DECISION NOTICE AND FINDING OF NO SIGNIFICANT IMPACT

THREE KNOB PROJECT

U.S. FOREST SERVICE

OZARK ST-FRANCIS NATIONAL FORESTS, BIG PINEY RANGER DISTRICT

POPE & JOHNSON COUNTIES, ARKANSAS

DECISION

Based upon my review of the Three Knob Project Environmental Assessment (EA), I have decided to implement the Proposed Action with its site specific design criteria, which includes the following specific activities;

The following descriptions and tables display the activities and treatments in detail.

Improvements to Vegetation and Wildlife Habitat

Pine Seed Tree Regeneration Harvest on 1,504 Acres

The seed tree timber harvesting method is designed to regenerate aging pine stands, create early seral stage habitat, balance age classes, improve forest health, and encourage a pine community with up to 30% hardwood canopy. Approximately 10-20 square feet of residual pine and hardwood basal area (10-15 trees per acre) per acre are retained in the overstory after harvesting is complete. Following pine regeneration harvests, competing vegetation would be reduced to create an adequate seedbed for regeneration using an herbicide application (see Table 10). Some areas would be regenerated naturally by the seed trees left on the area. Within these areas, if an adequate amount of pine regeneration (300-500 trees per acre) is not established within five years of harvest, the area would then be replanted with pine seedlings to meet target stocking levels.

The percentage of proposed Seed Tree (regeneration) acres for this project may appear measurably higher because the project area includes 5,228 acres acquired by the National Forest which was being managed primarily for timber production by a timber company. The majority of the acquired lands were converted to loblolly pine by the previous owner. While loblolly pine will grow and thrive in this area, it is out if its historic native range. The Revised Land and Resource Management Plan (RLRMP) page 1-30 states for loblolly pine under desired condition; "once mature, they are harvested for wood products and restored to native forest communities appropriate to site conditions. As a result, abundance of this community decreases over time". For that reason, 443 acres (30%) of the total 1,504 acres proposed to have a seed tree harvest are loblolly pine that is mature enough to start transitioning those stands back to native forest community types.

Regeneration areas outside burning areas are not suitable for natural regeneration efforts because of the absence of periodic prescribed burning to control brush and other competing vegetation. These areas would be planted with shortleaf pine seedlings following site preparation activities to a stocking level of approximately 680 trees per acre. Herbicide release of established regeneration (young trees) is also included in this action (see Herbicide Use Table 10). Residual seed trees may be removed once adequate regeneration has been established. These areas may be utilized for public firewood sale.

Table 1: Acres in Pine Seed Tree Regeneration Harvest

Area #	Acres		Area #	Acres		Area #	Acres		Area #	Acres
31	37		**84**	78		**125**	31		**154**	49
60	47		**87**	46		**134**	32		**156**	25
71	49		**89**	74		**136**	39		**158**	23
73	73		**90**	52		**137**	28		**160**	39
***75**	90		**93**	70		***139**	85		**161**	43
77	30		**105**	47		**143**	44			
78	74		**120**	76		**147**	46			
80	49		**122**	46		***149**	82			

***Note: Areas 75, 139 &149 exceed the maximum acreage limit for a regeneration cut of 80 acres. Final harvested acres will not exceed 80 acres per area.**

Pine Shelterwood Regeneration Harvest on 385 Acres

The shelterwood timber harvesting method is designed to regenerate aging pine stands, create early seral stage habitat, and encourage a mixed pine and hardwood community. Approximately 20-35 square feet of residual pine and hardwood basal area per acre are retained in the overstory after harvesting is complete. These areas have a higher hardwood component (more hardwood tress) per acre than the seed tree areas and need the additional residual basal area to help retard the development of hardwood competition by reducing sunlight. This will allow for better establishment of planted short leaf pine and promote a pine stand with up to 30% hardwood canopy after harvest. Following pine regeneration harvests, competing vegetation would be reduced to create an adequate seedbed for regeneration using an herbicide. Areas would be planted with shortleaf pine seedlings following site preparation activities to a stocking level of approximately 680 trees per acre (see Table 10). Herbicide release of established regeneration (young trees) is also included in this action. Residual seed trees may be removed once adequate regeneration has been established. These areas may be utilized for public firewood sale.

Table 2: Acres in Pine Shelterwood Regeneration Harvest

Area #	Acres		Area #	Acres
24	80		96	36
34	22		115	82
43	67		144	40
47	32		148	26

Pine Seed tree Preparation Thinning on 692 acres

This is not a regeneration type of harvest, this method is similar to a pine thinning, but the average age of the trees are older than 60 years. The seed tree preparation harvest is designed to prepare a fully mature stand of trees for regenerating in 15-20 years by opening up the canopy in an attempt to encourage development of advanced regeneration. Approximately 70-85 square feet of residual pine and hardwood basal area per acre are retained in the overstory after harvesting is complete. An herbicide application in the form of foliar spray, stem injection, basal spray and/or chainsaw fell and cut surface spray may also be used to aid in controlling understory species and promoting the establishment, development, and growth of advanced regeneration.

