Document Type: EA-Administrative Record
Index Field: Environmental Assessment
Project Name: Little Cedar Mountain Glades & Barrens Restoration (Nickajack)
Project Number: 2017-25

LITTLE CEDAR MOUNTAIN NATURAL AREA GLADES AND BARRENS RESTORATION

ENVIRONMENTAL ASSESSMENT & FINDING OF NO SIGNIFICANT IMPACT

Nickajack Reservoir
Marion County, Tennessee

Prepared by:
TENNESSEE VALLEY AUTHORITY
Knoxville

September 2017

To request further information, contact:
Matthew Higdon
NEPA Specialist
Tennessee Valley Authority
400 W. Summit Hill Drive
Knoxville, TN 37902
Phone: 865-632-8051
E-mail: mshigdon@tva.gov

This page intentionally left blank.

Purpose and Need for Action

TVA is proposing to restore forest glade and barren areas in the Little Cedar Mountain Natural Area in Marion County, Tennessee, on Nickajack Reservoir. The proposed activities include vegetation management using several methods occurring within portions of approximately 150 acres. TVA would clear vegetation around the edges of glade openings to remove invasive vegetation species and manage for desirable native grasses, forbs, and wildflowers. TVA also proposes to conduct two prescribed fires[1] in portions of the area in 2018 and 2019 to promote growth of native forbs and grasses.

The primary objective of the proposal is to enhance habitat preferred by plant species of conservation concern in Tennessee. Barrens and glade-like habitats are rare in the state and the sites within the Little Cedar Mountain area are unique. The proposed project would benefit these unique habitats by reducing encroachment of woody vegetation that has invaded the site over time. These rare ecosystems are dependent on fire to maintain the habitat and have been altered over time by fire suppression as well as development. Prescribed fires prevent unnatural vegetation from competing with rare plants and prevent the area from changing into a dense forest. Fire also encourages microbial activity, the activity of microscopic organisms that are responsible for the decay of dead materials. This activity increases the level of soil nutrients that plants require for growth. In addition, fire stimulates the germination of many prairie plant seeds.

The project is part of an ongoing study of selected natural areas with glades and barrens features throughout the TVA region. The study includes classifying and documenting glades and barrens, assessing current conditions, identifying threats and stressors, and identifying glade-affiliated species of conservation concern. Based on these findings, TVA would implement a program of management actions to restore and enhance the glades and barrens. Generally, restoration of the area to a native barrens-like community will require maintenance of multiple rare plants occurring at the site; the promotion of native warm season grasses, glade wildflowers and herbaceous prairie/barrens-indicator species; and the reduction of non-native or invasive species.

TVA is responsible for the management of public lands and shoreline on Nickajack Reservoir. TVA manages the Little Cedar Mountain Natural Area for sensitive resources, in accordance with the Nickajack Reservoir Land Management Plan (RLMP). The natural area, consisting of approximately 320 acres, is a designated habitat protection area and small wild area and contains numerous rare plants and animals. The proposal supports and is consistent with TVA's mission of environmental stewardship and the objectives for natural resource management in the TVA Natural Resources Plan and TVA's management goals set forth in TVA's Nickajack RLMP, which was completed in 2017.

Proposed Action

The proposed activities include vegetation management conducted by several methods within an approximately 150-acre parcel. The activities described would occur over several years.

In late summer 2017, TVA would conduct hand clearing around glade openings to remove undesirable and invasive plant species and manage desirable native grasses, forbs and wildflowers. TVA staff would select trees and vegetation for cutting; primarily, young cedar trees would be removed. Less than one-quarter acre of vegetation would be cleared to open up the encroaching tree canopy that currently does not

[1] Prescribed fires are planned and intentionally lit fires allowed to burn in a controlled manner within the requirements of federal or State laws, regulations, or permits. Fire is applied to forest, brush, or grassland vegetative fuels under specified environmental conditions and precautions, which cause the fire to be confined to a predetermined area and allow accomplishment of the planned management objectives.

allow sunlight to penetrate the glades and barrens habitat. Sunlight is required in these fragile ecosystems for various plant species that prefer rare habitats. No trees that are identified as suitable habitat for listed bat species would be cut.

