Marshall I. Diggs Conservation Area

Fifteen-Year Area Management Plan

FY 2017-2031

Wildlife Division Chief

26 JAN 2017

Date

Marshall I. Diggs Conservation Area Management Plan Approval Page

PLANNING TEAM

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CENTRAL REGION

RCT Chair John George 12/12/2016

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WILDLIFE DIVISION

Wildlife Management Chief Michael D Sorhow 12/19/16

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OVERVIEW

- **Official Area Name:** Marshall I. Diggs Conservation Area, #5705
- **Year of Initial Acquisition:** 1957
- **Acreage:** 1,014
- **Counties:** Audrain, Montgomery
- **Division with Administrative Responsibility:** Wildlife
- **Division with Maintenance Responsibility:** Wildlife
- **Statements of Purpose:**
  - **A. Strategic Direction**
    Manage for wildlife, aquatic, woodland, and grassland resources with emphasis on woodland and grassland natural community restoration and compatible recreational opportunities.
  - **B. Desired Future Condition**
    The desired future condition of Marshall I. Diggs Conservation Area (Diggs CA) is a healthy forest, woodland, and grassland complex.
  - **C. Federal Aid Statement**
    NA

GENERAL INFORMATION AND CONDITIONS

I. Special Considerations

A. Priority Areas: None

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

D. Other: Occurs in the Central Missouri Savanna/Woodland Dissected Plain Landtype Association. This landtype is a flat to gently rolling dissected plain at the northern edge of the outer Ozark border. Historically, the area was oak savanna and woodland in the valleys and mostly prairie on the flat ridges. (Nigh & Schroeder, 2002)

III. Existing Infrastructure

- One pavilion
- One stone monument

- Two Americans with Disabilities Act (ADA)-accessible privies with concrete parking areas
- Eight parking lots
- Two fishing lakes: Lake Whitesell (13 acres) and Lake Walter (7 acres)
- Two ADA-accessible concrete boat ramps
- Thirteen fishless ponds
- Dry hydrant at Lake Walter
- Camping area, no amenities

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: None

D. Cultural Resource Findings: No known cultural resources.

E. Endangered Species: None observed.

F. Boundary Issues: None

MANAGEMENT CONSIDERATIONS

V. Terrestrial Resource Management Considerations

Diggs CA has stands of remnant prairies that are managed with fire, inter-seeding of native forbs, and the treatment of invasive species. The southwest corner of the area has responded well to management efforts. Invasive species, while present, are not abundant and should be kept from spreading. Crop fields are being systematically converted to native vegetation while the thinning and burning of the woodlands has shown positive results.

Challenges and Opportunities:

1) Manage the grass and woodland communities in a manner to produce high quality examples of such communities that are worthy of designation in the Missouri Natural Areas program.

Management Objective 1: Stimulate the growth of native plants and to control woody sprouts in the woodland acres.

Strategy 1: Use management tools including but not limited to prescribed fire, chemical application, and mechanical removal to stimulate the growth of native plants and to control woody sprouts in the woodlands. (Wildlife)

Strategy 2: Alternate spring, summer, and fall prescribed burns on a three-to-five-year rotation to improve diversity and plant species composition. (Wildlife)

Management Objective 2: Convert remaining cropland acres to grasses and forbs by FY21.

Strategy 1: Contract with permittee farmer to grow soybeans the year before fields are to be planted to native grasses and forbs. (Wildlife)

Strategy 2: Acquire seed native to the region by trade, collection, or purchase. (Wildlife)

Strategy 3: Plant native seed in the winter months when soil conditions allow. (Wildlife)

Management Objective 3: On appropriate sites, manage woodland communities to provide healthy and diverse habitats for forest/woodland-dependent wildlife.

