**Document Type:** EA-Administrative Record
**Index Field:** Environmental Document
**Project Name:** Sauta Cave (Blowing Wind Cave)
**Project Number:** 2014-44

# SAUTA CAVE (BLOWING WIND CAVE) HABITAT ENHANCEMENT PROJECT

# **ENVIRONMENTAL ASSESSMENT**

**Jackson County, Alabama**

**Prepared by:**
TENNESSEE VALLEY AUTHORITY

July 2014

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## Purpose and Need for Action

TVA and the U.S. Fish and Wildlife Service (FWS) propose to eradicate invasive vegetation at and near the entrance of the Sauta Cave (Blowing Wind Cave) on North Sauty Creek in the Sauta Cave National Wildlife Refuge (NWR), Jackson County, Alabama. The primary objective of this collaborative effort is to protect and enhance the habitat for the Indiana bat (Myotis sodalist) and gray bat (Myotis grisescens) that utilize the cave. The project would also benefit the habitat of the Price's potato bean (Apio priceana) and the Cumberland rosinweed (Silphium mohrii). This project is part of an ongoing partnership to improve the habitat for certain threatened and endangered species of plants and animals in the Wheeler NWR complex in Northern Alabama.

The cave entrance is becoming over grown with English Ivy creating a curtain which is beginning to impact the entrance and exit flights of the bats (see Attachment A for photos). Also present at the site are Nepalese browntop, Japanese honeysuckle, privet, and other woody invasive plant species which are encroaching on the forest habitat at the cave entrance.

The opening of the Sauta Cave (Blowing Wind Cave) is on land owned by the FWS and is adjacent to TVA's Sauta Cave (Blowing Wind Cave) Habitat Protection Area (Attachment A includes location maps). This partnership project is in concert with the objectives of TVA's Natural Resource Plan in developing and implementing a variety of proactive methodologies in order to enhance and protect sensitive resources, habitats, and wildlife species. The project is also consistent with the FWS's *Comprehensive Conservation Plan and Environmental Assessment (EA) for the Wheeler NWR Complex* (August 2007) which identifies the wildlife and habitat management objectives for the Sauta Cave (Blowing Wind Cave) area. The FWS's EA provides a description of the cave area and an analysis of the potential impacts of vegetation management actions including herbicide application; this information is incorporated herein by reference (consistent with 40 CFR Parts 1502.21, 1502.20 and 1508.28).

## Proposed Action

Under this alternative, TVA and FWS would eradicate invasive vegetation at and around the Sauta Cave (Blowing Wind Cave) opening. Less than one acre would be treated. English Ivy present at the cave opening would be treated with a combination of two methods:

- Where the ivy is climbing in trees, TVA and FWS would utilize hammers and plastic wedges to pull the larger (pencil size to garden hose size) vines away from the trunks of the trees at a convenient working height, would cut the vines with loppers and treat the lower cut surface with an approved Triclopyr product using a paint brush or similar hand method, taking care not to impact desirable vegetation or spill the herbicide.
- Where the ivy is on the ground and/or rock faces, and where it can be done safely, TVA and FWS would reduce growth layers as needed and injure the leaves of the ivy with a string trimmer, and thoroughly wet all leaves and cut vines with an approved Glyphosate product mixed with an approved surfactant.

Chemicals (herbicides, surfactants, etc.) used during the treatment would be approved by the FWS and applied according to an approved Pesticide Use Proposal and other application FWS guidelines (Intra-Service Section 7 documentation). According to the FWS and the herbicide label guidelines, application of herbicide to English Ivy during July through October would be

most effective. Other invasive species, including tree-of-heaven and Nepalese grass would be treated between July and October and August and March, respectively. TVA and FWS would determine the optimum timing for application of the herbicide. Pesticide application will not occur during times of bat activity. TVA would repeat the proposed eradication actions at the project location annually or as needed.

TVA and FWS would also conduct surveys (acoustic and/or mist nets) in the forest in the vicinity of the cave and in the TVA Blowing Wind Habitat Protection Area to obtain bat activity data, utilizing methods and software programs validated by the FWS for summer surveys. These surveys would be conducted before August 15, 2014. If no bats are detected during the summer surveys, a follow-up survey would be conducted in the late Fall; the follow-up survey would assist TVA in determining whether bats are on the landscape prior to entering the cave for winter hibernation.

The proposed action is TVA's preferred alternative. TVA is also considering taking no action to eradicate the invasive plant species at or in the vicinity of the cave entrance. Not taking action would not address the resource condition issues nor would it help TVA and FWS achieve its goals to improve the habitat for Indiana and gray bats and other threatened and endangered species of plants and animals in the Wheeler NWR complex. Taking no action is included in this analysis to provide a baseline for comparison of project impacts and benefits.

## Site Description

According to the FWS's 2007 EA, the Sauta Cave NWR encompasses 264 acres of hardwood forests and was established in 1978 to provide protection for the federally endangered Indiana and gray bats and their habitat. The proposed action would take place at the cave's opening and its immediate vicinity, less than one acre in size. The cave is an important summer roosting habitat for an estimated 300,000 to 400,000 gray bats and a winter hibernaculum for both bat species (FWS 2007, p. 16).

In addition, more than 250 individual Price's potato-bean plants (a federally threatened species) are located in the refuge. As noted in Attachment B, TVA has observed as many as 152 stems of the Price's potato bean at the project site and up to 60 Cumberland rosinweed plants (a state-listed species) in the general area. The cave has two gated entrances at the project site and has mapped passages extending almost 15,000 feet (FWS 2007, p. 16).

