Toronto Springs Conservation Area

Ten Year Area Management Plan

FY 2014-2023

Lisa D. Allen
Forestry Division Chief

1-13-15
Date

Toronto Springs Conservation Area Management Plan Approval Page

PLANNING TEAM

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OVERVIEW

- **Official Area Name:** Toronto Springs Conservation Area, # 8616
- **Year of Initial Acquisition:** 1986
- **Acreage:** 890 acres
- **County:** Camden
- **Division with Administrative Responsibility:** Forestry
- **Division with Maintenance Responsibility:** Forestry
- **Statements of Purpose:**
  Toronto Springs Conservation Area was purchased in 1986 as a multi-use area for the public to experience nature and unique natural features, and have access to public fishing and hunting opportunities. The Ballenger tract was added to the area in 2013.

  A. Strategic Direction

  Toronto Springs Conservation Area (CA) will emphasize sustainable management of Missouri's forest, fish, and wildlife resources and provide opportunity for all citizens to use, enjoy and learn about these resources. The forests will be actively managed utilizing appropriate silvicultural techniques to produce forest products and ultimately healthy forest. Natural communities such as glades, woodlands, springs and fens will be managed to preserve biodiversity and create wildlife habitat. Furthermore, protection of sensitive habitats, aquatic resources and visual aspects of Toronto Springs will remain a high priority. Toronto Springs Conservation Area will serve as a benchmark example of how a publicly owned forest can be highly productive for timber production, wildlife and the surrounding community.

  1) Restore natural communities, namely woodlands; glades; savannas and wetlands.
  2) Manage the forest and natural community resource, utilizing sustainable forest management practices and BMP's.
  3) Maintain adequate public access for fishing, hunting, wildlife viewing, and general recreation.

  B. Desired Future Condition

  The desired future condition of Toronto Springs CA is a forest/woodland complex with glades, springs, and fens.

  C. Federal Aid Statement

  N/A

GENERAL INFORMATION AND CONDITIONS

I. Special Considerations

A. Priority Areas:

1) Wet Glaize Creek Fisheries Priority Watershed
Toronto Springs is found within the Wet Glaize Creek Priority Watershed; an 81,948 acre watershed surrounding the Wet Glaize Creek and associated tributaries.

2) Carol Cave Focus Area
The geology of this area is rich with karst topography and falls within a Cave Focus Area. This is the second largest focus area in the county and is known to provide important gray bat habitat.

B. Natural Areas: None

II. Important Natural Features and Resources

Toronto Springs Conservation Area falls within the Middle Osage River Oak Woodland Hills, a land type association (LTA) of the Osage River Hills Subsection located within the Ozark Highlands. This LTA is a moderately dissected landscape consisting of rolling hills and narrow ridge tops with steep side slopes. Historically this landscape marked a subtle transition between oak woodlands and prairie. Typically the upper ridge tops were dominated by open oak savanna or woodlands with pockets of prairie scattered throughout. The more rugged side slopes were likely dominated by woodland scattered with pockets of exposed glades. Today, what once was open savanna is now dominated by pasture or miscellaneous farm land. That which was rugged woodlands and glades is now dense stands of second growth oak forest (Nigh & Schroeder, 2002). Some notable natural features that occur in this LTA are several known fen communities and bat caves.

A. Species of Conservation Concern: Species of conservation concern are not known from this site, but are found in the surrounding area. Area Managers should consult annually with the Natural History Biologist.

B. Caves: Yes, records kept with MDC Natural History Biologist. Managers should follow the Cave Management policy found in the MDC 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 Missouri Department of Conservation's White-nose Syndrome Action Plan that limits public access to protect bats.

C. Springs/Streams:

Toronto Springs

Toronto Springs Conservation Area is so named after the springs that originate on the area. There are four outlets from this spring that flow diffused from gravel beds on the north bank of the Wet Glaize Creek. These springs are inconspicuous

due to stream side vegetation and the arrangement of the outlets over a large gravel bar. Dye tracing experiments conducted in 1965 proved that the major source of water for Toronto Springs is from Carroll Cave, a large cave system located south of the discharge area (Vineyard & Feder, 1974).

Wet Glaize Creek

Wet Glaize Creek originates northeast of Stoutland, MO in Camden County at the union of Conns and Sellers Creek. At river mile 6.2 the stream enters Toronto Springs Conservation Area and meanders for a distance of 1.2 miles to the confluence of the springs. The stream exits the conservation area at river mile 8.7.and continues on a short distance until it joins the Dry Auglaize Creek at river mile 9.0 near the Camden/Miller County line. This union forms the Grand Auglaize Creek, which creates the Grand Glaize Arm of Lake of the Ozarks. The Wet Glaize Creek Watershed drains 103,578 Acres (180 sq. mi2).

