

Coon Island Conservation Area

Fifteen-Year Area Management Plan

FY 2018-2032



J. L. Sauer

Wildlife Division Chief

20 APRIL 18

Date

Coon Island Conservation Area Management Plan Approval Page

PLANNING TEAM

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SOUTHEAST REGION

RCT Chair


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OVERVIEW

- **Official Area Name:** Coon Island Conservation Area, # 7943
- **Year of Initial Acquisition:** 1979
- **Acreage:** 3,223 acres
- **County:** Butler
- **Division with Administrative Responsibility:** Wildlife
- **Division with Maintenance Responsibility:** Wildlife
- **Statements of Purpose:**
 - A. Strategic Direction**

Manage and conserve natural resources that will provide compatible public use opportunities within lowland forest and open wetland habitats.
 - B. Desired Future Condition**

The desired future condition of Coon Island Conservation Area (CA) is a diverse natural community with a mixture of lowland forest and open wetland habitats.
 - C. Federal Aid Statement**

Coon Island CA, or a portion thereof, was developed with North American Wetlands Conservation Act funds to conserve and restore wetland habitats.

GENERAL INFORMATION AND CONDITIONS

- I. Special Considerations**
 - A. Priority Areas:** Black River – Stream Reach Conservation Opportunity Area, Big Cane Forests – Forest and Woodland Conservation Opportunity Area, Big Cane Forests – Wetland Conservation Opportunity Area
 - 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**
 - Four parking lots
 - Six wells
 - 16 water control structures
 - 15.5 miles of levee

- 7.1 miles of field roads
- Two concrete boat ramps (ramp on south end is Americans with Disabilities Act [ADA] accessible)
- One privy (ADA accessible)
- One primitive camping area

IV. Area Restrictions or Limitations

A. Deed Restrictions or Ownership Considerations: None

B. Federal Interest: This land must be used to conserve and restore wetlands. The federal funds made available under the North American Wetlands Conservation Act may not be used for fish and wildlife mitigation purposes under the Fish and Wildlife Coordination Act or the Water Resources Development Act of 1986. 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's Drainage District 7 maintains an easement along the Black River Ditch and an associated levee on the west side of the area. The Missouri Department of Conservation (the Department) has a 25-year cooperative agreement with the Drainage District to maintain the levee south of County Road 244 that began March 28, 1995.
- Arkansas' Clay County Drainage District maintains an easement on the flood levees located on the southeast side of the area.
- A powerline easement exists between County Roads 244 and 214, along the northern boundary of the refuge and on the east side of Unit 9. Ozark Border Electric periodically mows brush from under these powerlines.
- The U. S. Army Corps of Engineers inundates Coon Island CA periodically to lower water levels in Clearwater Lake.

D. Cultural Resources Findings: Yes, records kept with the Department's 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: None

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

This predominantly forested area is a remnant of the bottomland forest that originally covered most of the Missouri Bootheel region. The area includes a large block of forest cover and along with Big Cane CA (1,851 acres) and Black Lumber Company property (approximately 2,000 acres) make up the largest block of forested land in southern Butler County.

Coon Island CA contains a mix of bottomland forest, wetlands, open habitat, and infrastructure (roads, parking lots, levees, and ditches). Of the 2,300 acres of bottomland forest, 692 acres are within managed impoundments with water control and pumping capabilities. Of the 570 acres of wetlands, 495 acres fall within managed impoundments with water control and pumping capabilities.

Challenges and Opportunities:

- 1) Manage bottomland hardwood forests to provide habitat for wildlife.
 - The area is broken up into two forest management compartments (Figures 4 and 5). Most of the forested area is either wet or wet-mesic bottomland forest. Dominant tree species include pin/nuttall oak, willow oak, overcup oak, cherrybark oak, water oak, water hickory, slippery elm, red maple, green ash, sweetgum, and bald cypress. Forest growth on the area is high and most stands have well-stocked or overstocked saw timber-sized stands. Approximately 200 acres of these stands have had various forest thinnings done since 1995. Some were done to improve tree density and species diversity, and some were done to release developing oak seedling layers. A total of 340 acres have had saw-timber thinning harvests since 2003.
 - Coon Island CA has three wetland impoundments (units) with stands of bottomland tree species. Wetland units 8 and 9 consist of existing stands of timber with a diverse tree species mixture. Unit 7 consists primarily of planted red oak species.
- 2) Manage open wetland habitats.
 - Coon Island CA is greatly affected by a highly altered hydrologic flow regime. The majority of the area lies between two flood control levees. To manage floodwaters in the upper Black River drainage, Clearwater Lake stores excess water after large rain events and then slowly releases the excess water into the Black River. These results in a relatively long, moderately intense flood pulse that often leaves much of Coon Island CA inundated well into the growing season. As a result of numerous flood events late into the

growing season, some of the managed wetland impoundments have developed perennial plant communities that are difficult to manage. Continuous forest inventory plots were initiated by the Department's Forestry Division in 2012 to monitor any impacts to lowland forest communities.

