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Agriculture

Forest Service



Mark Twain  
National Forest,  
Region 9



October 2004

# DECISION NOTICE

## The Crooked Creek Analysis Area

Project Number: 70202  
Management Area 3.4  
Salem Ranger District  
Mark Twain National Forest  
Dent and Crawford Counties, Missouri

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## I. DECISION

### A. INTRODUCTION

The Environmental Assessment (EA) for the Crooked Creek Analysis Area Project is available for public review at the Salem Ranger District located at 1301 S. Main (Hwy 19 S), Salem, Missouri, 65560 or may be obtained online at <http://www.fs.fed.us/r9/marktwain/projects/project.htm>. This document, prepared by an Interdisciplinary team (IDT), discusses the reasons for taking action in the Crooked Creek Analysis Area, which include improving forest health and vigor, enhance terrestrial and aquatic wildlife habitat, and to reduce hazardous fuel loads. The EA also discusses environmental effects of the proposed treatments which include a mix of even-aged and uneven-aged timber management, reforestation, prescribed fire, road reconstruction, non-system road decommissioning, soil and water improvements, grazing, mowing, fertilizing, and pond rehabilitation.

The EA evaluates resource management alternatives on approximately 23,217 acres of National Forest land. It includes areas identified by the Forest Service as Compartments 19, 20, 21, 22, 23, 33, 34, 35, 36, 37, 38, 39, 40, 41, 49, 50, 51, 52, 53, 57, 58, 59, 78, 79, 80, 82, 83, 85, 86, 87, 88, 89, 90, 91, 92, 99, 100, and 118; which are managed under Forest Plan standards and guidelines Management Prescription 3.4. The analysis area is located on National Forest Land in Dent and Crawford Counties at Township 35 North, Range 3 West, Sections 7, 9-11, 14-23, 26-29, and 31-34; Township 34 North, Range 3 West, Sections 1-6, 8-10, 16-23, 25-27, and 34-36; and Township 34 North Range 4 West, Sections 8, 9, 13-17, and 22-24. It is approximately 8 air miles east of Salem, Missouri. Please refer to attached maps.

### B. DECISION

The purpose of the Decision Notice in the National Environmental Policy Act (NEPA) process is to identify a selected alternative and provide reasons why that alternative was selected over others considered in the EA. The Crooked Creek EA analyzed a total of three alternatives and, in my opinion, provides all the information I need to make a reasonable decision.

I have decided to implement the actions described as Alternative 2. The attached maps illustrate the location of the proposed activities and are hereby made a part of this decision document. Specific stands affected by this decision are found in the activity listing in Appendix A. Based on the needs identified in the EA, I have decided to implement the following actions in the Crooked Creek Analysis Area:

Treatment Description	Measurement
<b>Silvicultural Methods</b>	<b>Acres</b>
Complete Salvage	931
Seed Tree Salvage	26
Shelterwood Salvage	1275
Uneven Aged Salvage	1746
Overstory Removal for Salvage	122
Sanitation for Salvage	562
Thin	1197
<b>Reforestation</b>	<b>Acres</b>
Natural Regeneration	2512
Pine Planting	667

Treatment Description	Measurement
<b>Prescribed Fire</b>	<b>Acres</b>
Open woodland development	2445
Hazardous fuel reduction	5956
<b>Transportation</b>	<b>Miles</b>
Temporary	25
Reconstruction	8.4
<b>Soil and Water</b>	
Dump Clean-up	5 sites
Non-system Road Decommissions	55 miles
<b>Range/Wildlife</b>	<b>Acres</b>
Grazing	345
Fertilize	345
Mechanical-Hand Cut, Mow, and Waterhole Maintenance	1375
<b>Fisheries</b>	<b>Acres</b>
Pond Rehab	16
Stock Fish	16

Mitigating measures beyond those required by the Forest Plan standards and guides are found in Appendix B.

## II. REASONS FOR THE DECISION

I have selected Alternative 2 because the analysis indicates that it would be the best alternative mixture of activities for improving forest health and vigor, enhancing terrestrial and aquatic wildlife habitat, improving soil and water conditions through dumpsite clean-up and decommissioning non-system roads, and reducing hazardous fuels while providing a steady flow of products and opportunities for to meet needs of the local population. Alternative 2 will most effectively provide the necessary treatments for those analysis area stands that are experiencing oak decline or those that are at high risk.

My reasons for choosing Alternative 2 are as follows:

1. Alternative 2 would provide the best opportunity to treat areas of heavy tree mortality, red oak borer infestation, and late oak decline to balance the scarlet and black oak component throughout affected stands, as well as encouraging development more resilient white oak, post oak, and short leaf pine mixtures (EA, pgs 3-34 to 3-53).
2. The analysis demonstrates how this alternative best meets the objectives of Management Prescription 3.4 (Forest Plan, IV-115) for maintaining and enhancing wildlife habitat diversity for native and naturalized vertebrates, recreational opportunities, and moderate to high production of resources, including firewood and timber products.