## Environmental Impacts of the Proposed Action

TVA has conducted an environmental review of the proposed project with input from resource specialists by completing a Categorical Exclusion Checklist (see Attachment B). The checklist identifies the resources present in the project area and documents TVA's determination that the proposal would not significantly affect these resources. The following environmental issues were identified by TVA as relevant to this project and are addressed in the checklist:

- State and federally listed aquatic, terrestrial and plant species
- Invasive plant species
- Water quality
- Archaeological resources and historic properties
- Natural, heritage, and other management areas

As stated in the checklist, no adverse impacts to these resources are anticipated. Because the application of herbicide is proposed, there is potential that sensitive plant species or surface waters in the project area could be inadvertently affected. However, TVA would follow appropriate procedures to ensure that spilling of herbicide is prevented and that herbicides are not introduced outside of the treatment areas and to nearby surface water. In addition, the following project-specific measures would be taken to avoid impacts from herbicide application:

- Before work occurs, a TVA and/or FWS botanist would survey the work area for additional federal and state-listed species and would ensure that Price's potato-bean, Cumberland rosinweed, and any other listed plant species located in the project area are flagged in the field.
- Select spray of herbicide would not occur with 1.5 meter of Price's potato-bean, Cumberland rosinweed, or other listed plants.
- Within a 1.5 meter radius of listed plants and near surface water (a stream) near the cave entrance, herbicide would be applied to foliage or to cut stems of undesirable vegetation using a brush or other method of direct application.

Implementing the proposed action is expected to have beneficial impacts because the removal of the English Ivy from the entrance of the cave would allow the Indiana and gray bats to continue to fly into and out of the cave for use as habitat. The cave is utilized by gray bats as a summer maternity cave and by both species during winter as their hibernaculum. The forested areas around the hibernaculum serve as important foraging habitat for these species. The removal of invasive plant species from the forest would further improve the foraging habitat of these bats. Removal of invasive vegetation would also allow natural vegetation to return to the project area, directly benefitting the listed plant species occurring there.

As stated in the checklist, other resources near or present at the project location would not be adversely affected. Although the cave is associated with a previously recorded archaeological site, there would be no ground disturbance and, thus, no effects to the site would occur. There are also two management areas within close proximity to the project site: the North Sauty Creek State Wildlife Management Area and the TVA Blowing Wind Cave Habitat Area (as previously mentioned). The proposal would not affect the North Sauty Creek management area. The proposed survey of bats within TVA's Blowing Wind Cave Habitat Area would be conducted using audio recording and/or mist netting and would have no adverse effect on the management area.

In its 2007 plan, the FWS outlined a strategy for improving habitat in the Wheeler NWR complex. As one of many habitat enhancement projects implemented or proposed in the Wheeler NWR complex, the cumulative impact of the proposed action would be beneficial, with long-term positive impacts to the habitat of Indiana and gray bats and to Price's potato bean and Cumberland rosinweed.

If TVA and FWS do not implement this project, taking no action, the vegetation at the cave entrance would continue to grow and a more-dense vegetative curtain across the entrance would expand. Other invasive species at the site would also continue to grow and impact the habitat of native vegetation. The continued growth of English Ivy at the cave entrance would also obstruct the view of the cave's entrance and further alter the natural setting, thereby impacting the experience of visitors to the cave entrance.

## Agencies and Persons Consulted

Before implementing, the project would be approved by FWS through their Pesticide Use Proposal review process. TVA would obtain a special use permit from the FWS prior to conducting the work. Any other needed permits would be coordinated with FWS.

## TVA Preparers

The following individuals were involved in the preparation of this document:

- Freddie Bennett – Water Resource Representative
- Adam Dattilo – Biologist/Botany
- Michaelyn Harle – Archaeologist
- Matthew Higdon – NEPA compliance
- David Nestor – Biologist/Botany
- Randy Short - Heritage Reviewer, Watershed Specialist
- Erica Wadl – Program Manager, Environmental Support