- Furthermore, many of the open wetland impoundments have a high percentage of sandy loam soils. These sandy soils make artificially flooding impoundments for wildlife in the fall difficult, when the Black River levels are low and water infiltration rates are high. Without precipitation, some managed impoundments need to be pumped with groundwater periodically throughout the winter to maintain adequate water depths for wildlife.
- 3) Enhance wetland function.
 - The open habitats outside of management infrastructure were graded for farming before the Department's ownership. These habitats flood regularly, but are flat and retain little water after floodwaters recede. Restoring topographic diversity will enhance historic wetland functions in these areas along the river.
 - 4) Manage extent and timing of flooding.
 - Wetland Management Units 8 and 9 are protected from moderate flooding from the Black River, while Unit 7 is adjacent to the river and is subject to regular flooding. Although the infrastructure around these forested impoundments allows for reliable flooding of bottomland forested habitats, caution must be exercised on flood timing and duration to ensure the long-term productivity of these habitats.

Management Objective 1: Manage bottomland hardwood forest for wildlife species characteristic of the natural communities.

Strategy 1: Follow the Southeast Region's forest inventory schedule and inventory each compartment on a 15 to 20-year re-entry. (Forestry)

Strategy 2: Develop and implement forest management actions (e.g., harvest and forest thinning) from inventory data, as budget and time constraints allow. (Forestry)

Strategy 3: Use uneven aged (or all aged) harvest and forest thinning to create forest habitat conditions suitable for wetland forest wildlife species. Some stands within Compartment 1 are designated for even-aged management to allow for a component of the forest to progress to more old growth forest conditions (Figure 4). A long-term goal is to have 35 to 50 percent of forested acres meet the desired stand structure, per Table 2 of *Restoration, Management and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for*

Enhancing Wildlife Habitat (Wilson, Ribbeck, King, & Twedt, 2007) (Figure 6).
(Forestry)

Management Objective 2: Manage open wetland habitats to provide resources for waterfowl and other wetland-dependent wildlife.

Strategy 1: Maintain native vegetation within managed impoundments and non-forested areas. (Wildlife)

Strategy 2: Maintain at least 70 percent of herbaceous vegetation within managed impoundments in an early successional state. (Wildlife)

Management Objective 3: Enhance wetland function on non-forested areas outside of managed infrastructure.

Strategy 1: Enhance topographic diversity with earth moving equipment in open habitats, where possible. (Wildlife, Design and Development)

Strategy 2: Reforest portions of open areas after topographic enhancements are completed with bottomland tree species compatible for the site. (Wildlife, Forestry)

Management Objective 4: Manage green tree reservoirs for wildlife habitat and long-term forest health.

Strategy 1: Do not initiate flooding in the fall until trees have gone dormant. Research suggests trees are dormant when the soil temperature reaches 38 degrees Fahrenheit. (Wildlife)

Strategy 2: Alternate flood timing, depth, and duration to mimic natural hydrology as much as possible. (Wildlife)

Strategy 3: Dewater forested impoundments before leaf-out in the spring. (Wildlife)

VI. Aquatic Resource Management Considerations

Aquatic resources consist of 16 miles of Black River frontage, 3.5 miles of Swift Ditch frontage, 6.4 miles of Black River Ditch frontage, 1 mile of Ackerman Ditch frontage and over 25 acres of borrow areas.

Challenges and Opportunities:

- 1) Maintain forested riparian corridors.
- 2) The frequent flooding of the Black River makes most of Coon Island temporarily available to aquatic species during flood events. Fish commonly get trapped within impoundments and fish kills often occur in the borrow areas within impoundments in the late summer. To maintain drainage, most ditches have a

maintained access from at least one side and silt and debris is periodically removed from the ditches.

Management Objective 1: Maintain forested riparian corridors.

Strategy 1: Work with the drainage districts to encourage them to keep at least one side of the drainage ditches forested to shade the waterways. (Wildlife)

Strategy 2: Maintain tree plantings and forested habitats along the Black River and Swift Ditch. (Wildlife, Forestry)

Management Objective 2: Explore opportunities to enhance connectivity of ponded water within managed impoundments to the Black River at low river levels.