In early 2018 (January to mid-March), TVA would conduct a prescribed burn of up to 150 acres. TVA would establish approximately 900 feet of new hand-dug fire line (no mechanized equipment would be used). This requires removing only organic material to bare mineral soil; there would be no appreciable soil disturbance. Existing trails would be used for the remaining fire line to create a perimeter of approximately 150 acres. The 150-acre burn unit would extend from the improved fire line south to the southern tip of the Natural Area, where the controlled burn would be focused (identified as the hatched area on Figure 1). TVA would clean existing trails of fuels with a mower or backpack blower prior to the prescribed fire. No trees would be removed for fire line construction. By burning small units of 10-15 acres at a time, TVA would ensure that the fire remains small and manageable. The slow-moving fire would be low to the ground and would not be allowed to grow into a crown or canopy fire (which are fires that burn tree the tops of trees).

The fires are planned for winter months, when plants have low moisture content and fires are more easily managed. As discussed below, conducting such activities during these months also avoids potential impacts to forest dwelling bat species.

The prescribed fire would help control invasive plants and trigger the seedbank in the soil to re-vegetate the glades and barrens with native forbs and grasses. These management activities together, and sometimes in conjunction with native species plantings, promote the dominance of warm season grasses, suppress woody encroachment and facilitate the reestablishment of barrens vegetation on restoration sites. Ongoing management activities consisting of invasive plant control and biennial prescribed burns would occur in the following years post implementation to help retain the glades and barrens habitat.

TVA would continue its hand clearing actions around the glades and barren areas in fiscal years 2019 and 2020 to control invasive species. If needed, TVA staff would reintroduce native glades and barrens plants from previously collected seed. In early 2020 (January to mid-March), TVA would conduct another prescribed burn within the 150-acre area. After the 2020 prescribed burn, the area would be monitored to determine effectiveness of these vegetation management actions and to assess the need for continued vegetation management actions.

TVA is also considering taking no action (i.e., not conducting vegetation management actions to restore the glades and barrens area within the natural area). Taking no action would not address these resource condition issues nor would it help TVA achieve its goals and objectives for habitat restoration and sensitive resource management of the area. Taking no action is included in this analysis to provide a baseline for comparison of project impacts and benefits.

Figure 1. Prescribed burn area and proposed fire line, Little Cedar Mountain Natural Area.

Environmental Impacts

TVA has reviewed the proposed project and documented potential environmental impacts related to the project in the attached Checklist (Attachment A). The checklist was completed by an interdisciplinary team of experts, who identified relevant environmental issues. The Checklist identifies the resources present in the project area and documents TVA's determination that the proposal would not significantly affect these resources. As documented in the Checklist, TVA identified three primary issues relating to the project: the potential impacts to air quality, sensitive vegetation and wildlife in the project area.

Air quality

Two prescribed fires of the same area, up to approximately 150 acres, are proposed. TVA would conduct the burns during the winter months (January to mid-March) in early 2018 and 2020. Only small sections of the 150-acre area would be burned at a time, to more easily manage the fire. These small fires are expected to result in the release of minor amounts of smoke during the burn. TVA would monitor atmospheric conditions for proper burn conditions. Proper transport winds, as prescribed in the burn plan that would be completed prior to the burn, would be expected to dissipate smoke rapidly. The burning would be conducted at an appropriate time so that there would be minimal or no impacts to visibility along Interstate 24, which is approximately 1/2 mile north of the project area. Given appropriate conditions, all smoke should be cleared within a few hours of burn completion. No long term pollutants would be released from the prescribed fire. TVA will comply with regulations for open burning administered by the State of Tennessee Department of Environment and Conservation.

Vegetation

The primary objective of the proposed action is to enhance habitat preferred by plant species of conservation concern in Tennessee. Removal of select woody vegetation in combination with prescribed fire would reduce encroachment of woody plants that have slowly invaded the barrens over the course of many years and would produce more open, prairie-like habitat. This habitat is favored by the four state-listed species occurring in and around the glades and open woods at Little Cedar Mountain: the Spreading Rockcress (*Arabis patens*), Slender Blazing-star (*Liatris cylindracea*), Hairy False Gromwell (*Onosmodium hispidissimum*), and Great Plains Ladies'-tresses (*Spiranthes magnicamporum*) (see Table 1). Several of these species are globally rare and occur only in this and similar habitats. Federally listed species do not occur in the action area and would not be impacted by the proposed work.

TVA personnel would select and clear individual trees and vegetation on the edges of glade openings, removing less than one-quarter acre of vegetation. It is anticipated that primarily young, live cedars would be removed during hand-clearing. Because the glades at Little Cedar Mountain are very dry for much of the year, few exotic plant species can tolerate the habitat. It is expected that native plant species will colonize areas opened up by the proposed thinning and prescribed burning activities. The proposed project is not expected to contribute to the spread of exotic or invasive species. If TVA does not take action, encroachment of woody plants into the glades area of the Little Cedar Mountain Natural Area is expected to continue over time, reducing the open glade areas and adversely affecting several globally rare species that occur only in this and similar habitats.