Table 3: Acres in Pine Seed tree Preparation Thinning

Area #	Acres		Area #	Acres		Area #	Acres		Area #	Acres
72	164		88	163		104	63		145	62
74	77		92	18		112	40			
83	47		103	33		141	25			

Pine Thinning on 2,220 Acres

These areas would be commercially thinned to an average residual basal area of 80 square feet per acre based on the average stand diameter in order to improve the growth and health of the stands and the development of higher quality trees. Currently, these areas are overstocked (too many trees per acre) reducing health and vigor and creating susceptibility to catastrophic fire, insects and disease. Trees selected for removal (harvest) would be those that were damaged, diseased, suppressed, and poorly formed. Spacing of remaining trees would then serve as the determinant for removal. Applying this treatment would leave a healthier and more vigorous stand of trees that are more resistant to natural disturbances such as wildfire and insect/disease outbreaks.

Table 4: Acres in Pine Thinning

Area#	Acres		Area#	Acres		Area#	Acres		Area#	Acres		Area#	Acres
5	79		46	55		61	11		79	52		106	88
9	84		48	24		64	61		82	31			
12	99		51	187		65	17		85	35			
19	54		53	57		66	289		86	69			
27	45		58	23		69	49		94	80			
44	44		59	37		70	28		98	81			

Hardwood Shelterwood Harvest 863 Acres

The shelterwood timber harvesting method is designed to regenerate aging hardwood stands, create early serial stage habitat, balance age classes, and encourage a hardwood community with up to 30% pine canopy trees. This harvesting method would remove trees from selected stands in order to create an environment for the development and growth of advanced regeneration. Approximately 20-40 square feet of hardwood basal area per acre (15-30 trees per acre) are retained in the overstory after harvesting is complete. This harvesting method would be used in

hardwood species followed by manual or herbicide site preparation (see Table 10), prescribed burning, planting (if natural regeneration doesn't develop), and herbicide release (see Table 10) of established regeneration (young trees). The minimum stocking level for target hardwood species is 250 trees per acre following harvest operations. Residual shelterwood trees may be removed once adequate regeneration has been established. These areas may be utilized for public firewood sale.

Table 5: Acres in Hardwood Shelterwood

Area#	Acres		Area#	Acres		Area#	Acres		Area#	Acres		Area#	Acres
*3	46		*11	44		*18	43		*39	44		*54	53
4	21		14	24		*29	44		*40	46		*56	47
6	47		*15	44		35	33		*42	44		63	40
*8	49		*17	46		36	38		*50	46		68	34
10	30												

***Note: Area numbers with asterisks exceed the maximum acreage limit for a regeneration cut of 40 acres. Final harvested acres will not exceed 40 acres per area.**

Hardwood Commercial Thinning on 1,483 Acres

These areas would be commercially thinned to a residual basal area of 60-80 square feet or basal area per acre based on the average stand diameter in order to improve the growth and health of the stands and the development of higher quality trees. Currently, these areas are overstocked (too many trees per acre) reducing health and vigor and creating susceptibility to catastrophic fire, insects and disease. Trees selected for removal (harvest) would be those that were damaged, diseased, suppressed, and poorly formed. Spacing and species of remaining trees would then serve as the determinant for removal. Applying this treatment would leave a healthier and more vigorous stand of trees that are more resistant to natural disturbances such as wildfire and insect/disease outbreaks. These areas may be utilized for public firewood sale.

Table 6: Acres in Hardwood Commercial Thinning

Area #	Acres		Area #	Acres		Area #	Acres
1	56		33	279		62	132
2	163		38	19		67	81
13	47		45	75		107	63
16	65		49	234		110	31
23	51		52	142			
30	32		57	13			

Timber Stand Improvement (TSI) Thinning on 2,161 Acres

These areas consist of trees that are approximately 30-70 years old that are crowded (too many trees per acre) reducing tree health and vigor. Selected trees would be released (freed) from overtopping/competing vegetation using hand tools (chainsaws or brush saws). Trees selected to be cut would be those that were damaged, diseased, suppressed, and poorly formed. Spacing and species of remaining trees would then serve as the determinant for removal. Applying this treatment would leave a healthier and more vigorous stand of trees. These areas may be utilized for public firewood sale.

Table 7: Acres inTimber Stand Improvement (TSI) Thinning

Area #	Acres		Area #	Acres		Area #	Acres		Area #	Acres
7	61		97	134		126	11		153	20
20	22		99	125		128	375		155	47
22	8		100	138		129	237		157	38
25	38		101	93		133	86		159	181
28	28		113	47		135	79			
76	44		114	55		142	21			
91	57		117	170		151	46			

Timber Stand Improvement (TSI) Thinning with Herbicides on 395 Acres

These areas consist of trees that are approximately 30-70 years old that are crowded (too many trees per acre) reducing tree health and vigor. Selected trees would be released (freed) from overtopping/competing vegetation using hand tools (chainsaws or brush saws) or a herbicide application in the form of foliar spray, stem injection, basal spray, and/or chainsaw fell and cut surface spray. Trees selected to be cut/treated would be those that were damaged, diseased, suppressed, and poorly formed. Spacing of remaining trees would then serve as the determinant for removal. Applying this treatment would leave a healthier and more vigorous stand of trees. These areas may be utilized for public firewood sale.

