

## DECISION MEMO

### Davis Creek Prescribed Burn Project

USDA Forest Service  
Cherokee National Forest  
Nolichucky/Unaka Ranger District  
Greene County, Tennessee

#### Decision

I have decided to implement the Davis Creek Prescribed Burn Project; an approximately 1,076-acre burn on the Nolichucky/Unaka Ranger District. The burn area is approximately 11 miles southeast of Greeneville, Tennessee.

The primary objective of the Project is to reduce fuel accumulations. Long-term beneficial effects include maintaining natural communities and stimulating new growth of vegetation that will provide an increase of soft mast and herbaceous plants for wildlife. If post-burn monitoring determines that the burn objectives were not fully met, a follow-up burn will be implemented to achieve all objectives. In addition, if fuel accumulations attain a hazardous level within five years of the initial burn; or if beneficial effects (such as changes in community composition and vegetation for wildlife) have diminished based on recommendations from a resource specialist, a second (or third) prescribed burn will be implemented. Future burns will be scheduled to restore a historic fire regime and maintain the area in Condition Class I (Vegetation composition and structure are intact. The risk of losing key ecosystem components from the occurrence of fire is relatively low). The relevant analysis and decision documentation will be completed at that time.

The Davis Creek burn will be a dormant season burn. Forest-wide Standard 97 in the RLRMP states: *“Dormant season burns have a cutoff date of May 1<sup>st</sup> or the break of dormancy, as recommended by multi-disciplinary review and Tennessee Wildlife Resource Agency (TWRA) with decision by Line Officer.”*

Prior to implementing the project, a site-specific Burn Plan will be prepared by trained resource specialists and approved by the District Ranger. The Burn Plan will include a description of the treatment area, the burn objectives, weather and fuel moisture perimeters, and resource coordination requirements. Coordination requirements include provisions for public and worker safety; burn day notification of appropriate agencies and persons; smoke management guidelines to ensure compliance with air quality regulations and to maintain acceptable visibility in smoke-sensitive areas; fireline placement; specific firing patterns; ignition methods, mop-up and patrol procedures. The burn will be conducted under the conditions specified in the Burn Plan. An immediate post-burn evaluation will compare treatment results with the Plan objectives.

All control lines will utilize trails, roads, streams, and previously constructed dozer line. New dozer line will not be constructed. This prescribed burn will use primarily backing and flanking firing techniques. Portions of the prescribed burn areas are not expected to burn due to vegetation type and high fuel moisture. Since north and east aspects and coves do not readily burn, no effort will be made to force these areas to burn. Ridge tops, upper slopes, and south and west-facing aspects dominated by oak and pine tend to carry a backing fire; thus the emphasis of

the burn will be in these areas. The anticipated result of the burn will be a mosaic of burned and unburned areas across the landscape.

### **Purpose and Need for Project**

The Cherokee National Forest *Revised Land and Resource Management Plan* (RLRMP) Forest-wide Goals and Objectives that specifically pertain to the Davis Creek Project include:

Goal 10 Maintain and restore natural communities in amounts, arrangements, and conditions capable of supporting viable populations of existing native and desired non-native plants, fish, and wildlife species within the planning area.

Goal 17 Restore and maintain forest communities to those plant communities predicted as most likely to occur based on the ecological potential of the site potential natural vegetation.

Objective 17.03 Over the ten-year period restore at least 10,000 acres of shortleaf/pitch/table-mountain pine forests.

Goal 18 Contribute to maintenance or restoration of native tree species whose role in forest ecosystems is threatened by insects and disease. Management activities will reduce the impacts from non-native invasive species.

Objective 18.02 Promote the health of susceptible forest communities by maintaining a site-specific basal area that promotes tree vigor. Encourage advanced regeneration of oak species.

Goal 21 Use fire during dormant and growing seasons to achieve ecological sustainability, rehabilitation, and restoration of fire dependant and associated communities. Identify and establish appropriate “burning blocks” that facilitate the use of prescribed fire to maintain and restore fire dependant and associated communities.

Objective 21.01 Prescribe burn an average of at least 1,100 acres per year of shortleaf/pitch/table-mountain pine forests, in an effort to maintain a fire return cycle of 4-12 years.

Objective 21.02 Prescribe burn an average of at least 5,200 acres per year of oak and oak-pine forests in an effort to maintain a 4-12 year fire return cycle.