# ATTACHMENT A: FIGURES

## Figure 1: Location of Sauta Cave (Blowing Wind Cave).

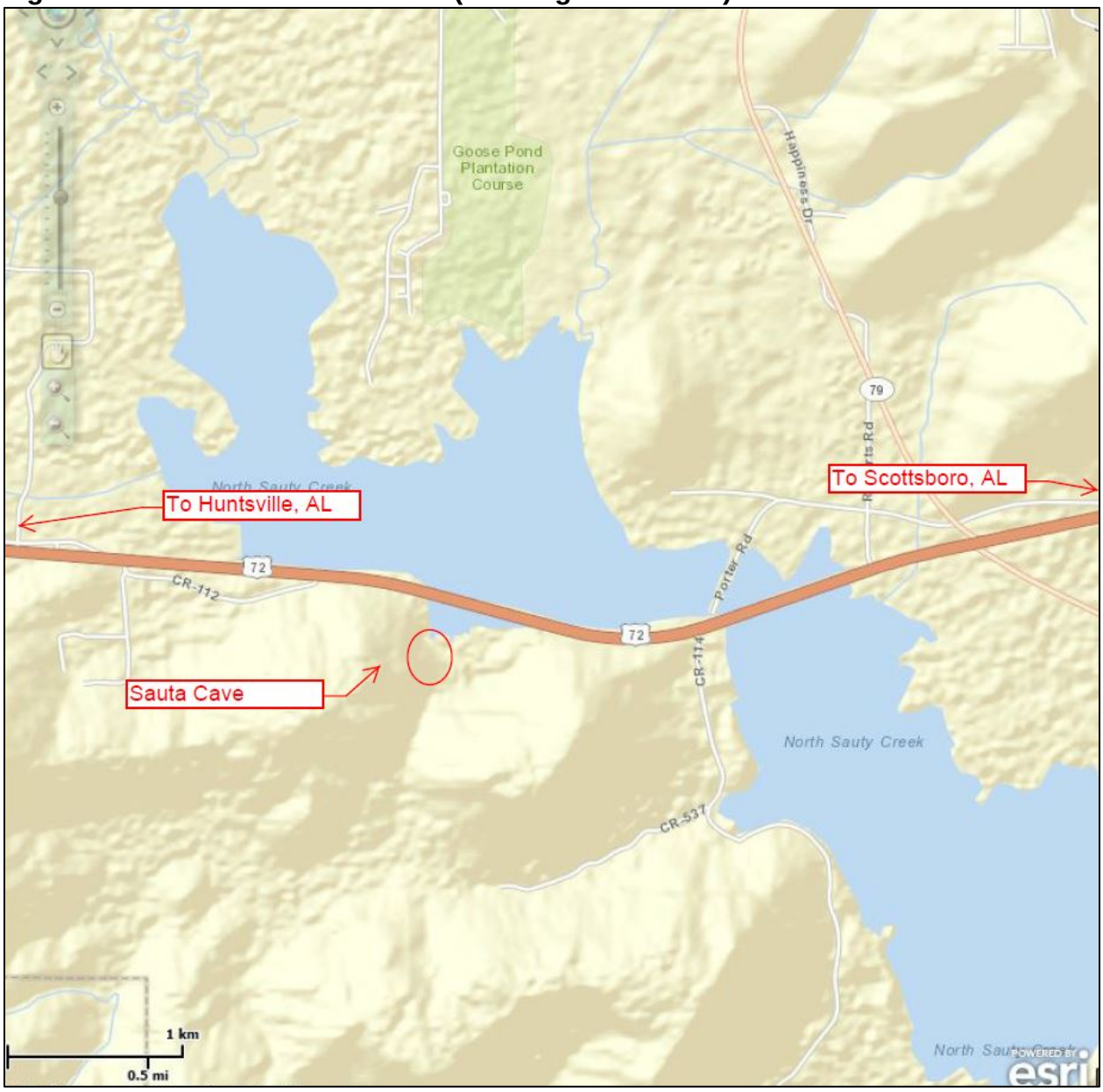
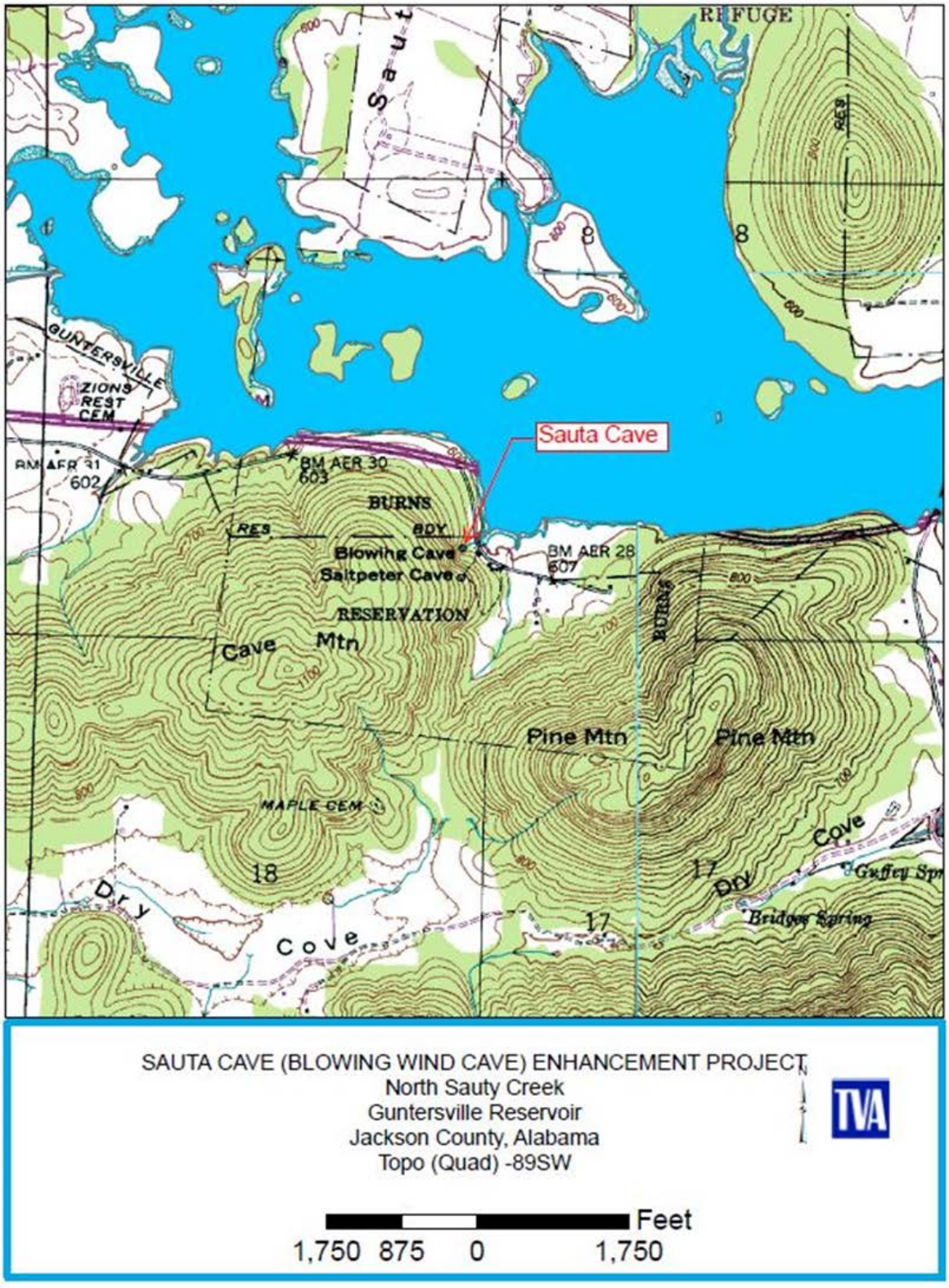