Table 8: Acres in Timber Stand Improvement (TSI) Thinning with Herbicides

Area#	Acres		Area#	Acres		Area#	Acres
26	43		41	52		124	36
32	57		55	20		131	26
37	61		123	71		162	29

Pine Seed Tree Removal Harvest on 85 Acres

Area number 81 (35 acres) and 102 (50 acres) were harvested in the past leaving approximately 20 square feet of residual pine and hardwood basal area (10 – 15 trees) per acre in the overstory after harvesting. Following the original harvest these areas were planted with shortleaf pine seedlings following site preparation activities and have reached a stocking level of approximately 680 trees per acre. Because these areas are stocked, the pine seedtree removal harvest method will remove (harvest) the 20 square feet of residual pine and hardwood basal area (10 – 15 trees) per acre left after the regeneration harvest. A release (thinning) of young seedlings from overtop/competing vegetation using hand tools (chainsaws or brush saws) or an herbicide application would also be a part of this action (see Herbicide Use Table 10). This will increase the growth and development of the young seedlings. Following the release treatment, 3-7 years, a pre-commercial thinning treatment would be done using the same methods as outlined above.

Seedling Release and Pre-Commercial Thinning on 78 Acres

Area #108 (35 acres) and #111 (43 acres) were harvested in the past and have established seedlings (young trees) that are crowded (too many trees per acre) reducing tree health and vigor. Selected seedlings would be released (freed) from overtopping/competing vegetation using hand tools (chainsaws or brush saws) or a herbicide application in the form of foliar spray, stem injection, basal spray, and/or chainsaw fell and cut surface spray. Following the release

treatment, 3-7 years, a pre-commercial thinning treatment would be done using the same methods as outlined above.

Thinning of Eastern Red Cedar on 47 Acres
Area #21 (47 acres) would be thinned commercially or manually (chainsaw) to a residual basal area of 10-50 square feet per acre based on the average stand diameter. Thinning would promote the growth and development of forbs and grasses on these less productive sites.

Commercial Salvage of Timber on up to 500 Acres
The project area has had numerous events occur in the past which damaged or destroyed timber resources. Trees would be salvaged only in the event of a disaster such as a tornado or strong wind event. This would expedite making utilization of damaged timber resources and reforestation efforts. If it has been determined the work could be performed safely, proposed salvage areas would be revisited by Heritage staff to ensure historical properties (if present) would be protected from adverse effects of activities.

Management of Wildlife Openings for High Quality Forage by a Combination of Constructing New Openings, Enlarging Existing Openings, and Management and Reconstruction of Existing Openings, for a Total of 75 Acres. (Some existing opening acres (10.5) would be dropped.)
New construction and enlargement of openings (15 total) are proposed in areas where the slope of the land would allow the creation and management of wildlife openings. New construction of openings could include short sections of roads for access as part of this proposal. Opening size would not exceed five acres. All trees would be removed (harvested) and the area prepared for planting by using a dozer or other mechanical equipment to clear the debris from harvested trees and remove the stumps. The area would be further prepared for planting of warm and/or cool season native and non-invasive non-native species that provide good forage and cover for wildlife by mechanical equipment. Management of these openings would be accomplished by mowing, haying, liming, seeding, fertilizing, prescribed burning, and/or the use of herbicides to control invasive, woody or encroaching species of vegetation. Management of existing openings would be in the same manner as outlined above. Openings proposed to be dropped would have existing vegetation removed using herbicides and then planted in native trees, forbs, and grass species, or they may be allowed to regenerate naturally if free of non-native invasives and they show signs of regeneration potential and success. Opening reconstruction would involve removing tree and brush islands from within the clearings and put it into the same management as the openings. One opening would involve re-contouring along with the other maintenance activities.

Woodland Management of up to 10 Acres around Each 5-Acre Wildlife Opening (total of 150 Acres)
Within the project area there would be a total of 150 acres (up to 10 acres around each proposed 5-acre wildlife opening) of woodland which would be thinned commercially, manually (chainsaw) and with herbicide to permit sunlight to reach the forest floor to promote the development of native grasses and forbs. The goal is to have mature open woodland dominated by native grasses and forbs in the understory. Thinning would reduce tree cover to 40-60 feet of basal area per acre, based on site specific conditions. In order to reach the desired condition, herbicides would be used to control woody species in these areas. This would be done manually

(chainsaws or brush saws only) or by a basal spray, stem injection, or cut surface herbicide treatment on brush more than 6 feet in height and using herbicide foliar spray treatment on brush less than 6 feet to control competition. In conjunction with prescribed burning, treatments would increase grasses, forbs and overall habitat diversity.

Glade Restoration on 6 Acres
One glade has been identified within this project area which needs to be restored due to encroachment by Eastern red cedar and other hardwood species. The tree cover would be reduced to less than 40 feet of basal area per acre and an herbicide treatment could be used to control re-sprouting of primarily woody species.

Construction of 37 Wildlife Ponds
The construction of wildlife ponds (< ½ acres) would be implemented in order to improve wildlife habitat in the vicinity. These ponds provide permanent water sources to allow for a more even dispersal of wildlife throughout the project area. Pond locations would be identified during implementation when test pits can be dug to determine suitable sites.

Pond Dam Reconstruction/Maintenance of 34 Existing Wildlife Ponds
The project area currently has 34 (<1/2 acres) wildlife ponds distributed across it. Inspections have discovered that a portion of these ponds need to have the dam reconstructed and this would be accomplished through the use of heavy equipment. The reconstructed dams would be seeded and fertilized to establish herbaceous vegetation on them. Other ponds have woody vegetation growing on and around the dams that need to be controlled so the integrity of the pond dams would not be compromised. This vegetation could be removed manually or by using an herbicide application in the form of foliar spray, stem injection, basal spray and/or chainsaw fell and cut surface spray. Pond sites will be evaluated and cleared for biological and heritage protection compliance before any ground disturbance.

