Clearwater Conservation Area

Ten-Year Area Management Plan

FY 2017-2026

Lisa D. Allen

Forestry Division Chief

7-27-16

Date

Clearwater Conservation Area Management Plan Approval Page

PLANNING TEAM

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SOUTHEAST REGION

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OVERVIEW

- **Official Area Name:** Clearwater Conservation Area, #4905
- **Year of Initial Acquisition:** 1947
- **Acreage:** 11,371 acres
- **County:** Reynolds
- **Division with Administrative Responsibility:** Forestry
- **Division with Maintenance Responsibility:** Forestry
- **Statements of Purpose:**
    - **A. Strategic Direction**
      The purpose of the Clearwater Conservation Area (CA) is to manage for outdoor recreation and education, wildlife habitat, watershed protection, and forest products.
    - **B. Desired Future Condition**
      The desired future condition of Clearwater CA is a healthy forest ecosystem that provides riparian areas that protect water quality.
    - **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. <u>Special Considerations</u>

- **A. Priority Areas:** McKenzie Creek Aquatic Conservation Opportunity Area, Priority Forest Landscape
- **B. Natural Areas:** None

II. <u>Important Natural Features and Resources</u>

- **A. Species of Conservation Concern:** Species of conservation concern are known from this area. Area Managers should consult the Natural Heritage Database annually and review all management activities with the Natural History Biologist.
- **B. Caves:** None
- **C. Springs:** None
- **D. Other:**
    - A prominent feature of this area is Bear Mountain, an isolated rhyolite knob that is a southern outlier of the St. Francois Mountains. It is one of the few outcrops of volcanic rock in southern Reynolds County.
    - A deep muck fen natural community lies between a north-facing slope and a small, intermittent stream in Deckard Hollow. The fen is dominated by rice

cutgrass and sedges, and is home to 33 different plant species. Glossy leaved aster is a northern species whose distribution shifted southward with glaciation. As glaciers retreated, this plant survived in Missouri only as isolated populations in fens, which provide a relatively cool microclimate.

- The dominant Land Type Association of the area is the Black River Oak-Pine Woodland/Forest Hills (Figure 5). These forested land types consist of mostly even-age mixed scarlet, black, and white oak. Much of the site conditions are capable of growing quality shortleaf pine.

III. <u>Existing Infrastructure</u>

- Three parking lots
- One fire tower
- 18 fishless ponds (3.5 acres total)

IV. <u>Area Restrictions or Limitations</u>

A. Deed Restrictions: 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:

- Railroad right of way easement exists through T28 R2E Sec 11.
- Ozark Border Electric Cooperative has a utility easement (underground electric service) parcels owned in T28 R1E & R2E, totaling 4,359 acres of Clearwater CA.

D. Cultural Resources Findings: No known cultural resources.

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. <u>Terrestrial Resource Management Considerations</u>

Following the turn-of-the-century (late 1800s – early 1900s), the merchantable forest was leveled and consistently burned. Today, most of the woods are in an even-age condition

and managed with an emphasis on forest ecosystem health, tree species diversity, and wildlife habitat.

Forested stands on the Clearwater CA are primarily upland oak-hickory and oak-pine associations. Major components are scarlet oak, black oak, white oak, and hickories. Minor components include post oak and shortleaf pine. Shortleaf pine occurs on the upper south and west slopes and is usually found intermingled with oaks and hickories.

Challenges and Opportunities:

1) Manage to create a variety of habitat types and the subsequent diversity of plant and animal species in addition to a healthy forest.
2) Provide forest-based recreational opportunities.
3) Continue management of research areas to inform resource managers.
4) Control invasive species.
5) Some forestry challenges include: lack of tree species diversity in a predominantly red oak forest, oak decline, poor public perceptions of timber harvesting, and difficulty with marketing suppressed small diameter trees of low vigor.

Management Objective 1: Maintain a healthy and diverse forest with a 20-year re-inventory cycle and subsequent management when necessary.

Strategy 1: Inventory compartments according to the management schedule (Forestry).

Strategy 2: Focus on enhancing tree species diversity when possible (Forestry).

Strategy 3: Engage the public and forest industry on the benefits of forest management by communicating the distinct difference between managed harvests, (i.e., retaining the best trees to provide a prescribed habitat condition) as opposed to merchantability harvests (i.e., removing the biggest and best trees with no regard to the outcome of residual habitat conditions) (Forestry).

Strategy 4: Continue to raise the bar on the local forest industry by using the latest Department sale administration resources and providing staff opportunities to assist with, and/or attend professional timber harvester training, when available (Forestry).