3. Of all the alternatives, this one best moves the area towards meeting the desired future conditions of the eight wildlife habitat objectives (EA, pgs 3-62 to 3-66; 3-75 to 3-77; and 3-85) for the 3.4 Management Area established in the Forest Plan (Forest Plan, IV-118 to IV-123).
4. This alternative will create approximately 957 acres of early successional habitats (0 -9 Age class) in Oak/Hickory Hill and Oak/Pine Hills Land Type Associations. This alternative will also have the most long-term benefits to neotropical migratory birds (EA, pg 3-71).
5. Thinning, seed tree salvage, shelterwood salvage, sanitation, uneven-aged management, and prescribed burn treatments under this alternative will encourage open woodland habitat development in oak, oak-pine, and pine saw timber with 20-30 % forbs, grass, and shrub ground cover. This will increase the biodiversity in the understory while enhancing this habitat for a variety of Management Indicator Species (EA, pg 3-76).
6. This alternative would provide diverse open/semi-open wildlife habitat (with forbs and flowering plants), allow management of open lands with prescribed fire, mechanical means, and grazing, and still move the project area towards the Desired Future Condition (DFC) for this habitat type (EA, pgs. 3-74 to 3-85 and 3-94 to 3-96).
7. This alternative would improve the watershed health and soil conditions of the analysis area by decommissioning non-system roads, reconstructing system roads, implementing erosion control measures, and cleaning-up illegal dumps (EA, pgs. 3-5 to 3-25).
8. Timber products would be provided.
9. Critical resources such as threatened and endangered species, heritage resources, caves, springs, and sensitive habitats, are either benefited or unaffected by proposed activities in Alternative 2.
10. There are little or no discernible effects to air and water quality, cultural resources, social economics, recreation, and visual quality.
11. Alternative 2 is the most balanced mix of treatments and activities to ecosystem health.
12. Alternative 2 conforms to Mark Twain Forest Plan and its forest-wide Goals, Standards, and Guidelines (Forest Plan, pgs IV-1 through IV-85) as they apply to the Crooked Creek proposed, analyzed, and selected actions. The project requires a site-specific non-significant amendment for the 3.4 Management Area.

### **Non-Significant Forest Plan Amendment to 3.4 Management Area**

This decision includes a non-significant Forest Plan amendment to allow pine planting in the 3.4 Management Area (MA) within the Crooked Creek Project Area. The Forest Plan restricts reforestation in the 3.4 MA to natural regeneration methods. For the Crooked Creek Analysis Area, pine planting (artificial regeneration) is necessary to meet forest health objectives and to improve resiliency by increasing diversity. This minor change in the standard and guideline is not a significant change in the Forest Plan (FSM 1922.51(3)). I have determined that this Forest Plan amendment is not significant because the small change does not significantly alter the long-term levels of multiple-use goods and services (36 CFR 219.10(e) or 219.12(k)).

### **Openings in Excess of 40 acres**

This decision includes salvage treatments that will result in temporary openings that exceed 40 acres, the maximum limit established for the 3.4 Management Area (Forest Plan, page IV-118). I have determined

that natural catastrophic conditions caused by oak decline and red-oak borer damage warrant treatments that create temporary openings in excess of 40 acres as defined and permitted by the Forest Plan on page IV-39. Further, I have determined that this decision is consistent with 36 CFR 219.27(d)(2)(iii), which states that the established limit of openings created by even-aged management shall not apply to the size of areas harvested as a result of natural catastrophic conditions. The Crooked Creek EA explores the environmental impacts of not treating the stands that would contribute to temporary openings greater than 40 acres in Alternative 1 (No Action) and Alternative 3. The analysis clearly indicates that the salvage harvests are necessary to treat the oak decline and increase forest health and resiliency in the project area (EA, pages 3-36 through 3-53).

## FOREST PLAN STANDARDS AND GUIDELINES

The actions to be implemented are consistent with the Forest-wide standards and guidelines listed in the Forest Plan on pgs. IV-11 through IV-85, as well as those listed for Management Area 3.4 on pgs. IV-115 through IV-124. The selected alternative applies management practices meeting the Forest Plan's overall direction of protecting the environment while producing goods and services by following Standards and Guidelines and using mitigating measures as needed.

I address only those Goals and Objectives directly related to the Crooked Creek analysis. Applicable goals, standards, and guidelines are repeated from the Forest Plan (*italicized*) below with corresponding citations.

### Forest Management Goals

#### Multiple Use Management Goals

The Crooked Creek Project provides for a “*cost efficient*” (EA, Alternative 2, pgs. 112-113; Appendix D) “*Multiple use program*” (EA, Alternative 2, pgs. 2-2 and 2-3) which provides improved growing conditions for forest stands, forest products, enhanced wildlife habitat, improved soil and watershed conditions, reduced hazardous fuel loads, 345 acres for three grazing allotments, and 8.4 miles of road reconstruction. The project also recognizes “*demand trends and local economies*” (EA, pgs. 1-5 through 1-10 and Alternative 2, pgs. 3-107 through 3-113) and “*integrates ecological management principles into Forest resource programs*” (EA, Appendix F – Biodiversity). Populations and trends of threatened, endangered, rare, and sensitive plants are also considered (EA, pgs 3-56 to 3-85 and Appendix E – Biological Evaluation and Assessment). The Crooked Creek Project will take place in Management Areas 3.41, 3.42, and 3.43. Previously approved projects on the Salem Ranger District resulting in timber sales currently being implemented are: Oak Decline and Forest Health in Management Areas 3.21, 3.22, 3.23, 3.24, 4.11, 4.12, 4.13, 4.15, and 8.12; Pine Fuel Reduction in Management Areas 3.21, 3.22, 4.12, 4.14, 4.15, 6.12, 6.21, 6.25 and in 3.42 east of the Crooked Creek Analysis Area; and Hazard Tree Removal in Management Areas 3.24 and 6.23. This meets the criteria for having a “*distributed program geographically to make effective use of the diverse ecological capability of the Forest.*” The Crooked Creek Project would directly impact approximately 5,859 acres through harvest activities. This represents approximately 2 % of the Salem Ranger District. Regeneration harvests involved in the Crooked Creek Project are planned, implemented, and monitored to “*establish only those controls on users that are essential to meet management area objectives, to protect resources, and to provide for public health and safety*”.