**Figure 2: Location of Sauta Cave (Blowing Wind Cave). Topographic Map.**



## Figure 3: Proposed Project Location.

**Figure 4: English Ivy at Entrance of Sauta Cave (Blowing Wind Cave).**

**Figure 5: English Ivy at Entrance of Sauta Cave (Blowing Wind Cave).**

# ATTACHMENT B: TVA ENVIRONMENTAL CHECKLIST

# Categorical Exclusion Checklist for Proposed TVA Actions

| Categorical Exclusion Number Claimed | Organization ID Number | **Tracking Number** *(NEPA Administration Use Only)* |
|---|---|---|
| | | 30202 |

| Form Preparer | Project Initiator/Manager | Business Unit |
|---|---|---|
| Freddie C Bennett | Freddie C Bennett | P&NR - Planning & Support Services |

| Project Title | Hydrologic Unit Code |
|---|---|
| Stewardship Enhancement Partnership Project - Sauta Cave (Blowing Wind Cave) | |

Description of Proposed Action *(Include Anticipated Dates of Implementation)* ☒ Continued on Page 3 *(if more than one line)*
For Proposed Action See Attachments and References

| Initiating TVA Facility or Office | TVA Business Units Involved in Project |
|---|---|
| | P&NR - Planning & Support Services |

Location *(City, County, State)*
For Project Location see Attachments and References

Parts 1 through 4 verify that there are no extraordinary circumstances associated with this action:

**Part 1. Project Characteristics**

| | Is there evidence that the proposed action... | No | Yes | Information Source for Insignificience |
|---|---|---|---|---|
| | 1. Is major in scope? | X | | Bennett, Freddie C. 03/28/2014 |
| | 2. Is part of a larger project proposal involving other TVA actions or other federal agencies? | X | | Bennett, Freddie C. 03/28/2014 |
| * | 3. Involves non-routine mitigation to avoid adverse impacts? | X | | Bennett, Freddie C. 06/03/2014 |
| | 4. Is opposed by another federal, state, or local government agency? | X | | Bennett, Freddie C. 03/28/2014 |
| * | 5. Has environmental effects which are controversial? | X | | Bennett, Freddie C. 03/28/2014 |
| * | 6. Is one of many actions that will affect the same resources? | X | | Bennett, Freddie C. 03/28/2014 |
| | 7. Involves more than minor amount of land? | X | | Bennett, Freddie C. 03/28/2014 |

*If "yes" is marked for any of the above boxes, consult with NEPA Administration on the suitability of this project for a categorical exclusion.

**Part 2. Natural and Cultural Features Affected**

| Would the proposed action... | No | Yes | Per-mit | Commit-ment | Information Source for Insignificience |
|---|---|---|---|---|---|
| 1. Potentially affect endangered, threatened, or special status species? | | X | No | Yes | For comments see attachments |
| 2. Potentially affect historic structures, historic sites, Native American religious or cultural properties, or archaeological sites? | X | | No | No | For comments see attachments |
| 3. Potentially take prime or unique farmland out of production? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 4. Potentially affect Wild and Scenic Rivers or their tributaries? | X | | No | No | For comments see attachments |
| 5. Potentially affect a stream on the Nationwide Rivers Inventory? | X | | No | No | For comments see attachments |
| 6. Potentially affect wetlands, water flow, or stream channels? | X | | No | No | For comments see attachments |
| 7. Potentially affect the 100-year floodplain? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 8. Potentially affect ecologically critical areas, federal, state, or local park lands, national or state forests, wilderness areas, scenic areas, wildlife management areas, recreational areas, greenways, or trails? | | X | No | No | For comments see attachments |
| 9. Contribute to the spread of exotic or invasive species? | X | | No | No | For comments see attachments |
| 10. Potentially affect migratory bird populations? | X | | No | No | For comments see attachments |
| 11. Involve water withdrawal of a magnitude that may affect aquatic life or involve interbasin transfer of water? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 12. Potentially affect surface water? | X | | No | No | For comments see attachments |
| 13. Potentially affect drinking water supply? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 14. Potentially affect groundwater? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 15. Potentially affect unique or important terrestrial habitat? | X | | No | No | For comments see attachments |
| 16. Potentially affect unique or important aquatic habitat? | X | | No | No | For comments see attachments |