Table 1. Federally listed plants previously reported from Marion County, Tennessee and state listed species known to occur within glades on Little Cedar Mountain.

Common Name	Scientific Name	Federal Status[1]	State Status[1]	State Rank[2]
Plants				
Price's Potato-bean[4]	*Apios priceana*	THR	THR	S3
Spreading Rockcress[3]	*Arabis patens*	-	END	S1
American Hart's-tongue Fern[4]	*Asplenium scolopendrium var. americanum*	THR	END	S1
Slender Blazing-star[3]	*Liatris cylindracea*	-	THR	S2
Hairy False Gromwell[3]	*Onosmodium hispidissimum*	-	END	S2
White Fringeless Orchid[4]	*Platanthera integrilabia*	THR	END	S2S3
Large-flowered Skullcap[4]	*Scutellaria montana*	THR	THR	S3S4
Great Plains Ladies'-tresses[3]	*Spiranthes magnicamporum*	-	END	S2

Source: TVA Natural Heritage Database, queried by April 2017.
[1] Status Codes: END = Listed Endangered; THR = Listed Threatened.
[2] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable; S#S# = Denotes a range of ranks because the exact rarity of the element is uncertain (e.g., S1S2).
[3] Species documented from the project area.
[4] Federally listed species occurring within the county where work would occur.

After the proposed burns, exposure of soils may result in minor soil erosion. However, the proposed burns would be conducted in a season when grasses respond quickly to burns and regenerate to protect soils from environmental factors (e.g., wind, rain). Any soil erosion in the area would likely be short-term.

Wildlife

A review of the TVA Natural Heritage database identified records of five state-listed species, two federally listed species (gray bat and Indiana bat), and one federally protected species (bald eagle) occurring within three miles of the project footprint. No additional federally listed species have been recorded in Marion County, Tennessee. The federally listed northern long-eared bat is believed to have the potential to occur within Marion County, thus this species also will be assessed (see Table 2 below).

Nickajack Cave isopod and Nickajack Cave beetle are cave obligate species known only from Nickajack Cave. The Nickajack Cave is approximately 2.0 miles from the proposed actions and would not be impacted by the proposed actions. Proposed actions would not impact the Nickajack Cave isopod or the Nickajack Cave beetle.

Tennessee cave salamander is an aquatic cave obligate species. The closest known record of this species is from Nickajack Cave approximately 2.0 miles from the proposed actions. There are four caves, one with three entrances, within the proposed action area. Habitat for these species may occur in these caves if water is present in the caves; however, no known streams occur in the project action area or near the cave entrances. Nonetheless, best management practices would be used around caves including restricting the timing of the burn to ensure weather conditions were favorable for smoke dispersal and keeping burn temperatures low such that erosion would not increase following burns. Cave habitat would not be impacted by the proposed actions. The proposed project would not impact Tennessee cave salamander.

Bald eagles are protected under the Bald and Golden Eagle Protection Act. This species is associated with larger mature trees capable of supporting its massive nest. These are usually found near larger waterways where the eagles forage. The nearest bald eagle record occurs approximately one mile from the proposed activities and would not be impacted by the proposed actions.

Table 2. Federally listed terrestrial animal species reported from Marion County, Tennessee, and other species of conservation concern documented within three miles of the project area.

Common Name	Scientific Name	Federal Status[1]	State Status[2]/Rank[3]
Invertebrates			
Nickajack Cave isopod	*Caecidotea nickajackensis*	-	-(S1)
Nickajack Cave Beetle	*Pseudanophthalmus nickajackensis*	-	-(S1)
Birds			
Bald eagle	*Haliaeetus leucocephalus*	DM	D(S3)
Mammals			
Allegheny woodrat	*Neotoma magister*	--	D(S3)
Gray bat	*Myotis grisescens*	LE	E(S2)
Indiana bat	*Myotis sodalis*	LE	E(S1)
Eastern small-footed bat	*Myotis leibii*	--	D(S2S3)
Northern long-eared bat[4]	*Myotis septentrionalis*	LT	-(S1S2)

Source: TVA Regional Natural Heritage Database, extracted 3/27/2017; USFWS Information for Planning and Conservation (http://ecos.fws.gov/ecos/home.action), accessed 3/27/2017.
[1] Status Codes: D= Deemed in need of management; DM = Delisted but monitored; E = Endangered; LE = Listed Endangered; LT = Listed Threatened.
[2] State Ranks: S1 = Critically Imperiled; S2 = Imperiled; S3 = Vulnerable.
[3] Federally listed species whose range includes Marion County, Tennessee though no records are known from this county.