Native Cane Restoration on 31 Acres
Areas of native cane were once more prevalent along Big Piney Creek and its tributaries. Due to agricultural clearing and fire suppression, populations of native cane have been reduced in this area. Commercial/non-commercial thinning of overstory and understory trees within the native canes' range would be done to restore and promote the expansion of existing communities. In order to reach the desired condition, herbicides would be used to control woody species in these areas. This would be done manually (chainsaws or brush saws only) or by a basal spray, stem injection, or cut surface herbicide treatment on brush more than six feet in height and using herbicide foliar spray treatment on brush less than six feet to control competition. Cane would also be planted in strategic locations to promote the further expansion of this community.

Non-Native Invasive Species (NNIS) Control on Approximately 500 Acres (Annually)
Herbicide treatment(s) (see Table 10) would be used to control identified non-native invasive species (NNIS) and roadside woody vegetation on up to 500 acres annually. These non-indigenous plant species degrade the diversity of wildlife habitat in forest openings, primarily along roads, but will be treated elsewhere where they occurr. Control of existing infestations would aid the reestablishment of native vegetation.

Table 9 below identifies the NNIS believed to occur in the project area and the herbicides that

would be used to control them.

Table 9: NNIS/ Herbicide treatment Table

Non-Native Invasive Species Treated	Herbicide Treatment
Privet -*ligustrum spp.*	Glyphosate or Metsulfuron methyl
Paulownia- *paulownia tomentosa*	Imazapyr (large stems) Triclopyr (sprouts)
Tree of Heaven- *Ailanthus altissima*	Imazapyr (large stems) Triclopyr (sprouts)
Exotic Lespedezas- *cuneata* and *bicolor*	Metsulfuron methyl or Triclopyr
Japanese Honeysuckle- *Lonicera japonica*	Triclopyr
Nonnative Rose- *Rosa multiflora*	Imazapyr or Metsulfuron methyl
Mimosa- *Albizia julibrissin*	Imazapyr (large stems) Triclopyr (sprouts)
Japanese stiltgrass- *Microstegium vimineum*	Glyphosate

Note: Recommended controls are those provided by:
***Invasive Plant Responses to Silvicultural Practices in the South* - Evans, Moorhead, Bargeron and Douce and *Nonnative Invasive Plants of Southern Forests* – James H. Miller**

As new NNIS are found, they would be treated using appropriate methods, following application rates on herbicide lables. Application rates will be in accordance with manufacture's label.

Placement of Large Woody Debris in Streams
To improve overall stream habitat, up to 10 trees, greater than 12 inches in diameter at breast height (DBH) per mile would be felled into streams within the project area. These streams include perennial, intermittent and larger ephemeral streams.

Prescribed Burning as Needed on 1,771 Acres
These acres could be repeatedly burned over a 10-year period for fuel reduction, to improve wildlife habitat, or for site preparation in advance of planting seedling trees. The project area is a fire adapted ecosystem in which fire has been absent for many years creating an overall unnatural condition. The use/reintroduction of fire into this system would assist in restoring the area to its desired future condition. Fire-lines may be established along the Wildland Urban Interface (WUI) adjacent to private property where landowners do not want the use of fire on their property. As a result, approximately 2 miles of (dozer) fire-line construction could be necessary. The remainder of the control lines would use existing roads or natural fuel breaks such as streams. This would minimize control line construction. Additionally, mechanical treatments could be used (areas of heavy fuels, WUI areas, hard to access areas, etc.) to reduce fuel loading and to facilitate prescribed burning operations. After burns are completed, the control lines would be water barred and may be seeded with native grasses and forbs where needed to restore vegetative cover. In order to minimize control line construction, some burn blocks extend to natural or existing man-made fuel breaks, such as streams or roads.

Prescribed burning would be done on NFS lands, during dormant or growing season.
-Dormant season burning- takes place in fall and winter months, (generally Oct. 1 – April 30) and involves the application of controlled, low-to-moderate intensity fire to reduce accumulated fuels, stimulate growth of native vegetation, and improve wildlife habitat. Some duff is retained for soil protection. Vegetation 1 ¼ inches or less in diameter would be targeted for reduction to

create an open understory, stimulating growth of native grassed and forbs, and increasing forage for browsing animals.

-Growing season burning- takes place in spring and summer months (generally May 1 – Sept. 30) and involves application of controlled, low-to-moderate intensity fire to control competing vegetation, prepare sites for seeding, and perpetuate fire dependent species. These burns are implemented during the time between leaf emergence and leaf fall. Vegetation three inches and less in diameter would be targeted. This will result in less competition for seedlings and other fire dependent species, while creating an open understory. Other added benefits would include reducing accumulated fuels, stimulate growth of native vegetation, and improve wildlife habitat.

Commercial Rock Collection

Public need would be met by allowing surface rock collection (over no more than one percent of the total project area) within commercially harvested timber units where Biological Evaluations, Heritage surveys, and other permit requirements have been completed.