**Part 3. Potential Pollutant Generation**

| Would the proposed action potentially (including accidental or unplanned)... | No | Yes | Per-mit | Commit-ment | Information Source for Insignificience |
|---|---|---|---|---|---|
| 1.Release air pollutants? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 2.Generate water pollutants? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 3.Generate wastewater streams? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 4.Cause soil erosion? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 5.Discharge dredged or fill materials? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 6.Generate large amounts of solid waste or waste not ordinarily generated? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 7.Generate or release hazardous waste (RCRA)? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 8.Generate or release universal or special waste, or used oil? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 9.Generate or release toxic substances (CERCLA, TSCA)? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 10.Involve materials such as PCBs, solvents, asbestos, sandblasting material, mercury, lead, or paints? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 11.Involve disturbance of pre-existing contamination? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 12.Generate noise levels with off-site impacts? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 13.Generate odor with off-site impacts? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 14.Produce light which causes disturbance? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 15.Release of radioactive materials? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 16.Involve underground or above-ground storage tanks or bulk storage? | X | | No | No | Bennett, Freddie C. 03/28/2014 |
| 17.Involve materials that require special handling? | X | | No | No | Bennett, Freddie C. 03/28/2014 |

**Part 4. Social and Economic Effects**

| Would the proposed action... | No | Yes | Commit-ment | Information Source for Insignificience |
|---|---|---|---|---|
| 1.Potentially cause public health effects? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 2.Increase the potential for accidents affecting the public? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 3.Cause the displacement or relocation of businesses, residences, cemeteries, or farms? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 4.Contrast with existing land use, or potentially affect resources described as unique or significant in a federal, state, or local plan? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 5.Disproportionately affect minority or low-income populations? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 6.Involve genetically engineered organisms or materials? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 7.Produce visual contrast or visual discord? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 8.Potentially interfere with recreational or educational uses? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 9.Potentially interfere with river or other navigation? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 10.Potentially generate highway or railroad traffic problems? | X | | No | Bennett, Freddie C. 03/28/2014 |

**Part 5. Other Environmental Compliance/Reporting Issues**

| Would the proposed action... | No | Yes | Commit-ment | Information Source for Insignificience |
|---|---|---|---|---|
| 1.Release or otherwise use substances on the Toxic Release Inventory list? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 2.Involve a structure taller than 200 feet above ground level? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 3.Involve site-specific chemical traffic control? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 4.Require a site-specific emergency notification process? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 5.Cause a modification to equipment with an environmental permit? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 6.Potentially impact operation of the river system or require special water elevations or flow conditions?? | X | | No | Bennett, Freddie C. 03/28/2014 |
| 7.Involve construction of a new building or renovation of existing building (i.e., major changes to lighting, HVAC, and/or structural elements of building of 2000 sq. ft or more) on which TVA will pay/pays the utilities?? | X | | No | Bennett, Freddie C. 03/28/2014 |

*Parts 1 through 4: If "yes" is checked, describe in the discussion section following this form why the effect is insignificant. Attach any conditions or commitments which will ensure insignificant impacts. Use of non-routine commitments to avoid significance is an indication that consultation with NEPA Administration is needed.*

*An* ☒ *EA or* ☐ *EIS Will be prepared.*

*Based upon my review of environmental impacts, the discussion attached, and/or consultations with NEPA Administration, I have determined that the above action does not have a significant impact on the quality of the human environment and that no extraordinary circumstances exist. Therefore, this proposal qualifies for a categorical exclusion under Section 5.2.* _____ *of TVA NEPA Procedures.*

| Project Initiator/Manager | | Date |
|---|---|---|
| Freddie C Bennett | | 06/03/2014 |
| **TVA Organization** | **E-mail** | **Telephone** |
| UNKN | fcbennet@tva.gov | |

**Site Environmental Compliance Reviewer**

_____
*Signature*

**Final Review/Closure**

Freddie C Bennett 06/19/14
*Signature*

**Other Review Signatures** *(as required by your organization)*

Erica Fritz Wadl 06/19/2014
*Signature*

_____
*Signature*

_____
*Signature*

_____
*Signature*

_____
*Signature*

_____
*Signature*

**Attachments/References**

Description of Proposed Action Continued from Page 1
TVA and the US Fish and Wildlife Service (FWS) are collaborating to improve the habitat for certain threatened and endangered species of plants and animals at the Sauta Cave (Blowing Wind Cave) on North Sauty Creek in Jackson County, Alabama. However, the primary focus of this habitat improvement project will be on protecting and enhancing the habitat area for the Indiana and gray bats that utilize the Sauta Cave. The cave entrance is being over grown with English Ivy creating a curtain which is beginning to impact the entrance and exit flights of the bats. To correct the problem, the partners are proposing the implementation of certain eradication methods which are indicated on the project description attached to this CEC. This partnership project is in concert with the objectives of TVA's Natural Resource Plan in developing and implementing a variety of proactive methodologies in order to enhance and protect sensitive resources, habitats, and wildlife species.

Project Location Continued from Page 1
Jackson, AL, The project area, Sauta Cave (Blowing Wind Cave), is located in the North Sauty Creek area on Guntersville Reservoir, in Jackson County, Alabama.

CEC General Comment Listing

| | | | |
|---|---|---|---|
| 1. | Project Description | | |
| | By: Freddie C Bennett | 03/28/2014 | |
| | Files: Sauta_Project description.docx | 03/28/2014 | 206.33 Bytes |
| 2. | Area Maps | | |
| | By: Freddie C Bennett | 03/28/2014 | |
| | Files: Maps_Sauta Cave Area.pdf | 03/28/2014 | 519.30 Bytes |
| 3. | Aerial Map | | |
| | By: Freddie C Bennett | 03/28/2014 | |
| | Files: Aerial (Sauta Cave).pdf | 03/28/2014 | 707.85 Bytes |