Management Objective 2: Provide forest-based recreational opportunities.

Strategy 1: Continue to encourage the public to hunt, gather wild edibles, hike, and enjoy nature at Clearwater CA (Forestry).

Management Objective 3: Continue to manage research areas (Blocks 1 and 3) of the Joint Fire Service Project (Appendix A) to inform resource managers.

Strategy 1: Continue to burn Blocks 1 and 3 of the Joint Fire Science Project at appropriate intervals (Forestry, Resource Science).

Management Objective 4: Control invasive species.

Strategy 1: Contain and control invasive species, as they occur, to preserve the native integrity of the forest ecosystem (Forestry, Wildlife).

VI. Aquatic Resources Management Considerations

Challenges and Opportunities:

1) Wildlife watering holes are scattered throughout the larger tracts to provide much needed water on the dry ridges. Continue to maintain the area's key wildlife watering holes and ponds.
2) Protect and enhance the area's riparian corridors in the Current and Black River Watersheds.

Management Objective 1: Continue to maintain the area's key wildlife watering holes and ponds.

Strategy 1: Retain viability of critical wildlife watering holes of the area by removing brush from dams and enhancing amphibian habitat as needed (Fisheries, Forestry, Wildlife).

Strategy 2: Minimize disturbance to naturally occurring ponds on the area due to species of conservation concern that may occur there (Fisheries, Forestry, Wildlife).

Management Objective 2: Protect and enhance the area's riparian corridors in the Current and Black River Watersheds.

Strategy 1: Use best management practices as defined in the Department's *Watershed and Stream Management Guidelines* (Missouri Department of Conservation, 2009) to enhance best management practices during timber harvests, temporary sale access road construction, and to evaluate the impacts of existing area roads on the watershed (Design and Development, Fisheries, Forestry).

VII. Public Use Management Considerations

Challenges and Opportunities:

1) Provide for hunting and wildlife viewing opportunities.
2) Improve educational and interpretive opportunities.
3) Build relationships with neighboring landowners.

Management Objective 1: Provide public hunting, gathering, and wildlife viewing opportunities.

Strategy 1: Conduct management activities that provide habitat for a diversity of species (Forestry).

Management Objective 2: Improve educational and interpretive opportunities on Clearwater CA.

Strategy 1: Communicate to the public recreational opportunities (e.g., using brochures, Atlas database) (Forestry).

Strategy 2: Communicate to teachers, students, scout groups, and youth groups the uniqueness of the area to facilitate as a possible destination for ecology classes, school programs, and workshops (Outreach and Education).

Management Objective 3: Facilitate a good working relationship with neighboring landowners.

Strategy 1: Work with neighbors to minimize boundary, trespass or any other issues affecting Clearwater CA or private property (Forestry).

Strategy 2: Promote habitat management on neighboring landowner properties (Private Land Services).

VIII. Administrative Considerations

Challenges and Opportunities:

1) Maintain area infrastructure at current levels.
2) Maintain boundary lines and area signage.
3) Consider land acquisition, when available.

Management Objective 1: Maintain area infrastructure at current levels.

Strategy 1: Maintain area infrastructure in accordance with Department guidelines and at currently identified maintenance level (Forestry).

Management Objective 2: Maintain boundary lines and area signage.

Strategy 1: Maintain the area's 80 miles of painted boundary lines. Maintain boundary lines with blue paint on a five-year rotation.

Strategy 2: Area signage and regulations postings will be re-installed as needed (Forestry).

Lands Proposed for Acquisition:

When available, inholdings and 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**
Terrestrial Resource Management Considerations										
Objective 1										
Strategy 1	Compartment 9 (1,493 acres)		Compartment 7 (1,311 acres)	Compartment 8 (1,008 acres)						
Objective 3										
Strategy 1			X				X			
Administrative Considerations										
Objective 2										
Strategy 1	Compartments 7, 8, 9 (30 mi)					Compartments 7, 8, 9 (30 mi)	Compartments 2, part of 3 south of Hwy HH (10 mi)	Compartments 3 north of Hwy HH, 4 (7.5 mi)	Compartments 1, 5, 6 (32.5 mi)	

APPENDICES

Area Background:
Clearwater Conservation Area (CA) lies southwest of Clearwater Lake in Reynolds County. This area is comprised of the former Webb Creek State Forest and Clearwater State Forest (Missouri Department of Conservation, 1993). The area can be accessed from Highway H, Highway HH, Highway 34, and Highway 21. In addition, County Roads 510, 512, 530, 534, 558, 578, 584, and 586 lead to or cross various tracts of the forest in Clearwater CA.