Improvement of Road Access and Recreational Opportunities

Maintenance on a Total of 132 Miles of Existing Roads, 75 Miles are Open Roads, and 57 Miles of Existing Closed Roads would have maintenance then closed after Activities are completed as Recommended by the Travel Analysis Process (TAP) Report

Existing system roads would be maintained to facilitate access and hauling of timber from stands proposed for commercial harvest. Work includes, but is not limited to, widening of roads, improving alignment, providing natural turnouts, and improving sight distance that improves safety, slide and slump repair, surface blading, spot surfacing with gravel, maintenance of drainage structures, culvert replacement, ditch cleaning, and the clearing the roadside of vegetation. The TAP in the process file contains additional information about each individual road.

Reconstruction of 1 Mile of Road

One mile of road would be reconstructed to facilitate access and hauling of timber from stands proposed for commercial harvest.

Decommission 7.5 Miles Existing Roads

Decommissioning of 7.5 miles of existing roads no longer needed for the transportation system in this project area would occur. Methods of decommissioning range from blocking the road entrance to full obliteration, and may include re-vegetation, water-barring, culvert removal, establishing drain-ways, removing unstable road shoulders, and restoring natural slopes.

Closure of 4 Miles of Existing Open Roads

One mile would be permanently closed and three miles would be closed by installing gates and have administrative use only on them. The project area contains many open roads that are currently used to access the area. Some of these roads are used by the public but are creating problems due to soil loss and erosion. Other roads being used in the area also create an unfavorable situation for wildlife through unnecessary disturbance. Signs, gates, and/or earthen berms would be used to seasonally and/or permanently close some existing roads to resolve a number of these problems. For road specific information, the Travel Analysis Process table is

attached as Appendix G. The entire Travel Analysis Process Report is contained in the process file at the Jasper office.

Temporary Road Construction of 20 Miles

In order to implement the activities in the Three Knob Project, 20 miles of temporary roads would be needed. Temporary roads are closed after silvicultural treatments are completed.

Recreational Opportunities and Access

Convert three miles of FS Road # 1800A, currently open to full-sized motor vehicles, to an off-highway vehicle (OHV) trail. Road numbers 1800F, 93212A, 93698A and 93698D are currently included on the OHV designated routes list. Inspections have shown safety issues related to resource damage from OHV use (identified on accompanying maps). These roads would be removed from the designated routes list and OHVs would no longer be allowed on these routes. That would result in a total of six miles being removed from the OHV designated routes list.

Protection/Restoration of Heritage Site

A Heritage site has been identified within this project area which needs protection. The site is currently being used as a dispersed campsite by forest visitors. The campsite would be closed and the site rehabilitated by placing a layer of protective fabric over it and covering the site with six inches of gravel or fill material. The site would be monitored by district Heritage staff.

Herbicide use

In the project area various activities have been identified that would require the application of specific herbicide(s). Table 10 identifies the activity, acres, and the type of application.

Table 10: Herbicide Use Table

Treatment	Glyphosate	Metsulfuron methyl	Triclopyr (ester)	Triclopyr (amine)	Imazapyr	Triclopyr & Fluroxypyr	Acres
Wildlife opening Management	Foliar	Foliar		Foliar		Foliar	75
Transition Areas around Openings	Cut surface		Basal Spray	Foliar &/or stem injection	Stem Injection		150*
NNIS Control	Foliar	Foliar		Foliar &/or stem injection	Stem Injection		Up to 500 annually
Pine Seedtree, Shelterwood, and Seedtree Removal	Cut surface			Foliar &/or cut surface	Foliar &/or Stem Injection		1,974*
Hardwood Shelterwood	Cut surface			Foliar &/or cut surface	Foliar &/or Stem Injection		863
Timber Stand Improvement and Release and pre-commercial Thinning			Basal Spray	Foliar &/or cut surface	Foliar &/or Stem Injection		473**
Cane Restoration	Cut surface			Foliar &/or cut surface	Stem Injection		31
Pine Seedtree Prep.	Cut surface			Foliar &/or cut surface	Foliar &/or Stem Injection		692
Total							4,758

*** - Includes 385 acres of pine shelterwood, 85 acres of pine seed tree removal, and 1,504 of pine seed tree.**

**** - Includes 395 acres of timber stand improvement and 78 acres of release and pre-commercial thinning.**

Notes: Tank mixes and adjuvants (such as Cide-Kick) may be added to the herbicide to improve effectiveness and control of target species. All herbicides will be applied at rates and use only application methods specified on the label. Additional spot treatments would be needed to reach the desired future condition in some areas.

SITE SPECIFIC DESIGN CRITERIA

- Area #s – 60, 73 & 76 pine seedtree leave a 50-60 basal area for a minimum 100-foot buffer along Pilot Rock Mountain Road to reduce the Visual Impact on a highly traveled path. Slash disposal after harvest for 50-100 feet off of the road is also recommended.

- Area # - 122 pine seedtree minimum 100-foot buffer along northeast boundary highly visible from Highway 7. Leave a 50-60 basal area of residual trees.

- Area # - 120 pine seedtree minimum 100-foot buffer along east boundary highly visible from Highway 7. Leave a 50- 60 basal area of residual trees.

- Area # - 71 pine seedtree minimum 100-foot buffer along east boundary highly visible from Long Pool Recreation Area. Leave a 50-60 basal area of residual trees.