#### Recreation Management Goals

Recreation, visual quality, and cultural (heritage) resources are considered in the Crooked Creek EA analysis of impacts on pages 3-96 through 3-107.

Wilderness Management Goals

The Crooked Creek Analysis Area is approximately 21 air miles west of the Bell Mountain Wilderness. Activities implemented in the Crooked Creek Analysis Area are not expected to effect users of the Bell Mountain Wilderness.

Wildlife Management Goals

The Crooked Creek Project provides “*habitat for indicator species*” and this habitat is quantified and qualified in the EA, pgs. 3-56 to 3-92. The Crooked Creek Project maintains a diversity of habitats expected to “*at least maintain viable populations of all existing native and non-native vertebrates*” while also providing habitat that “*responds to the demand for both consumptive and non-consumptive fish and wildlife use.*” The Crooked Creek Project provides mitigations to project actions in Alternative 2 identified in the EA on pages 2-4 through 2-11. These mitigations, along with the analysis on pgs. 3-56 to 3-92 of the EA, show that this project can “*Provide for wildlife species requiring specialized habitat including those recognized by both Federal and State authorities as being threatened, endangered, rare, or sensitive*” and not hinder the “*recovery of federally (listed) endangered species and threatened species by following reasonable and prudent measures outlined in any biological opinion issued by USFWS as a result of formal consultation*”.

Timber Management Goals

The Crooked Creek Project, in producing timber products as a part of maintaining a variety of habitats on the Mark Twain National Forest will operate within the Forest timber management program to “*provide a positive benefit-cost ratio*” (EA, pg. 3-112; Appendix D). The project responds to the oak decline condition of the analysis area “*by implementing cost efficient opportunities for intensified management of shortleaf and high value hardwood species on sites where they occur naturally*”(EA, pgs.2-2 through 2-3 and 3-110 through 3-113). This would be accomplished through the implementation of a variety of silvicultural treatments and reforestation through natural regeneration and pine planting where appropriate. Application of group selection (uneven-aged management) on 1746 acres in the Crooked Creek Analysis Area continues to “*apply and evaluate the uneven-aged management system on selected areas to determine the long term feasibility of using this system for management on the Forest*”.

Range Management Goals

By managing 345 acres for grazing in three allotments in the analysis area, the Crooked Creek Project contributes to “*a range management program that responds to projected demand for range forage while complementing other resource objectives, particularly those associated with open land wildlife habitat*” (EA, pgs. 3-93 through 3-96). The project “*emphasizes the establishment and management of native warm-season grasses*” on most of the acres planned for grazing in the analysis area (EA, pgs. 3-93 and 3-94).

Transportation System Goals

The Forest Plan identifies the Forest Transportation System. The Crooked Creek Project “*provides the minimum permanent road access and development standards while meeting resource management objectives*” and “*close unnecessary roads*” in the project by closing approximately 55 miles of non-system roads. The project will “*provide for temporary access to complement the permanent road system for effective resource development*” through construction of about 25 miles of temporary roads which would be decommissioned after they have served their purpose (EA, pgs. 3-30 through 3-32).

Fire Management Goals

The Crooked Creek Project “*implements prescribed fire as a tool for meeting resource management objectives*” through 8,401 acres of prescribed burn treatments (EA, pgs.2-2 through 2-3 and 3-53 through 3-56).

### Soil, Water, and Air Management Goals

The Crooked Creek Analysis Area EA “ensures the maintenance of soil productivity and the achievement of water and air quality objectives” by analyzing and disclosing effects (EA, pgs. 3-5 through 3-30).

### Land Adjustment Program Goals

The established surveyed landlines as part of the Crooked Creek Project help to clarify land ownership. Management activities associated with road reconstruction improves access to National Forest System Lands.

### **Forest Management Objectives**

Forest management objectives on pages IV-4 to IV-10 of the Forest Plan are reflected in the selection of Alternative 2, as exemplified by the following:

- Firewood material is provided for in tops and cull material felled during logging activity, after timber sale activity is completed.
- Wildlife habitat management that involves timber harvest in Alternative 2 are on suitable acres and do not include acres in Land Classifications 4, 7, or 9 (Forest Plan, pg. IV-7).

### **Forest-wide Management Direction**

#### 1600 Information Services

The public involvement aspects of the Crooked Creek Project are discussed in the EA on page 1-11.

#### 1800 Human and Community Development

The Crooked Creek Analysis Area EA “identifies forest and range opportunities that will help local communities enhance their self-sufficiency and their feeling of social well-being” by providing timber harvest opportunities to supply small, family-owned sawmills with raw wood products (sawlogs), as well as those larger forest product facilities that hire many local workers. The 3 grazing allotments in the Crooked Creek project will provide grazing areas for livestock owned by local farmers.

#### 1900 Land and Resource Management Planning

This project responds to forest-wide management direction regarding: Vegetative Management (EA, pgs. 3-33 through 3-56); NEPA Process (Crooked Creek Analysis Area EA and Appendices); Plan Implementation (selected Alternative 2 as described in this Decision Notice); Plan Monitoring Review and Revision (EA, pg 3-113 through 3-114); and RPA Coordination (the Crooked Creek EA and project file will be a source of data as indicated in the Forest Plan (pg. IV-22).