The area is composed of several scattered tracts that are separated by privately owned properties. The first tract was purchased in 1947 from W. R. Brown. Mr. Brown was an entrepreneur who purchased the bulk of the property from the Bozarth family, who lived in Oklahoma, for $2.50 an acre. The largest purchase was also from Mr. Brown in 1949. For many years, this forest was known as Bozarth State Forest. Other smaller tracts were purchased in later years, with the last tract being purchased in 1972 from Della Pyles. Parts of the property were purchased with Pittman-Robertson funds. In 1993, Webb Creek State Forest and Clearwater State Forest were combined into the Clearwater CA. The total acreage now consists of 11,371 acres in nine compartments.

Most of the area that is Clearwater CA was owned by non-resident landowners who acquired the land for investment purposes. A caretaker was employed to look after the property for the family. Over time, the more accessible tracts were exploited by people who considered it a part of "Grandma's" land. Parts of the bottomlands were cleared and pastured. The whole tract was indiscriminately burned for open range on a regular basis. As a result, the older trees are badly fire scarred. When open range was closed, adjoining landowners began to fence the open areas, primarily in the hollows. This resulted in several encroachments (Missouri Department of Conservation, 1993).

The Garwood Fire Tower with a small parking lot is also located on Clearwater CA. The tower can be accessed by County Road 573.

Current Land and Water Types:

Land/Water Type	Acres	% of Area
Forest and Woodland	11,371	100

Public Input Summary:
The draft Clearwater Conservation Area Management Plan was available for a public comment period March 1–31, 2016. The Missouri Department of Conservation received comments from two respondents (Appendix A). The Clearwater 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 Clearwater Conservation Area public comment period

Suggests keeping water levels higher year round.
This plan is for Clearwater Conservation Area, not Clearwater Lake. Please contact the Clearwater Lake U.S. Army Corps of Engineers office at 573-223-7777 with questions about the management of Clearwater Lake.

Suggests developing a multi-use trail system (hike, bike, horseback riding) in compartments 1, 2, 3, 4, 5, and 6 in conjunction with U.S. Army Corps of Engineers lands. Offers to help with trail development and maintenance.
Multiple recreational opportunities are available on Clearwater Conservation Area. Hiking is permitted on interior roads and trails. Other modes of transportation (including horseback riding and biking) are allowed on public roadways. Groups of more than ten horseback riders or cyclists require a special use permit.

References:
Missouri Department of Conservation. (1993). *Clearwater State Forest Area plan*. Jefferson City, MO: Missouri Department of Conservation.

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.

Nigh, T. A., & Schroeder, W. A. (2002). *Atlas of Missouri ecoregions*. Jefferson City, MO: Missouri Department of Conservation.

Stevenson, A., & Anderson, C. (2012). *Fire effects on woodland vegetation and soil nutrients and carbon*. Jefferson City, MO: Missouri Department of Conservation.

Maps:

Figure 1: Area Map
Figure 2: Aerial Map
Figure 3: Compartment Map
Figure 4: Easement Map
Figure 5: Land Type Association Map

Other Appendices:

Appendix 1. Joint Fire Science Project
Appendix 2. Clearwater Conservation Area Management Plan Public Comments