Allegheny woodrats are found on rocky cliffs, outcrops, and talus slopes with boulders, caves, and crevices. Records of this species are known from Little Cedar Mountain Cave. Suitable habitat for this species may occur in the proposed action area, particularly in rocky areas of the cedar glade and barrens. Best management practices would avoid impacts to cave habitat and any individuals living in this type of shelter. However, proposed burning may directly impact boulder areas of the glade and barrens, thereby directly impacting individuals of this species. Low burn temperatures, short burn times, and smaller amounts of vegetation in boulder areas suggest individuals would likely be able to find shelter to avoid direct impacts of the burn. Therefore, the proposed actions are not likely to significantly impact populations of Allegheny woodrats.

Gray bats are a federally listed species associated year-round with caves, roosting in different caves throughout the year. Bats disperse from colonies at dusk to forage along waterways. Little Cedar Mountain Cave is a known summer roost cave for gray bats and occurs in the proposed burn unit. No gray bats are known to use this cave or either of the other two caves in the proposed burn unit during winter months. Burns would occur during winter months (between October 15 and March 31) when gray bats are not known to occur in the project area. Best management practices would be used around caves including

restricting the timing of the burn to ensure weather conditions were favorable for smoke dispersal and keeping burn temperatures low such that erosion would not increase following burns.

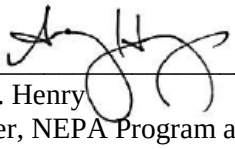
Indiana bats inhabit caves during winter and migrate to roost under exfoliating bark and within cavities of trees (typically greater than or equal to 5 inches in diameter) during summer. This species forages along riparian areas and along the tops of trees, forested edges, and tree lines. Some habitat requirements overlap between Indiana bat and northern long-eared bat (NLEB). Both species roost in caves or cave-like structures in winter, and utilizes cave-like structures as well as live and dead trees (typically greater than or equal to 3 inches in diameter) with exfoliating bark and crevices in the summer. NLEB is thought to forage primarily within forests below the canopy layer. Eastern small-footed bats also roost in caves and mines during the winter. In summer they inhabit buildings, caves, and cracks and crevices in boulders. This species forages relatively low to the ground over ponds and streams, in upland forests, or in clearings.

Indiana bats and eastern small-footed bats have been recorded in Marion County approximately 2 miles away in Nickajack Cave. However, both of these records are historical with no recent observations of either species in the last five years. The closest records of NLEBs are from neighboring counties approximately 12.7 and 12.9 miles away in Hamilton County, Tennessee and Jackson Counties, Alabama, respectively.

Three caves occur within the burn plot. None of these species have been reported from these caves. Little Cedar Mountain Cave is a warm cave not suitable for most bat species as a winter hibernacula. Suitable foraging habitat for Indiana bat, NLEB, and eastern small-footed bat occurs over the entire action area. Suitable roosting habitat for Indiana bat and NLEB occurs in the mature shagbark hickory dominated forest of the burn plot. Suitable rock/boulder areas of the glade barrens may also offer summer habitat for eastern small-footed bats. As mentioned above, best management practices would be used around caves including restricting the timing of the burn to ensure weather conditions were favorable for smoke dispersal and keeping burn temperatures low such that erosion would not increase following burns. Burns would occur during winter months when bats are not roosting in trees. Because burning actions would occur when eastern small-footed bats would not be roosting under boulders on the landscape, and because no eastern small-footed bats are known from caves in the action area, eastern small-footed bats are not expected to be impacted by the proposed actions.

In August 2017, TVA consulted with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act regarding potential impacts to gray bat, Indian bat, and NLEB. TVA requested concurrence with the determination that the proposal is not likely to adversely affect these species given the proposed best management practices and the timing of the prescribed burning. On August 11, 2017, USFWS provided concurrence that the proposed activities may affect, but is not likely to adversely affect these listed species or their habitat.

Conclusion and Findings
Based on the findings listed above and the analyses in the attached checklist, we conclude that the proposed action to conduct vegetation management actions to restore forest glade and barren within a portion of the Little Cedar Mountain Natural Area would not be a major federal action significantly affecting the environment. Accordingly, an environmental impact statement is not required.