- Area#s – 1, 2 & 45 (hardwood thinning) and 46 & 66 (pine thinning) within the Wild and Scenic River Corridor harvesting activities will be excluded from April-May and October-November. The scenic integrity of the river corridor must be maintained. Where the above areas get within sight distance of the river, they need to be laid out to minimize the visibility of the activity from the river. The boundary location will vary depending on the topography of the area. While the thinning of the trees may be noticed from the river, the edge of the activity area should not be visible from it. Additionally, log landings and skidder trails should not be visible from the river.

- Scenic class was determined using a broad brush approach. The scenic analysis performed shows that all activity areas outside of the Wild and Scenic River Corridor, Highway 7 State Scenic By-Way and along Pilot Rock Road (FS Road # 1802) need to be reclassified as moderate scenic class.

- This project area includes 6,335 acres which were acquired after the 2005 RLRMP. These acres have not been evaluated to determine their scenic class. I recommend 96 acres on the northwest facing slope above Grimmit Springs be placed in a high scenic class due to visibility along the road accessing Long Pool Recreation Area. I recommend that 172 acres on the northeast facing slope of Three Knob Mountain be placed in a high scenic class due to the visibility of this mountain side from Highway 7. I recommend 96 acres along Highway 7 be placed in a high scenic class since Highway 7 is a state designated scenic highway. I recommend that the balance of unclassified acres (5,971) be placed in a moderate scenic class because they are located in less visible and less frequently accessed areas.

The Scenic Analysis Report is contained in the process file at the Jasper office.

DECISION RATIONALE

The Proposed Action with its site specific design criteria was selected because it best addressed the purpose and need in a balanced, cost effective way providing for a high level of resource outputs that can be maintained in perpetuity without harming land productivity. It was selected over Alternative 1 (no action) because Alternative 1 would not address the needs of the area nor move the area toward achieving the desired future conditions outlined in the Revised Land and Resource Management Plan (RLRMP). The No Action Alternative is a requirement of the National Environmental Policy Act (NEPA). The Proposed Action was chosen over Alternative 2 (No Herbicide Use), because it is expected to provide better site conditions for the establishment of regeneration and provide optimum freedom from competition for seedlings. Past experience has shown that manual release usually results in profuse re-sprouting, thus requiring additional treatments and increased costs. The use of herbicides is critical to controlling the population and spread of non-native invasive species. Manual control measures and periodic prescribed burning are not effective management treatments for the control of non-native invasive species present within the project area.
My conclusion is based on a review of the record that shows a thorough review of relevant scientific information (peer reviewed science), a consideration of responsible opposing views, and the acknowledgment of incomplete or unavailable information, scientific uncertainty, and risk. Analysis shows this project:

1. Provides for healthy forests by thinning (EA, pg. II-3 – II-6).
2. Provides for early successional habitat (EA, pg. II- - II-3).
3. Begins to balance age classes (EA, pg. I-1).
4. Reduces amount of burnable fuels and increases forage production (EA, pg. II-7, II-9).
5. Provides enhanced wildlife habitat through openings and ponds (EA, pg. II-8).
6. Closes roads not needed for management in the near future (EA, pg. II-11).
7. Provides commodities (EA, pg.I-8).
8. Provides for control of invasive species (EA, pg. II-7, 8).
9. Attempts to address unmanaged recreation (EA, pg. II-10)

Other Alternatives Considered

In addition to the proposed action the EA considered two other alternatives. A comparison of the proposed action to the two other alternatives considered can be found on pages II-13 through II-15 in the EA. The following is a summary of the two alternatives considered.

Alternative 1(No Action)

The No Action Alternative is a requirement of the National Environmental Policy Act (NEPA). None of the activities in the proposed action would be implemented. Other activities allowed under previous decisions would continue to be implemented.

Alternative 2 (No Herbicide Use)

Herbicide use would be excluded with this alternative. All other activities would be approved and the treatments which would have included the use of herbicide would be implemented using manual methods.

The Three Knob Project EA documents the environmental analysis and conclusions upon which this decision is based.

Public Involvement

To encourage public participation in the **Three Knob Project** decision process, a project initiation letter including maps was mailed to 328 neighboring landowners, the Native American Tribes, and other interested parties explaining the project proposal on August 15th, 2013. They were asked to comment on, or involve themselves in, the proposed project, and were informed about the kinds of decisions to be made. The project was also published in the Ozark- St. Francis National Forest Schedule of Proposed Actions and on the Forest planning website. An initial scoping letter was also published in Russellville's *The Courier* (The Official Paper of Record for the Big Piney Ranger District) on August 16th, 2013, requesting comments, questions, and offering detailed information to those expressing an interest in the project. Twenty-six letters were returned as undeliverable.

The project initiation effort resulted in six responses (3 from Native American Tribes and 3 from members of the public). All interested parties who responded to our public involvement efforts received a notice informing them that the Draft EA was ready for review.

The pre-decisional EA was posted on the Ozark St-Francis National Forest website on May 7th, 2014. A legal notice to receive comments was published in Russellville's *Courier* newspaper on the same date. Four cover letters were emailed to interested parties who had responded to the initial scoping effort. One commenter submitted comments during this 30-day period.

The comments received were responded to by members of the ID Team and are incorporated into the Final EA as Appendix F.

The EA also lists other agencies and people consulted in Chapter IV.

