherries, wild cherries, service berries, wild plums, wild rose, elderberries, scarlet sumac, paw paws, and any other species that I failed to mention, that would be as suitable food, so that bears and other wildlife would have plenty of readily available food sources at their disposal during the spring, summer, and early fall months.

This is obviously a key natural area to be maintained carefully for future generations. My views
1) keep ATVs & off road vehicles out except in life emergencies
2) careful re too many horses
3) if money avail, have staff monitor areas and signs explaining goals, benefits of, wildlife, no

ATVs, etc 4) encourage hiking, birding, study of plants & trees 5) Maintain paths with barriers from straight downhill accesses (erosion) and signs explaining. I know it's idealistic re financial costs - I'd like to see these areas healthy for great grandchildren. Am still studying your info & may add more later in March. Thank you for reading.

Thank you for asking for public comment, I appreciate the opportunity. I have just three items of suggestion. 1. Would it be possible to provide better signage to the equestrian trail head from Highway 19, and along the county road to the trail head. There are many visitors from other states that are unable to find the trail head. They end up at Eminence asking for directions. 2. On the detailed map from the website, could you include numbers that would be referenced to numbers that are placed on the trail, so equestrians and hikers knew where they were on the trail. Very similar to the "you are here" concept that are on exit maps in buildings? 3, Please allow use of block 35 during the different gun hunting seasons for both equestrians and hikers. Those seasons are prime times for other recreational use. I believe it is close to 60 days a year that area would be closed. Thank you again for the opportunity to comment. Sincerely

MDC Angeline Conservation Area Individual MO Citizen Comments 3-31-17

This is obviously a key natural area to be maintained carefully for future generations. My comments based on observations, reading and life experience:

Upgrade still more: education of facts re how this large area helps us all in the Ozarks & Missouri. I think this is key. I know why, you know why, but unfortunately most citizens still do not. This, ideally, will include science/nature presentations to children in our public schools, state-wide.

Keep ATVs & off-road vehicles out except in life emergencies; and include more regularly accessible info printed in magazines and pamphlets, signs - why ATVs can be negative to soil, water & stream banks, plants & wildlife.

Maintain & perhaps improve monitoring of area regarding number of trail riders/horses (for all natural areas and conservation areas too)

When/if money available:, have staff monitor areas and establish signs explaining goals, benefits of, wildlife info, no ATVs, etc

Continue & improve methods to encourage hiking, birding, study of plants & trees

Maintain paths with barriers from straight downhill accesses (erosion) and signs explaining.

I know budget always effects implementing all of these. My husband and I would like to see these areas healthy for all future citizens as well as our own family. We are still studying the facts concerning our Conservation and Natural Areas. I hope to give intelligent, fact-based thoughts in the future. Thank you for your consideration of my comments. And thank you for

your work for our state conservation.

Respectfully,

My wife and I regularly access this area for recreational purposes. I understand the need to redesign some of the stream crossings to reduce sedimentation, but I sincerely hope you do not close any of the existing roads.

Please expand, upgrade, and maintain more equine trails in the CA. Appreciate the efforts to include a place to water horses that will not degrade the stream banks. Thank you for your hard work.

Intensify efforts to acquire private inholdings to increase acreage within the area and consolidate boundaries.

Limit or discourage controlled and prescribed burn activity.

Utilize low impact methods to discourage soil and stream bank erosion.

We would like to see the Angeline equine and hiking trail system areas be posted no hunting year round. These are some of the only areas that we can safely ride/hike during hunting seasons.

Thank you for the opportunity to comment on the Angeline Conservation Area Draft Management Plan. Back Country Horsemen of Missouri commends the Department for allowing equestrian use of the multi-use trails on Angeline CA, and we appreciate the efforts to stabilize the trails and the intent to continue that permission.

One of the most serious areas of erosion on the existing trail system is on the Fox Pen Road Access Trail. The excessive erosion occurs on the several steep segments. This could be solved by rerouting the trail and letting nature stabilize the eroding segments. From the point where the trail leaves the Fox Pen Road (Co. Rd 205) the trail should stay on a general contour proceeding southwest, staying above the pond, and slowly descending to intersect the trailhead road a little north of the loop.

The original “new” trail between Co. Rd 203 and Lick Log Falls required one to climb well over 100 feet in elevation then descend nearly as many feet to the Falls. The “cutoff” trail that removed about 1/3 of that climb is much appreciated. I would request that another “cutoff” be cut through at a lower elevation—possibly connecting the next two lower switchbacks. This cutoff would reduce strain on trail users (horses and people), reduce use on a steep portion of the present designated trail and still maintain more than adequate buffer between the trail and the Falls and stream.

The biggest contributor to overuse of the trails, of course, is the proximity to Cross Country Trail

Ride. The Angeline multi-use trail system, standing alone, does not provide adequate trail length for a quality riding experience. Unfortunately there is little room on the small tract for more trails. I would recommend that three to four miles of trails be developed between Co. Rd 208 (Sutton Creek Road) and the fire roads (329 and 330). Parking could be allowed along dead end roads 329 and 330.

Back Country Horsemen of Missouri offers, depending on availability of volunteers, to advise and assist in any efforts to improve and expand the trail system. Thank you again for the opportunity to comment.