Strategy 1: Where possible, connect existing sloughs and borrow areas to wells and water control structures. (Wildlife, Fisheries, Design and Development)

Strategy 2: Manage water control structures to make fish passage easier and explore replacing key water control structures to be more fish friendly. (Wildlife)

VII. Public Use Management Considerations

Challenges and Opportunities:

- 1) Provide public hunting and viewing opportunities.

The primary use of Coon Island CA is by waterfowl hunters. Small game hunting, archery deer hunting, and angling are also popular activities at the area. Vehicle access is limited across the area, which helps to moderate hunting pressure and wildlife disturbance on this open hunting access area. Additionally, some easily accessible viewing opportunities exist on Coon Island CA, especially on the north end of Unit 3 at Panhandlers' Park.

- 2) Maintain good relationships with neighboring landowners.

There are several inholdings by private landowners. Access is currently granted to inholdings by special use permits.

Management Objective 1: Provide public hunting and viewing opportunities.

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

Management Objective 2: Facilitate good working relationships with neighboring landowners.

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

VIII. Administrative Considerations

Challenges and Opportunities:

- 1) Maintain area infrastructure.
The current level of infrastructure at Coon Island CA is adequate. However, some improvements to existing infrastructure could reduce maintenance time and expense over the long term.
- 2) The rapid rise and fall of the Black River during flood events damages levees and flood alleviation spillways.
- 3) Land acquisitions could also help with improving public access, limiting wildlife disturbances, and, in some cases, improving hydrologic functions.

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. (Wildlife)

Strategy 2: Annually maintain levees to prevent damage from encroaching trees. (Wildlife)

Strategy 3: Monitor levees for flood damage and report damages to Design and Development for repairs. (Wildlife, Design and Development)

Management Objective 2: Improve existing infrastructure to sustain less damage during flood events.

Strategy 1: Armor levees, where washouts typically occur after flood events. (Wildlife, Design and Development)

Strategy 2: Improve spillways on levees to prevent erosion during flood events. (Wildlife, Design and Development)

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 TIMETABLE

Strategies are considered ongoing unless listed in the following table:

	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
Terrestrial Resource Management Considerations															
<i>Objective 1</i>															
Strategy 1 – Compartment 2										X					

APPENDICES

Area Background:

The Missouri Bootheel was once predominantly swamp and almost completely forested. The once vast lowland forests along the Black River, which flows through Coon Island Conservation Area (CA), were reportedly favorite hunting grounds for Native Americans.

Extensive land conversion from seasonally flooded bottomland hardwood forest to agricultural land has greatly diminished wetland habitat in this region and, with it, the numbers of resident and migratory wildlife species that depend on this valuable lowland habitat.

The 3,223-acre Coon Island CA was purchased in 1979 to protect existing wetlands, recreate seasonally flooded bottomland hardwoods, and restore the hydrology of the area to simulate natural water processes.

A system of levees, spillways, water control structures, and submersible pumps maintain wetland habitat. However, the area continues to be subject to frequent Black River flood events, which affect annual management practices.

This area provides important habitat for waterfowl and management of this wetland is designed to increase waterfowl use. The open marsh and flooded timber provide acorns, wild millets, smartweeds, pigweeds, sedges, tubers, and invertebrates for waterfowl. Corn and other row crops are grown to provide high energy foods when water levels allow. Natural foods, such as smartweed, millet, pigweed, and sedges provide nutrients to waterfowl. Flooding fields during fall, winter, and spring makes these foods available to waterfowl, herons, shorebirds, aquatic furbearers, and many other wildlife species.

During a visit to Coon Island CA, visitors may notice various forest improvement practices designed to improve tree growth, quality, and species composition and to maintain wildlife habitat. Any physical disturbance is only temporary, and the area will soon return to its normal and natural condition. Sound management practices such as these will ensure long range productivity of the diverse habitats present on the area.

Current Land and Water Types:

Land/Water Type	Acres	Miles	% of Area
Forest	1,580		49
Forested Impoundments	692		21
Wetlands	569		18
Old Fields	205		6
Infrastructure	96		3
Open Water (Including the Black River)	80		3
Total	3,223		100
Black River Frontage		16.0	
Black River Ditch Frontage		6.4	
Swift Ditch Frontage		3.6	
Ackerman Ditch Frontage		1.0	

Public Input Summary:

The draft Coon Island Conservation Area Management Plan was available for a public comment period April 1–30, 2017. The Missouri Department of Conservation received comments from three respondents (Appendix A). The Coon Island 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 Coon Island Conservation Area Management Plan public comment period.

Suggests converting the area north of Tram Road into wetland habitat for waterfowl hunting.

While writing this plan, we completed a project in the two fields north and one field south of the Tram Road. The project involved us scouring out parts of the fields to take on water from lower flood pulses and to hold some surface water after floods recede or after heavy rainfall events. We reforested a large portion of the fields, but left out approximately 5 acres in each of the three fields to manage as open habitat.