Findings Required by Other Laws and Regulations

The actions are consistent with the intent of the management goals, objectives, and standards in the 2005 Revised Land and Resource Management Plan for the Ozark St-Francis National Forests. The project was designed in conformance with the 2005 RLRMP and incorporates appropriate guidelines and mitigation measures. The project is feasible and reasonable, and results in applying management practices that are consistent with the 2005 RLRMP direction of protecting the environment while maintaining natural communities and minimizing effects of non-native invasive species. This decision supports goals and objectives from the 2005 RLRMP as follows:

1) Restore and maintain at least 22,000 acres of oak woodland over the first decade, with a long-term objective of 110,000 acres (RLRMP page 2.10)
2) Across all community types, maintain a range of 3.8 to 6.8 [percent of the total forest and woodland acreage in regeneration forest conditions (0-10 years old)]. (RLRMP page 2.10)
3) Across all community types, annually burn an average of 120,000 acres under prescribed burn conditions. Burn approximately one-third of this acreage within the growing season (April 1 through October 15) (RLRMP page 2.11)
4) Reduce the risk of oak and pine mortality events by thinning and regenerating at least 150,000 acres within the first decade (RLRMP page 2.12)
5) Treat at least 200 acres per year for reduction or elimination of non-native, invasive species (RLRMP page 2.12)
6) Improve and maintain bobwhite quail habitat on 5,000 acres per year for the first decade (RLRMP page 2.13)
7) Improve and maintain habitat for whitetail deer on 10,000 acres per year for the first decade (RLRMP page 2.13)
8) Improve and maintain habitat for eastern wild turkey on 10,000 acres per year for the first decade (RLRMP page 2.13)
9) Improve and maintain habitat for black bear on 8,000 acres per year for the first decade (RLRMP page 2.13)
10) Maintain or restore Large Woody Debris (LWD) levels in perennial streams/rivers at 75 to 200 pieces per mile for all LWD larger than 3.3 feet long and 3.9 inches in diameter in the first decade
11) Maintain or restore LWD levels in perennial streams/rivers at 8 to 20 pieces /mile for all LWD larger than 16.4 feet long and 19.7 inches in diameter in the first decade. (RLRMP page 2.16)
12) In conjunction with designing low-maintenance, standard roads develop a system of motorized trails that address the needs of OHV enthusiasts (RLRMP page 2.19).
13) Evaluate historic sites for appropriate management. Develop site management plans for noteworthy heritage resources wherever they occur. (RLRMP page 2.21)
14) Decommission roads and trails unnecessary for conversion to either the road or trail system through the roads analysis process (RAP) (RLRMP page 2.24)
15) Identify by the first decade all system roads that should be obliterated (RLRMP page 2.24)
16) Within 15 years, restore 15 to 20 percent of all ecological communities into Fire Regime Condition Class 1 (RLRMP page 2.26)
17) Annually complete 50,000 to 100,000 acres of hazardous fuel reduction (RLRMP page 2.26)
18) Provide 731 MMBF (146MCF) per decade of saw timber and pulpwood (RLRMP page 2.28)
19) In MA3E (High Quality Forest Products) and appropriate portions of other MAs, apply appropriate silviculture prescriptions to provide the following forest products: 18" to 20" saw-timber with grade 1 or 2 butt logs and /or yellow pine 18' saw-timber. (RLRMP page 2.28)
20) Treat up to 300 acres per decade to meet the habitat needs of riparian area species groups. (RLRMP page 2.76)

It is my finding that the actions of this decision comply with the requirements of the National Forest Management Act (NFMA) of 1976, NFMA implementing regulations in 36 Code of Federal Regulations (CFR) Section 219, the National Historic Preservation Act, the Endangered Species Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality Regulations.

A Finding of No Significant Impact (FONSI) and EA were considered. I determined these actions will not have a significant effect on the quality of the human environment, and an Environmental Impact Statement (EIS) will not be prepared.

The Proposed Action, which alters vegetation, complies with the requirements of the National Forest Management Act (NFMA). Under 16 U.S.C. 1604 (g)(3)(e). The Responsible Official may authorize site-specific projects and activities to harvest timber on National Forest System (NFS) lands only where:

1. Soil, Slope, or other watershed conditions will not be irreversibly damaged.

2. There is assurance that the lands can adequately be restocked within five years after final regeneration harvests (FSM 1921.12g).

3. Streams, stream banks, shorelines, lakes, wetlands, and other bodies of water are protected from detrimental changes in water temperatures, blockages of water courses, and deposits of sediment where harvests are likely to seriously and adversely affect water conditions of fish habitat.

4. The harvesting system to be used is not selected primarily because it will give the greatest dollar return or greatest unit output of timber.

The Responsible Official may authorize projects and activities on NFS lands using cutting methods such as clearcutting, seed tree cutting, shelterwood cutting, and other cuts designed to regenerate an even-aged stand of timber only where:

1. For clearcutting, it is the optimum method; or where seed tree shelterwood, and other cuts are determined to be appropriate to meeting the objectives and requirements of the relevant plan (16 U.S.C. 1604(g)(3)(F)(i)).

2. The interdisciplinary review has been completed and the potential environmental, biological, aesthetic, engineering, and economic impacts have been assessed on each advertised sale area and the cutting methods are consistent with the multiple use of the general area (16 U.S.C. 1604(g)(3)(F)(ii)).