| | | | |
|---|---|---|---|
| 4. | Topo (Quad) Map | | |
| | By: Freddie C Bennett | 03/28/2014 | |
| | Files: Topo-89SW_ (Sauta Cave).pdf | 03/28/2014 | 471.45 Bytes |
| 5. | Photo | | |
| | By: Freddie C Bennett | 03/28/2014 | |
| | Files: SautaPhotoClose.JPG | 03/28/2014 | 132.26 Bytes |
| 6. | Photo | | |
| | By: Freddie C Bennett | 03/28/2014 | |
| | Files: SautaPhotoIvyExtent.JPG | 03/28/2014 | 189.84 Bytes |
| 7. | Topo-another view | | |
| | By: Freddie C Bennett | 03/28/2014 | |
| | Files: SautaTopoW-Ownerships.pdf | 03/28/2014 | 293.77 Bytes |
| 8. | NO COMMENT TEXT | | |
| | By: 26a Added Comment | | |
| 9. | NO COMMENT TEXT | | |
| | By: 26a Added Comment | | |
| 10. | NO COMMENT TEXT | | |
| | By: 26a Added Comment | | |
| 11. | NO COMMENT TEXT | | |
| | By: 26a Added Comment | | |
| 12. | NO COMMENT TEXT | | |
| | By: 26a Added Comment | | |
| 13. | NO COMMENT TEXT | | |
| | By: 26a Added Comment | | |

CEC Comment Listing

Part 2 Comments

| | | | |
|---|---|---|---|
| 1. | Review of the project and TVA Heritage database on 4/8/14 indicated 23 state and 5 federal listed aquatic EO's (23 species total) located within a 10 mile radius from the project site. The habitat at and adjacent to the project site does not appear suitable for the listed species. With the proper implementation of TVA General Standards and Conditions, the proposed actions should have no impacts to the listed aquatic species or their habitats.<br><br>Review of the project and TVA Heritage database on 4/8/14 indicated 2 state and 1 federal listed plant EO's (2 species total) located within a 5 mile radius from the project site.<br>Review of the project and TVA Heritage database on 4/8/14 indicated 7 state and 3 federal listed terrestrial EO's (7 species total) located within a 3 mile radius search from the project site. | | |
| | By: Randy Short | 04/08/2014 | |
| | Files: Heritage_Species_List2.pdf | 04/08/2014 | 106.20 Bytes |
| 1. | An April 11, 2014 query of the TVA Heritage database indicates that one federal-listed and one state-listed plant species are known from within five miles of the proposed project (Table 1). One federal-candidate and three additional federal-listed plants are known from Jackson County, Alabama, where work would occur. American Hart's tongue fern does occur in association with mesic cave entrances, but this plant has never been reported from Sauta Cave and is highly unlikely to occur there. Morefield's leather flower grows in moist areas amongst limestone boulders in habitat similar to that near Sauta Cave. Though this species has not been reported from the site, it could be present there. Habitat for green pitcher plant and monkey-face orchid does not occur in the project area and these species would not be affected by the proposed work.<br><br>Populations of both the federal-listed Price's potato-bean and state-listed Cumberland rosinweed are known to occur in the immediate vicinity of where the planned habitat manipulations would take place. The most recent observation of Price's potato-bean at the site (2011-8-03) noted that 152 stems occur on the rocky north facing slopes overlooking the cave entrance and along a nearby old roadbed. An older observation of Cumberland rosinweed from 1998 noted that 50-60 plants occurred in the same general area. One goal of the proposed project is to eradicate several invasive plants from the site and to promote growth of rare plant species. However, since herbicide is being used to meet this objective there is some potential that Price's potato-bean, Cumberland rosinweed, or other listed plant species could be inadvertently adversely affected. With the listed commitments, the project would likely not adversely affect federal-listed plants and would not negatively impact state-listed species. TVA's responsibilities for compliance with Section 7 of the Endangered Species Act would be met with an intra-agency consultation conducted by the USFWS. | | |
| | By: Adam J Dattilo | 04/28/2014 | |
| | Files: 22204_botany_SautaCave_table.docx | 04/28/2014 | 29.09 Bytes |
| 1. | See attached for input regarding rare and/or protected terrestrial animal species. | | |
| | By: Holly G LeGrand | 05/28/2014 | |
| | Files: CEC30202_TerrZoo_Part2Que1.docx | 05/28/2014 | 26.76 Bytes |

2. Although Sauta Cave is associated with a previously recorded archaeological site, the proposed activity would require no ground disturbance and would not effect the site. No historic properties would be affected by the proposed undertaking. Concur with approval.
By: Michaelyn S Harle 04/01/2014

4. Since no such designated waters occur at or adjacent to the project site, the proposed action is not anticipated to impact Wild and Scenic Rivers or their tributaries.
By: David T Nestor 05/07/2014

5. Since no such designated waters occur at or adjacent to the project site, the proposed action is not anticipated to impact streams listed on the Nationwide Rivers Inventory.
By: David T Nestor 05/07/2014

6. Review of the project and TVA Natural Heritage database on 4/8/14 indicated no wetlands occur within the project area. No impacts to water flow or stream channels should occur especially with the implementation of appropriate TVA General and Standard Conditions.
By: Randy Short 04/08/2014