Strategy 1: Conduct inventories on forest/woodland compartments according to the inventory schedule to develop prescriptions for ecological and silvicultural treatments. (Forestry)

Strategy 2: Utilize a variety of sustainable forest management techniques to promote healthy woodland communities including, but not limited to, timber harvesting, forest stand improvement, firewood cutting, salvage cuttings, tree planting, seeding, and prescribed burning. (Forestry, Wildlife)

Strategy 3: Maintain a diversity of tree age classes that will provide both a diversity of wildlife habitat as well as resiliency to living and non-living (fire, weather, and climate) damaging agents. (Forestry, Wildlife)

Strategy 4: Utilize best management practices during forest management as described in the Department's manuals: *Missouri Watershed Protection Practice* manual (Missouri Department of Conservation, 2014) and the *Missouri Forest Management Guidelines: Voluntary Recommendations for Well-Managed Forests* (Missouri Department of Conservation, 2014). (Forestry, Wildlife)

Management Objective 4: Control invasive species.

Strategy 1: Monitor for the presence of invasive forest pests and plants. (Wildlife)

Strategy 2: Control invasive plants and pests as needed**.** Techniques used to control such problem include but are not limited to chemical control of sericea

lespedeza, mechanical cutting of autumn olive and bush honeysuckle, and chemical treatment of woody stumps to prevent resprouting. (Wildlife)

VI. Aquatic Resource Management Considerations

Diggs CA includes approximately 2.5 miles of stream frontage for six perennial streams. Area streams include three first-order streams (1.2 miles), two second-order streams (0.3 miles), and one third-order stream (1 mile). Little Loutre Creek is the area's principal stream resource with 1 mile of frontage that bisects the area from northwest to southeast. It supports a diverse fish community that is indicative of its Prairie Faunal Region. The streams on Diggs CA drain land that is primarily forests, grassland, and crop fields.

Lake Walter (7 acres) and Lake Whitesell (13 acres) provide fishing opportunities at Diggs CA. Management activities include stocking fish, controlling aquatic vegetation, improving area access, and physically or chemically renovating the lakes.

The remaining ponds on the area were built as water sources for wildlife and are each less than 0.5 acres in size. These small shallow ponds are managed as fishless ponds to benefit amphibians and other wildlife.

Challenges and Opportunities:

1) Manage fish populations in two lakes on the area.
2) Maintain fishless area ponds for wildlife watering and semi-aquatic wildlife use.
3) Control nuisance aquatic plants in ponds designated for fishing.
4) Maintain and enhance forested riparian corridors.
5) Manage area streams to maintain their water quality and diverse fish fauna.

Management Objective 1: Manage fish populations and provide public fishing opportunities in ponds large enough to support fishing.

Strategy 1: Conduct periodic (every three years or as needed) electrofishing surveys to assess the fish population in Lake Walter and Lake Whitesell. (Fisheries)

Strategy 2: Maintain fish habitat structures in fishing ponds to enhance the fishery. (Fisheries)

Strategy 3: Maintain public access to fishing ponds through vegetation management around ponds. (Wildlife)

Strategy 4: Provide periodic stocking of 8-12" channel catfish to maintain population densities. (Fisheries)

Management Objective 2: Manage all fishless waters on the area to benefit amphibians and other wildlife.

Strategy 1: Ponds incapable of supporting quality fisheries will be chemically renovated and maintained as fishless for amphibians, reptiles, and other wildlife. (Fisheries)

Management Objective 3: Treat nuisance aquatic plants in fishing ponds as needed.

Strategy 1: Use appropriate chemical, biological, or mechanical methods (depending on the plant coverage and species being controlled) to control nuisance aquatic plants in fishing ponds. (Fisheries)

Management Objective 4: Establish and maintain a riparian corridor of trees along stream drainages.

Strategy 1: Maintain a forested corridor through natural regeneration or plantings along streams, where needed, to widen the existing riparian corridor to a functional and protective width. First- and second-order streams should have a riparian corridor width of 50 feet on each side of the stream, and all other streams should have a minimum corridor width of 100 feet. (Wildlife)

Strategy 2: All management activities should follow the *Watershed and Stream Management Guidelines for Lands and Waters Managed by the Missouri Department of Conservation* (Missouri Department of Conservation, 2009). (Wildlife)

Management Objective 5: Manage stream resources to maintain and enhance their water quality and diverse fish populations.