We reforested a large portion of the fields because flood frequency and duration during the growing season is making it increasingly difficult to manage open habitats in a productive state for waterfowl and other species that use moist-soil habitat. Furthermore, these fields were historically covered in bottomland forests.

By reforesting a large portion of the fields, restoring topographic diversity, and still managing a portion of the fields as open habitat, we tried to strike a balance between restoring a historical habitat, but still retain a portion of the habitat to manage more intensively as foraging habitat for waterfowl when conditions will allow it.

Concerned that flooding of pools 8 and 9 has negatively affected turkey and small game populations.

We appreciate the concerns about how flooding Pools 8 and 9 could negatively impact local wildlife populations. In addition to long term forest health, that's one of the reasons we've adopted a conservative flooding strategy for the timber units. We typically do not initiate flooding until after the trees have gone fully dormant (typically mid to late November). With the wells we have, it can take over a month of continuous pumping to flood one unit to "full pool" if we do not receive much rainfall.

We also typically try to avoid flooding both units to full pool the same season and alternate which pools get flooded to full pool each year. On a year we flood Pool 9 to full pool, pool 8 will only be flooded to about 35%-50% of full pool and vice versa. However, on wet years both pools may be temporarily flooded with heavy rain events.

We try to manage the water depths to maximize the amount of water that is at optimum foraging depth for waterfowl (less than 18" deep). Thus, when we managed the pools at "full pool," there is still some dry ground within the units, mainly on the eastern portion of the units. We begin slowly dewatering the forested impoundments in February to concentrate food resources for waterfowl and late winter/early spring use by waterfowl can be quite high. The impoundments are typically dewatered by late March, unless we experience spring flooding from heavy rainfall.

Historically all of Southern Butler County was completely covered in bottomland hardwoods that flooded periodically. Now, just a narrow corridor along the Black River remains intact and flood protection levees prevent many of the other isolated fragments of forest from flooding regularly. Furthermore, the constriction of the flood protection levees along the Black River makes flooding deeper and the water move more swiftly than it did historically. We feel it's important to provide some shallowly flooded forested habitat where we can to help offset some of these alterations to the landscape.

Suggests providing better access to the wooded areas in Pool 8 and Pool 9.

Providing better access to Pools 8 and 9 would be quite difficult and cost prohibitive. The existing levee tops are only wide enough for one vehicle and there are large, drive-thru water control structures that are flooded through part of the winter. To provide better access to the timber pools, we'd have to clear bottomland hardwoods to widen the levees enough to allow vehicles to pass and create pull-offs or parking areas for vehicles. The limited access also helps

to reduce disturbances and allow waterfowl and other wildlife to use the habitat more frequently. This reduced disturbance typically increases the quality of hunting.

Concerned about the effects of redirecting surface water on Coon Island CA.

Water to flood the wetland pools comes from groundwater wells. The floodplain is active enough and the soils are porous enough to allow the aquifers to recharge and there are no indications that the groundwater supply is declining around Coon Island. Surface water is not redirected on Coon Island to capture floodwaters. Flooding from surface water occurs when the Black River rises enough and water either backs in through water control structures equipped with flap gates or overtops emergency spillways into the wetland pools.

Wonders if lead shot or lead bullets are allowed on this area.

Lead shot from shotgun shells is not allowed on the area. Lead rifle and handgun ammunition is allowed for small game hunting. Deer hunting is archery methods only.

References:

Wilson, R., Ribbeck, K., King, S., & Twedt, D. (Eds.). (2007). *Restoration, management and monitoring of forest resources in the Mississippi Alluvial Valley: Recommendations for enhancing wildlife habitat*. Vicksburg, MS: Lower Mississippi Valley Joint Venture Forest Resource Conservation Working Group.

Maps:

Figure 1: Area Map

Figure 2: Aerial Photo

Figure 3: Land Cover Map

Figure 4: Compartment 1 Forest Management Map

Figure 5: Compartment 2 Forest Management Map

Figure 6: Table 2 from Restoration, Management and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat

Figure 7: Easement Map

Additional Appendices:

Appendix A: Coon Island Conservation Area Management Plan Public Comments

Figure 1: Area Map

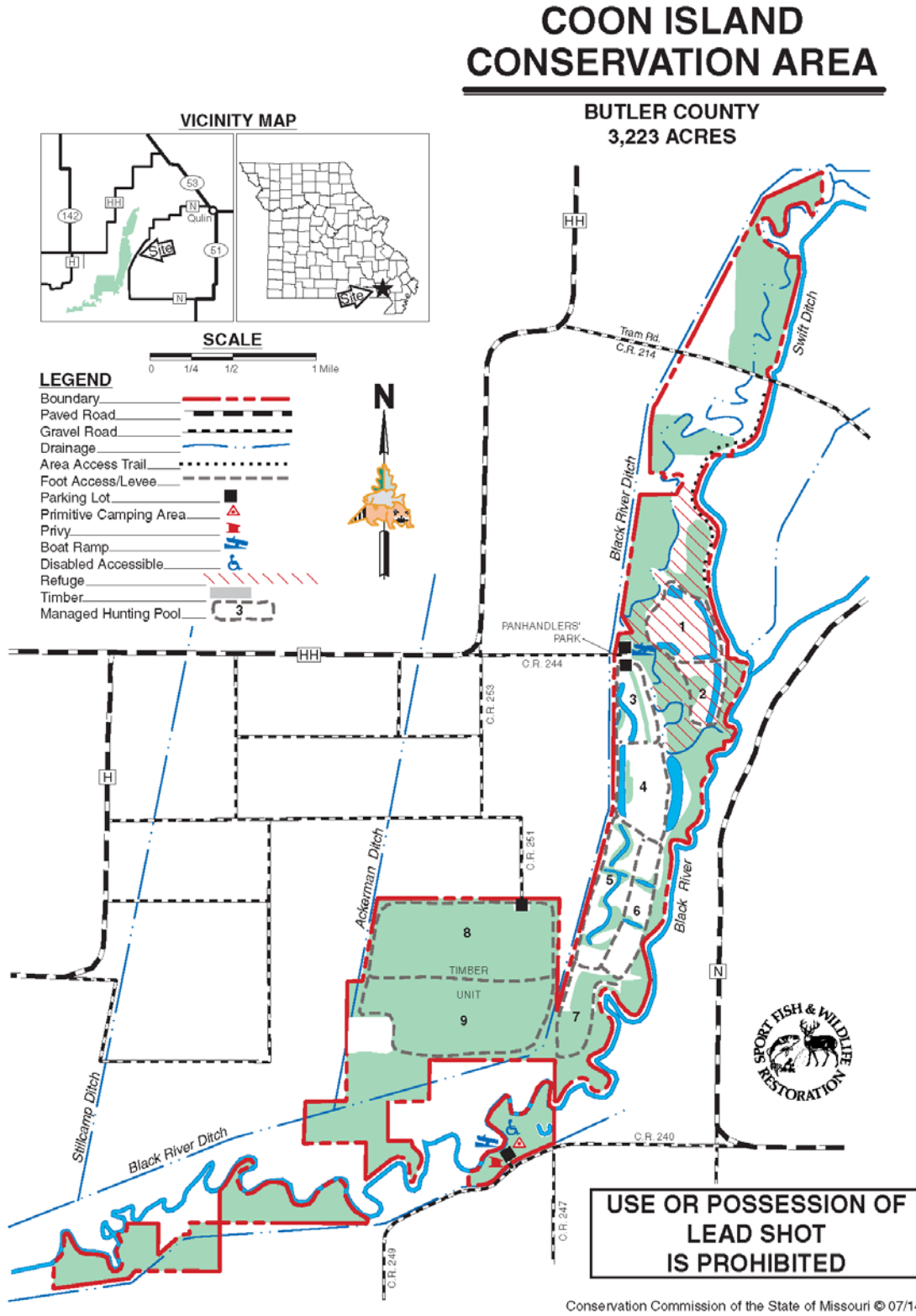


Figure 2: Aerial Photo



Figure 3: Land Cover Map

Coon Island Land Cover Map