In 1989, Fisheries and Forestry personnel jointly proposed 2 separate revetment projects on Toronto Springs CA along the Wet Glaize Creek. The projects were meant to serve a dual purpose, first as a way of evaluating effective revetment methods for Ozark streams and second as a showcase for landowners of the region. Both sites had experienced years of abuse by cattle grazing causing nearly 600 feet of eroded bank on the first site and 200 feet on the second. The revetments were installed during the 1989 field season and for a period of 2 years the project was a success. In early January of 1992 the project turned unsuccessful when a flood event destroyed nearly half of the first revetment.

D. Glades/Woodlands

The woodland complexes found in this region are predominately a dry chert woodland type with pockets of exposed chert or limestone/dolomite glades. These woodland/glade complexes represent a subtle transition between the western prairies and the Osage River oak woodland hills (Nelson, 2010). These communities are found associated with each other on the west and south facing upper backslopes or ridges. Soil conditions and historic natural processes such as wildfire, herbivory, and adverse weather conditions limited the development of these communities. Frequent intervals of these factors create open canopy conditions with a sparse understory and a dense ground layer of forbs, sedges and grasses. Soils have developed from a mixing of loess and the gravelly sediment over gravelly or clayey residuum, weathered form the underlying parent material (Nelson, 2010). These soils are poor and highly acidic. Chert makes up most of the loose fragments whereas dolomite/limestone and sometimes chert create occasional rock outcroppings.

The Ecological Classification System identifies the potential for at least the following seven variations of glade/woodland communities on Toronto Springs CA. (Refer to Figure 2 in Appendix B for distribution of these natural communities.).

- Alfic Chert Upland Woodland
- Chert Limestone Dolomite Exposed Backslope Woodland
- Chert Limestone/Dolomite Upland Woodland & Shallow Limestone/Dolomite Upland Glade/Woodland.
- Ultic Chert Exposed BackSlope Woodland
- Ultic Chert Protected Backslope Woodland
- Ultic Chert Upland woodland
- Loess Fragipan Upland Flatwoods

E. Forest Resources

Toronto Springs is more than 81% forested, consisting of both forest and woodland community types. The forest communities vary ecologically from an upland oak hickory forest to a bottomland riverfront forest based on topographic position. Upland sites are described as a dry-mesic chert forest. This community type is found generally on the north and east aspects of side slopes and narrow ridges creating a natural fire shadow in which wildfire incidences are infrequent or reduced to low intensity (Nelson, 2010). Community structure consists of a dense overstory of oak and hickory species with a shade tolerant understory and mixture of shrub and patchy ground flora on the forest floor. Soils are well drained, deep and highly acidic with a high amount of chert fragments scattered throughout the profile. Soils have developed from sediment built up over highly weathered cherty limestone or dolomite residuum. Soil fertility is low due to the acidity and rarely due to a fragipan that has developed on the ridges and steep shoulder slopes.

The remaining forest community type found in the bottomland is characterized as a river front forest. This community type is found within the flood plain adjacent to rivers, streams and wetlands. Slope is nearly non-existent. Natural flood events shape this community through periods of soil saturation and deposition of both organic and inorganic material. Community structure varies but is often poorly structured depending on frequency and amount of alleviated material (Nelson, 2010). Newly deposited material along stream meanders is quickly inhabited showing a gradual progression of age from stream bank inward. Frequent flooding has created an open understory and sparse forest floor due to deposition, and scouring of sediment (Nelson, 2010).

The forest component of Toronto Springs is small to large saw timber sized oaks with pockets of small pole oak-hickory timber. Much of this timberland was cut over through high grading prior to public ownership. Old fields within the riparian corridor have been converted to bottomland tree plantations along the Wet Glaize Creek and the glades have succeeded into dense cedar thickets. Dominant species on upland sites include: white oak, northern red oak, black oak, post oak, shagbark hickory, black hickory and ash spp. Bottomland stands are dominated by black walnut, sycamore, elm, ash and hickory species. Site productivity for growing trees varies good to poor quality across the landscape. TSI and tree plantings have been the only forest management activities in recent years. Future management efforts will include both even and uneven aged prescriptions.

The entire Forest will be divided into two compartments that will be re-inventoried on a 15 year cycle. The first compartment encompasses nearly all of the 568 acres of Toronto Springs as it was prior to 2013. In 2013, 322 acres known as the Ballenger Tract was acquired by the Department north of the property. This new addition more or less will be designated as compartment number 2. Actual compartment boundaries will follow natural divisions.