Objective 21.04 Prescribe burn an average of at least 1,200 acres per year of pine-oak forests in an effort to maintain a fire return cycle of 4-12 years.

Goal 23 Fire dependent ecosystem components are maintained by desired fire regimes. Restore and maintain fire associated and dependent landscapes by moving them from condition class 2 and 3 to condition class 1.

Goal 24 Reduce hazardous fuels through wildland fire use, prescribed fire, and mechanical fuels treatment.

Objective 24.01 Reduce hazardous fuels between 19,000 and 60,000 acres per year with priority given to areas affected by insects, diseases, storm damage, and along NFS boundaries with high values at risk.

To achieve the above Goals and Objectives, the Purpose and Need for this Project is:

Primary Need: Decrease future wildfire severity and occurrence by reducing the fuel loading of 1-hour and 10-hour fuels by reducing leaf litter, herbaceous vegetation and dead/down fuels (Goal 24 and Objective 24.01), and

Long-term Benefits: Improve wildlife habitat by stimulating fruit production, new growth of wild grasses and legumes for seed eating animals and by encouraging new coppice sprouting in woody plants two inches or less in diameter at ground level for browsing animals (Goal 10), and continue the process of restoring the historic role of fire in maintaining natural fire dependant species and associated communities (Goals 21 and 23; Objectives 21.01, 21.02, and 21.04). Improve General forest health in the project areas by providing for the development of advanced reproduction of desirable species through the introduction of prescribed fire. (Goals 17, 18, and 21; Objectives 17.03, 18.02, 21.02, and 21.04)

The burn area is in RLRMP Prescription Areas 4.A (Appalachian Trail Corridor) and 4.F (Scenic Areas). These prescriptions permit the use of prescribed fire to meet plan objectives, but 4.F places some constraints for other resource considerations.

Fire and Fuels is one of the Forest Service Chief's "Four Great Threats", and this project addresses the issue by reducing fuels and beginning the process of returning fire to a historic role in the ecosystem.

### **Implementation**

For the environmental effects of the project, this Decision Memo (DM) utilizes the supporting documentation of the effects disclosure found in the Vegetative Management section of the Appalachian Mountains EIS (VMEIS) and the documentation found in the 2004 Final Environmental Impact Statement for the Revised Land and Resource Management Plan Cherokee National Forest.

The following standards from the RLRMP will be applied to the activity:

FW-18: when preparing for prescribed fire, use wet lines, black lines or hand lines within the channeled ephemeral stream zone and across ephemeral channels to minimize soil disturbance. Use water diversions to keep sediment out of the stream channel. Removal of litter and debris from the channel is permissible. Do not construct firelines in channels, but they may be used as natural firebreaks.

FW-19: do not plow firelines with heavy mechanized equipment (e.g. bulldozers and tractors) in channeled ephemeral zones when preparing for prescribed fire.

FW-21: conduct all CNF management activities (including permitted activities) in a manner that does not cause (1) a violation of National Ambient Air Quality Standards (NAAQS) or (2) a violation of applicable provisions in the state implementation plan.

FW-23: no prescribed fires will be ignited in a county where the Air Quality Index (AQI) is 90 or above. Choosing the value of 90 (yellow zone) is considered appropriate since the air regulatory agencies may not be aware a prescribed fire is planned the next day, this should allow adequate room so ozone or fine particle health concerns are not exceeded. The AQI will not be used in a decision to burn the next day if the appropriate air agency has demonstrated (through the use of appropriate atmospheric models) that prescribed fires are not a significant contributor to exceeding the NAAQS, and the prescribe fire guidelines are appropriate in maintaining air quality.

FW-24: proximity to non-attainment areas and areas that exceed ozone or fine particle NAAQS is specified in Smoke Management Plans.

FW-25: CNF will work with the appropriate air agency to provide estimates on the timing, amount, and location of pollution emissions from prescribed fires as the Air Regulatory Agency is developing plans to bring an area back to attainment in all declared non-attainment areas.

FW-48: basic mesic forests are excluded from prescribed burning blocks where this can be accomplished without large increases in fireline construction. When necessary to include mesic deciduous forests within burning blocks, direct firing will not be done within these communities unless necessary to secure control lines. In these cases, only low intensity fires are allowed.

FW-92: use existing barriers, e.g. streams, lakes, wetlands, roads, and trails as firelines for prescribed fire, whenever possible to reduce the need for fireline construction and to minimize resource impacts.