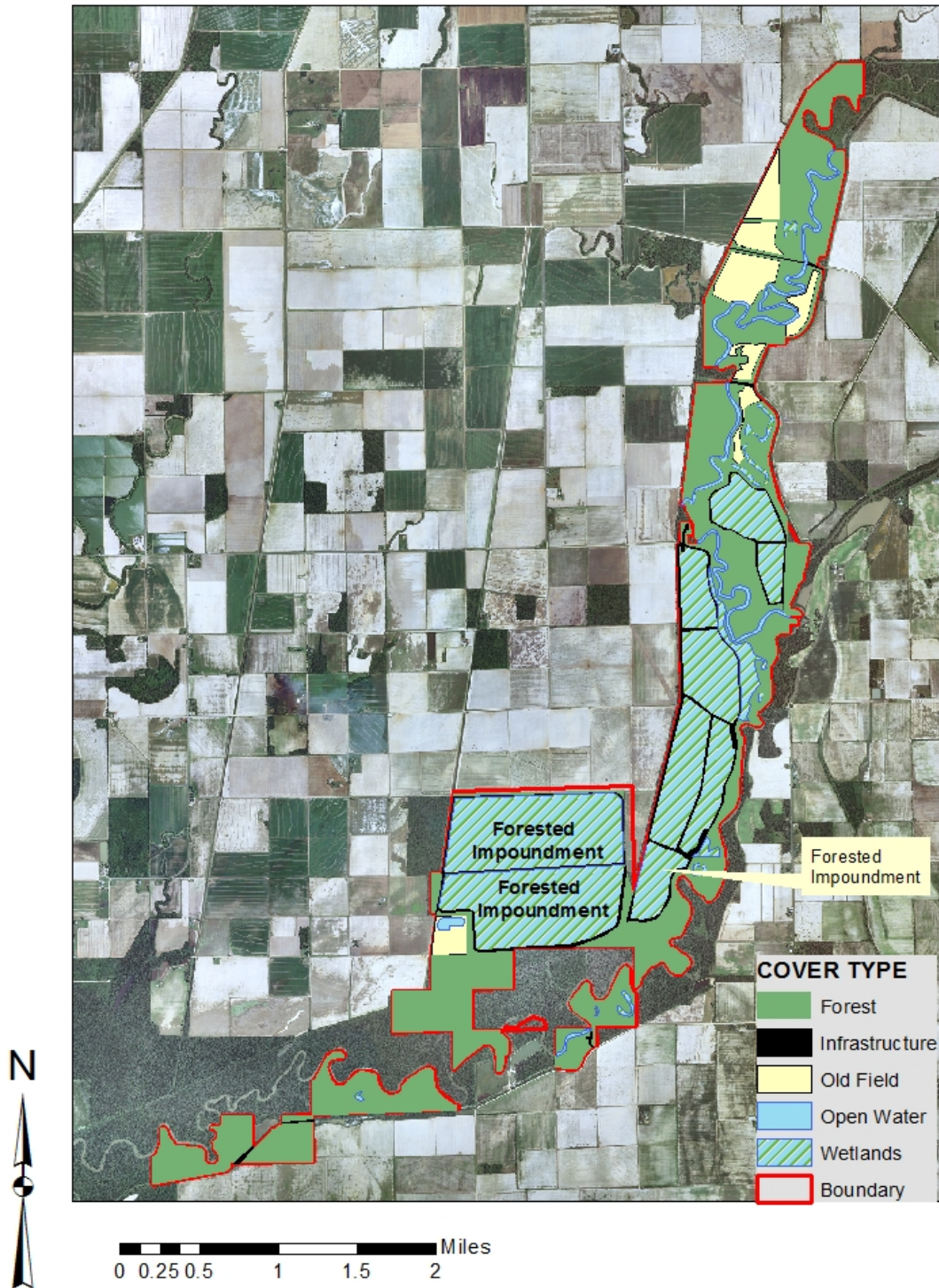


Figure 4: Compartment 1 Forest Management Map

Coon Island Compartment 1 Timber Stands

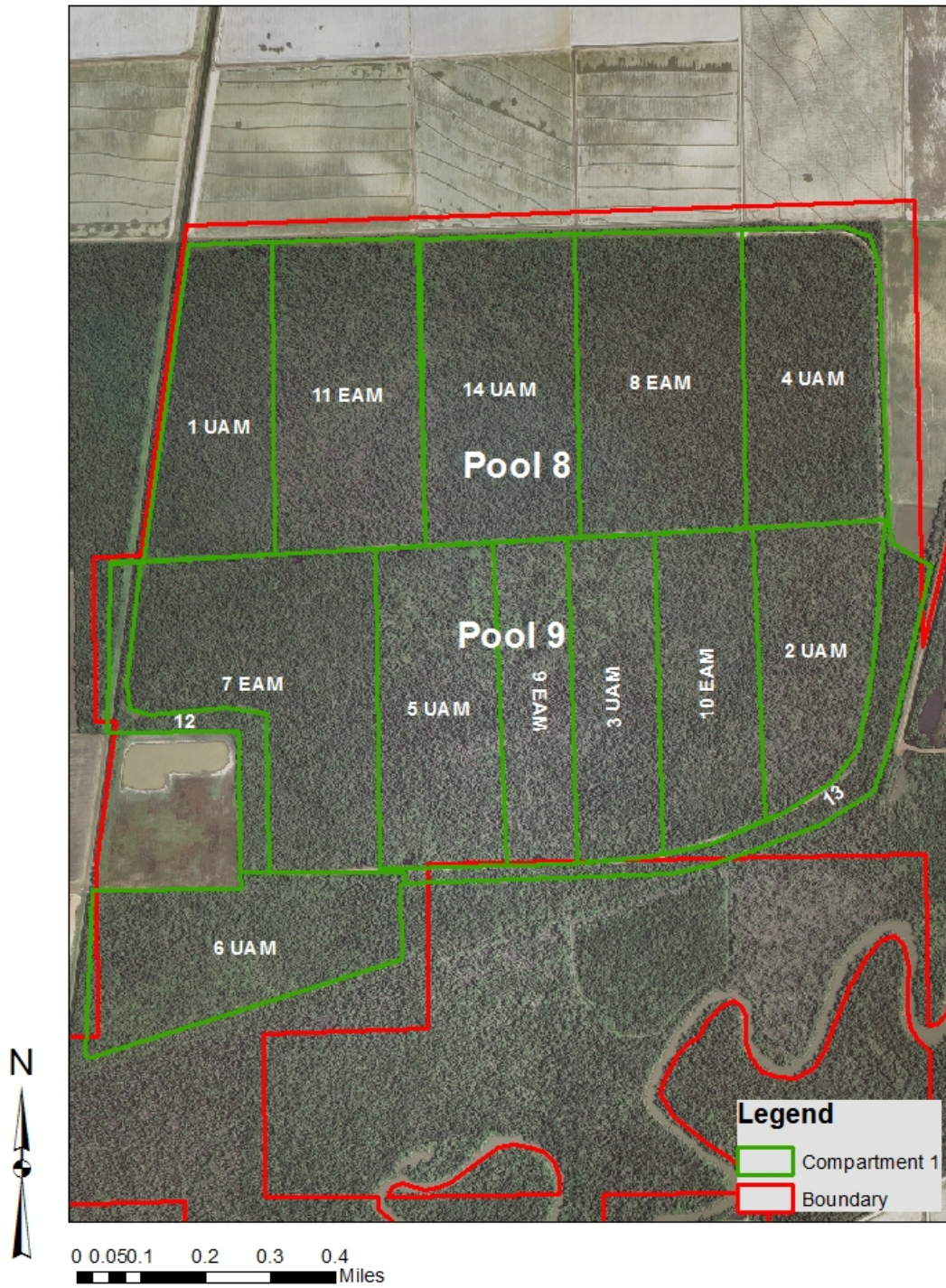


Figure 5: Compartment 2 Forest Management Map

Coon Island Compartment 2 Timber Stands