F. Wetlands

There are three small wetland sites on Toronto Springs CA. The first is a small seasonably wet pool adjacent to the canoe access parking lot. The second is a small spring fed slough near the springs. Finally, the third is a highly degraded oxbow slough located on the Ballenger tract. The canoe access wetland is less than an acre that has become overgrown with softwood species such as box elder, willow and silver maple. It is full of water nearly all year round except during droughty conditions. It is excellent amphibian and migratory bird habitat as both are frequently observed. The spring fed slough is relatively inconspicuous but was noted in a field survey collected in the late 1980s as having good water quality and unique herbaceous species. The oxbow slough has had several consecutive years of abuse due to cattle grazing and is in need of restoration.

G. Fields

Toronto Springs has approximately 18% of its total acreage in food plots, old pasture and warm season grasslands. The old pastures are rank with fescue and perennial forbs. Maintenance in recent years has consisted of mowing and contract haying with a neighboring landowner. The remaining open fields are planted with annual food plots, maintained by Missouri Department of Conservation employees for the purpose of providing wildlife habitat.

III. Existing Infrastructure

- 4 gravel parking lots each with the capacity of 5-10 vehicles
- 1 unimproved canoe access
- 1 primitive campsite located near the canoe access available at first come first serve
- 1 concrete picnic table located with the primitive campsite

IV. Area Restrictions or Limitations

A. Deed Restrictions or Ownership Considerations:

1) A mining lease was listed in Schedule B of the property title insurance policy provided by TRW title Insurance Co. Reference policy # 0142214 for the book and page number maintained in the County record at the Camden County Courthouse.
2) The Ballenger tract found north of Toronto Springs has recently been added to the state land inventory. This tract of land adds approximately a ½ mile of stream frontage on the Wet Glaize Creek; two caves; and approximately 200 acres of timber.

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:

A 30 foot Right-of-Way easement for private road access is referenced in Schedule B of the property title insurance policy. Refer to policy # 0142214 from the TRW title Insurance Co for referenced book and page numbers maintained in the Camden County Courthouse records. A Right of Entry easement granted to MODOT for road improvements of Highway A is recorded and maintained in book 73; page 598 and 599 of the county record at the Camden County Courthouse.

D. Cultural Resources Findings: No known cultural resources.

E. Hazards and Hazardous Materials: None observed.

F. Endangered Species: Endangered Species are not known from this site, but are found in the surrounding area. Area Managers should consult annually with the Natural History Biologist.

G. 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) The forested community should be managed sustainably to improve health, productivity and biodiversity.
2) Natural community resources need active management to promote biodiversity and connectivity.
3) Management should emphasize diverse wildlife habitat.
4) Control of invasive species is an ongoing challenge.

Management Objective 1: Manage the forest resource to improve health, productivity and sustainability as well as provide protection for aquatic resources.

Strategy 1: Conduct forest inventory by compartment with an estimated reentry time of 15 years or as needed.

Strategy 2: Implement timber management and wildlife habitat improvement practices as prescribed by the detailed forest inventory process.

Strategy 3: During timber harvesting utilize BMP's according to the *Missouri Watershed Protection Practices* booklet to maintain soil, water and visual integrity.

Management Objective 2: Improve natural community diversity.

Strategy 1: Identify landscape scale management units that encompass a complex of natural communities that can easily be managed as a single unit.

Strategy 2: Utilize current compartment level inventory, aerial photography and onsite inspection to identify and support management decisions of the identified units.

Strategy 3: Use management techniques to release the full potential of each natural community management unit. Management activities will occur on a 1-5 year rotation to ensure regular monitoring of these highly sensitive communities.

Management Objective 3: Provide diverse wildlife habitat.

Strategy 1: Implement Management Objective 2.

Strategy 2: Manage open land through rotational cropping, hay permitting, prescribed fire and mowing to maintain early successional habitat.

Strategy 3: Provide transitional zones between field, woodland and forest. Use management techniques such as edge feathering, thinning and prescribed fire to meet this strategy.

Strategy 4: Increase the riparian corridor out to 200 feet around the Wet Glaize Creek specifically for gray bat habitat and stream bank stabilization.

Management Objective 4: Control invasive species where applicable.

Strategy 1: Identify the extent of both exotic and invasive species and develop an integrated pest management attack strategy.

Strategy 2: Implement the attack strategy using available resources both contracted and in-house. Evaluate effectiveness annually.

VI. Aquatic Resource Management Considerations

Challenges and Opportunities:

1) Fishing access and wildlife viewing opportunities should be maintained and considered a fundamental objective for future generations.
2) Water quality of the streams must be maintained to support a healthy ecosystem.
3) The aquatic features of Toronto Springs are unique and must be protected.

Management Objective 1: Maintain access to wetlands and streams for fishing and wildlife viewing opportunities.

Strategy 1: Provide maintenance on an as needed basis to the parking lots, trails and signage adjacent to the stream frontage along the Wet Glaize Creek.

Strategy 2: Maintain canoe access to the Wet Glaize Creek.

Management Objective 2: Improve Riparian habitat surrounding Wet Glaize Creek

Strategy 1: Establish and maintain a 200 foot buffer around the Wet Glaize Creek both for water quality and wildlife habitat, specifically gray bats.

Strategy 2: Establish and maintain a 50 foot vegetative buffer around the oxbow slough on the Ballenger Tract.

VII. Public Use Management Considerations

Challenges and Opportunities:

1) Toronto Springs should be managed to provide the public with many opportunities to enjoy Missouri's resources.
2) Toronto Springs should be inviting and accessible to all area users.

Management Objective 1: Provide opportunities for safe and acceptable activities on Toronto Springs CA

Strategy 1: Ensure that information regarding the area, including the Ballenger tract, is up-to-date accurate, consistent and available to the public through general contact, atlas database, posted signs and brochures.

Strategy 2: Provide quick response to issues or questions that arise from area users or activities.

Strategy 3: Allow year round access for area users to hunt, fish, gather edibles, and enjoy Missouri's outdoors appropriately and in accordance with State and area specific regulations.

Strategy 4: Support the local community by allowing group activities such as FFA and Stream Team.

VIII. Administrative Considerations

Challenges and Opportunities:

1) Area infrastructure should be inviting and encourage the public to care for it.
2) Toronto Springs should support the local community through conservation of the local resources.

Management Objective 1: Maintain area infrastructure.

Strategy 1: Evaluate access points from Highway C to the Ballenger Tract and consider adding additional parking.

Strategy 2: Monitor and mark the area boundaries according to the pre-established marking schedule. Relocate the boundary markers to include the Ballenger Tract.

Strategy 3: Maintain infrastructure on an as needed basis to ensure that signage, parking lots, and trails are in good shape.

Strategy 4: Maintain primitive camping opportunities.

Management Objective 2: Seek out and develop good relationships with Toronto Springs CA neighbors and the community.

Strategy 1: Inform neighboring landowners of noteworthy area activities prior to the activity in either formal writing, or verbally. Provide periodic updates as needed.

Strategy 2: Provide special use permitting for appropriate activities requested by the public or neighboring landowners.

MANAGEMENT TIMETABLE

Strategies are considered ongoing unless listed in the following table:

	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23
Terrestrial Resource Management										
Objective 1										
Strategy 1	X									
Strategy 2	X								X	
Strategy 3	X	X	X	X						
Objective 2										
Strategy 1	X								X	
Strategy 2	X								X	
Objective 3										
Strategy 4		X	X	X	X	X				
Objective 4										
Strategy 1	X	X								
Aquatic Resource Management										
Objective 2										
Strategy 1		X	X	X	X	X				
Strategy 2		X	X	X	X	X				
Administrative Considerations										
Objective 1										
Strategy 1	X									
Strategy 2	X	X								
Objective 2										
Strategy 2	As needed									

APPENDICES

Area Background:
Toronto Springs Conservation Area is located in Camden County, five miles east of Montreal on Route E, then one mile east on Route A, which forms most of the southern boundary of the area.

The conservation area was established in 1986 with an initial acquisition of 532 acres. Three additional land purchases have expanded the area to its present 890 acres and have improved public access to a 2.7-mile section of Wet Glaize Creek.

Toronto Springs, a multi-outlet source, has a flow of two to four million gallons per day.

In the late 1850s, a mill was built near the junction of Wet Glaize Creek and the spring branch. During its heyday, the Toronto Springs Mill was reported to have served locally produced cheese and beer to patrons waiting for their grain to be milled. It also served as a community center where elections and church services were held. The only remaining clue to the exact location of this important mill are the springs.

The area offers a 10-car parking lot off Route A for canoe access to Wet Glaize Creek. There are three other parking areas, one on Route A and the other two are off Route C which provide access to ridge top forest areas. Toilet facilities or approved water are not provided.

Current Land and Water Types

Land/Water Type	**Acres**	**Miles**	**% of Area**
Forest/ Woodland/Glades	722		81
Grassland/ Food Plot	159		18
Savanna	10		<1
Total	**890**		**100**
Major Streams		2	

Public Input Summary:
The draft Toronto Springs Conservation Area Management Plan was available for a public comment period May 1 – 31, 2014. The Missouri Department of Conservation received comments from two respondents (Appendix A). The Toronto Springs 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.

<u>MDC responses to themes and issues identified through Toronto Springs Conservation Area public comment period</u>

Legend font on page 21 is not legible.
As a planning team, we have decided to omit the Ecological Site Description map. This map is difficult to read and does not significantly provide relevant information for the area plan. This information is more appropriate for a detailed forest management or natural community management plan.

Concerned about boundary lines of new Ballenger Tract (acquired in 2013).
The area manager has met with the concerned landowner to understand more details about the boundary line concerns. This is an individual matter that will be addressed through standard fencing policy.

Neighboring landowners may have additional concerns.
The area manager has made several attempts to approach neighbors regarding additional concerns. The area manager personally met with two neighbors to discuss the plan. Neither had concern with the plan itself and were more concerned with trespass issues in reference to area users. We are working to address these issues by surveying and better marking area boundary lines.

References:
MDC. (2005). *Missouri Watershed Protection Practices.* Jefferson City: MDC.

MDC. (2011). *Conservation Priorities; Decision Support Tool* . Jefferson City: Missouri Department of Conservation.

MDC. (2012). *Resource Science Ecological Site Descriptions.* Retrieved June 1, 2013, from MDC SharePoint.

Nelson, P. W. (2010). *The Terrestrial Natural Communities of Missouri.* Jefferson City: Missouri Department of Conservation.

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

Vineyard, J. D., & Feder, G. L., 1974, *Springs of Missouri*: Mo. GeologicalSurvey and Water Resources,WR29,212 p., 94 figs., 26 tbls. Revised edition (1982).

Maps:

Additional Appendices:

Figure 1: Toronto Springs CA Area Map

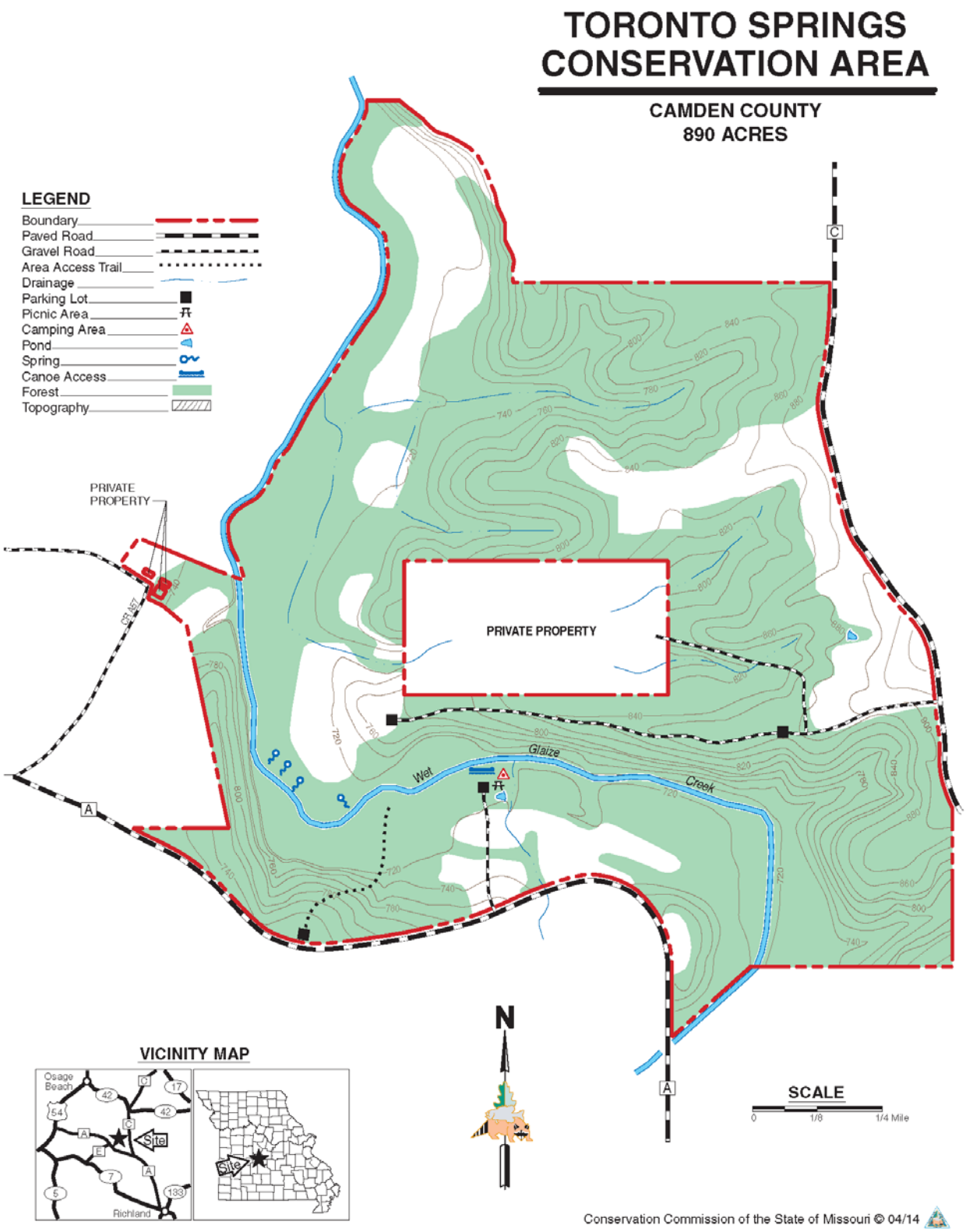

Figure 2: Identified Priority Landscapes

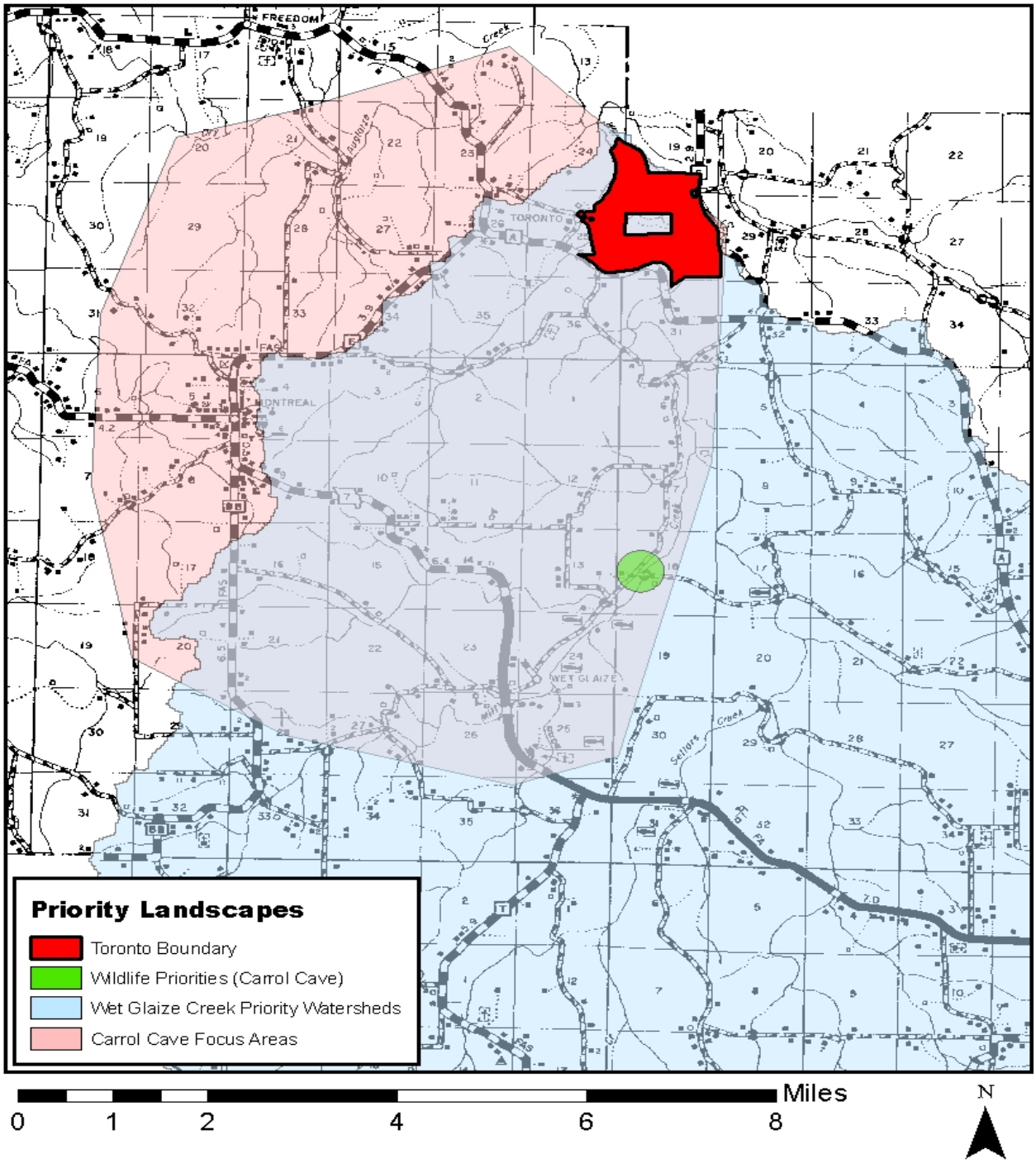

Figure 2: The above map shows the location of Toronto Springs Conservation Area within the identified priority landscapes.

Figure 3: Toronto Springs Compartment Map

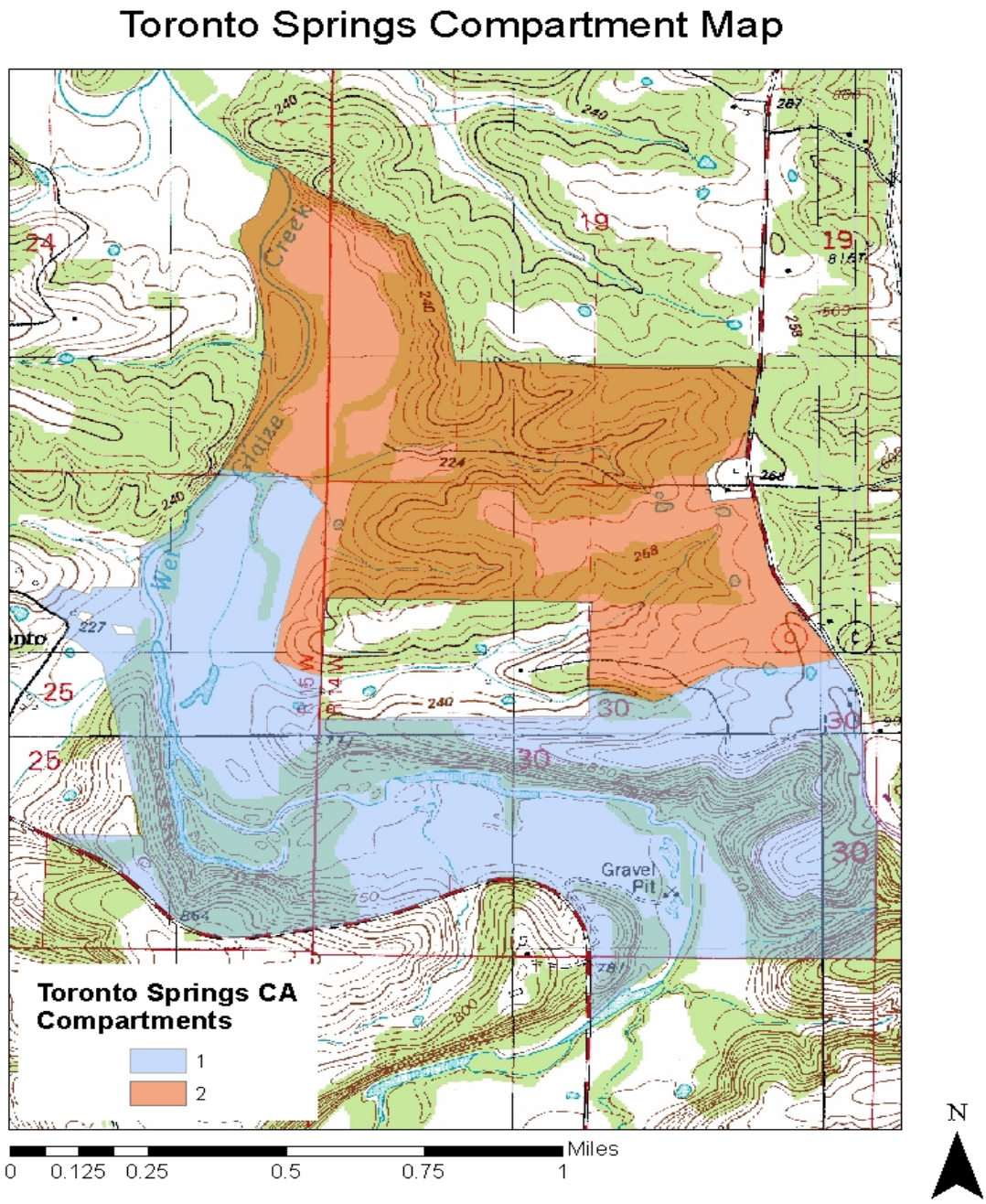

Figure 3: The above map shows the newly designated compartments of Toronto Springs CA to account for the addition of the Ballenger tract.

Figure 4: Ecological Site Descriptions

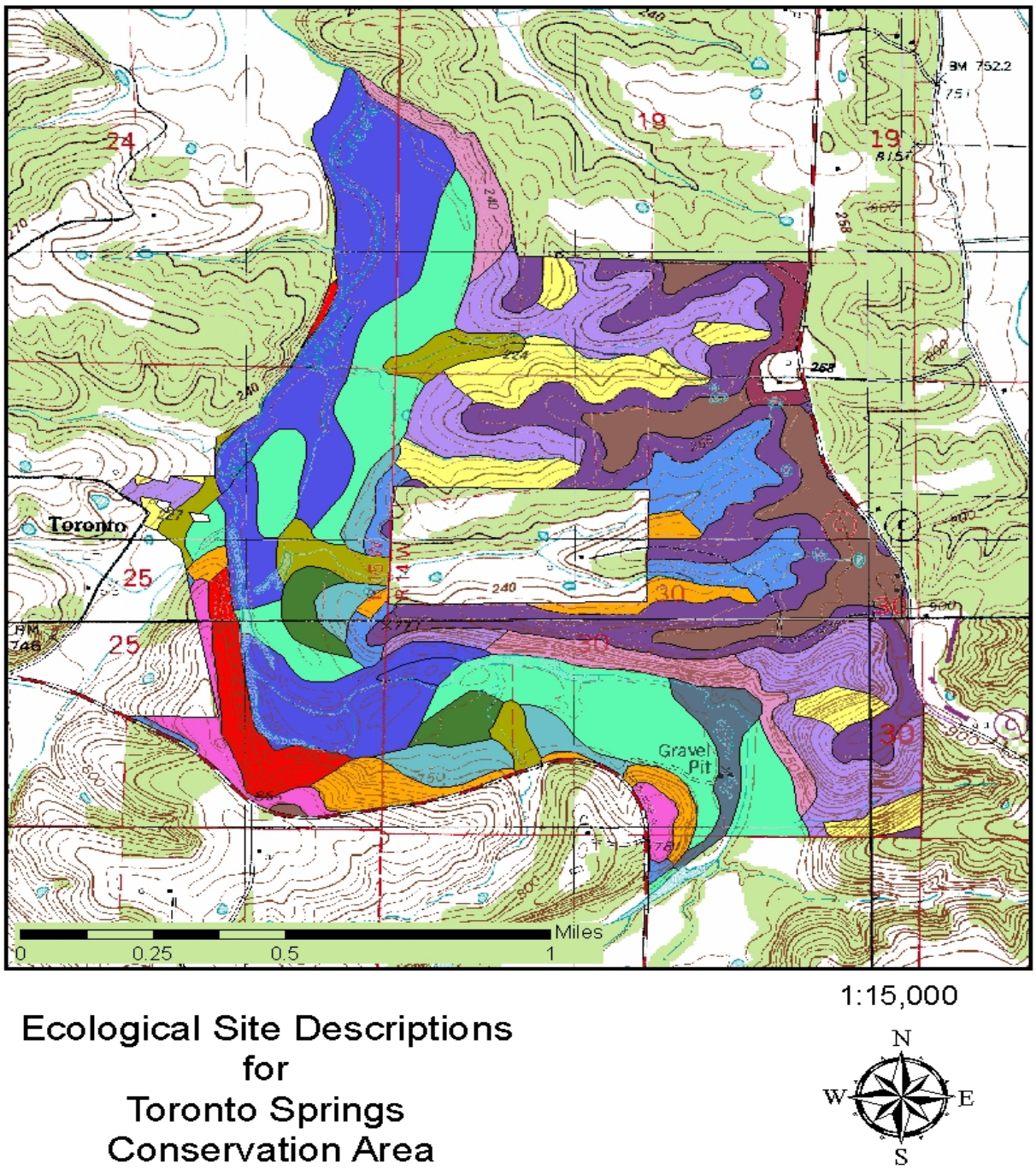

Figure 4: The above map shows the distribution of community types identified by the ecological site descriptions mapping tool. See legend below.

Figure 5: Ecological Site Names

Appendix A. Draft Toronto Springs Conservation Area Management Plan Public Comments

Received during public comment period (May 1-31, 2014).

The font on page 19 on the legend for the ecological site descriptions is very hard to read. For example, I can't tell what the first word on the first four (alfic?) is nor the first word of the last three - can't even guess on this one thanks
We have requested written copy of plan from Paul Johnson and for him to meet with us and have had no response. Left email and phone messages. We have concerns about several issues in the plan but was only notifed of new plan a few weeks ago and limited time to respond to. Concerns about boundaries with the states purchase of the ballinger place . Would appreciate a call from someone to address our concerns . As a landowner that boarders Tronto springs I do not feel that we were given enough notice or attention regarding the new plan as well as several other neighbors I have spoke with. thank you