#### 2100 Environmental Management

The Crooked Creek Project is in adherence with forest-wide direction on Air Quality (EA, pgs. 3-26 through 3-30); Hazardous Waste (contracts that implement Alternative 2 require proper disposal of hazardous waste); Pesticide Use (no pesticides are used in the Crooked Creek Project); Catastrophic Hazard Response (one of the central goals of this project is to “salvage merchantable timber products from natural...catastrophe” (EA, pgs 1-5 through 1-10).

#### 2200 Range Management

The Crooked Creek Project includes range management activities that “provide a cost effective means of manipulating openland vegetation for the achievement of overall management area objectives” (EA, pgs. 3-93 through 3-96).

#### 2300 Recreation Management

The Environmental Assessment for this project discusses: Recreation Opportunities (EA, pgs. 3-96 through 3-99); Cultural Resources (EA, pgs. 3-103 to 3-107); and Visual Quality Management (EA, pgs. 3-99 through 3-102).

### 2400 Timber Management

Vegetative treatments are discussed in the EA on pages 3-33 through 3-53. The project is also responsive to direction concerning Management Intensity and Utilization (see “Harvesting on Suitable Lands” in this Decision Notice); Reforestation (EA, pgs. 3-50 and 3-51) and Temporary Roads (The Crooked Creek utilizes 25 miles of temporary roads which will be decommissioned after they have served their purpose in the project).

### 2500 Water and Soil Resource Management

Water and soil resources are discussed in the EA on pgs. 3-5 through 3-25.

### 2600 Wildlife Management

The Crooked Creek Project has given full consideration to threatened, endangered, and sensitive species and the duty to consult with the United States Fish and Wildlife Service (USFWS) (EA, pgs. 3-56 through 3-85 and Appendix E). Included in the wildlife evaluation (EA Appendix E) are specialized habitats and management indicator species and minimum viable population numbers and habitat.

### 3400 Forest Pest Management

The Crooked Creek Project addresses pest management from the aspect that silvicultural treatments will be implemented that will help maintain healthy forests prevent further spread and potential for the pests associated with oak decline.

### 5100 Fire Management

Forest-wide management direction will be applied in the use of prescribed burning implemented in the Crooked Creek Project decision.

### 5400 Landownership

The Crooked Creek Project will be implemented on only the Mark Twain National Forest land. Adjacent landowners have been contacted during public involvement efforts (EA, pg. 1-11).

### 7700 Transportation

The transportation needs of the Crooked Creek Project are considered on pgs. 3-30 through 3-32).

I am confident based on my review of the EA, that Alternative 2 provides the most beneficial effects for the forest ecosystem in the Crooked Creek analysis area.

## **A. SUMMARY OF ENVIRONMENTAL ISSUES AND CONCERN**

The range of alternatives developed by the IDT shows that a good effort was made to design alternatives that were responsive to the variety of issues and concerns identified by the Interdisciplinary Team and the Public during scoping and 30-day comment period. Specifically these issues and concerns were:

**GRAZING AND FORTUNE HOLLOW FEN:** This Issue is addressed under the Forest Plan (IV-52 and IV-116). The Forest Plan stipulates that a buffer zone with at least a 100-foot radius will be established around the fen area where all grazing activities are restricted (Forest Plan, IV-5). Allotment Management Plans must comply with the Forest Plan and are designed to use cattle grazing to help meet wildlife habitat objectives and to minimize impacts to other resources such as soil, water, and aquatics. Alternative 1 addressed this issue by discontinuing open land management in the three allotments in the analysis area. Alternatives 2 and 3 would both exclude livestock from the fen area by fencing. Alternative 2 also employs an adaptive management approach to better utilize forage and enhance open/semi-open habitats within the allotments. Adaptive management will specify the maximum limits or parameters for the appropriate timing, intensity, frequency, and duration variables instead of specifying

a fixed number of livestock and on and off dates. Monitoring of the effects of grazing will be used to determine specific numbers and periods of use.

**EFFECTS OF PRESCRIBED BURNS ON HEALTHY TIMBER AND REGENERATING STANDS:** A few commenters expressed concerns that healthy timber or stands with regenerating timber (0 – 9 yr. and 10 – 20 yr. age classes) may be damaged in the course of implementing prescribed fire treatments. We are now facing an increased threat to these timber stands due to oak mortality and oak decline in the Crooked Creek Analysis Area. This declining forest condition is contributing to the increasing fuel load. In the last few years, the Mark Twain National Forest has experienced more severe fire behavior due to these factors. Without removal of these fuels, the trend for damage to private and public resources will continue. Alternative 2 employs prescribed burn treatments for hazardous fuels with accompanying measures to protect timber and resources in the analysis area (EA, pgs 1-11 through 1-12 and 3-55).