September 12, 2017

Amy B. Henry
Manager, NEPA Program and Valley Projects
Tennessee Valley Authority

Date

Preparers
Freddie Bennett – Land Use and Watershed Specialist, Document Preparation
Adam Datillo – Botanist, Endangered Species Act Compliance
Elizabeth Hamrick - Terrestrial Zoologist, Endangered Species Act Compliance
Dr. Michaelyn Harle - Archaeologist, National Historic Preservation Act Compliance
Heather Hart - Project Manager
Matthew Higdon – NEPA Specialist, Document Preparation
Mark Odom - Natural Heritage Review
Doug White – Program Manager Environmental Support, Document Preparation

Attachment
Attachment A - Environmental Review Checklist

Document Type: EA-Administrative Record
Index Field: Environmental Assessment
Project Name: Little Cedar Mountain Glades & Barrens Restoration (Nickajack)
Project Number: 2017-25

Attachment A: Environmental Review Checklist

Categorical Exclusion Checklist for Proposed TVA Actions

Categorical Exclusion Number Claimed	Organization ID Number	**Tracking Number** *(NEPA Administration Use Only)*
N/A	NRM Task ID 283384	36475

Form Preparer	Project Initiator/Manager	Business Unit
Freddie C Bennett	Heather M Hart	P&NR - Reservoir Property & Resource Mgmt

Project Title	Hydrologic Unit Code
GLADES AND BARRENS RESTORATION INITIATIVE - LITTLE CEDAR MOUNTAIN NATURAL AREA	

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

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**	**Commit-ment**	**Information Source for Insignificance**
	1. Is major in scope?	X			Bennett, Freddie C. 03/14/2017
	2. Is part of a larger project proposal involving other TVA actions or other federal agencies?	X			Bennett, Freddie C. 03/14/2017
*	3. Involves non-routine mitigation to avoid adverse impacts ?	X		No	Bennett, Freddie C. 03/14/2017
	4. Is opposed by another federal, state, or local government agency?	X			Bennett, Freddie C. 03/14/2017
*	5. Has environmental effects which are controversial?	X			Bennett, Freddie C. 03/14/2017
*	6. Is one of many actions that will affect the same resources?	X			Bennett, Freddie C. 03/14/2017
	7. Involves more than minor amount of land?		X		For comments see attachments

*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	Permit	Commit-ment	Information Source for Insignificance
1.Potentially affect endangered, threatened, or special status species?		X	No	No	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. 03/14/2017
4.Potentially affect Wild and Scenic Rivers or their tributaries?	X		No	No	Bennett, Freddie C. 03/14/2017
5.Potentially affect a stream on the Nationwide Rivers Inventory?	X		No	No	Bennett, Freddie C. 03/14/2017
6.Potentially affect wetlands?	X		No	No	For comments see attachments
7.Potentially affect water flow, stream banks or stream channels?	X		No	No	For comments see attachments
8.Potentially affect the 100-year floodplain?	X		No	No	Bennett, Freddie C. 03/14/2017
9.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
10.Contribute to the spread of exotic or invasive species?	X		No	No	For comments see attachments
11.Potentially affect migratory bird populations?	X		No	No	For comments see attachments
12.Involve water withdrawal of a magnitude that may affect aquatic life or involve interbasin transfer of water?	X		No	No	Bennett, Freddie C. 03/14/2017
13.Potentially affect surface water?	X		No	No	Bennett, Freddie C. 03/14/2017
14.Potentially affect drinking water supply?	X		No	No	Bennett, Freddie C. 03/14/2017
15.Potentially affect groundwater?	X		No	No	Bennett, Freddie C. 03/14/2017
16.Potentially affect unique or important terrestrial habitat?		X	No	No	For comments see attachments
17.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	Permit	Commit-ment	Information Source for Insignificance
1.Release air pollutants?		X	Yes	No	For comments see attachments
2.Generate water pollutants?	X		No	No	Bennett, Freddie C. 03/14/2017
3.Generate wastewater streams?	X		No	No	Bennett, Freddie C. 03/14/2017
4.Cause soil erosion?	X		No	No	Bennett, Freddie C. 03/14/2017
5.Discharge dredged or fill materials?	X		No	No	Bennett, Freddie C. 03/14/2017
6.Generate large amounts of solid waste or waste not ordinarily generated?	X		No	No	Bennett, Freddie C. 03/14/2017
7.Generate or release hazardous waste (RCRA)?	X		No	No	Bennett, Freddie C. 03/14/2017
8.Generate or release universal or special waste, or used oil?	X		No	No	Bennett, Freddie C. 03/14/2017
9.Generate or release toxic substances (CERCLA, TSCA)?	X		No	No	Bennett, Freddie C. 03/14/2017
10.Involve materials such as PCBs, solvents, asbestos, sandblasting material, mercury, lead, or paints?	X		No	No	Bennett, Freddie C. 03/14/2017
11.Involve disturbance of pre-existing contamination?	X		No	No	Bennett, Freddie C. 03/14/2017
12.Generate noise levels with off-site impacts?	X		No	No	Bennett, Freddie C. 03/14/2017
13.Generate odor with off-site impacts?		X	No	No	For comments see attachments
14.Produce light which causes disturbance?	X		No	No	Bennett, Freddie C. 03/14/2017
15.Release of radioactive materials?	X		No	No	Bennett, Freddie C. 03/14/2017
16.Involve underground or above-ground storage tanks or bulk storage?	X		No	No	Bennett, Freddie C. 03/14/2017
17.Involve materials that require special handling?	X		No	No	Bennett, Freddie C. 03/14/2017