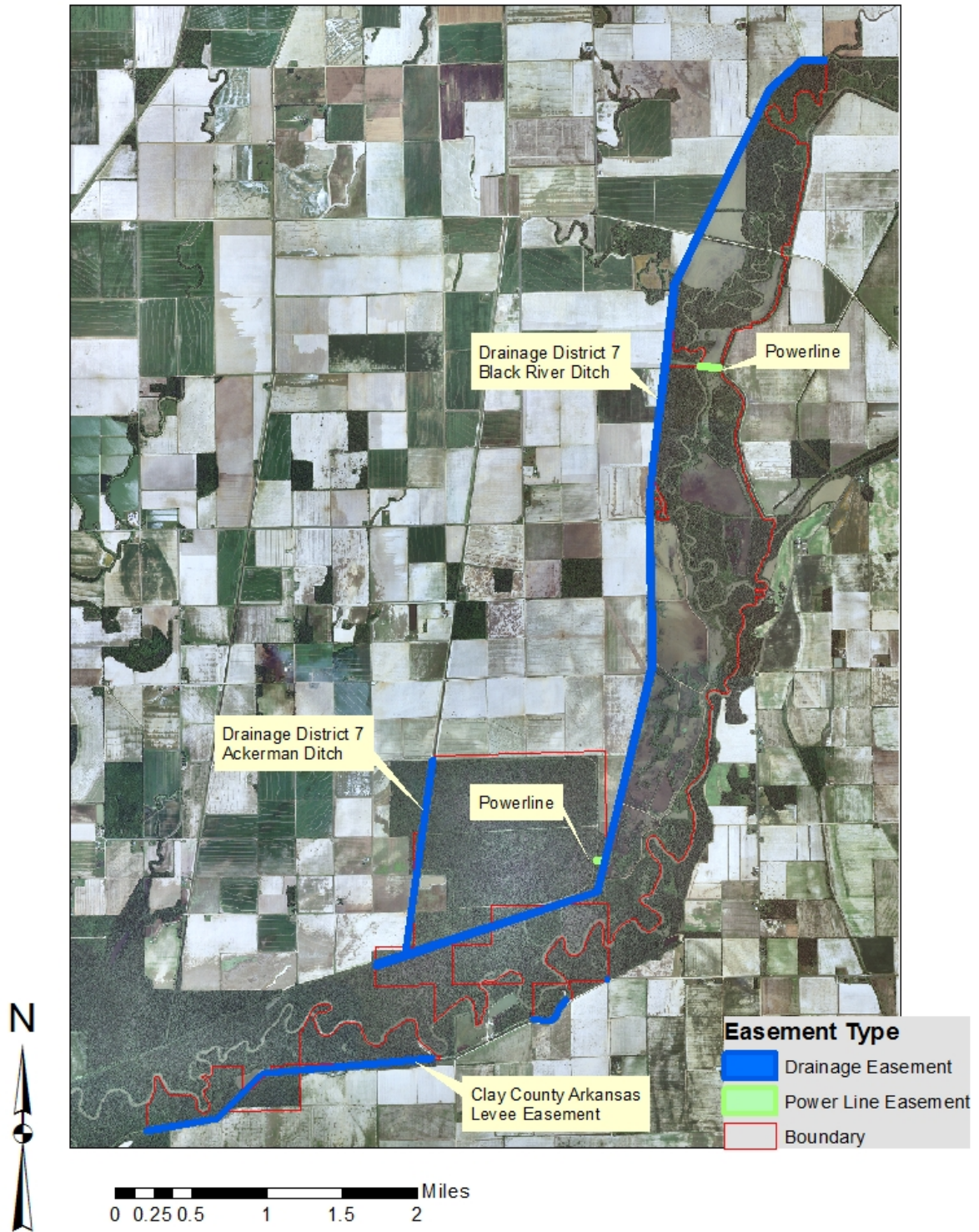
Figure 6: Table 2 from *Restoration, Management and Monitoring of Forest Resources in the Mississippi Alluvial Valley: Recommendations for Enhancing Wildlife Habitat*