**MAXIMUM SIZE LIMIT OF TEMPORARY OPENINGS:** The prescription for MA 3.4 states that any temporary openings created by even-aged silviculture management should not exceed a maximum limit of 40 acres (Mark Twain National Forest LRMP, page IV-118). The definition of an “opening” is an area where the trees are less than 20 feet in height (Mark Twain National Forest LRMP, page IV-38). Some of the treatments described in the proposed actions below will result in temporary openings in excess of 40 acres. The reason for this, in most cases, is that some proposed complete salvage treatments are adjacent to previously created openings where trees have yet to reach a height of 20 feet. The condition of these combined “opening” acreages exceeding 40 acres would exist for a very limited duration, as trees in the existing openings would reach a height of 20 feet in approximately 4 to 7 years. In three particular cases, the mortality is so widespread that complete salvage is proposed in multiple stands that, when combined, will exceed 40 acres. Alternative 3 was developed to address this issue by prescribing 294 fewer acres for complete salvage in those areas where temporary openings in excess of 40 acres would occur. The Forest Plan stipulates that temporary openings greater than 40 acres in size may be created in treating natural catastrophic conditions (Forest Plan IV-39). The oak decline and mortality condition that currently affects the analysis area constitutes such catastrophic conditions. Alternative 2 provides the best response to these conditions and would be most effective in improving the forest health and vigor of the analysis area.

**REFORESTATION THROUGH PINE PLANTING:** Under Alternative 2, approximately 667 acres of pine planting for reforestation are planned. According to the prescription for Management Area 3.4 in the Forest Plan, all reforestation will be through natural regeneration methods. A non-significant forest plan would be required in order to utilize pine planting as a reforestation method in the analysis area. Alternative 3 addresses this issue and prescribes only reforestation by natural regeneration so that a forest plan amendment would not be required. The pine planting utilized in Alternative 2 will add to the biodiversity of treated stands improve forest health and vigor through added resilience. Mixed species stands are considerably more resilient to natural events such as drought, fire, or insect and disease infestation, and the pine planting prescription will help ensure long term sustainability for these areas. **Planting pine in the analysis area will not alter the current management focus. The emphasis will continue to be on maintaining a mix of oak and other hardwoods, shortleaf pine, and grassland.**

## **B. OTHER ALTERNATIVES CONSIDERED AND REASONS WHY THEY WERE NOT SELECTED**

Six different alternatives were considered and three were selected for detailed analysis. The three alternatives that were analyzed include:

Alternative 1 – This is the no action alternative. This is a viable alternative and responds to the concerns of those who want no vegetative management activities (i.e. “no logging”) to take place. Current and on-going management activities would continue such as maintenance of roads and wildlife openings.

Rationale – I did not select this alternative because it does not address the following: (1) Providing healthy, resilient forests; (2) Loss of woodland habitats in the 0-9 age class; (3) Decline in woodland habitats in oak, oak/pine, and pine forest with 20 to 30 % forbs, grass, and shrub cover; (4) Maintaining existing open and semi-open lands; (5) Improving and maintaining aquatic habitat; (6) Reducing hazardous fuel loads. This alternative fails to move the area towards the Desired Future Conditions (DFC) for identified in the Forest Plan.

Alternative 3 – This alternative was designed to address issues regarding conflicts in the proposed action with the prescription for Management Area 3.4. It was designed to meet the project purpose and need without going outside the parameters established in the management prescription. Alternative 3 calls for 294 fewer acres of complete salvage treatments so that no temporary openings will be created that exceed 40 acres. It also restricts reforestation to natural regeneration methods.

Rationale – I did not select this alternative because it does not meet the need for improving forest health as well as Alternative 2. This alternative would not treat 294 acres of dead and dying or high risk trees. It would also result in additional accumulations of hazardous fuels. Without pine planting, this alternative would not advance biodiversity and stand resilience as much as Alternative 2. While this alternative would move existing conditions towards the DFCs identified in the Forest Plan, Alternative 2 will achieve more substantial improvements toward DFCs.

Other alternatives that were considered but were no carried through for analysis include:

Reduced Prescribed Burn Acreage – An alternative similar to the proposed action with fewer and smaller prescribed burn areas was considered in order to address the issue of fire effects on healthy timber and regenerating stands. This alternative was not carried into analysis because a reduction in prescribed burn treatments will leave larger hazardous fuel loads which increase the potential for damage to timber stands from high-intensity wildland fires. Under low-intensity prescribed burn conditions, the potential for damage to timber stands is minimal.

All Uneven-aged Management – An alternative similar to the proposed action was considered in which all timber harvest would utilize uneven-aged methods. It was determined by the IDT that this would not meet the goals and objectives of the project. Using strictly uneven-aged harvest methods would not address forest health issues. In areas of severe oak decline, even-aged methods are a necessary response to ensure the development of healthy forest stands.

Vegetation Management without Commercial Harvest – This alternative was considered to address the concerns of those who do not support logging on National Forest System Lands. Under this alternative only high risk stands would be treated. Valuable timber products would not be recovered. The IDT decided not to carry this alternative further into analysis because it would not meet the forest health and hazardous fuels needs of the analysis area. The dead material, left on the ground, would increase fuel loads and wildland fire risks. Reforestation would also be hindered by the dead material on the ground surface.

### **III. PUBLIC INVOLVEMENT**

A scoping letter with maps and project description was mailed to everyone on the Salem District mailing list and neighbors adjacent to the analysis area on November 26, 2003 (294 addresses) to invite comments on the project. This project has also appeared in the forest-wide Schedule of Proposed Actions (SOPA). Comments received after the scoping period were accepted and evaluated in the development of issues and alternatives to the proposed action. The District received 34 responses to the scoping document. All comments received were reviewed and evaluated by the IDT. Using the comments from the public and other agencies or organizations, the IDT identified several issues regarding the effects of the proposed

action as described on pages 1-11 and 1-12 of the EA. To address these issues the IDT created the alternatives described in Chapter 2 of the EA.

