

**December 20, 2005**

**BLACK OAK RIDGE  
CONSERVATION EASEMENT**

**FINAL MANAGEMENT PLAN**

Managing Agency

STATE OF TENNESSEE  
TENNESSEE WILDLIFE RESOURCES AGENCY

in consultation with

DEPARTMENT OF ENVIRONMENT AND CONSERVATION  
DIVISION OF NATURAL HERITAGE

**BLACK OAK RIDGE CONSERVATION EASEMENT  
FINAL MANAGEMENT PLAN**

**PURPOSE ..... 1**

**BACKGROUND / LOCATION ..... 1**

**PART 1: GENERAL MANAGEMENT OF THE BLACK OAK RIDGE  
CONSERVATION EASEMENT ..... 2**

    A. Facilities .....2

    B. Roads .....2

    C. Fences .....3

    D. Cemeteries.....3

    E. Quarries.....3

    F. Oversight.....3

    G. Public Access .....3

    H. New Projects and Initiatives .....4

    I. General Management of Flora and Fauna in Open Areas.....4

    J. General Management of Flora and Fauna in Forested Areas .....4

**PART 2: MANAGEMENT OF THE PROPOSED EAST BLACK OAK RIDGE  
STATE NATURAL AREA/WMA AND THE WEST BLACK OAK  
RIDGE WMA ..... 5**

**INTRODUCTION..... 5**

    A. Goals .....5

    B. Significance.....6

    C. Management Authority .....6

**DESCRIPTION..... 7**

    A. Statutes, Rules, and Regulations .....7

    B. Natural Resource Assessment.....7

        1. Description of the Area..... 7

        2. Description of Threats..... 9

    C. Cultural Assessment.....9

    D. Target Elements: .....10

        1. Communities..... 10

        2. Species ..... 10

**MANAGEMENT OF TARGET ELEMENTS FOR CONSERVATION..... 10**

    A. Major Goals .....10

**PUBLIC USE ..... 10**

- A. Permitted Uses .....11
- B. Conditional Uses .....11
- C. Prohibited Uses .....11

**ACCESS AND MAINTENANCE ..... 13**

- A. Parking .....13
- B. Signs .....13
- C. Trails .....13
- D. Buildings .....13
- E. Boundary / Site Patrol .....13
- F. Litter Removal .....13

**EDUCATION AND RESEARCH ..... 13**

**RESPONSIBILITIES OF PARTICIPANTS ..... 13**

**LIST OF APPENDICES ..... 14**

# **BLACK OAK RIDGE CONSERVATION EASEMENT FINAL MANAGEMENT PLAN**

## **PURPOSE**

The purpose of this management plan is to identify and outline the goals, objectives, and technical services necessary for conserving, protecting and managing the lands and habitat known as the Black Oak Ridge Conservation Easement (BORCE). The BORCE is approximately 3,000-acres (exact acreage will be determined by final DOE-approved survey) of the Department of Energy's (DOE) Oak Ridge Reservation (ORR). The Tennessee Wildlife Resources Agency (TWRA) will be the lead state managing entity for the BORCE, in consultation with the Tennessee Department of Environment and Conservation (TDEC), and will manage the BORCE as specified by the Black Oak Ridge Conservation Easement (Appendix A), the Cooperative Management Agreement (Appendix B), and the terms set forth in this management plan.

There are two basic parts to this management plan: Part 1) the general management of BORCE specified by the conservation easement which assigns responsibility for maintenance and upkeep of infrastructure of the area, and also the general management practices of open fields and forested areas. Part 2) the specific management of BORCE as a part of Oak Ridge Reservation Wildlife Management Area (WMA) and as a proposed designated state natural area.

Part 1 addresses management of: (A) facilities utilization, (B) road maintenance, (C) fence maintenance, (D) cemeteries, (E) oversight, (F) public access, (G) new projects and initiatives, (H) general management of the flora and fauna in open areas; and, (I) general management of the flora and fauna in forested areas. Part 2 addresses the specific management of the proposed natural area within the WMA and WMA outside of the proposed natural area.

## **BACKGROUND / LOCATION**

The BORCE is situated in the northwest section of 33,749-acre Oak Ridge Reservation and located in Roane County, Tennessee within the city of Oak Ridge (Appendix C). The approximately 3,000-acre BORCE will be subdivided into two units. The proposed natural area will be referred to as East Black Oak Ridge (EBOR), while the section excluded from the natural area is referred to as West Black Oak Ridge (WBOR). The EBOR will be managed both as a WMA and a proposed State natural area. The WBOR will be exclusively managed as a WMA.

The ORR is listed as a National Priorities List (NPL) Site pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. The BORCE area has been investigated for

hazardous substance contamination. This investigation revealed that no known hazardous substance contaminates occur here.

Both TWRA and TDEC have had longstanding relationships with the ORR. TWRA has managed much of the ORR as the Oak Ridge Wildlife Management Area through a TWRA/DOE WMA Agreement (Appendix D) since 1984. The TDEC Division of Natural Heritage Tennessee Natural Areas Program (TNAP) has maintained a suite of registered State natural areas (rsna's) on the ORR since the mid 1980's, and in the late 1990's proposed that these natural areas be significantly increased in size and protected through designation. A more thorough description of the significance of the area is provided in the natural area section of this plan.

## **PART 1: GENERAL MANAGEMENT OF THE BLACK OAK RIDGE CONSERVATION EASEMENT**

The BORCE will be managed on a day-to-day basis by the TWRA, in consultation with TDEC. The primary focus of the management plan will be to protect and enhance the area for native and migratory wildlife, native plants and plant communities, and public use consistent with the easement.

The framework for this management plan is based on nine management sections consisting of:

- facilities
- roads
- fences
- cemeteries
- quarries
- oversight
- public access
- new projects and initiatives
- flora and fauna management in open areas
- flora and fauna in forested areas

### A. Facilities

As specified on page 1 of the easement agreement (Appendix A), there are no known facilities within the BORCE.

### B. Roads

The EBOR has four gravel roads that are currently maintained by the Department of Energy. They are Poplar Creek Road (approximately 2.3 miles), East Quarry Road (approximately 1.0 mile), West Quarry Road

(approximately 2.5 miles), and Hunley Road (approximately 0.7 mile). The total amount of gravel roads within the EBOR is approximately 6.5 miles.

The WBOR has six gravel roads. They are Dyllis Orchard Road (approximately 4.0 miles), Raby Road (approximately 2.0 miles), and West Ridge Road (approximately 3.0 miles), C-1 Power Line Access Road (approximately 1.5 miles), K-901-A Pond Access Road (approximately 0.5 mile), and Black Locust Trail/Clack Road (approximately 1.0 mile). The total amount of gravel roads within the WBOR is approximately 12 miles.

The total amount of roads for both parcels is approximately 18.5 miles. The Department of Energy will continue to be responsible for these roads for the duration of this Agreement. The Department of Energy has expressed an interest that greater public access be provided, and that existing roads within the BORCE be considered for future greenway expansion.

C. Fences

The EBOR and WBOR are bordered by a 6-ft high chain link fence that is approximately four miles long within each parcel, for a total of eight miles of fencing. DOE will continue to be responsible for these fences for the duration of this Agreement.

D. Cemeteries

There are four cemeteries on the BORCE that are excluded from the easement area. These cemeteries are the George Jones Memorial Cemetery, the Silvey Cemetery, the Gallaher Cemetery, and the Rather Cemetery. DOE will continue to assure cemetery visitations and immediate rights of access.

E. Quarries

The quarries are excluded from the easement area and will remain the responsibility of DOE.

F. Oversight

DOE will control all gates, locks, and keys. Access to the BORCE will be in consultation with TWRA.

G. Public Access

Currently, public access is not provided to the BORCE. However, subject to provisions of the WMA, consideration will given to allow for expansion of the existing greenway system (that is predominantly outside the easement area) into the easement area by utilizing some of the 18.5 miles of existing roads.

## H. New Projects and Initiatives

Parking and access areas, as well as limited new hiking and interpretive trails, may be considered to provide the public with access to the BORCE. Additionally, establishing a canoe trail on East Fork Poplar Creek and Poplar Creek is a long-term goal. Any such improvements shall be subject to DOE approval, the restrictions of the Easement, and the provisions of the WMA

## I. General Management of Flora and Fauna in Open Areas

Currently, no open fields are located in either the EBOR or WBOR. The only existing open areas are under and along existing power line and road right-of-ways. TWRA will work with the right-of-way easement holders to develop plans and/or agreements to identify and eradicate - or control - invasive, exotic plant species such as: privet, fescue, sericea lespedeza, Japanese honeysuckle, autumn olive, etc.

TWRA will also work with the right-of-way easement holders to develop plans and/or agreements to allow these areas to regenerate into native plant communities and to maintain them in early succession stages, provided that such will not interfere with the operation of roads or power lines. In areas where natural regeneration is not successful, consideration may be given to planting native warm season grasses or other appropriate native plant communities. Such plans may include the use of tractor bush hogs, herbicides, no-till drills and prescribed burns to accomplish this objective.

Efforts will be made to locate and map all known occurrences of state and federal concern plant and animals species, as well as rare or high quality ecological communities, and management efforts will be directed to sustain and enhance them. Additionally, similar efforts will be made to locate and map known occurrences of invasive exotic pest species, and management efforts will be directed toward their control and eradication.

The success of these plans may be limited by the roughness of the terrain and possible prohibition on using fire as management tool. Fire control will remain the responsibility of DOE. Additional management strategies or ideas may be suggested by the TDEC Natural Areas Program and may be incorporated, when possible, subject to the availability of money, time, and equipment.

## J. General Management of Flora and Fauna in Forested Areas

The WBOR parcel may be managed in conjunction with the Partners-in-Flight Neo-tropical Migratory Bird Management Plan for the Ridge and Valley Physiographic Regions of Tennessee. This plan when completed will call for

specific forest management objectives in various parts of the Ridge and Valley province to provide critical forest habitats for specific bird species. The EBOR forested area will be managed as specified in Part 2 as proposed State natural area, which will also be consistent with the Partners-in-Flight Neotropical Migratory Bird Management Plan for the Ridge and Valley Physiographic Regions of Tennessee.

With acceptance and approval of this plan by the DOE, TWRA will provide forest management recommendations for the EBOR and WBOR to DOE for incorporation into DOE's ongoing Forest Management Plan. Existing forest management plans will be implemented until other plans can be developed. Forest fire control and all other forest management responsibilities will remain the responsibility of DOE.

## **PART 2: MANAGEMENT OF THE PROPOSED EAST BLACK OAK RIDGE STATE NATURAL AREA/WMA AND THE WEST BLACK OAK RIDGE WMA**

### **INTRODUCTION**

The East Black Oak Ridge (EBOR) State Natural Area will be managed on a day-to-day basis by the Tennessee Wildlife Resources Agency (TWRA) in consultation with the Tennessee Department of Environment and Conservation (TDEC), Division of Natural Heritage (DNH). Management will occur in accordance with the Cooperative Management Agreement between these two agencies found in Appendix B and will be consistent with the terms of the Black Oak Ridge Conservation Easement (BORCE) agreement between TWRA and the U.S. Department of Energy, Oak Ridge Reservation (Appendix A), and in accordance with the Tennessee Natural Areas Preservation Act of 1971 (Appendix E), and the Rules for Management of Tennessee Natural Resource Areas (Appendix F). The West Black Oak Ridge area will be managed in exclusively as WMA (T.C.A. 70-1-101 et seq. Rules of the Tennessee Wildlife Resources Agency, Chapter 1660-1-1 et seq.).

#### **A. Goals**

The BORCE has two distinct parcels: East Black Oak Ridge (EBOR) and West Black Oak Ridge (WBOR). The east and west parcels are separated by the Poplar Creek water gap and Blair Road. The east parcel will be managed as a State natural area.