3. Cut blocks, patches, or strips are shaped and blended to the extent practicable with the natural terrain (16 U.S.C. 1604(g)(3)(F)(iii)).

4. Cuts are carried out according to the maximum size limit requirements for areas to be cut during one harvest operation (FSM 1921.12e).

5. Timber cuts are carried out in a manner consistent with the protection of soil, watershed, fish, wildlife, recreation, aesthetic resources, cultural and historic resources, and the regeneration of timber resources.

6. Stands of trees are harvested according to requirements for culmination of mean annual increment of growth (16 U.S.C. 1604 (m); FSM 1921.12f; FSH 1909.12, ch. 60).

Finding of No Significant Impact

The significance of environmental impacts must be considered in terms of context and intensity. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human and national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. In the case of a site-specific action, significance usually depends upon the effects in the locale rather than in the world as a whole. Intensity refers to the severity or degree of impact. (40 CFR 1508.27)

Intensity

The intensity of effects was considered in terms of the following:

1. **Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that, on balance, the effect will be beneficial.** Consideration of the intensity of environmental effects is not biased by beneficial effects of the action.

2. **The degree to which the proposed action affects public health or safety**. There will be no significant effects on public health and safety. The EA discloses the effects of exposure of forest users and the public to various hazards such as smoke, particulate matter, herbicides, hazards in the general forest, along with others and concludes that no thresholds will be exceeded and/or mitigated (See EA pages III-12-III-18, III-71-III-74, and III-74-III-81).

3. **Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.** There will be no significant effects on unique characteristics of the area, because concurrence on National Register eligibility and the avoidance of adverse effects by project implementation to historical properties was received from SHPO on October 15, 2012. This included a list of known and recorded archeological sites, their recommendations of eligibility for possible inclusion in the Register of Historic Places (NRHP), and avoidance of adverse effects (See EA pages III-81-III-84). In addition, the EA concludes the vegetative treatments within the corridor would promote and enhance the recreational remarkable values for which the scenic river was designated by improving the scenic quality (See EA page III-24).

4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.** The effects on the quality of the human environment are not

likely to be highly controversial. There is no known credible scientific controversy over the impacts of the Proposed Action (See EA Chapter III).

5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.** The Agency has considerable experience with actions like the one proposed. The analysis shows the effects are not uncertain, and do not involve unique or unknown risk (See EA Chapter III)

6. **The degree to which the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.** The action is not likely to establish a precedent for future actions with significant effects, because the Purpose and Need for the project and the actions proposed in the PA are implementing and within the scope of the RLRMP (See EA pages I-1-I-6).

7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.** The analysis supports that the cumulative impacts are not significant. The Past, Present and Reasonably Foreseeable Future Actions within the project area are listed on page II-13 of the EA. The cumulative effects of these actions along with the PA are disclosed throughout chapter III of the EA and conclude that there are no significant impacts (See EA pages III-1-III-84).

8. **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed , or eligible for listing, in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.** The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places, because concurrence on National Register eligibility and the avoidance of adverse effects by project implementation to historical properties was received from SHPO on October 15, 2012. This included a list of known and recorded archeological sites, their recommendations of eligibility for possible inclusion in the Register of Historic Places (NRHP), and avoidance of adverse effects (See EA pages III-81-III-84). The action will also not cause loss or destruction of significant scientific, cultural, or historical resources. (See EA pages III-81-III-84).

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.** The action will not adversely affect any endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species act of 1973, because the EA concluded, based on the BE sent to and approved by the US Fish and Wildlife Service, that the PA would was not likely to adversely affect the Indiana bat, gray bat, or Ozark big-eared bat. There is **no critical habitat** for any federally-listed species on the Big Piney Ranger District (BPRD) of the OSFNFs. There is no known occupied or unoccupied habitat required for recovery of any of the species discussed here in the project area, or the BPRD (See EA pages III-69-III71).

10. **Whether the action threatens to violate Federal, State, or local law or requirements imposed for the protection of the environment**. The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA (see EA Chapters 1 & 2). The action is

consistent with the Ozark-St Francis Land and Resource Management Plan (See EA pages I-3 – I-9)

After considering the effects of the actions analyzed, in terms of context and intensity, I have determined that these actions will not have a significant effect on the quality of the human environment. Therefore, an environmental impact statement will not be prepared.

Administrative Review (Objection) Opportunities

This decision was subject to objection pursuant to 36 CFR 218.8. The objection period was from September 1, 2014 – October 15, 2014. An objection was received and accepted by the Reviewing Official. The objection and the reviewing official's responses are incorporated into this project's decision by reference. The objection and reviewing official's responses are contained in the process file.

Implementation Date

Timing of project decision 36 CFR 218.129 (c): When no objection is filed within the objection filing period (see §§218.26 and 218.32):
(1) The reviewing officer must notify the responsible official.
(2) Approval of the proposed project or activity documented in a ROD in accordance with 40 CFR 1506.10, or in a DN may occur on, but not before, the fifth business day following the end of the objection filing period.

Contact

Further information about this decision can be obtained from Mike Mulford, NEPA Coordinator, Big Piney Ranger District, P.O. Box 427, Jasper, AR 72641; (870) 446-5122; fax (870) 446-2063; e-mail: mmulford@fs.fed.us.

T. E. Jones 1/6/2015

TIMOTHY E. JONES Date

District Ranger