On April 8, 2004, a letter with a proposal for the Crooked Creek Analysis Area Project was mailed to the district mailing list and adjacent neighbors to invite timely, substantive comments on the proposed projects, in accordance with our revised regulations for notice, comment, and appeal (36 CFR 215). Legal Notice of this 30-day comment period was published on April 11, 2003, in the *Rolla Daily News*, Rolla, Missouri. Four comments were received; all of them were timely. These comments were reviewed for relevant issues and concerns about the project. Very little new information was provided that had not been identified during previous public involvement. Cited research articles revealed no new issues. A listing of the comments and the agency responses to comments can be found in the project file. All comments were taken into account in making my decision.

#### **IV. ENVIRONMENTAL JUSTICE**

I have determined that this project is being conducted in a manner that does not exclude persons from participating in, denying the benefits of, or subjecting persons to discrimination because of their racial, ethnic, or economic status. The activities carried out by this decision will not have disproportionately high and adverse health or environmental effects on minority or low-income populations.

Dent County has a 17.2 % poverty level and contains a 2.9 % minority population. Crawford County has 16.3 % poverty level and contains a 1.7 % minority population. Based on the 2000 Census Bureau information, the percent of low-income persons in these counties does not qualify them as environmental justice communities (EA, pgs 3-108 and 3-109).

Of the alternatives evaluated for the Crooked Creek Analysis Area Project, it is my opinion that none of the alternatives would pose disproportionately adverse impact on the economic or social fabric of the local communities. Alternatives 2 and 3 would generated the highest economic return by providing for recreational activities, timber harvest, and grazing (EA, pgs. 3-110 to 3-113).

#### **V. FINDING OF NO SIGNIFICANT IMPACT**

I have determined, based on the discussion of effects in the Environmental Analysis, and from past experience with similar activities, that these actions are not a major federal action, individually or cumulatively, and will not significantly affect the quality of the human environment. This determination is based on the following factors:

1. There will be no significant effects, beneficial or adverse, resulting from this project. The environmental effects are discussed in the Environmental Assessment, beginning on page 3-1. The beneficial effects include: a) improving forest health by removing diseased and low vigor trees; b) enhancing the diversity of wildlife habitats; c) improving the biological diversity of grasses, forbs, and shrubs in the forest understory; d) improving watershed health within the analysis area; e) improving public access to the area and road conditions for safe public access; f) removal of hazardous fuels; and g) providing a flow of timber products to benefit the local communities.
2. The beneficial effects of the action do not bias my finding of no significant environmental effects.
3. Public health and safety are minimally affected by the proposed actions. Public safety will be improved by improving or restoring road conditions and removing hazardous fuels. Effects of the alternative courses of action are displayed in the Environmental Assessment, pgs 3-1 to 3-114.

4. There will be no adverse effects on prime farmlands, floodplains, wetlands, historic or cultural resources, wild and scenic rivers, ecologically critical areas, civil rights, women, or minority groups. The Environmental Assessment, beginning on page 3-1, discusses the anticipated effects of implementing these actions.

5. Based on public participation and the involvement of resource specialists, I do not expect effects on the quality of the human environment to be highly controversial. This does not mean that the decision to proceed with the project will be acceptable to all people, as some will probably find that their needs and interest are not served by the proposed actions. However, it is my professional judgment that the significant biological, social, and economic issues have been addressed well enough for this project to avoid major scientific controversy over environmental effects. The proposed actions are similar to other management activities recently implemented in the same vicinity; therefore the results are reasonably predictable (EA, pgs 3-1 to 3-114).

6. There are no known effects on the human environment that are highly uncertain or involve unique or unknown risks. Timber harvesting, wildlife habitat improvement projects, watershed improvement projects, and grazing have been conducted throughout this area for many years. There have been many research projects, which enable us to predict fairly well what the effects of these actions may be. Environmental effects described in the assessment, beginning on page 3-1, have been analyzed in enough detail to determine predictable results.

7. These actions are similar to other management activities previously implemented and do not set a precedent for other projects that may be proposed to meet the goals and objectives of the Forest Plan (EA, beginning on page 3-1).

8. There are no known significant cumulative effects between this project and other projects implemented or planned on areas separated from the affected area of this project beyond those evaluated in the Final Environmental Impact Statement, or any amendments, for the Forest Plan. Cumulative effects are evaluated for each resource in the effects section of the environmental assessment, beginning on page 3-1. All past Forest Service activities in the last twenty years were reviewed and determined not to have an appreciable cumulative effect to the Crooked Creek Analysis Area.

9. Based on the archaeologist's analysis and because any sites or structures eligible for the National Register of Historic Places will be avoided, there will be no adverse effects on heritage resources, or eligibility for listing in the National Register of Historic Places (EA, pgs. 3-103 to 3-107 and project record).

10. Based on the Crooked Creek Biological Evaluation (EA, Appendix E) which analyzed impacts to federally listed Threatened and Endangered Species, the selected actions will not have additional effects beyond those stated in the 1999 Programmatic BA and June 23, 2000 US Fish and Wildlife Service Biological Opinion. The US Fish and Wildlife Service concurred on September 30, 2004 (EA, Appendix E and project record) with our determination that this project is in compliance with the Biological Opinion (June 23, 1999). The concurrence letter states "We concur with your conclusion that there are no additional effects to federally listed species associated with the Crooked Creek Project beyond those that were previously disclosed..." and "we also concur with your determination that the only species that may occur within the project area are Indiana bat, gray bat, Hine's emerald dragonfly, running buffalo clover, pink mucket pearly mussel, and bald eagle." The letter further states "...we concur with your determination that the Crooked Creek Project "may affect, but is not likely to adversely affect" the gray bat, bald eagle, Hine's emerald dragonfly, running buffalo clover, and pink mucket pearly mussel.