Table 2. Desired stand conditions for bottomland hardwood forests within the Mississippi Alluvial Valley.

Forest variables ¹	Desired stand structure	Conditions that may warrant management
Primary Management Factors		
Overstory canopy cover	60 – 70 %	>80%
Midstory cover	25 – 40 %	<20% or >50%
Basal area	60 – 70 ft ² / acre with ≥25% in older age classes ²	>90ft ² / acre or ≥60% in older age classes
Tree stocking	60 – 70 %	<50% or >90%
Secondary Management Factors		
Dominant trees ³	>2 / acre	<1 / acre
Understory cover	25 – 40%	<20%
Regeneration ⁴	30 – 40% of area	<20% of area
Coarse woody debris (>10 inch diameter)	≥200 ft ³ / acres	<100ft ³ / acre
Small cavities (<10 inch diameter)	>4 visible holes / acre or >4 “snag” stems ≥4 inch dbh or ≥2 stems >20 inch dbh	<2 visible holes / acre or <2 snags ≥4 inch dbh or <1 stem ≥20 inch dbh
Den trees/large cavities ⁵ (>10 inch diameter)	1 visible hole / 10 acres or ≥2 stems ≥26 inch dbh (≥8 ft ² BA ≥26 inch dbh)	0 visible holes / 10 acres or <1 stem ≥26 inch dbh (<4 ft ² BA ≥ 26 inch dbh)
Standing dead and/or stressed trees ⁵	>6 stems / acre ≥10 inch dbh or ≥2 stems ≥20 inch dbh (>4 ft ² BA ≥ 10 inch dbh)	<4 stems ≥10 inch dbh / acre or <1 stem ≥20 inch dbh (<2 ft ² BA ≥ 10 inch dbh)

Figure 7: Easement Map

Coon Island Easement Map



Appendix A: Coon Island Conservation Area Management Plan Public Comments

Received during public comment period (April 1–30, 2017):

Concerned about redirecting surface water if bad will outweigh good. Lead shot illegal for rabbit or squirrel hunting ? Lead bullets for deer hunting ?

Would like to see the north section near tram road developed into more waterfowl hunting area such as flooded pools or partial flooded with plantings for goose hunting. Similar to 10 mile pond. Also if there was better access to the wooded areas in pool 8/9

would like to comment on the flooding of pool 8 and 9 called the timber unit. This area is the largest track of timber that does not normally have flooding from the Black River which gave Turkey and other small game a dry place to go when the river floods. Since the flooding started in pools eight and nine the turkey population has went from very good to just hanging on other small game has suffered as well. The duck hunting in these pools are not to great as well most people who try it I suspect don't waste their time again as the open pools have far greater duck numbers when season is in. The question is why does the flooding of 8 and 9 continue when it has such a negative impact on local wildlife and very little to offer the ducks as they have such a vast area to choose from. Then from the timber standpoint don't make a whole lot of sense to flood it just makes it hard on the trees as well. Would like to see the flooding come to an end in pool 8 and 9.

Thank you