FW-93: all managed burns will operate under a Smoke Management Plan that is developed as part of the Prescribed Burn Plan. Use the best available and emerging smoke management measures to minimize impacts on air quality at smoke sensitive receptors (such as hospitals, child care centers, nursing homes, roads, poultry farms, and the Class I areas – Great Smoky Mountain National Park and Cohutta Wilderness).

FW-94: conformity with the state implementation plan will be demonstrated for any prescribed fire planned within EPA-designated “non-attainment” and “maintenance” areas.

FW-95: all managed burns will comply with smoke management programs for Tennessee, when these are implemented. (Per EPA’s “Interim Air Quality Policy On Wildland And Prescribed Fires” which was developed with involvement of the USDA Forest Service.)

FW-96: where necessary to include mixed mesophytic forests and northern hardwood communities within prescribed burn block, ignite prescribed fire within these communities to secure line only.

FW-97: dormant season burns have a cutoff date of May 1<sup>st</sup> or the break of dormancy, as recommended by multi-disciplinary review and TWRA with decision by line officer.

FW-99: critical values for the Keetch-Byram Drought Code (Cumulative Severity Index) are established for all prescribed burning activities. Burning is allowed only on days when the drought code is less than this critical value.

FW-100: prescribed fire in areas managed for timber commodity value will consider potential impacts to trees. Prescribe fire managers will develop Burn Plans that produce acceptable effects.

## **Monitoring**

A post-burn evaluation is included as part of the Burn Plan. The following information is collected immediately following the burn to determine if the goals and objectives were met:

- Amount of litter left (in inches).
- Percent of understory vegetation consumed.
- Percent and area of crown scorch.
- Occurrences of spotting and/or jump-overs.
- Tree damage.
- Percent of top-kill of understory undesired vegetation.
- Occurrences of Smoke Management violations.
- Occurrences of escaped fires.
- Occurrences of complaints.
- Adverse effects.
- Any restoration needs.
- Were the objectives met?
- Recommendations for future evaluations.

Forest-wide long-term monitoring data are also gathered following direction in Forest Service Manual 5140.42. Two randomly-selected permanent plots are established for each forest community type within the burn block(s). (Permanent plots however may not be established for this specific burn.) Monitoring data are gathered following the direction and standards set in the *Fire Monitoring Handbook* (USDI National Park Service. 2003. Boise, ID: Fire Management Program Center, National Interagency Fire Center. 274p.)

The following monitoring data is collected pre-burn, within a month post-burn, then at 1-year, 2-year, 5-year, and 10-year intervals:

- Plot Identification and Location, including direction to area, description of area, size, photo points, plot identification, burn unit name, date and recorders.
- Overstory trees (8+ inches (in.) Diameter Breast Height (DBH)) are tagged throughout the 50x20 meter plot. Plot is then divided into four quadrants.
- Pole-sized trees (2 in. – 8 in. DBH) within Quadrant 1 (Q1), a 10x25 meter area, are mapped and numbered.
- Seedling/Saplings in a 5x10 meter area within Q1 are counted and species listed.
- Herbaceous transects, 30 meters in length, are taken along both 50-meter sides of the plot. Every 0.3 meters, any herbaceous species that cross this transect are recorded.
- Three random fuels transects, 50 feet in length are taken. Fuels information includes 1 hour – 1,000 hour fuels and depth of duff layer.

## **Scoping and Public Involvement**

Scoping for this project included review of the management direction for this area in the Cherokee National Forest RLRMP, review of the National Forest Management Act, and consultations with various Forest Service and other agency resource specialists. The project was

provided to the public and other agencies for comment. The project has been published in the Schedule of Proposed Actions since April 2009.

The Legal Notice for a 30-day comment period was published in the *Greeneville Sun* on June 1, 2009 and the draft Decision Memo was sent to those groups and individuals who have expressed interest in prescribed burn projects. Two supportive comments were received during the comment period.

A Federal Court decision in *Earth Island v. Ruthenbeck* in the Eastern District of California invalidated the provisions of 36 CFR Part 215 that excluded categorical exclusions such as prescribed burning from notice, comment, and appeal. The District Court order was applied nationwide affecting decisions signed after July 7, 2005.

As required by 36 CFR 219.35, I have considered the best available science in making this decision. The project record demonstrates a thorough review of relevant scientific information, consideration of responsible opposing views, and where appropriate, the acknowledgement of incomplete or unavailable information, scientific uncertainty, and risk.