Mist net and Anabat surveys were conducted in and near the Crooked Creek Analysis Area between July 7 and July 26, 2004. During these surveys, a male roosting Indiana bat was captured in the analysis area.

A supplement to the Crooked Creek Biological Evaluation (EA, Appendix E) was submitted to the US Fish and Wildlife Service on August 20, 2004 detailing the results of these surveys and determination of effects. In regards to this supplement, the US Fish and Wildlife Service's tiered BO states:

The actions and effects associated with the proposed Crooked Creek Project are consistent with those identified and discussed in the Service's Programmatic BO. After reviewing the size and scope of the project, the environmental baseline, the status of the Indiana bat and its potential occurrence within the project area, the effects of the action; and any cumulative effects, it is the Service's biological opinion that this action is not likely to jeopardize the continued existence of the Indiana bat.

The letter also makes further conservation recommendation in light of the capture in the analysis area. In the interest of further developing information concerning the response of summer roosting habits of Indiana bats to forest management activities, the US Fish and Wildlife Service recommends that *"the MTNF conduct during summer bat season mist netting surveys and radio telemetry studies in the project area during and after project implementation, in the area where the male Indiana bat was captured and tracked in 2004."* The MTNF may conduct these monitoring activities in cooperation with *"the USFWS, North Central Experiment Station, and Missouri Department of Conservation to determine the best methods for obtaining useful data."*

In light of these determinations and the concurrence of the Service, I have determined, based on the context and limited intensity, that the impacts to Indiana bat are not significant.

11. The actions do not threaten a violation of federal, state, or local law, or requirements imposed for the protection of the environment. The Environmental Assessment displays compliance with the US Environmental Protection Agency, the Missouri Department of Natural Resources, Missouri State and National Historic Preservation Act, etc. (Also, see section VI below).

The Rams Horn Project (Nov 2002) on the Houston Ranger District and the Oak Decline and Forest Health Project (April 2002) on the Salem and Potosi Districts are similar in environmental context and planned activities to the Crooked Creek Analysis Area Project. The Rams Horn ROD states that *"implementing the selected action will not contribute to any significant cumulative impact to any resource..."* Monitoring reports indicate that the Oak Decline project *"is being implemented as planned, and the results produced are as anticipated by the analysis."* The activities planned in the Crooked Creek Analysis Area are very similar to activities in these projects. No significant effects were anticipated in the Rams Horn EIS or the Oak Decline EIS. No significant effects have resulted from the implementation of these projects. Therefore, I have determined, based on the similarity of anticipated effects between these projects, that an EIS is not needed.

## **FOREST PLAN CONSISTENCY**

### Project Specific Forest Plan Amendment

My decision to implement the Selected Alternative includes a Project-Specific Forest Plan amendment. Forest Plan standards state, *"Reforestation will be by natural regeneration methods,"* in Management Prescription 3.4 (Forest Plan, page IV-110). I am authorizing a non-significant amendment to, *"Allow the planting of shortleaf pine for regeneration"* in the 3.4 Management Prescription.

## **DETERMINATION THAT PROJECT-SPECIFIC FOREST PLAN AMENDMENT IS NOT SIGNIFICANT UNDER NFMA**

I have determined that this amendment is not a significant amendment under the National Forest Management Act (NFMA) implementing regulations [36 CFR 219.10(f)]. In reaching this conclusion, I

considered the following factors from Forest Service Handbook 1909.12, section 5.32, Process to Amend a Forest Plan.

### Timing

*“A change is less likely to result in a significant plan amendment if the change is likely to take place after the plan period (first decade) or whether the change is to take place after the next scheduled revision of the forest plan”* (FSH 1909.12,5 pg.5). The Mark Twain National Forest is in the late stages of the Forest Plan revision process. The reforestation activities planned under the Selected Alternative will not be implemented until after the forest plan revision is in effect.

### Location and Size

*“In most cases, the smaller the area affected, the less likely the change is to be significant change in the forest plan”* (FSH 1909.12,5 pg. 5). Under the current Forest Plan, the 3.4 Management Prescription is assigned to approximately 468,600 acres of the Mark Twain National Forest. A substantial portion of this area is located within the native range for shortleaf pine in the State of Missouri. Under this Amendment, pine planting is not mandatory, but is made possible in order to provide additional tools for more diverse species composition in forested stands . **The emphasis of this Management Prescription will continue to be on maintaining a mix of oak and other hardwoods, shortleaf pine, and grassland.**

### Goals, Objectives, and Outputs

*“In most cases, changes in outputs are not likely to be a significant change in the forest plan unless the change would forgo the opportunity to achieve an output in later years”* (FSH 1909.12,5 pg. 5). The amendment is part of my decision to allow regeneration through pine planting in order to promote a diversity of species in forest stands and provide for the goal of a healthier forest. Given the historic and contemporary presence of shortleaf pine in Management Prescription 3.4 stands, there has been no discernable effect to achieving Forest Plan goals and outputs to date. Regeneration through pine planting will help reduce the potential for catastrophic levels of oak decline, and therefore, ensure forest outputs in the future.

### Management Prescription

A change is more likely to require a significant amendment if it *“...will apply to future decisions throughout the planning area”* (FSH 1909.12,5 pg. 5). The next forest plan revision does not stipulate that natural regeneration must be used for reforestation in these management areas. Pine planting would be a viable alternative for project reforestation activities and as a means of meeting Forest Plan goals and objectives. Future projects under the revision may use multiple strategies for reforestation as the Crooked Creek Analysis Area Project does.

## **VI. FINDINGS RELATED TO OTHER LAWS AND REGULATIONS**

It is my finding that the actions of this decision comply with the requirements of the National Forest Management Act of 1976, NFMA implementing regulations in 36 CFR Section 219, and the Mark Twain National Forest Land and Resource Management Plan.

### **HARVESTING ON SUITABLE LANDS**

I have determined that the land on which harvesting has been proposed is suitable for timber production as described in 16 U.S.C. 1604(k) and 36 CFR 219.14 and 36 CFR 219.27(c)(1).

The land is forested and capable of producing crops of industrial wood (EA, pgs 1-2 through 1-4; Forest Plan, IV-115 through IV-124).

Technology is available to harvest timber from the land without irreversible resource damage to soil productivity or watershed conditions.

The land, which is regenerated, can be adequately restocked within 5 years of the final harvest (EA, pgs. 3-33 through 3-53; Forest Plan, IV-41).

The land is not withdrawn from timber production by an Act of Congress, the Secretary of Agriculture, or the Chief of the Forest Service (EA, pgs 1-2 through 1-4; Forest Plan, IV-115 through IV-124).

The land has not been deemed inappropriate for timber production due to assignment to other resource uses or considerations of cost efficiency (EA, pgs 1-2 through 1-4; Forest Plan, pgs. IV-115 through IV-124).

### **NATIONAL FOREST MANAGEMENT ACT REQUIREMENTS**

All proposals involving the manipulation of tree cover for any purpose comply with the seven requirements found in CFR 219.27(b). Specifically, they:

- (1) are best suited to multiple use goals for the area (EA, pgs 1-2 through 1-4; Forest Plan, IV-115 through IV-123);
- (2) occur on lands where adequate reforestation can be assured (EA, pgs. 3-33 through 3-53; Forest Plan IV-41);
- (3) were chosen after consideration of effects on residual trees and adjacent stands (EA, pgs 1-6 through 1-7, 1-12, and 3-33 through 3-53);
- (4) were not chosen primarily because they gave the greatest dollar return or timber output (EA, pgs. 3-107 through 3-113);
- (5) avoid impairment of site productivity and ensure soil and water resource conservation (EA, pgs. 2-7 through 2-8 and 3-5 through 3-25);
- (6) provide desirable effects on all affected resources (EA, pgs. 3-1 through 3-114);
- (7) employ practical timber harvest techniques (Forest Plan Appendix D) and transportation systems (EA, pgs. 3-30 through 3-32).

### **APPROPRIATENESS OF EVEN-AGED MANAGEMENT AND OPTIMALITY OF COMPLETE SALVAGE**

A portion of the vegetative management in the Crooked Creek project is even-aged management. A total of 957 acres are planned for even-aged management in this project. I have determined that the site-specific prescriptions for these stands are appropriate (EA, pgs 3-35 through 3-48). I have determined that the prescriptions for complete salvage are the optimal harvest method because of the current stand conditions (EA, pgs. 1-4, 1-6 through 1-7, and 3-35 through 3-48). The stand meets the criteria for optimality described in Appendix D, page D-9 of the Forest Plan and is compliant with the Forest and Rangeland Renewable Planning Act of 1974 as amended by the National Forest Management Act of 1976.

## **VII. ADMINISTRATIVE REVIEW OR APPEAL**

This decision is subject to appeal pursuant to 36 CFR 215.11 (as published in the Federal Register, June 4, 2003). A written Notice of Appeal must be postmarked or received within 45 days after the date of publication of this decision in the *Rolla Daily News* at the following address:

USDA Forest Service, Eastern Region  
ATTN: Appeals Deciding Officer, Randy Moore  
Gaslight Building, Suite 700  
626 E. Wisconsin Avenue  
Milwaukee, WI 53202-4616

or E-mail: [appeals-eastern-regional-office@fs.fed.us](mailto:appeals-eastern-regional-office@fs.fed.us)  
Subject: Crooked Creek Analysis Area Project

or Fax: 414-944-3963  
ATTN: Appeal Deciding Officer, USDA Forest Service, Eastern Region

Normal business hours (for hand-delivered appeals) are 7:30 AM – 4:00 PM, Mon-Fri. Electronic appeals should be in TXT, RTF, DOC, PDF, or other Microsoft Office-compatible formats. Appeals must meet the content requirements of 36 CFR 215.14.

## **VIII. IMPLEMENTATION DATE**

If no appeal is received, implementation of this decision may occur on, but not before, 5 business days from the close of the appeal filing period. If we receive an appeal, implementation may not occur for 15 business days following the date of the appeal deposition (36 CFR 215.9).

## **IX. CONTACT PERSON**

Further information about this decision can be obtained from District Range Thomas Haines at the Salem Ranger District: P. O. Box 460, Salem, MO 65560; (573) 729-6656; FAX (573) 729-2867, e-mail: [tehaines@fs.fed.us](mailto:tehaines@fs.fed.us)

## **X. SIGNATURE AND DATE**

/s/ Ronnie Raum

RONNIE RAUM  
Forest Supervisor  
Mark Twain National Forest

1 November 2004

Date

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