Part 4. Social and Economic Effects

Would the proposed action...	No	Yes	Permit	Commit-ment	Information Source for Insignificance
1.Potentially cause public health effects?	X			No	For comments see attachments
2.Increase the potential for accidents affecting the public?	X			No	For comments see attachments
3.Cause the displacement or relocation of businesses, residences, cemeteries, or farms?	X			No	Bennett, Freddie C. 03/14/2017
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. 03/14/2017
5.Disproportionately affect minority or low-income populations?	X			No	Bennett, Freddie C. 03/14/2017
6.Involve genetically engineered organisms or materials?	X			No	Bennett, Freddie C. 03/14/2017
7.Produce visual contrast or visual discord?	X			No	Bennett, Freddie C. 03/14/2017
8.Potentially interfere with recreational or educational uses?		X		No	For comments see attachments
9.Potentially interfere with river or other navigation?	X		No	No	Bennett, Freddie C. 03/14/2017
10.Potentially generate highway or railroad traffic problems?	X			No	Bennett, Freddie C. 03/14/2017

Part 5. Other Environmental Compliance/Reporting Issues

Would the proposed action...	No	Yes	Commit-ment	Information Source for Insignificance
1.Release or otherwise use substances on the Toxic Release Inventory list?	X		No	Bennett, Freddie C. 03/14/2017
2.Involve a structure taller than 200 feet above ground level?	X		No	Bennett, Freddie C. 03/14/2017
3.Involve site-specific chemical traffic control?	X		No	Bennett, Freddie C. 03/14/2017
4.Require a site-specific emergency notification process?		X	No	For comments see attachments
5.Cause a modification to an existing environmental permit or to existing equipment with an environmental permit or involve the installation of new equipment/systems that will require a permit?	X		No	Bennett, Freddie C. 03/14/2017
6.Potentially impact operation of the river system or require special water elevations or flow conditions??	X		No	Bennett, Freddie C. 03/14/2017
7.Involve construction or lease of a new building or demolition or renovation of existing building (i.e. major changes to lighting, HVAC, and/or structural elements of building of 1000 sq. ft. or more)?	X		No	Bennett, Freddie C. 03/14/2017

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 Heather M Hart		Date 07/13/2017
TVA Organization OE&R		Telephone

Environmental Concurrence Reviewer

W. Doug White 08/18/2017

Signature

Preparer Closure

Freddie C Bennett 08/21/17

Signature

Other Environmental Concurrence Signatures *(as required by your organization)*

Signature

Signature

Signature *Signature*

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

Freddie C Bennett 07/13/2017

Signature *Signature*

Signature *Signature*

Signature *Signature*

Attachments/References

Description of Proposed Action Continued from Page 1
Natural Resources Management is proposing a glades and barrens restoration project at the Little Cedar Mountain Natural Area in Marion County, Tennessee, on Nickajack Reservoir. The activities will include vegetation management via several methods in FY17 occurring on approximately 150 acres. Hand clearing around glade openings will be conducted to remove invasives and manage for desirable native grasses, forbs, and wildflowers. A prescribed fire will be utilized in FY 18 over approximately 150 acres to help control invasive plants and trigger the seed bank in the soil to re-vegetate the glades and barrens with native forbs and grasses. See project overview attached to this record for more detail description of the proposed activities.

Project Location Continued from Page 1
Marion, TN, Nickajack Reservoir - Tract NJR-301 - TNRM 427R -Little Cedar Mountain - Natural Area - Quad Map 100SE (Sequatchie) - Marion County, Tennessee

CEC General Comment Listing

1. NO COMMENT TEXT
   By: 26a Added Comment
2. NO COMMENT TEXT
   By: 26a Added Comment
3. NO COMMENT TEXT
   By: 26a Added Comment
4. NO COMMENT TEXT
   By: 26a Added Comment

CEC Comment Listing

Part 1 Comments

7. The project, affecting approximately 150 acres, is expected to have a positive a effect on the natural environment. It is part of an ongoing pilot study of selected natural areas with glades and barrens features and will take a restoration and habitat enhancement approach through classifying and describing glades and barrens, assessing current conditions, identifying threats and stressors, identifying glade-affiliated species of conservation concern, and implementing as an active management and protection program to restore and enhance the glades and barrens.
   By: Freddie C Bennett 08/08/2017

Part 2 Comments

1. See terrestrial zoology input and commitment for Section 7 consultation regarding impacts to gray bats, Indiana bats, and northern long-eared bats.
   By: Elizabeth B Hamrick 03/27/2017

1. The primary objective of the proposed project is to enhance habitat preferred by plant species of conservation concern in Tennessee. Removal of select woody vegetation in combination with prescribed fire would reduce encroachment of woody plants that have slowly invaded the barrens over the course of many years and would produce more open, prairie-like habitat that is favored by the four state-listed species occurring in and around the glades and open woods at Little Cedar Mountain (See Table). Several of these species are globally rare and occur only in this and similar habitats. Federally listed species do not occur in the action area and would not be impacted by the proposed work.
   By: Adam J Dattilo 04/17/2017

1. Review of TVA natural heritage data on 03/15/2017 for special status aquatic species within 10 miles of the project 6 state and federal endangered, 1 federal endangered, 3 state protected and federal endangered, 1 state protected and federal threatened, 1 state partial status mussel and federal endangered, 1 federal endangered, 1 state tracked, 4 state partial status mussels, and 3 state "in need of management species. Suitable habitat for these species does not occur at or near the project site - as a result the project will not affect these species.
By: Mark L Odom 04/17/2017

1. Section 7 consultation under the Endangered Species Act was completed on August 11, 2017. See concurrence letter from USFWS attached and note winter burning commitment (Oct 15 - March 31).
By: Elizabeth B Hamrick 08/15/2017

2. TVA's Cultural database shows two documented archaeological sites (40MI16 and 40MI22) within the APE. The sites were examined during a TVA survey of Little Cedar Mountain in 1990 (Driskell and Mistovich) and to a lesser degree in 2007 (Alexander and Boutwell). The results of these surveys revealed the shelter openings are either submerged by Nickajack reservoir, or the sites have been completely destroyed by looting and erosion. A large portion of the APE has been previously surveyed in association with the Little Cedar Mountain Hiking Trail (Alexander and Boutwell 2007; Alexander and Schneider 2013). On March 15, 2017, TVA Cultural Compliance staff conducted a reconnaissance survey of the APE. A pedestrian survey of the APE failed to locate any evidence of the previously documented sites (40MI16 and 40MI22) or any other occupation within the APE. TVA finds the proposed action will not affect any historic properties. In a letter dated, 4/24/2017 the TN SHPO concurred with TVA's finding of no effect. Pursuant to 36 CFR Part 800.3(f)(2), TVA consulted with federally recognized Indian tribes regarding properties within the proposed project's APE that may be of religious and cultural significance to them and eligible for the NRHP. TVA received responses from the Chickasaw Nation, Shawnee Tribe, and EBCI with no objection.

By: Michaelyn S Harle 05/18/2017

9. Review of TVA heritage data shows 10 managed areas, 16 Natural areas and 6 heritage sites within 5 miles of the project site. The project will positively affect the Little Cedar Mountain Habitat Protection area by preserving and protecting glade and barren habitart for the area. The project will not affect the other areas due to its nature and its distance from these resources.
By: Mark L Odom 04/17/2017

10. Based on review of the actions, site location information, and maps provided by the project lead, the proposed project would not contribute to the spread of exotic or invasive terrestrial animal species.
By: Elizabeth B Hamrick 03/27/2017

10. The glades at Little Cedar Mountain are very dry in summer and few exotic species can tolerate the habitat. It is expected that native species will colonize areas opened up by the proposed thinning and prescribed burning activities. The proposed project is not expected to contribute to the spread of exotic or invasive species.
By: Adam J Dattilo 04/17/2017

10. Review of TVA heritage data, site information and photos, and project plans shows that the project will not contribute to the spread of exotic or invasive aquatic species with implementation of general and standard best management practices for this type of work.
By: Mark L Odom 04/17/2017