### **Reasons for Categorically Excluding the Proposed Action**

The proposed action falls under Category Number 6 in 36 CFR 220.6 (e): “*Timber stand and/or wildlife improvement activities which do not include the use of herbicides or do not require more than one mile of low standard road construction*”.

Category #6 was developed by the Forest Service, as allowed by the Council on Environmental Quality, for activities that normally do not have significant impacts on the human environment, and therefore do not require preparation of an Environmental Assessment or an Environmental Impact Statement. Examples i through iv, under Category #6 are activities that considerable experience has shown qualify the project for exclusion: specifically, example iv: “*Prescribed burning to reduce natural fuel build-up and improve plant vigor*” appropriately describes the action as enumerated in the Purpose and Need for this project.

Based on past experience, the effects of implementing the action will be of limited context and intensity, and will result in little or no environmental effects to either the physical or biological components of the environment. The project has been reviewed for the existence of extraordinary circumstances that would result in significant environmental effects, and none were found. Therefore, the action can be categorically excluded from documentation in an Environmental Assessment or Environmental Impact Statement.

### **Finding of No Extraordinary Circumstances**

I have considered the following resource conditions and determined that there are no extraordinary circumstances existing that may cause the project to have significant effects. The mere presence of one or more of these resource conditions does not preclude use of a Categorical Exclusion. It is the degree of the potential effect of a proposed action on resource conditions that determines whether extraordinary circumstances exist. The resource conditions are:

1. Federally listed threatened or endangered species or designated critical habitat, species proposed for federal listing or proposed critical habitat, or Regional Forester's Sensitive Species.
  - a. The Endangered Species Act requires that federal activities do not jeopardize the continued existence of any species federally listed or proposed as threatened or endangered, or result in adverse modification to such species' designated critical habitat. The Biological Evaluation is in the project file.
  - b. Forest Service Manual 2670 direction requires analysis of potential impacts to sensitive species, those species for which the Regional Forester has identified population viability is a concern. The Biological Evaluation is in the project file.
2. Floodplains, Wetlands, or Municipal Watersheds
  - a. Floodplains. Executive Order 11988 is to avoid adverse impacts associated with the occupancy and modification of floodplains. Floodplains are defined by this order as, "*...the lowland and relatively flat areas adjoining inland and coastal waters include flood prone areas of offshore islands, including at a minimum, that area subject to a one percent [100-year recurrence] or greater chance of flooding in any one year.*" The project will not result in the occupancy or modification of a floodplain. This decision will not affect floodplains.
  - b. Wetlands. Executive Order 11990 is to avoid adverse impacts associated with destruction or modification of wetlands. Wetlands are defined by this order as, "*...areas inundated by surface or ground water with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Wetlands generally include swamps, marshes, bogs, and similar areas such as sloughs, potholes, wet meadows, river overflows, mud flats, and natural ponds.*" There are no inventoried wetlands in the affected area. If any small, uninventoried wetlands exist in the project area, they would be protected from any ground disturbance associated with hand or machine firelines. Due to the moist or wet conditions associated with wetlands, the prescribe burn would have minimal, if any, affect on any wetland area.
  - c. Municipal Watersheds. There are no source water/municipal watersheds within the area for prescribed burning. This decision will not affect municipal watersheds.
3. Congressionally Designated Areas
  - a. The Appalachian Trail forms part of the burn area's southern boundary. This decision will have no long-term adverse effects to the Appalachian Trail. There are no designated Wilderness, wilderness study areas, National Recreation Areas or Wild and Scenic Rivers within the burn area.
4. Inventoried Roadless Area
  - a. The burn area is part of the Bald Mountain Roadless Area. This decision will not affect Roadless Area values.

5. Research Natural Areas

- a. There are no Research Natural Areas in the burn area. This decision, with impacts limited to the immediate area of action, will not affect Research Natural Areas.

6. Native American Religious or Cultural Sites, Archaeological Sites or Historic Properties or Areas

- a. Section 106 of the National Historic Preservation Act (Act) requires federal agencies to take into account the effect of a project on any district, site, building, structure, or object included in, or eligible for inclusion in the National Register. The Act also requires federal agencies to afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. The Archaeological Resources Protection Act covers the discovery and protection of historic properties (prehistoric and historic) that are excavated or discovered in federal lands. It affords lawful protection of archaeological resources and sites that are on public and Indian lands. The Native American Graves Protection and Repatriation Act cover the discovery and protection of Native American human remains and objects that are excavated or discovered in federal lands. It encourages avoidance of archaeological sites that contain burials or portions of sites that contain graves through “in situ” preservation, but may encompass other actions to preserve these remains and items. The No Cultural Resources Form is in the project file.
- b. Additionally, the Federal government has trust responsibilities to Tribes under a government-to-government relationship to insure that the Tribes reserved rights are protected. Consultation with tribes helps insure that these trust responsibilities are met. Scoping included mailings to affected tribes.