Strategy 1: Develop and implement management recommendations for area streams with excessive erosion or nutrient loading. (Fisheries)

VII. Public Use Management Considerations

Challenges and Opportunities:

1) Provide hunting, fishing, and nature viewing opportunities.
2) Maintain area in a condition that invites public use.

Management Objective 1: Provide for hunting, fishing, and viewing opportunities.

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

Management Objective 2: Maintain the area in a desirable condition.

Strategy 1: Continue maintenance contract with private contractors. (Wildlife)

Strategy 2: Remove hazardous trees and trim overhanging brush from trails as needed. (Wildlife)

Strategy 3: Maintain accurate area information and regulations through the Conservation Atlas database, area brochures, and posted information. (Wildlife)

VIII. Administrative Considerations

Challenges and Opportunities:

1) Maintain area infrastructure at current levels.
2) Consider land acquisitions, when available.

Management Objective 1: Maintain area infrastructure at current levels.

Strategy 1: Maintain area infrastructure in accordance with Missouri Department of Conservation (Department) guidelines. (Wildlife)

Lands Proposed for Acquisition:

When available, adjacent land may be considered for purchase from willing sellers. Tracts that improve area access, provide public use opportunities, contain unique natural communities 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**	**FY27**	**FY28**	**FY29**	**FY30**	**FY31**
Terrestrial Resource Management															
Objective 2															
Strategy 3	X		X												
Objective 3															
Strategy 1						X									

APPENDICES

Area Background:

From 1940 to 1955 Mr. Marshall Diggs bought 610 acres from eight landowners, which he sold to the Department for one dollar in 1958. That same year, the Wellsville Fire Brick Company donated 160 adjoining acres and another 80 acres were purchased from the Gibbs family for $18.72 an acre. Nineteen acres were purchased in 1978 from Otto and Margaret Schnarr for $14,500 and in 1981another 145 acres were purchased from the A. P. Green Refractories Company for $85,000. In total, 1,014 acres were acquired over 23 years for $100,998.50 for an average of $99.31 per acre.

Aerial photographs from April 1963 show Walter and Whitesell lakes, eroded fields, and far fewer trees than exist at present. Early management efforts were focused on reducing soil erosion, improving soil fertility, constructing watering ponds, and planting for wildlife food and cover. The 1964 Area Plan (Terrill, 1964) describes in detail how fields should be strip planted in various food and cover crops to maximize rabbit and quail production.

Current management efforts used to improve the natural communities include enhancing remnant grasslands and woodlands, converting crop fields to native vegetation; treating invasive species with herbicides; collecting and inter-seeding forb seeds; thinning woodlands; and using prescribed fire on a landscape scale.

Current Land and Water Types:

Land/Water Type	Acres	Miles	% of Area
Forest/Woodland	753		74
Native Prairie	168		17
Crop Land	30		3
Old Field	27		3
Lake/Ponds	20		2
Infrastructure	9		1
Grassland (non-prairie)	7		<1
Total	**1,014**		**100**
Stream Frontage		1.3	

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

Suggests adding dove fields.
This area is about an hour away from the work team that manages itand results in our tractors and other equipment being on the area very infrequently. The nearby Whetstone Creek Conservation Area has dove fields planted each year.

Suggests adding and maintaining wood duck boxes to the area.
Installing wood duck nest boxes would not be the difficult part for our staff but the annual maintenance of them would be. This would be an excellent opportunity for an individual or group of individuals to volunteer to help keep them maintained. Please contact the area manager for more details.

Concerned that fishless ponds have increased midge fly population, hurting the deer population.
Fishless ponds can contribute to midge fly populations, but so do ponds with fish in them. Fishless ponds are vitally important to the life cycles of multiple amphibian species and for that reason we intentionally keep them fishless.