8. Commitment: Prior to the exotic, invasive plant species (consisting mostly of English Ivy) eradication, Dwight Cooley (256)-353-7243, extension 23 of the U.S. Fish and Wildlife Service should be notified about activities associated with the proposed project.
Comments: A review of the TVA Natural Heritage Database indicates there are four natural areas within 3.0 miles of the proposed project. The proposed project area is within the Sauta Cave National Wildlife Refuge, which is managed by the U.S Fish and Wildlife Service. The refuge encompasses 264 acres of hardwood forests. It serves as a major maternity cave for gray bats, which bat numbers of up to 400,000 have been documented, and a minor hibernation cave for both gray and Indiana bats in the winter. The federally-listed Price's Potato-bean (Apios priceana) also occurs in the area. Other unique species occur in the cave achieving biodiversity of a very high significance. Natural areas that are less than .1 miles directly north of the proposed activities site include the North Sauty Creek State Wildlife Management Area and Blowing Wind Cave TVA Habitat Protection Area. The only other natural area is Mint Creek TVA Habitat Protection Area, which is 2.2 miles south of the proposed project area. As a courtesy, U.S. Fish and Wildlife Service should be notified, Dwight Cooley (256) 353-7243, extension 23, prior to exotic, invasive plant eradication activities. Since the personal of U.S. Fisheries and Wildlife have been consulted with and agree with the project and proper BMPs will be implemented during the proposed activities, no impacts are anticipated to the natural areas.

By: David T Nestor 05/07/2014

8. Review of the project and TVA Natural Heritage database on 4/8/14 indicated 4 managed areas and no heritage sites located within a 5 mile radius of the project site. Based on the scope and location of the proposed actions, there should be no impacts to the listed managed areas or heritage sites as a result of the proposed project.
By: Randy Short 04/08/2014

9. Based on the scope, location, and nature of the proposed actions, the proposed project is not expected to contribute to the spread of exotic or invasive species with the implementation of applicable TVA General and Standard Conditions, including best management practices.
By: Randy Short 04/08/2014

9. The proposed project would not significantly contribute to the spread of exotic or invasive species. The project area currently contains several non-native species including a sizable infestation of English ivy, which if left unchecked, may begin to impede bats from accessing the cave. English ivy and other non-native weeds present on the site are distributed widely throughout the region and implementation of the proposed project would not change this situation. However, removal of invasive plant species in the immediate vicinity of Sauta Cave would be likely to directly benefit the listed plants Price's potato-bean and Cumberland rosinweed, which also occur there.
By: Adam J Dattilo 04/28/2014

10. Review of the project and TVA Natural Heritage database on 4/8/14 indicated 2 wading bird colonies within the 3 mile radius search. The proposed actions should have no impacts to any wading bird colonies or migratory bird populations with the implementation of the appropriate TVA General and Standard conditions.
By: Randy Short 04/08/2014

12. Herbicide application near the cave entrance that is near surface water (a stream) will be hand applied with a paint brush. Some stump spraying may occur but it will be well away from the cave entrance and water. There will be no direct application of herbicide to the water nor is there any chance that there will be residue introduced because of the method of application.
By: Freddie C Bennett 06/18/2014

15. No uncommon plant communities are known from the vicinity and no rare plant communities occur in the project area. Implementation of the proposed project would not potentially affect unique or important terrestrial plant habitat.
By: Adam J Dattilo 04/28/2014

15. Review of the project and TVA Natural Heritage database on 4/8/14 indicated 16 caves located within a 3 mile radius from the project site.
By: Randy Short 04/08/2014

16. Review of the project and TVA Natural Heritage database on 4/8/14 indicated no unique or important aquatic habitat within a 10 mile radius from the project site. With the implementation of the appropriate TVA General and Standard conditions, there should be no impact to any unique or important aquatic habitat.
By: Randy Short 04/08/2014

CEC Commitment Listing

Part 2 Commitments

1. User Defined: • A TVA botanist would survey the work area for additional federal and state-listed species before work occurs.
• A TVA botanist would ensure Price's potato-bean, Cumberland rosinweed, and other listed plant species located in the project area are flagged in the field before work commences.
• Select spray of herbicide would not occur with 1.5 meter of Price's potato-bean, Cumberland rosinweed, or other listed plants. Within a 1.5 meter radius of listed plants, herbicide would be applied to foliage or to cut stems of undesirable vegetation using a brush or other method of direct application.

   By: Adam J Dattilo 04/28/2014

ENVIRONMENTAL REVIEW – Project #22204
Stewardship Enhancement Partnership Project - Sauta Cave (Blowing Wind Cave)
April 11, 2014

Table 1. Federal-listed plant species previously reported from Jackson County, Alabama, and all species of conservation concern known from within five miles of the project area.

| Common Name | Scientific Name | Federal Status | AL State Status (Rank) |
|---|---|---|---|
| Price's Potato-bean | *Apios priceana* | THR | SLNS(S3) |
| American Hart's-tongue Fern[1] | *Asplenium scolopendrium* var. *americanum* | THR | SLNS(S1) |
| Morefield's Leather-flower[1] | *Clematis morefieldii* | END | SLNS(S1S2) |
| Monkey-face Orchid[1] | *Platanthera integrilabia* | C | SLNS(S2) |
| Green Pitcher Plant[1] | *Sarracenia oreophila* | END | SLNS(S2) |
| Cumberland Rosinweed | *Silphium brachiatum* | - | SLNS(S2) |

**Status abbreviations: END** = Endangered; **C** = Candidate; **SLNS** = Listed by the state of Alabama, but not assigned a status; **THR** = Threatened.

**Rank codes: S1** = Extremely rare and critically imperiled in the state with 5 or fewer occurrences, or very few remaining individuals, or because of some special condition where the species is particularly vulnerable to extirpation; **S2** = Very rare and imperiled within the state, 6 to 20 occurrences; **S3** = Rare or uncommon with 21 to 100 occurrences; **S#S#** = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2);

[1]Federal-listed species occurring within the county where work would occur, but not within 5 miles of the project area.