The main goals for managing the EBOR State Natural Area are:

1. Maintain values as a Tennessee Department of Environment and Conservation Class II Natural-Scientific Natural Area.

2. Restore and maintain the ecological integrity of East Black Oak Ridge.
3. Provide and maintain reasonable, safe public access to the natural area for passive day-use recreation in cooperation with the Tennessee Wildlife Resources Agency and the U.S. Department of Energy.

#### B. Significance

The BORCE comprises approximately 3,000 acres located in the northwestern part of the Oak Ridge Reservation. Both the EBOR and the WBOR will continue to be part of the TWRA's Oak Ridge Wildlife Management Area. In addition, the East parcel will be managed by TWRA as a state natural area, in consultation with TDEC.

Prominent features of the BORCE include:

- Black Oak Ridge
- McKinney Ridge
- mixed hardwood-native pine forest
- large forested wetland
- river bluffs

The significant features of the EBOR State Natural Area are more specifically described in Section VI.B.1.

#### C. Management Authority

The principal manager of the BORCE is the Tennessee Wildlife Resources Agency. The EBOR will be managed on a day-to-day basis by the Tennessee Wildlife Resources Agency (TWRA). The Tennessee Department of Environment and Conservation (TDEC), Division of Natural Heritage (DNH) Tennessee Natural Areas Program will provide consultation, technical assistance, and consent to the management of EBOR. The administration of Natural Areas Preservation Act of 1971 is the responsibility of the State of Tennessee Department of Environment and Conservation, Division of Natural Heritage, Natural Areas Program.

Contacts: Tennessee Wildlife Resources Agency (TWRA), TWRA, Region III, Attn: Jim Evans, 464 Industrial Blvd., Crossville, TN 38555, 865-574-8204

Division of Natural Heritage, 401 Church Street, 14h Floor L&C Tower, Nashville, TN 37243-0447, (615) 532-0431 or Division of Natural Heritage, 2700 Middlebrook Pike, Suite 220, Knoxville, TN 37921 (865) 594-5601.

## DESCRIPTION

### A. Statutes, Rules, and Regulations

Both the EBOR and WBOR are managed as part of the TWRA Oak Ridge Wildlife Management Area (T.C.A. 70-1-101 et seq. Rules of the Tennessee Wildlife Resources Agency Chapter 1660-1-1 et seq.) and in compliance with the Black Oak Ridge Conservation Easement.

The EBOR will be managed as a Class II Natural Area under the Natural Areas Preservation Act of 1971 (T.C.A. 11-14-101) (Appendix E). The classification is “natural-scientific... which are areas associated with and containing floral assemblages, forest types, fossil assemblages, geological phenomena, hydrological phenomena, swamplands and other similar features or phenomena which are unique in natural or scientific value and are worthy of perpetual preservation” (T.C.A. 11-14-105). The area is managed in accordance with the Rules for Management of Tennessee Natural Resource Areas Chapter 0400-2-8, Appendix F).

### B. Natural Resource Assessment

#### 1. Description of the Area

The BORCE is situated within the 33,749-acre Oak Ridge Reservation and is located in Roane County, Tennessee. It is comprised of two parcels hereafter referred to as East Black Oak Ridge (EBOR) and West Black Oak Ridge (WBOR). These Black Oak Ridge parcels are part of Oak Ridge’s National Environmental Research Park (NERP) on which the Department of Energy performs research and extracts valuable data for environmental and ecological preservation. The ORR is listed as a National Priorities List (NPL) Site pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, as amended. The areas comprising the Black Oak Ridge parcels have been investigated for hazardous substance contamination and it is shown that said hazardous substances do not contaminate the parcels.

Both the EBOR and WBOR sections include the following forest types:

- southern red oak-tuliptree-white oak-pine-hickory;
- tuliptree-southern red oak-white oak; and
- northern red oak-tuliptree-white oak.

The EBOR and WBOR include some pine plantations that will eventually be replaced by natural communities, either through forest management or natural succession. Some invasive species exist within the natural area, including kudzu in the west portion and privet in the forested wetlands of the east section. Control and management of these invasive species is

recommended. Appendix G contains a list of exotic invasive species in Tennessee.

a) East Black Oak Ridge State Natural Area

East Black Oak Ridge contains three significant ecological sites within its boundaries: Poplar Creek Bluff, McKinney Ridge Hemlock-Rhododendron Forest, and Black Oak Ridge Forest. Each of these sites harbors numerous uncommon and some rare species, including Tennessee dace (*Phoxinus tennesseensis*), American ginseng (*Panax quinquefolius*), golden seal (*Hydrastis canadensis*), pink lady's-slipper (*Cypripedium acaule*), and spreading false-foxglove (*Aureolaria patula*).

Sites of Ecological Importance within East Black Oak Ridge Natural Area include:

- Poplar Creek Bluff
- McKinney Ridge Hemlock-Rhododendron Forest
- Black Oak Ridge Forest

Site 1: Poplar Creek Bluff

Poplar Creek Bluff is a steep, southwest-facing slope in the Poplar Creek Water Gap that bisects Black Oak Ridge. It is located a short distance upstream from the East Fork Poplar Creek confluence with Poplar Creek. Small limestone cliffs occur near the stream. Many species that are unusual within the ORR occur here, including hemlock (*Tsuga canadensis*), rhododendron (*Rhododendron maximum*), fringe tree (*Chionanthus virginicus*), spider lily (*Hymenocallis occidentalis*), and mock orange (*Philadelphus hirsutus*). Pink lady's-slipper (*Cypripedium acaule*) and spreading false-foxglove (*Aureolaria patula*) also occur at this site. This site was one of the eight original Registered State Natural Areas established in 1985 at the ORR.

Site 2: McKinney Ridge Hemlocks

McKinney Ridge Hemlocks is found northeast of the East Tennessee Technology Park (ETTP) facilities on the slopes of McKinney Ridge overlooking Poplar Creek. Spreading false-foxglove and whorled horse-balm (*Collinsonia verticillata*) are found here. This site is the most extensive area of hemlocks and rhododendrons on the ORR and represents a rare forest community type in the Ridge and Valley Province. Additionally, two small cave entrances are found near Poplar Creek. This also was one of eight original Registered State Natural Areas established at ORR in 1985.

### Site 3: Black Oak Ridge Forest

Black Oak Ridge Forest is northwest of Lambert's Quarry and is a large forested area of mature mixed hardwoods and pines. Much of the forest is oak-hickory-tuliptree, but native pine forests of shortleaf pine (*Pinus echinata*) and white pine (*Pinus strobus*) dominate some areas. This large forested area includes commercially exploited pink lady's-slipper. The white-topped sedge (*Rhynchospora colorata*) occurs at the edge of the pond in a quarry located within the site. This is the only confirmed site for this sedge in Tennessee.

#### b) West Black Oak Ridge Section

Sites of Ecological Importance within the West Black Oak Ridge conservation area include:

- Leatherwood Bluff

### Site 4: Leatherwood Bluff

Leatherwood Bluff is a site west of Blair Road and the Poplar Creek Water Gap through the ridge and extending southwest along the ORR boundary on top of Black Oak. This is a largely mature forest of hardwoods and hemlocks with an understory of rhododendron, maple-leaf viburnum (*Viburnum acerifolium*), buffalo-nut (*Pyralia pubera*), and leatherwood (*Dirca palustris*). This understory assemblage is not found elsewhere on the ORR and, indeed, is rare within the Ridge and Valley physiographic province. The site is on a steep north-facing slope overlooking Poplar Creek in an area of limestone outcrops and three cave entrances. At least four plant species are found here, but nowhere else on the ORR. These are a milkweed (*Asclepias quadrifolia*), purple sedge (*Carex purpurifera*), buffalo-nut, and Vasey's trillium (*Trillium vaseyi*).

## 2. Description of Threats

Exotic invasive species are threatening the integrity of the natural area. Common exotic invasive species include kudzu, in the west portion, and privet in the forested wetlands of the east section. Control and management of these invasive species is recommended.

## C. Cultural Assessment

There are no known cultural resources within the BORCE. Any such resources that may be discovered will be protected from disturbance and be reported to DOE immediately. Any cemeteries or burial sites that may be discovered within the surveyed boundary of the BORCE will be fenced and excluded from the BORCE and remain in their same location as a separate land unit.

D. Target Elements:

1. Communities

The following community types have been recognized in both the east and west sections of the BOR:

- southern red oak-tuliptree-white oak-pine-hickory;
- tuliptree-southern red oak-white oak; and
- northern red oak-tuliptree-white oak.

2. Species

Rare and threatened species within the EBOR include:

	<u>Global Rank</u>	<u>Federal Rank</u>	<u>State Rank</u>	<u>State Status</u>
pink lady's-slipper ( <i>Cypripedium acaule</i> )	G5	---	S4	E-CE
spreading false-foxglove ( <i>Aureolaria patula</i> )	G2G3	---	S2	T
golden seal ( <i>Hydrastis canadensis</i> )	G4G5	---	S3	S-CE
American ginseng ( <i>Panax quinquefolius</i> )	G3G4	---	S3S4	S-CE
southeastern shrew ( <i>Sorex longirostris</i> )	---	---	S4	D
Tennessee dace ( <i>Phoxinus tennesseensis</i> )	---	---	S3	D

## MANAGEMENT OF TARGET ELEMENTS FOR CONSERVATION

A. Major Goals

1. Set up and implement a monitoring plan for the threatened and endangered species in the EBOR. Monitor the populations of threatened and/or endangered species on a regular basis.
2. Provide interpretive signage that educates users about the ecological significance of the EBOR and the BORCE.
3. Locate, assess, and map invasive exotic plant species. Develop and implement a plan for their eradication and/or control.
4. Promote the ecological significance of the EBOR and BORCE to the larger East Tennessee community. Management of the BORCE will emphasize the importance of the forested areas as habitat for avian and other fauna that are dependent upon large, contiguous forested areas.
5. Increase public access opportunities in the BORCE.

## PUBLIC USE

The EBOR State Natural Area will be a day-use only natural area. It will be a favorite location for amateur ornithologists and for hikers. EBOR will provide the

public an opportunity for passive recreation associated with various foot travel activities. The natural area will be open daily dawn until dusk. Hiking and all other related activities including photography, birding, and organized interpretive hikes will be permitted on trails. Off-trail activities may be permitted with approval of DOE, in conjunction with the State Natural Areas Program (regional stewardship ecologist) and TWRA consistent with the BORCE agreement with the U.S. DOE (Appendix A) and management objectives. Consideration will be given to expanding the greenway into the BORCE conservation area along exiting roads.

#### A. Permitted Uses

1. Hiking – Visitors may use trails, when developed, for pedestrian foot travel (Appendix A, Item 15).
2. Nature enjoyment – Passive, low-impact nature recreation such as bird watching, photography, guided hikes and similar activities will be encouraged in public access areas when developed.

#### B. Conditional Uses

1. Hunting – Hunting will be in accord with the Oak Ridge WMA Agreement.
2. Pets – Leashed pets might be permitted in the BORCE in the future pending public access development. Free-roaming pets can cause significant degradation to natural resources through trampling and loss of vegetation, digging up plants and wildlife, and harassment or killing of wildlife.
3. Motorized vehicles – Use of motorized vehicles will be in accord with the Oak Ridge WMA Agreement.
4. Prescribed fires – Prescribed fires will be allowed as per the BORCE agreement with DOE (Appendix A, Item 25b).

#### C. Prohibited Uses

The following uses by the public are prohibited because these activities cause damage to archeological, scientific, historical, or other significant resources, including rare natural features of interest for scientific study and/or because they conflict with passive use recreation activities or policy, unless specifically approved by DOE in consultation with TWRA.

1. Horseback riding – Horseback riding is not permitted anywhere within the natural area. Horses can cause significant degradation of the natural resources within the natural area through dispersal of invasive exotic pest plants, increased soil erosion, trail damage (especially at switchbacks),

trampling and loss of vegetation, soil compaction, alteration of wetland or bog areas, and decreased water quality.

2. Camping – Camping is not allowed anywhere on the property.
3. Motorized and non-motorized off-road vehicle riding (motorcycles, ATVs, go-carts, jeeps, bicycles\*, etc.) – Use of motorized and non-motorized off-road vehicles is not permitted anywhere within the natural area. Off-road vehicle riding can cause significant degradation of the natural resources within the natural area through increased soil erosion, trail damage, crushing and loss of vegetation, soil compaction, alteration of wildlife behavior, alteration of wetland or bog areas, decreased water quality, and disrupts passive recreation activities. \* Bicycles will be permitted only on designated roads in the conservation area if the greenway system is expanded.
4. Rappelling – Rappelling is not permitted anywhere within the natural area. Rappelling can cause significant degradation of the natural resources within the natural area through the trampling and/or removal of vegetation especially mosses and lichens, alteration of plant population and community structure, alteration of wildlife habitat and/or behavior, and alteration and/or degradation of natural rock surfaces.
5. Fires – The use of any fire, including campfires, is not permitted anywhere within the natural area. Fire can cause significant degradation of the natural resources within the natural area through loss of vegetation, loss of wildlife, alteration of plant and animal population structure and community composition, loss of forest litter layer, alteration of the soil fertility, increased soil erosion, decreased water quality, and decreased aesthetics. Fires within the natural area may also pose a significant safety hazard to other visitors within the natural area and to neighboring residents. Fire and smoke may damage or destroy both private property and state owned structures.
6. Collection – Collection or destruction of plants, animals, minerals, or artifacts. The collection or destruction of any natural feature is not permitted anywhere within the natural area.
7. Consumption or possession of alcoholic beverages and controlled substances – The consumption or possession of alcoholic beverages, controlled substances, and other intoxicating drugs or chemicals is not permitted anywhere in the BORCE area.

## **ACCESS AND MAINTENANCE**

### **A. Parking**

There are no public parking areas developed within the boundary of the BORCE. Development of parking and access areas may be considered to provide the public with access to the BORCE. Any such improvements shall be subject to DOE approval, the restrictions of the Easement, and the WMA.

### **B. Signs**

The DNH and TWRA will place signs in the EBOR per the BORCE agreement (Appendix A, Item 21).

### **C. Trails**

There are currently no public use trails located within the BORCE. Future hiking and interpretive trails may be considered to provide the public with access to the BORCE. Any such improvements shall be subject to DOE approval and the restrictions of the Easement.

### **D. Buildings**

There are no buildings within the EBOR and none are planned.

### **E. Boundary / Site Patrol**

Boundary and site patrol will occur consistent with the BORCE agreement.

### **F. Litter Removal**

Litter is generally not a problem within the area. Public use areas will be monitored and maintained.

## **EDUCATION AND RESEARCH**

The EBOR State Natural Area provides an opportunity to demonstrate the importance of natural area values in a rapidly urbanizing area. As part of the ORR, the EBOR provides scientists from all over the world the opportunity to conduct research.

## **RESPONSIBILITIES OF PARTICIPANTS**

Cooperative Management Agreement to be developed.

## **LIST OF APPENDICES**

- A Black Oak Ridge Conservation Easement Agreement (to be appended when executed and recorded)
- B Cooperative Management Agreement between TWRA and TDEC/DNH (to be appended when developed)
- C Location map of Black Oak Ridge Conservation Easement (to be appended when developed upon completion of boundary survey)
- D TWRA Oak Ridge Wildlife Management Area Agreement (annual hunting proclamations are available at TWRA Region 3 office)
- E Natural Areas Preservation Act of 1971
- F Rules for Management of Tennessee Natural Resource Areas
- G List of Invasive Exotic Pest Plants in Tennessee