Concerned that deer population on area appears to be declining. Suggests only allowing muzzleloader and archery methods on the area for at least five years.
The area was formerly under statewide regulations which meant all legal methods could be used as well as antlerless only permits. Current regulations are that all legal methods are still allowed but antlerless only permits for all methods are not allowed. Hunters on the area can harvest antlerless deer but must use either their archery any-deer permit or their firearms any-deer permit. We will re-evaluate the methods for this area in approximately five years.

Suggests adding 10-12 miles of multi-use trails to Marshall Diggs CA.
The work team that manages the area is about an hour away from it. Maintenance of trails would be a large burden on the work team. Other multi-use trails in the vicinity include a 7-mile multi-

use trail at Daniel Boone Conservation Area in Warren County and trails at the U.S. Army Corps of Engineers Mark Twain Lake in Ralls County (30-mile Joanna Trail and 9-mile Lick Creek Trail).

Believes that the Department should focus more on conservation instead of attracting visitors.
We have done nothing specifically to attract area visitors, but we do try to maintain the area in a manner that it is inviting to the public. We have also completed numerous woodland and grassland management projects to improve the wildlife habitat over the last 15 years.

Appreciates Marshall Diggs CA.
Thank you.

References:

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

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

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.

Terrill, H. V. (1964). *Management plans for the Marshall I. Diggs Wildlife Area.* Jefferson City, MO: Missouri Department of Conservation.

Figures:
Figure 1: Area Map
Figure 2: Aerial Photo
Figure 3: Land Cover Types

Additional Appendices:
Appendix A. Marshall Diggs Conservation Area Management Plan Public Comments

Figure 1: Area Map

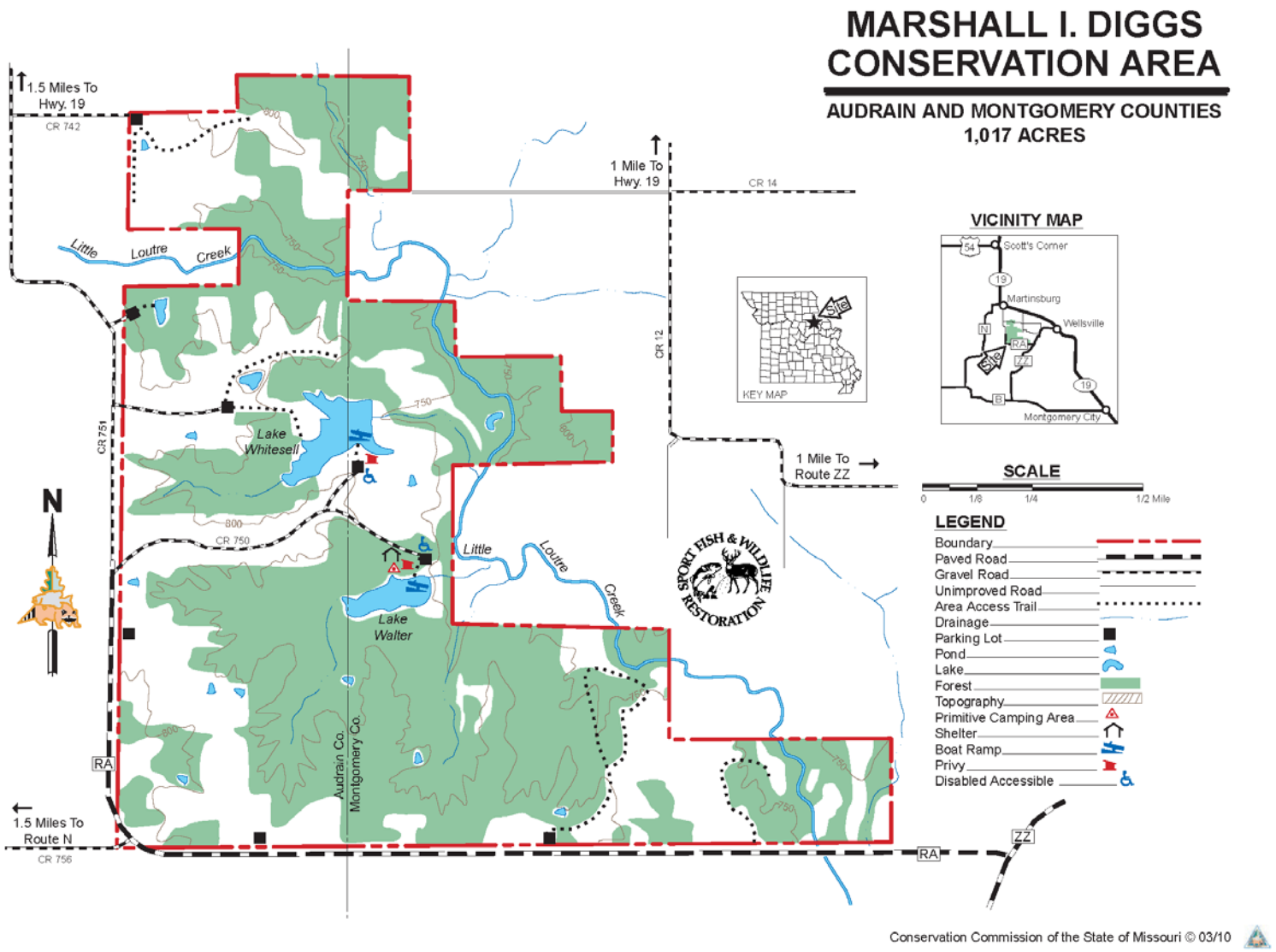


Figure 2: Aerial Photo

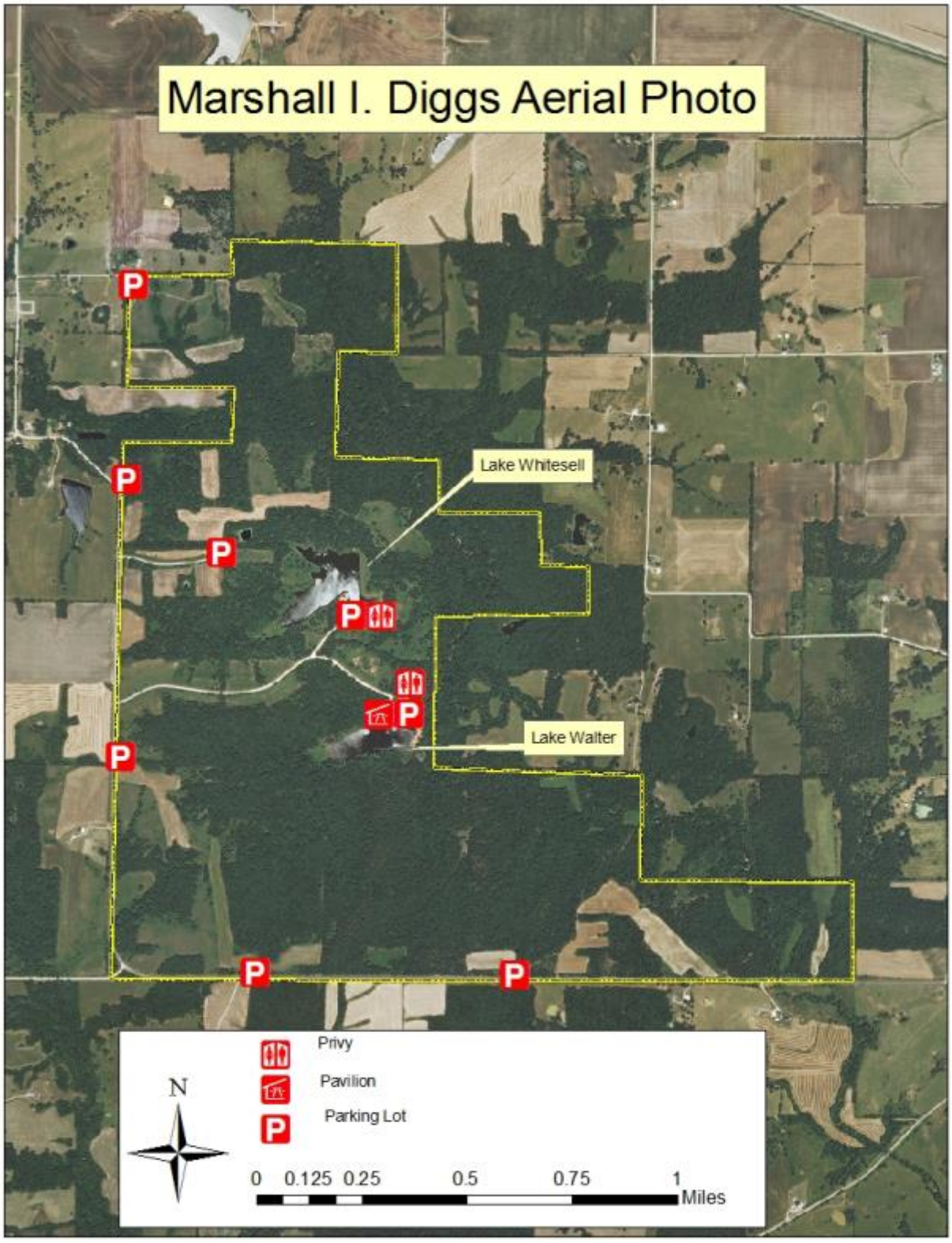
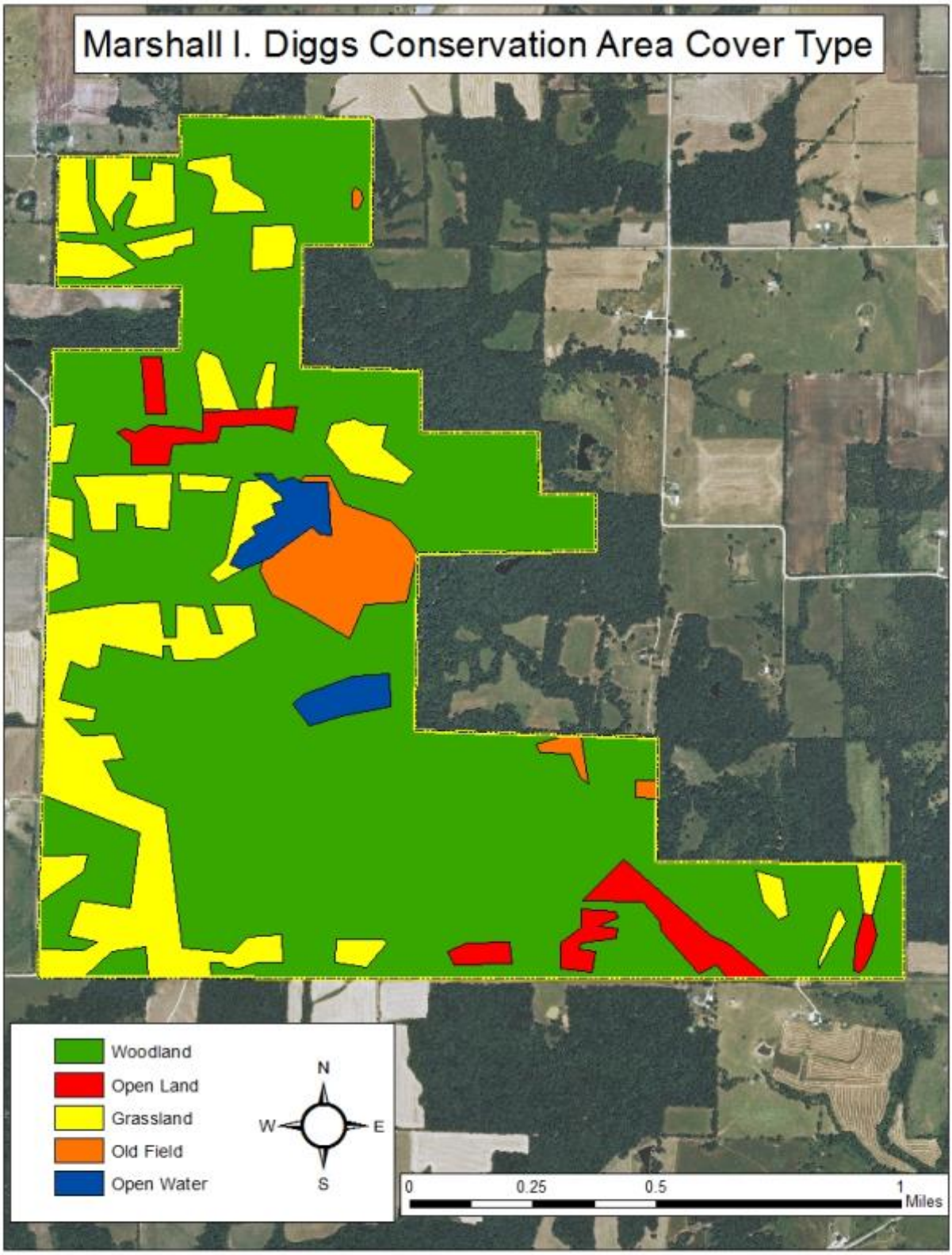