**Findings Required By Other Laws**

Forest Plan Consistency - As required by the National Forest Management Act, I have determined that this project is consistent with the Forest-wide standards and guidelines for all affected Management Areas. Prescribed burning will not lead to any violations of federal, state, or local laws imposed for the protection of the environment. This will be assured by carrying out the burns consistent with the standards and guidelines, management requirements, and implementing mitigating measures as established in the Revised *Land and Resource Management Plan* for the Cherokee National Forests (2004).

Clean Water Act - This Act is designed to restore and maintain the integrity of waters. The Forest Service complies with the Act through the use of Best Management Practices and Forest Plan standards. This decision incorporates Best Management Practices and Forest Plan standards to ensure protection of soil and water resources.

Wetlands (Executive Order 11990) - See the Finding of No Extraordinary Circumstances section of this document.

Floodplains (Executive Order 11988) - See the Finding of No Extraordinary Circumstances section of this document.

Endangered Species Act - See the Finding of No Extraordinary Circumstances section of this document.

Clean Air Act - Under this Act areas of the country were designated as Class I, II, or III airsheds for Prevention of Significant Deterioration purposes. Class I areas generally include national parks and wilderness areas. Class I provides the most protection by severely limiting the amount of additional human-caused air pollution that can be added to the area. The project area is not located in a Class I area. A greater amount of additional human-caused air pollution may be added to these areas. The State has been involved in the planning process (project file). Prescribed burning in this decision will comply with notification of appropriate agencies and persons, smoke management guidelines to ensure compliance with air quality regulations and to maintain acceptable visibility in smoke sensitive areas.

Federal Cave Resources Protection Act - This Act is designed to secure, protect, preserve, and maintain significant caves, to the extent practical. No known cave resources will be affected by this decision.

National Historic Preservation Act - See the Finding of No Extraordinary Circumstances section of this document.

Archaeological Resources Protection Act - See the Finding of No Extraordinary Circumstances section of this document.

Native American Graves Protection and Repatriation Act - See the Finding of No Extraordinary Circumstances section of this document.

Wild and Scenic Rivers Act - See the Finding of No Extraordinary Circumstances section of this document.

Environmental Justice (Executive Order 12898) - This Order requires consideration of whether projects would disproportionately impact minority or low-income populations or not. Scoping did not reveal that this project would cause disproportionate impacts.

National Environmental Policy Act - This Act requires public involvement and consideration of potential environmental effects. The entirety of documentation for this decision supports compliance with this Act. The actions are designed to comply with all management requirements in the Record of Decision for the Final Environmental Impact Statement for Vegetation Management in the Appalachian Mountains, which was an amendment to the 1986 Forest Plan and incorporated into the RLRMP.

The Davis Creek Project complies with requirements related to vegetation management (16 U.S.C. 1604):

1. It is best suited to the multiple-use goals established for the area based on the Forestwide direction. This suitability is based on the potential environmental, biological, cultural resource, aesthetic, engineering, and economic impacts.
2. The areas will remain adequately stocked after treatment.

3. This action has not been chosen primarily due to cost considerations, although this was taken into consideration.
4. This action has been chosen after considering potential effects on residual trees and adjacent stands
5. The action will avoid permanent impairment of site productivity and ensure conservation of soil and water resources
6. The action will provide the desired effects on water quality and quantity, wildlife and fish habitat, woody regeneration, forage production, recreation uses, aesthetic values, and resource needs.
7. The project area is adequately roaded and new permanent or temporary roads are not necessary to implement this decision. The project is practical in terms of transportation requirements, and the total costs of preparation and administration. The project does not require a project-level roads analysis because there are no permanent changes in access into the area; road standards will not change; and it includes only maintenance activities

**Appeal Opportunities**

This decision is not subject to appeal pursuant to 36 CFR 215.12 (e) and may be implemented immediately.

**Contact Person**

For additional information concerning this decision contact Jeff Chynoweth at (423) 783-4216 or write to:

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2/2/2010

Date