11. One colonial wading bird colony is known within three miles of the project footprint, approximately 0.3 miles away. An osprey nest is also known approximately 2.5 miles from the proposed actions. Neither of these resources would be impacted by the proposed actions. Individual migratory birds may use the project action areas for foraging or nesting and could be impacted by the proposed actions if nests are active in the action area at the time of vegetation removal or burns. Some tree removal would occur during summer months (primarily young live cedars). Prescribed burning activities would occur during late fall, winter, or early spring months before most migratory song birds have arrived and before most resident birds have laid eggs. Low burn temperatures would ensure habitat is available for nesting migratory birds following proposed actions. Proposed construction activities would not impact populations or aggregations of migratory birds.
By: Elizabeth B Hamrick 03/27/2017

16. Three caves with five entrances have been recorded in the proposed burn unit. Nine additional caves occur within three miles of the project area. One of the caves in the burn plot, Little Cedar Mountain Cave is a known summer roost for the federally endangered gray bat. Tree removal actions would not impact any known cave habitat. Burn activities would occur outside of summer months when gray bats may be occupying Little Cedar Mountain Cave. Best management practices would be used around caves including restricting the timing of the burn to ensure weather conditions were favorable for smoke dispersal away from caves. Burn temperatures would also be kept low to ensure that erosion (and subsequently sedimentation into caves) would not increase due to burns. Activities associated with the proposed project would not impact unique or important terrestrial habitats.
By: Elizabeth B Hamrick 03/27/2017

16. The primary objective of the proposed project is to enhance habitat preferred by plant species of conservation concern in Tennessee. These barrens and glade-like habitats are very rare in the state and sites on Little Cedar Mountain are unique. The proposed project would benefit these unique barrens habitats by reducing encroachment of woody vegetation that has invaded the site over the course of many years.
By: Adam J Dattilo 04/17/2017

17. Review of TVA heritage data, site information and photos, and project plans shows that the project will not affect unique or important terrestrial habitat with general and standard best management practices for this type of work for aquatic habitats. The majority of the work will be up-slope of aquatic habitats.
By: Mark L Odom 04/17/2017

6. Review of TVA heritage data, site information and project plans indicates project will not affect wetland areas with implementation of general and standard best management practices for this type of habitat maintenance.
By: Mark L Odom 04/17/2017

7. The project is woodland habitat maintenance. Review of site information and project plans shows the project will not affect water flow, stream banks, and stream channels.
By: Mark L Odom 04/17/2017

Part 3 Comments

1. Minor amounts of smoke will be released during the controlled burn. Proper transport winds, as prescribed in the burn plan, will dissipate smoke rapidly. All smoke should be cleared within a few hours of burn completion. No long term pollutants will be released. The burning will be conducted at an appropriate time so that there will be minimal or no impacts to visibility along nearby Interstate 24.
By: Freddie C Bennett 08/08/2017

1. 1) The project shall follow the TN Department of Agriculture rules for prescribed burning ((Chapter 0080-00-06), Rules Governing Prescribed Burning).

2) Provide a courtesy notification to the local TDEC Field office 2 weeks in advance of the prescribed burn.

A burn permit will be obtained according to applicable laws and regulations. Marion County in in attainment for all air pollutants.
By: W. D White 08/14/2017

13. Smoke will be produced from the prescribed burn which may cause off-site effects. Smoke production is anticipated for only a short duration. A project specific burn plan will be developed and implemented to address and limit the effects of off-site smoke.
By: W. D White 08/14/2017

Part 4 Comments

1. The project proposes to apply herbicides for vegetation management. Products used in accordance with the label will have no impacts on human health. There are no water bodies, wetlands, or sinkholes within the areas where the herbicides will be applied.
By: W. D White 08/14/2017

2. Accidental spill have the potential to cause impacts to human health. However, safeguards are put into place to ensure adequate transport, application, and storage of such products. Herbicides being used are NOT restricted use pesticides (RUPs).
By: W. D White 08/14/2017

8. The area will be closed to the public during prescribed burning activities. Closures will be temporary and of short duration. The area will be re-opened to the public after burn activities are complete and the area is deemed safe by TVA staff.
By: W. D White 08/14/2017

Part 5 Comments

4. A site specific burn plan will be developed for this prescribed burn. Applicable emergency contact procedures and contact information will be included in the plan.
By: W. D White 08/14/2017

CEC Permit Listing

Part 3 Permits

1. Open Burning Permit

By: W. D White 08/14/2017