Figure 3: Land Cover Types



Appendix A. Marshall I. Diggs Conservation Area Management Plan Public Comments

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

I haven't been to Diggs for several years, I did enjoy it .Mo. conservation dept .is top drawer,and work hard to do what is best for Wildlife, land usage and the people that use it. That's a hard juggling act ..Thanks
I have noticed the deer population has been declining at Diggs for the last few years and there have been fewer mature bucks on my cameras. I suggest making Diggs a archery/muzzle-loading only area for a period of 5 years then re-evaluate the deer herd. This area is in a quality area for growing mature bucks but the pressure from rifle hunting has severely hurt the quality of hunting offered at Diggs.
I. I believe the fishless ponds created for watering holes should be filled in, or otherwise removed, as they have been the cause of midge flies killing scores of deer during long hot dry spells. II. I do not think the goal of attracting more visitors to the conservation areas is consonant with the MDC mission. The Parks Dept (M D N R) has the job of attracting visitors by adding conveniences, etc. MDC should stick with managing for conservation. Thanks for the opportunity to express my opinions.
1; Provide at least 2 areas of over 5 acres for managed dove fields with sunflowers or other dove attracting plants. 2; Provide and maintain wood duck nest boxes in appropriate locations. It appears at least 20 could be effectively utilized.
First, thank you for the opportunity to comment on the Marshall I. Diggs CA Draft Management Plan. Equestrian trail riders in Audrain, Monroe, Montgomery, and Callaway Counties are underserved with respect to public land riding opportunities. To address this lack of opportunity Marshall Diggs CA is on a priority list of Conservation Areas recommended for multi-use trail development in the 2015 "Expanding Public Land Multi-Use Trails in Missouri" proposal by Show-Me Missouri Back Country Horsemen. This is consistent with the purpose of providing compatible recreation opportunities as stated in the draft plan Statement of Purpose, Strategic Direction. Providing opportunity for equestrian users is also consistent with the part of Public Use Management Objective 1: providing wildlife viewing opportunities; allowing equestrian use would also make those opportunities available to a number of persons with disabilities. Diggs CA exhibits most desirable characteristics for development of a multi-use trail system. The CA is of adequate size for development of a minimum of 10-12 miles of trails. Topography and landscape (predominantly upland), a variety of cover types, and a minimum of conflicting uses also represent positive features. Trails should be located to maintain adequate separation from the two fishing lakes, and they must be located carefully to minimize issues with erodible

and seasonally saturated claypan soils—all quite easily done. The location, off Missouri Route ZZ and near Highways 19 and 54, would provide safe and convenient access to the CA via hard surface roads.

SMMBCH offers our services (availability of volunteers permitting) to help decide on the best location and then clear and mark the trails. We further offer to assist the Area Manager to develop a partnership with local trail users to assist with development and maintenance with the trails and associated infrastructure.

Thank you again for the opportunity to comment.