Figure 1: Area Map

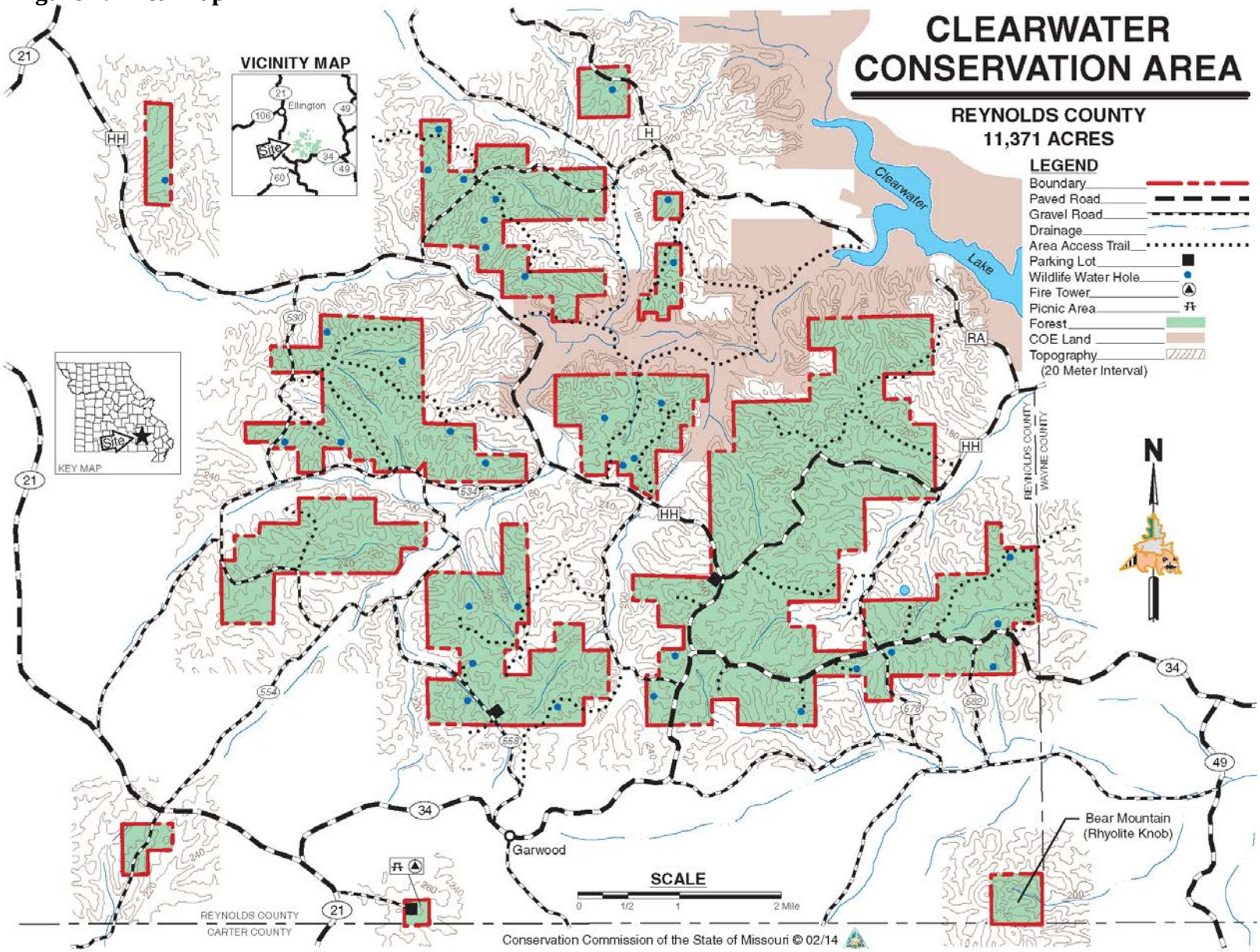


Figure 2: Aerial Map

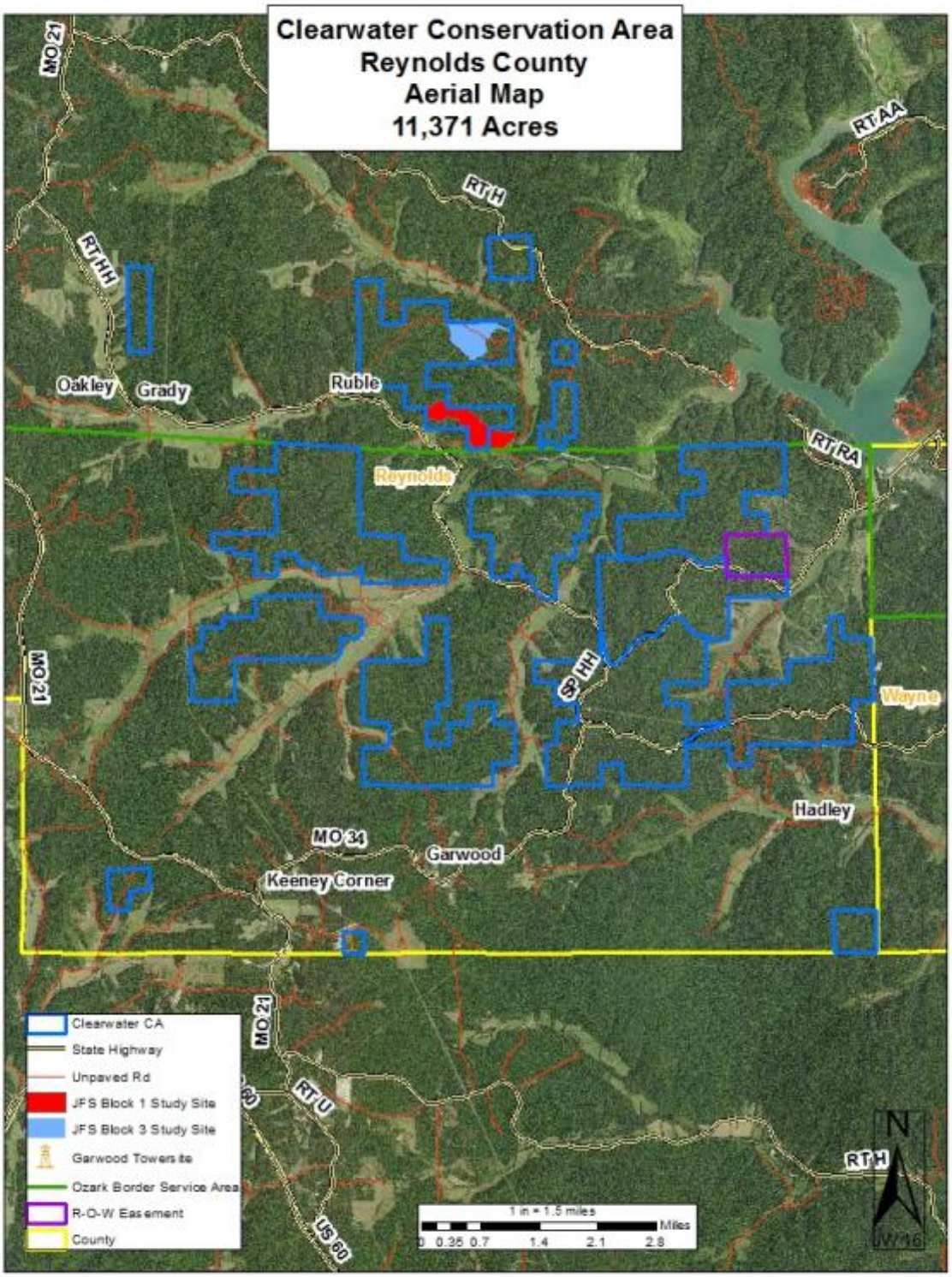


Figure 3: Compartment Map

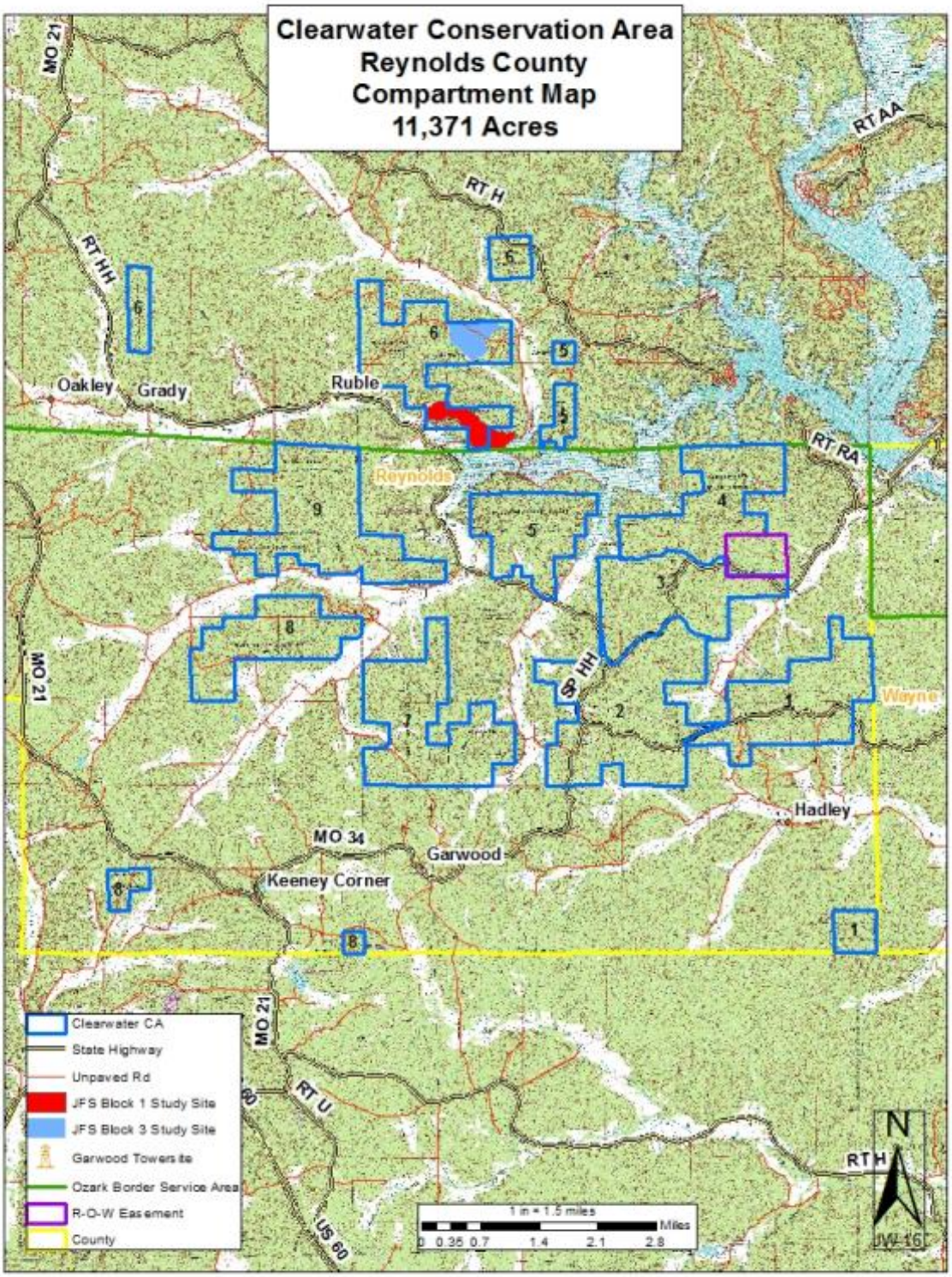


Figure 4: Easement Map

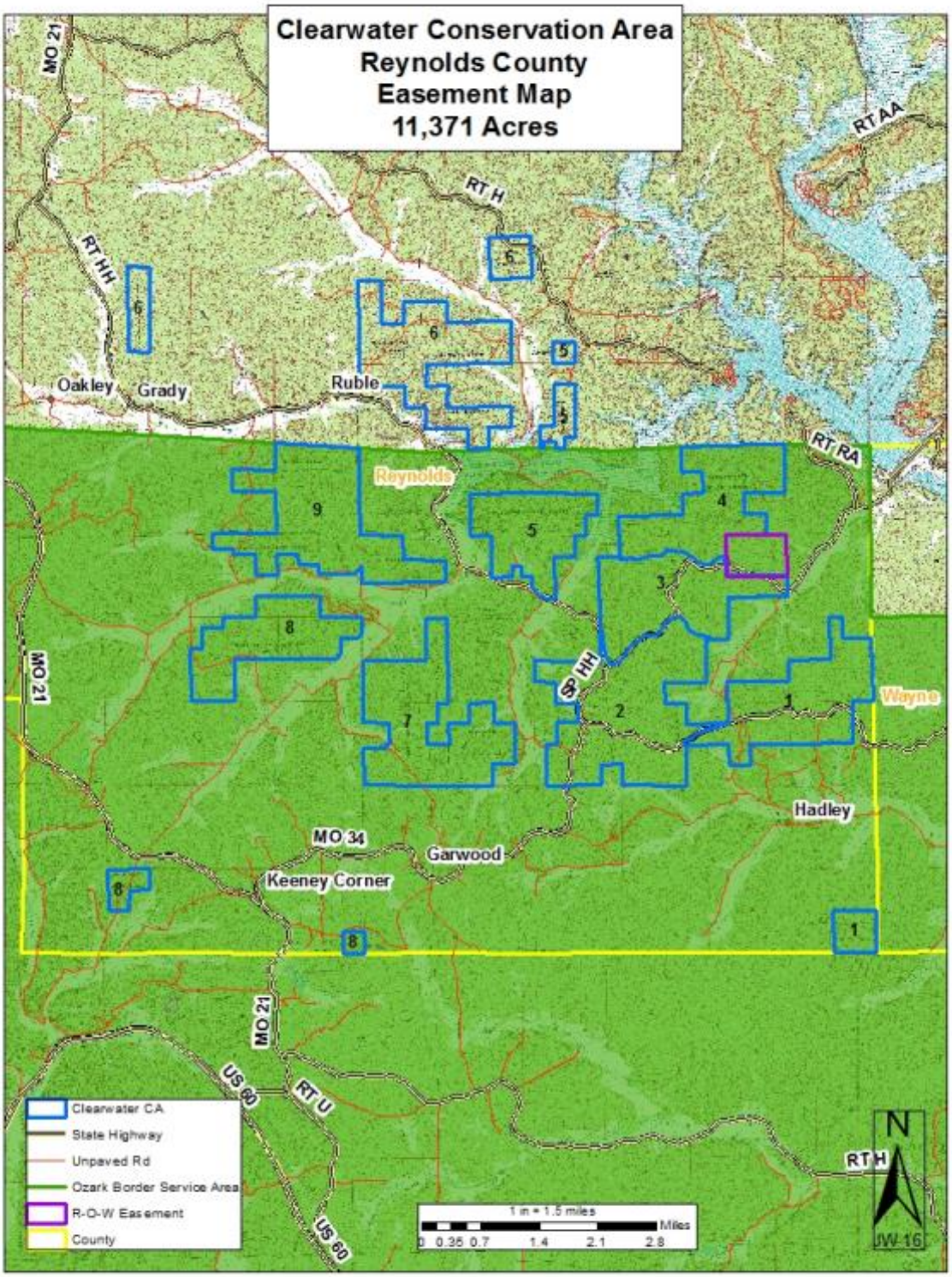
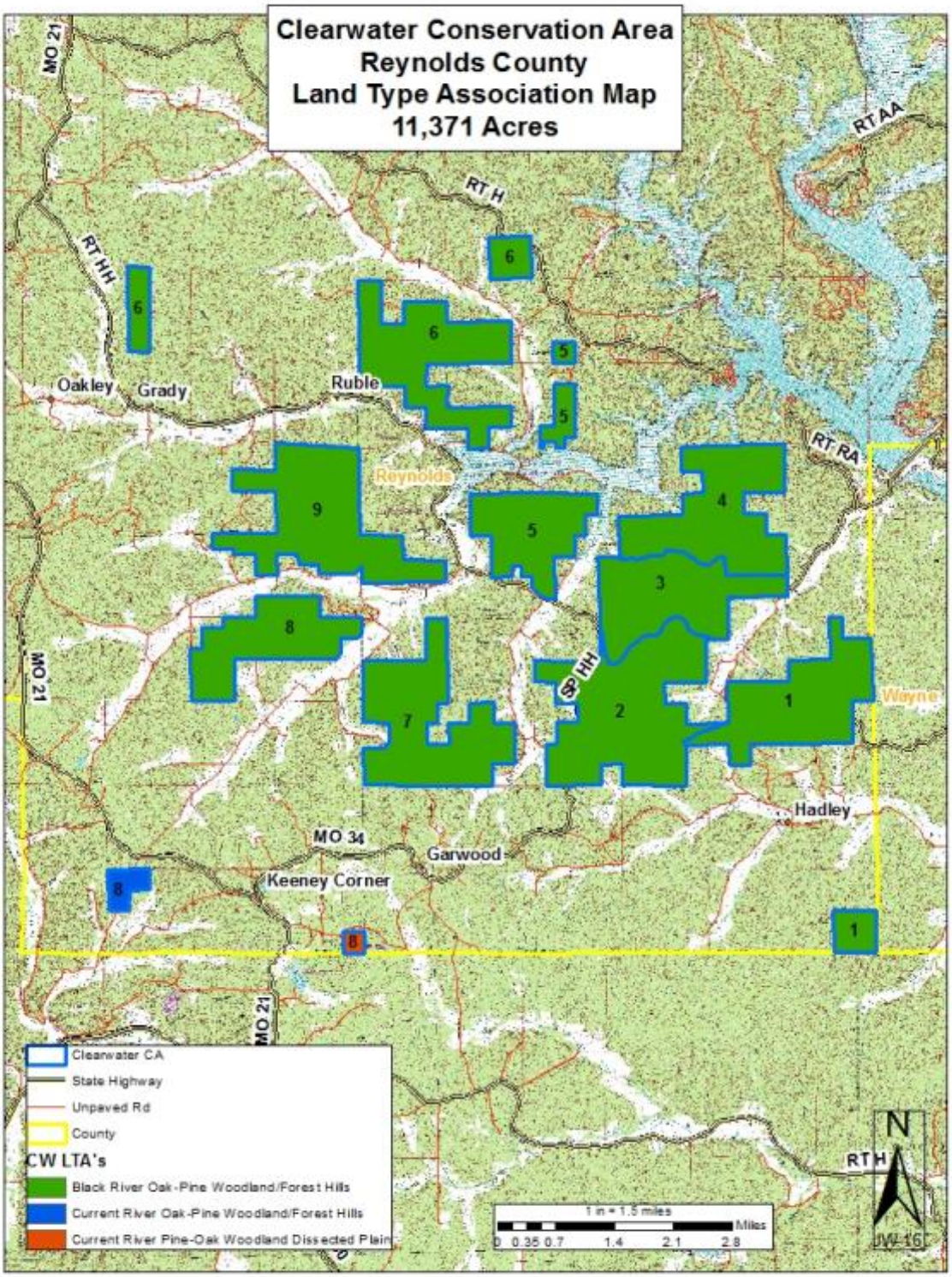


Figure 5: Land Type Association Map



Appendix 1. Joint Fire Science Project:

The Joint Fire Science Project is conducted at Logan Creek CA and Clearwater CA. When the study was initiated, the sites were fully stocked and comprised primarily of oak-hickory and oak-pine forest types. No management or documented fire had been recorded for at least 40 years. Sites were within the Black River Oak/Pine Woodland/Forest Hills Land Type Association, characterized by steep hillslopes consisting mainly of cherty, low-base soils and occupied by second growth forests (Nigh & Schroeder, 2002).

This study was designed to monitor the effects of four treatments across three slope position and aspect combinations. Treatments included prescribed fire (burn), commercial thinning (harvest), their combination (harvest-burn), and control. Treatments were paired by slope and aspect to create 12 5-acre units per block. Three complete blocks were initially established: two at Clearwater CA and one at Logan Creek CA, each approximately 60 acres in area. Timber harvests occurred during the summer and early fall 2002, prior to the first burn. Harvesting reduced stand density to 40 percent stocking by thinning from below. However, to achieve stocking goals, some dominant and co-dominant trees were removed. Preferred trees for retention were white oak and shortleaf pine because of the fire tolerance of these two species. Prescribed fires were applied during spring for burn and harvest-burn units in 2003 and 2005. Each burn was executed using the ring fire method, while burning the ridges at the same time (Stevenson & Schroeder, 2002).

Blocks 1 and 3 of the project are part of Clearwater CA. Burns on all three blocks occurred in the spring of 2015. Stevenson and Anderson (2012) advise a controlled burn on each block every three to five years. These blocks are planned to burn on a four-year rotation at the present time.

Additional information on the project can be found in the literature cited above.

Appendix 2. Clearwater Conservation Area Management Plan Public Comments

Received during public comment period (March 1-31, 2016):

The water level should be kept higher all year long, better for the fish and more room for them to spawn . I fish there a lot of times,especially during the crappie season. several areas are real low, hard to get a boat in, like up where the ball is on the high line area.
First, thank you for the opportunity to comment on the Clearwater CA Draft Management Plan. Equestrian trail riders in Wayne and Reynolds Counties are fortunate to be served by trails on Mark Twain National Forest, Sam A. Baker and Wappapello State Parks, and University Forest Conservation Area. That being said Clearwater CA offers a great opportunity for the Department to add a multi-use trail network to the outdoor opportunities the CA currently offers. Compartments 1, 2, 3, 4, 5, and 6, in conjunction with land owned by USACE comprise a huge, essentially contiguous area. Accessibility via hard-surfaced roads is very good thanks to Missouri Highways 34 and HH. The upland landscape and soils are well-suited for trails with a natural surface, and there is a minimum of conflicting uses. Some of the area access trails shown on the map are essentially public gravel roads, but some of the access trails are no more than 2-tracks through the woods. The latter could be opened to multi-use, and a few additional trails could be installed to form connected loops for hikers, bikers, and equestrians. While Wayne and Reynolds Counties are not identified as underserved with regard to public land equestrian trail opportunities, opening multi-use trails on Clearwater CA would assist CA management to achieve several of the Public Use Management Objectives dealing with wildlife viewing, educational and interpretive opportunities, and the uniqueness of the area. It would also help to facilitate a good relationship with some neighbors. In addition to the need to put in some new trails, it is likely that steep grades, creek crossings and other obstacles might make it advisable to treat or reroute the existing access trails for multi-use. Show-Me Missouri Back Country Horsemen offers our services (availability of volunteers permitting) to assist the area manager to assess any trail safety or maintenance issues and develop plans to address them; we would also offer assistance with marking and cutting the new trails. We further offer to assist the Area Manager to develop a partnership with local trail users to assist with maintaining multi-use trails and associated infrastructure. Thank you again for the opportunity to comment, and SMMBCH encourages the planning committee to amend the Management Plan to include multi-use trails on Clearwater CA.