**Terrestrial Zoology Input for proposed habitat improvements at Sauta Cave National Wildlife Refuge, Jackson County, Alabama (CEC #30202)**

**For Part 2.1 -** *Potentially affect endangered, threatened, or special status species?*

**Terrestrial Animal T&E Species.**

Review of terrestrial animals in the TVA Natural Heritage database on May 27, 2014, resulted in records for one federally protected species (bald eagle), two federally endangered species (gray bat, Indiana bat), one species considered rare in Alabama (eastern big-eared bat) and 2 invertebrate species (spider, beetle) tracked by the Alabama Natural Heritage Program, within 3 miles of the project site. Northern long-eared bat, currently proposed for listing as federally endangered, has the potential to occur in Jackson County (Table 1 below).

Bald eagles and their nests are protected by the Bald and Golden Eagle Protection Act. Nesting bald eagles have been documented along the Guntersville Reservoir. The two closest documented nests were located on transmission line structures. Proposed actions would not impact bald eagle.

Eastern big-eared bats were historically (1959) documented roosting in Sauta Cave during winter. The species has not been observed in recent surveys (e.g., 2010). Proposed actions would not impact this species.

Gray bats inhabit caves throughout the year, migrating between summer and winter caves, and forage along water courses including large rivers, reservoirs, and streams. Sauta Cave is inhabited by a large maternity colony of gray bat during summer; fewer individuals of the species also roosts in Sauta Cave during winter. Proposed treatment of invasive plants along the mouth of Sauta Cave would be timed to occur when juveniles are able to fly (i.e., after July 1) to minimize and hopefully avoid disturbance that results in non-volent (i.e., incapable of flight) juveniles falling from roost sites. Habitat assessments and acoustic surveys would not impact gray bats.

Indiana bats inhabit caves during winter and migrate to roost under exfoliating bark and within cavities of trees (typically greater than or equal to 5 inches in diameter) during summer. Foraging occurs along riparian areas and along the tops of trees such as along a forested edge or tree line. Some habitat requirements overlap between Indiana bat and northern long-eared bat, which roosts in caves or cave-like structures in winter, and utilizes cave-like structures as well as live and dead trees with exfoliating bark and crevices in the summer. Northern long-eared bat was proposed in October, 2013, for listing as federally endangered by the U.S. Fish and Wildlife Service (USFWS) and has the potential to occur in Jackson County. While the species is proposed for listing, federal action agencies are required to make determinations with respect to whether proposed actions would result in jeopardy to the species based on guidance provided by the USFWS in January 6, 2014. Based on the nature and scope of the project, proposed actions are not likely to jeopardize the continued existence of northern long-eared bat.

Indiana bats have been documented within Sauta Cave during winter. Habitat assessments on-site would determine extent of available habitat suitable for summer use. Acoustic surveys would assess presence of the species on the landscape during the summer. Neither action would impact the species.

TVA proposes to collaborate with USFWS to improve habitat for several federally listed species, including gray bat, Indiana bat and Price's potato bean at/near Sauta Cave National Wildlife Refuge. Proposed actions include the following: 1) assess the availability and abundance of summer habitat for Indiana bat (May - August 2014); 2) conduct acoustic surveys to determine if Indiana bats are present during summer (May 15 – Aug 15, 2014); this may be followed up by Fall acoustic surveys if Indiana bat is not detected during summer; 3) treat the following invasive plants to benefit Price's potato bean and gray bat and Indiana bat (via removal of invasive plants from mouth of Sauta Cave). Targeted invasive plants include tree-of-heaven (July – Oct); Nepalese grass (Aug – Mar); English ivy (July - October).

Assessments for suitable summer habitat for Indiana bat would be the first activity to occur on site. Acoustic surveys would occur between May 15 and August 15, and likely would not occur before June 1 given other commitments. If summer surveys result in zero detections, acoustic surveys may be repeated in Fall if financially feasible. Botany surveys would occur after June 1 to ensure plants are plainly visible above ground. If feasible, surveys will occur later in the summer to maximize the likelihood of observing flowering plants. Herbicide treatments may begin as early as July and continue through October. Results from acoustic surveys would drive decision on whether manipulation of habitat for summer use by Indiana bat is warranted.

The spider and beetle are species associated with cave environments. Neither is expected to be impacted by proposed actions.

**Table 1. Federally listed terrestrial animal species reported from Jackson County, Alabama, and other species of conservation concern documented within three miles of site on TVA-managed land proposed for habitat improvements.[1]**

| | | Status[2] | |
|---|---|---|---|
| **Common Name** | **Scientific Name** | **Federal** | **State (Rank[3])** |
| **Birds** | | | |
| Bald Eagle | *Haliaeetus leucocephalus* | DM | PROT (S3) |
| **Mammals** | | | |
| Eastern Big-eared Bat | *Corynorhinus rafinesquii* | -- | PROT (S2) |
| Gray Bat | *Myotis grisescens* | LE | PROT (S2) |
| Indiana Bat | *Myotis sodalis* | LE | PROT (S2) |
| Northern Long-eared Bat | *Myotis septentrionalis* | PE | -- |
| **Invertebrates** | | | |
| A Cave-obligate Spider | *Nesticus barri* | -- | TRKD (S3) |
| A Beetle | *Ptomaphagus valentinei* | -- | TRKD (S2) |

[1] Source: TVA Regional Natural Heritage Database, extracted 05/28/2014.
[2] Status Codes: DM = Delisted, stable, and being monitored; LE = Listed endangered; PE = Proposed endangered; PROT = Protected; TRKD = Tracked by the Alabama Natural Heritage Program.
[3] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable.