Decision Notice &
Finding of No Significant Impact

For

Little Fir Watershed Restoration Management Project

For Further Information Contact:
Caddo-Womble Ranger District
1523 Hwy 270 East
Mount Ida, AR 71957
(870) 867-2101

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Introduction

An interdisciplinary team (IDT) prepared an Environmental Assessment (EA) that addresses and analyzes the environmental effects of implementing the Proposed Action, also known as the Preferred Alternative (Alternative B), the No Action Alternative, also known as the Deferred Harvest Alternative (Alternative A) and No Herbicides Alternative (Alternative C). The management activities proposed in the Preferred Alternative are summarized below and listed in detail in Attachment A to this document.

The USDA, Ouachita National Forest, Caddo-Womble Ranger District, proposes to implement restoration management activities in the 16,908-acre project area known as Little Fir that primarily lies within the watershed identified as Little Fir Cemetery – Lake Ouachita. These areas are located in Management Areas 9, 16 and 21 identified in the Revised Land and Resource Management Plan (RLRMP 2005). Compartments 1622, 1623, and 1631 fall completely or partially within the project area, which is located in Township1 South and Township 2 South, Range 23 and 24 West in Montgomery County, Arkansas. (See attached project map). Specifically, the Forest Service proposes the following activities: *

- Seed tree regeneration harvest – 92 acres
- Shelter wood regeneration harvest – 133 acres
- Commercial thinning – 549 acres
- Forest Health Restoration thinning – 288 acres
- Site Prep prescribed burn (National Forest)
- Chemical/Mechanical site preparation for natural regeneration – up to 225 acres
- Timber Stand Improvement – 225 acres
- Pre-Commercial Thinning – 225 acres
- Hand Plant shortleaf pine seedlings – up to 225 acres
- Wildlife stand improvement (WSI)/ Midstory reduction – 12 acres
- Wildlife stand improvement (Commercial) – 162 acres
- Glade restoration – 62.7 acres
- Pond improvements to existing ponds – 6 each
- Pond construction – 4 each
- Linear wildlife opening improvements – 0.22 miles
- Wildlife opening construction – 0.73 acres
- Wildlife opening improvement – 5.4 acres
- Fire line maintenance – 7 miles
- Road construction/reconstruction – 6 miles
- Temporary road construction – 7 miles
- Pre-haul road maintenance – 1 mile
- Non-native invasive plant species treatment throughout project area

* acreages, mileage, etc. are approximate

Decision and Reasons for the Decision

Based on the analysis documented in the EA, it is my decision to implement the Preferred Alternative identified above for the Little Fir Watershed Restoration Management Project. The Preferred Alternative is detailed in Attachment A of this document. My decision is based on a detailed study of the record that shows a thorough review of relevant scientific information, a consideration of responsible opposing views, and the acknowledgement of incomplete or unavailable information. See EA Chapter 3 (pg. 35) "Analysis Tools Used" and EA Chapter 6 (pg. 134) "Literature Cited".

The proposed action improves the health and vigor of the Ouachita National Forest by reducing the existing overstocked timber stands, reducing the threat of severe wildfires and creating early seral wildlife habitat while creating a more natural appearing mixed pine and hardwood stands to increase biological diversity. Current conditions of the project area do not meet the goals and objectives designed to meet an ecosystem management approach to for a healthy native system. These management decisions are based on experience, ecological concepts and scientific research. By implementing these activities we will provide for a diversity of plant and animal communities throughout the project area, provide early seral habitat in a well-distributed grass/forb or shrub/seedling stage, reduce fuel accumulation and provide increased recreational opportunities for wildlife viewing and hunting.

Several non-native invasive plant species have been identified throughout the project area. These species include but are not limited to Chinese privet (*Ligustrum sinense*), Japanese honeysuckle (*Lonicera japonica*), mimosa (*Albizia julibrissin*), autumn olive (*Elaeagnus umbellata*), and multiflora rose (*Rosa multiflora*). If the control of non-native invasive plant species was not to occur within stream side management areas this could create a refuge for these species to grow and spread. Only aquatic labeled herbicides for terrestrial vegetation control would be permitted within riparian areas. When treating invasive plant species within riparian areas, only direct foliar application or cut and spray methods are to be utilized. Surveillance monitoring to ensure that herbicide label instructions are being followed would be conducted as part of the contract administration. Form R8-FS-2100-1, Herbicide Treatment and Evaluation Record, would be used to monitor work involving herbicides. Stream samples would also be taken to monitor for offsite movement.

The Preferred Alternative (Alternative B, the Proposed Action) was chosen over the No Action Alternative (Alternative A, Deferred Harvest) because it meets the identified purpose and need for the Little Fir Resource Management Project area as stated in the EA. The No Action Alternative is a requirement of the National Environmental Policy Act (NEPA). The No Action Alternative would not improve forest health and vigor; reduce susceptibility to pine beetle outbreaks; provide adequate grass-forb and seedling-sapling habitat conditions; provide a diversity of wildlife habitat conditions; reduce fuel accumulations; increase the amount of high quality forage and nesting habitat; provide for mast production; provide nest structures where suitable nest cavities do not occur; reduce open road density; develop, operate, and maintain the road system; nor would it eliminate non-native invasive species.

The Preferred Alternative was chosen over Alternative C: No Herbicide Use, because it is expected to provide better site conditions for the establishment of pine regeneration and provide optimum freedom from competition for those 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. The No Herbicide Use Alternative will comply with present Forest Policy.
The following table illustrates specifically how each Alternative would meet the desired objectives:

Objective (measure)	No Action	Alt B	Alt C
Improve the health and vigor of forest stands and improve stand quality (acres of timber stands treated resulting in reduced basal areas)	0	1,062	1,062
Contribute to the economic base of local communities by providing a sustained yield of high-quality wood products. (volume harvested – 100 cubic feet (ccf))	0	3,242	3,242
Provide grass-forb and seedling-sapling habitat conditions. (percent of suitable acres in early seral habitat)	0.0	5.8	5.8
Maintain or Improve open habitats to provide high quality forage and nesting habitat for wildlife. (acres of wildlife openings maintained/created)	0	6.35	6.35
Eliminate non-native, invasive species. (acres treated for invasive species eradication)	0	Across Project Area (50 acres for analysis)	0
Reduce open road density. (miles of open road per square mile)	1.94	1.0	1.0
Develop, operate, and maintain the road system to meet the requirements of the proposed actions, protect the environment, and provide reasonable and safe access. (miles of road construction: road reconstruction: and pre-haul maintenance)	0	2.5: 2.5: 1	2.5: 2.5: 1

Climate Change

As greenhouse gas emissions and carbon cycling are integrated across the global atmosphere, it is not possible to determine the cumulative impact on global climate from emissions associated with insect or disease suppression treatments. It is not expected that the effects of single suppression treatment or multiple treatments can be specifically attributed the cumulative effects on global climate change.

Prescribed burning activities, although a carbon neutral process, would release CO_2, other greenhouse gasses, and particulates into the atmosphere. However, implementing the proposed prescribed burns on an annual and/or bi-annual cycle would reduce fuel loading and could be expected to reduce fire intensity and severity as well (EA, pg. 114).

Indirectly, implementation of the preferred alternative would increase the overall health, vitality, and growth within the project area, reduce the susceptibility to insects and disease, as well as reduce fuel accumulations and lower the risk for a catastrophic wildfire from occurring in the project area. This would serve as a way to increase carbon storage within the project area and mitigate carbon accumulation in the atmosphere.

Implementation of the preferred alternative would increase the overall health, vitality, and growth within the project area, and reduce the susceptibility to insects and disease, as well as reduce fuel accumulations and lower the risk for a catastrophic wildfire from occurring in the project area. This would serve as a way to increase carbon storage within the project area and mitigate carbon accumulation in the atmosphere. No effects from climate change on the proposal are anticipated (EA, pg. 115)

Role of the Interdisciplinary Team and Public Involvement

The Caddo-Womble District IDT initiated internal scoping on August, 26th 2009. External scoping was initiated on January 5th, 2012 and February 7th, 2012. Scoping letters requesting comments on the proposal were mailed to over 100 agencies, groups, or individuals. The project was also published in the Ouachita National Forest Schedule of Proposed Actions. The IDT received five responses during scoping efforts. These were primarily questions regarding proposed actions. No comments were received during the thirty day comment period.

The IDT worked collaboratively to identify significant issues and develop objectives for the proposed project.

Issues Identified

One significant issue was identified by the IDT during the planning process:

Herbicide Use: Forest policy requires analysis of alternatives to herbicide use. Herbicide, insecticide and fungicide use will be considered a significant issue for this reason, and the environmental consequences of their use are disclosed throughout Chapter 3. The No Action Alternative serves as the no herbicide, insecticide and/or fungicide use alternative.

Technical Requirements

The Revised Land and Resource Management Plan (RLRMP) for the Ouachita National Forest provides overall technical requirements. The IDT reviewed the RLRMP Forest-wide Design Criteria, Management Area-specific Design Criteria, and specialist reports, then identified the following project-area requirements:

- Even-aged regeneration treatments that exceed or create an opening (as defined by FR005) that would exceed the recommended maximum area of regeneration (RLRMP, p.81, table 3.2) required Forest Supervisor approval. The following stands apply: compartment 1622, stands 15 and 27; compartment 1623, stand 2, 25 and 40. A letter requesting approval to exceed harvest acres was approved by the responsible official on February 25th, 2013.
- During prescribed burning activities, sign travel ways as needed notifying the public there may be smoke along the road. Position flaggers or warning signs along the travel ways during active flaming.
- Inform the public of potential burn days, times, information contacts, and suggested alternatives for those concerned with smoke.
- Notify local, county and state law enforcement that burning will take place.
- Resource management activities such as timber harvests, timber stand improvement, prescribed burns and wildlife habitat improvements will be conducted in a manner that promotes Scenic Integrity Objectives (SIO). (RLRMP, RS002, p.90)
- Soils would be managed to maintain a minimum of 85 percent of a treatment area in a condition of acceptable soil productivity following land management activities. (RLRMP, SW003, p.74)
- Allow heavy equipment operations on soils with a severe compaction hazard rating only during the months of July through November. Operations during December through June are allowed with the use of methods or equipment that does not cause excessive soil compaction. This does not apply to roads, primary skid trails, or log decks. (RLRMP, SW001, p.74)

- Allow heavy equipment operations on soils with a high compaction hazard rating only during the months of April through November. Operations during December through March are allowed with the use of methods or equipment that does not cause excessive soil compaction. This does not apply to roads, primary skid trails, or log decks. (RLRMP, SW002, p.74)

- Erosion control treatments of log decks, temporary roads, and primary skid trails will include installing waterbars and seeding. (Little Fir USLE report)

- Bulk density would not increase more than 15 percent over the undisturbed level in the upper eight inches of soil. (RLRMP, SW003, p.74)

- Soil organic matter will remain at least 85 percent of the natural or undisturbed total in the upper six inches of soil. (RLRMP, SW003, p.74)

- Soil loss from management actions would not exceed the estimated Forested T-factor for each soil or soil map unit, based on the cumulative time period between soil disturbing management actions. (RLRMP, SW003, p.74)

- Soil puddling (tire track rutting) will not exceed six inches deep. (Little Fir USLE report)

- Soil displacement will not exceed two inches or one-half the humus-enriched "A" horizon, whichever is less, over a surface area greater than 100 square feet that is more than ten feet wide. (RLRMP, SW003, p.74)

Alternatives Considered

Alternative A: Deferred Harvest (No Action)

In this alternative, the management activities described in the proposed action (those listed in Alternative B 'description of treatments') would be deferred until a later entry. However, ongoing Forest Service permitted and approved activities would continue in the project area:

- Road maintenance – normal and emergency road maintenance would continue on all existing roads.
- Power line right of way (ROW) maintenance would continue on existing ROW's.
- Fire suppression – natural caused fires may be suppressed unless appropriate conditions allow for it to be used as a management tool to accomplish resource needs. Human caused fires by accident or intention (arson) would be suppressed.
- Off road vehicle use – ORV use of the area would continue under the Travel Management Plan for the Ouachita National Forest.
- Camping – camping would continue under the current rules of the Ouachita National Forest. Special restrictions would apply during times of fire threat.
- Hunting and Fishing – game hunting and fishing would continue under the rules of the Arkansas Game and Fish Commission.
- Firewood cutting – under the permitting rules of the Ouachita National Forest, the public would continue to harvest firewood.
- Rock gathering – under the permitting rules of the Ouachita National Forest, the public would continue to collect rock for personal use.
- Existing quartz, shale and gravel mining would continue in approved locations.
- Routine maintenance of facilities and administrative sites.
- Prescribed burning and other activities as authorized under Little Fir Prescribed Burning EA

Alternative B: Little Fir Watershed Restoration Management Project (Preferred Alternative) The No Action Alternative is a requirement of the National Environmental Policy Act (NEPA). The No Action Alternative would not: improve forest health and vigor; reduce susceptibility to pine beetle outbreaks; provide a sustained yield of high-quality wood products; provide adequate grass-forb and seedling-sapling habitat conditions; provide a diversity of wildlife habitat conditions; reduce fuel accumulations; increase the amount of high quality forage and nesting habitat; provide for mast production; restore glade structure; provide nest structures where suitable nest cavities do not occur; reduce open road density; develop, operate, and maintain the road system; eliminate non-native invasive species.

- Seed tree regeneration harvest – 92 acres
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* acreages, mileage, etc. are approximate

Alternative C: No Herbicide Use

This alternative would be the same as those listed under Alternative B above with the exception of no herbicides would be used to meet desired conditions. This alternative addresses the Forest direction requiring analysis of alternatives to herbicide use. Herbicide application for site preparation, pre-commercial thinning/release, and non-native invasive species control would not occur. These activities would be accomplished manually with chainsaws and/or other mechanical means.

Findings Under the National Forest Management Act –Revised Forest Plan Consistency

The Preferred Alternative, 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. 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.

Finding of No Significant Impact (FONSI)

Based on the nature and extent of the area affected by the Preferred Alternative, I have determined that the implementation of this project, with the associated technical requirements, is not a major federal action either individually or cumulatively, and will not significantly affect the quality of the human environment. Therefore an environmental impact statement is not required. This determination is based on the following factors (40 CFR 1508.27):

1. Both beneficial and adverse effects have been considered and this action will not have a significant effect on the quality of the human environment (EA, pages 12-116).

2. The degree to which public health and safety may be affected is minimal. This includes both short and long term health and safety. Prescribed burning, insecticide, fungicide and herbicide applications will be conducted under the design criteria documented in the Revised Forest Plan (EA, pages 107-110).

3. The action will not adversely affect any 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 (EA, pages 13-14).

4. Based on public involvement and the environmental analyses conducted, the effects on the quality of the human environment from this action are not likely to be highly controversial (EA, pages pg. 17).

5. The effects on the quality of the human environment from this action are not highly uncertain nor do they involve unique or unknown risks. The actions have been implemented before on similar lands and under similar circumstances (EA, pages 91-116).

6. The actions in this decision will not establish a precedent for future actions with significant effects nor does this represent a decision in principle about a future consideration.

7. The cumulative effects of the Preferred Alternative have been analyzed with consideration for past and foreseeable future activities on adjacent public and private lands, and no significant cumulative effects would result from implementation (EA, pages 12-116).

8. The actions will not affect any sites listed or eligible for listing in the National Register of Historic places, nor will they cause loss or destruction of significant scientific, cultural, or historical resources. Based on the ratified Programmatic Agreement between the National Forests of Arkansas, the Arkansas Historic Preservation Officer, and Native American Tribes, many activities contained in the Preferred Alternative have no potential to impact heritage resources and are "Exempt Undertakings" (Stipulations V.B.1-26). These include but are not limited to maintenance of buildings less than 50 years old; herbicide and pesticide application; routine road and heliport maintenance; re-vegetation, paving, and cut and leave treatments. Other activities hold little-to-no potential to impact heritage resources and are categorically excluded from routine consultation (Stipulations V.C.1-5) including but not limited to prescribed burns in areas previously burned; actions in existing road right-of-ways; and work in areas previously surveyed for archeological sites. Consultation on such activities occurs internally and is formally documented. Other proposed actions requiring further review and consultation, however, include, but are not limited to, new fire line construction, commercial timber harvests and all new construction projects that are not in previously surveyed areas.

9. The actions are not likely to adversely affect endangered or threatened plant or animal species or critical habitat (EA, pages 90-106). The actions are in compliance with the Endangered Species Act.

10. None of the actions threaten to lead to a violation of Federal, State, or local law or requirements imposed for the protection of the environment. This will be ensured by implementing the Preferred Alternative in a manner consistent with the design criteria and management requirements established in the Revised Forest Plan. For water quality, State approved Best Management Practices (BMP) will be used. These BMPs are from the State water quality management plan, which has the goal of producing water that meets state water quality standards. The project will be monitored to ensure that BMPs are implemented, and treatments comply with the provisions of the Clean Water Act. If the implementation of BMPs on a specific site results in effects significantly greater than previously anticipated, due to unforeseen site factors or events, appropriate corrective measures will be taken (EA, pages 43-54).

Implementation and Appeal Rights

This decision is not subject to appeal pursuant to 36 CFR 215.11(a). No comments were received during the official 30 day comment period. Implementation of this decision may occur immediately after publication of the legal notice of this decision in the Arkansas Democrat-Gazette.

Responsible Official:

Gloria Chrismer

GLORIA CHRISMER
District Ranger

05/28/2013
Date

ATTACHMENT A

Present Activities to be Continued:

- Road maintenance – normal and emergency road maintenance would continue on all existing roads.
- Power line right of way (ROW) maintenance would continue on existing ROW's.
- Fire suppression – natural caused fires may be suppressed unless appropriate conditions allow for it to be used as a management tool to accomplish resource needs. Human caused fires by accident or intention (arson) would be suppressed.
- Off road vehicle use – ORV use of the area would continue under the Travel Management Plan for the Ouachita National Forest.
- Camping – camping would continue under the current rules of the Ouachita National Forest. Special restrictions would apply during times of fire threat.
- Hunting and Fishing – game hunting and fishing would continue under the rules of the Arkansas Game and Fish Commission.
- Firewood cutting – under the permitting rules of the Ouachita National Forest, the public would continue to harvest firewood.
- Rock gathering – under the permitting rules of the Ouachita National Forest, the public would continue to collect rock for personal use.
- Existing quartz, shale and gravel mining would continue in approved locations.
- Routine maintenance of facilities and administrative sites.
- Prescribed burning and other activities as authorized under Sharptop Environmental Assessment.

Proposed Activities by Compartment and Stand

Compartment	Stand	Activity	Acres	Miles	Number
1622	6	Forest Health Restoration Thin	33		
1622	9	Commercial Thin	86		
1622	15	Seed Tree Regen. Harvest	46		
1622	15	Timber Stand Improvement	46		
1622	15	Pre-Commercial Thin	46		
1622	15	Hand Plant (if necessary)	46		
1622	15	Chemical/Mechanical SP	46		
1622	15	Prescribe Burn Site Prep	46		
1622	16	Forest Health Restoration Thin	78		
1622	17	Commercial Thin	57		
1622	18	WSI Commercial	24		
1622	22	Commercial Thin	19		
1622	24	Commercial Thin	23		
1622	27	Shelterwood Regen. Harvest	47		
1622	27	Timber Stand Improvement	47		
1622	27	Pre-Commercial Thin	47		
1622	27	Hand Plant (if necessary)	47		
1622	27	Chemical/Mechanical SP	47		
1622	27	Prescribe Burn Site Prep	47		

1622	11, 13, 16, 23, 24	Pond Maintenance			5
1622	Throughout Project Area	Fireline Maintenance		2.03	
1622	Throughout Project Area	Road Construction		0.63	
1622	Throughout Project Area	Barriers/Gates			6
1623	2	Seed Tree Regen. Harvest	46		
1623	2	Timber Stand Improvement	46		
1623	2	Pre-Commercial Thin	46		
1623	2	Hand Plant (if necessary)	46		
1623	2	Chemical/Mechanical SP	46		
1623	2	Prescribe Burn Site Prep	46		
1623	4	WSI Commercial	138		
1623	7	Glade Restoration	45		
1623	8	Glade Restoration	18		
1623	9	Commercial Thin	19		
1623	11	Commercial Thin	60		
1623	15	Commercial Thin	22		
1623	18	Pond Maintenance			1
1623	19	Commercial Thin	110		
1623	25	Shelterwood Regen. Harvest	43		
1623	25	Timber Stand Improvement	43		
1623	25	Pre-Commercial Thin	43		
1623	25	Hand Plant (if necessary)	43		
1623	25	Chemical/Mechanical SP	43		
1623	25	Prescribe Burn Site Prep	43		
1623	30	Forest Health Restoration Thin	72		
1623	30	WLO New Construction	0.72		
1623	33	Forest Health Restoration Thin	67		
1623	36	Commercial Thin	16		
1623	37	Forest Health Restoration Thin	38		
1623	39	Commercial Thin	35		
1623	40	Shelterwood Regen. Harvest	43		
1623	40	Timber Stand Improvement	43		
1623	40	Pre-Commercial Thin	43		
1623	40	Hand Plant (if necessary)	43		
1623	40	Chemical/Mechanical SP	43		
1623	40	Prescribe Burn Site Prep	43		
1623	43	Commercial Thin	11		
1623	52	Commercial Thin	11		

1623	54	WSI Midstory	12		
1623	18, 36	Linear WLO Improvement		0.22	
1623	4, 14, 18, 39	WLO Maintenance	5.4		
1623	4, 14, 27, 30	Pond Construction			4
1623	Throughout Project Area	Fireline Maintenance		11	
1623	Throughout Project Area	Road Construction		1.4	
1623	Throughout Project Area	Barriers/Gates			13
1631	20	Commercial Thin	80		
1631	Throughout Project Area	Barriers/Gates			1

Modified Seed Tree Regeneration (ST) – A timber harvest cut designed to obtain natural regeneration from seed trees left for that purpose. Approximately 10-15 sq. ft. of pine, 5-10 sq. ft. of hardwood basal area per acre is retained in the overstory. Seed trees are retained indefinitely. This cut would establish a two-aged stand. This treatment differs from a traditional seed tree by retaining a mix of hardwoods and pines in the overstory after regeneration. Hardwood trees felled in these areas may be utilized for public firewood or commercial sale. (92 acres proposed)

Modified Shelterwood (SW) – A timber harvest method of regenerating an even-aged stand in which most of the trees are removed leaving a new age class to develop beneath the partially shaded microenvironment provided by the residual trees. The residual basal area will be 25-35 sq. ft. of pine and 5-10 sq. ft. of hardwood to maintain scenic integrity. After new stand establishment, overstory may be reduced to seed tree density. (133 acres proposed)

Within the Project Area, several stands have the potential to exceed the size threshold for regeneration harvesting per the Revised Forest Plan. Boundaries were identified using existing physical topographic features (i.e. drains, ridges, roads) resulting in larger map units. Stands include riparian areas and steep slopes that would be delineated from the harvest area during sale preparation activities. The Plan provides that maximum size of regeneration areas may be exceeded with approval of the Forest Supervisor up to a maximum of 80 acres for pine and pine-hardwood forest types (FR009/Table 3.15, page 110). Approval from the Forest Supervisor to exceed the maximum size of regeneration acres was granted on March 28th, 2013.

It should, however, be noted that the five stands (compartment 1622 stands 15 and 27 and compartment1623 stands 2, 25, and 40) would create early seral habitat openings for wildlife purposes, and provide for increased recreational use by local hunters. (RLRMP, p.78)

To facilitate natural pine regeneration, adequate site preparation is needed to disturb the soil surface in the newly created openings. Competing vegetation may be removed manually with chainsaws, heavy equipment, scarifying, ripping, prescribed fire, herbicide application and/or the use of a large steel drum pulled behind a bulldozer to chop. If warranted, the herbicide triclopyr, imazapyr, imazapic, and/or glyphosate may be applied using either hack-and-squirt or foliar spray by hand method. Prescribed fire will be employed in late summer/early fall months for best results, however may be conducted during the winter or early spring months to combine activities with other wildlife habitat/fuel reduction prescribed burning. When burning is not possible, ripping of the area may be used. Ripping is the process where soil is mechanically sliced or broken to improve tilth, aeration and

permeability. When possible, site preparation activities will coincide with adequate cone crops. If after five years there are fewer than 150 pine seedlings per acre, the area will be hand planted with genetically improved shortleaf pine seedlings.

Where established regeneration is present, seedlings may regenerate too densely causing overcrowded conditions, requiring pre-commercial thinning and/or release. This release may be accomplished manually with hand tools (e.g. chainsaws) or with the herbicides applied as a foliar spray or cut surface application to remove the overtopping and competing vegetation and brush. A foliar spray may be applied to areas with vegetation less than six feet tall and with pine regeneration that does not require thinning. A cut surface application is employed in areas with vegetation greater than six feet tall and/or with pine regeneration requiring thinning. During any pre-commercial thinning and/or release activities, sufficient hardwood trees would be left scattered throughout the stand to ensure a ten to 30 percent hardwood component in the stand. When selecting hardwood trees, preference would be given to mast producers. Final stocking after treatments would be 250-500 pine stems per acre.

Pre-commercial Thinning /Release (PCT) – Regenerated pine stands between 5 and 10 years of age would be thinned to a maximum of 700 trees per acre, averaging a 10 x 10 foot spacing, using hand tools or herbicide application as described above. Leave trees would be free of all competing vegetation such as vines and woody stems to ensure survival, reduced susceptibility to insects and disease, and increase growth of the residual stand. Poorly formed trees would also be removed. The hardwood component would be retained at 10 to 30% of the total trees per acre. These areas may also be made available for commercial sale. (Up to 225 acres proposed)

Commercial Thinning (CT) – Stands will be thinned to a pine residual basal area of 50-60 sq. ft. per acre. For the following stands, the pine residual basal area will be 70-75 sq. ft. per acre: Compartment 1623 stands 9 and 36. Where a hardwood component is present, the target basal area will be 20-35 sq. ft. per acre.

In order for mechanical harvesting equipment to operate within these stands and to reduce the amount of damage to the remaining stand, a minimum spacing between trees of 20 feet is required (127 trees/acre). Stands with average diameters less than 10 inches will be thinned below the basal area guides listed in Table 3.6 Thinning Guide by Community Group (Revised Land and Resource Management Plan). Pursuant to Revised Forest Plan Design Criteria FI005, deviations from these guides are allowable if site-specific conditions warrant, subject to approval by the project Responsible Official. Damaged, diseased, suppressed, and poorly formed trees would be targeted first for removal. Trees harvested will be sold to support the local economy (549 acres proposed).

Forest Health Restoration Thinning – Densely stocked pine plantations with basal areas varying from 108 ft^2 to 113 ft^2 per acre would be thinned to a residual basal area of 50-60 sq. ft. per acre. Stands are normally thinned to a pine residual basal area of 70-75 sq. ft. per acre based on the average stand diameter. However, for mechanical harvesting equipment to operate within these densely stocked pine stands and to reduce the amount of damage to the remaining stand, a minimum spacing between trees of 20 feet is required (127 trees/acre). These stands will be thinned below the basal area guides listed in Table 3.6 Thinning Guide by Community Group (Revised Land and Resource Management Plan). Pursuant to Revised Forest Plan Design Criteria FI005, deviations from these guides are allowable if site-specific conditions warrant, subject to approval by the project Responsible Official. Damaged, diseased, suppressed, and poorly formed trees would be targeted first for removal. Trees harvested will be sold to support the local economy. (288 acres proposed)

Timber Stand Improvement (TSI) – An intermediate treatment designed to improve the composition, structure, condition, health and growth of existing even aged stands. Competing hardwood poles would be removed to improve pine stand vigor. These areas may be made available for firewood or commercial sale. (Up to 225 acres proposed)

Wildlife Stand Improvements (Commercial) – Wildlife stand improvements are achieved by using a combination of fire, chainsaws, and/or herbicides. Understory and intermediate trees would be removed, reducing competition

for light and nutrients among retained species. Oaks, hickories, and beech are favored for retention. These areas may be made available for firewood or commercial sale. The most common treatments to meet the objectives of these areas are woodland stand restoration, woodland stand development, midstory reduction and overstory development.

Midstory Reduction (MSR) – By using a combination of fire, chainsaws and/or herbicides, suppressed and intermediate trees would be removed. Reducing the midstory will allow more light to filter through the forest canopy to spur the growth of understory vegetation. These areas may be available for public firewood and/or commercial.

Glade Restoration – Activities include the restoration of 62.7 acres of glade communities. These areas will be managed to maintain their ecological integrity by using fire as a tool to mimic past fire regimes. These areas may also be made available for firewood or commercial sale.

Chemical Site Preparation – After pine regeneration harvest, hardwoods would be reduced to 20% of the residual basal area of pine using herbicide application in the form of foliar spray, stem injection, and/or chainsaw fell and cut surface spray. A minimum of 5 square feet per acre of basal area of overstory hardwoods would be retained where available. In modified seed tree harvest areas one-half acre clumps of hardwoods per 20 acres of harvest area would be retained in order to create den trees. These areas may be made available for commercial or firewood sale areas. (225 acres proposed= ST+SW)

Mechanical Site Prep - Competing vegetation may be removed manually with chainsaws, heavy equipment and/or ripping. This will be used in lieu of or in addition to other site prep methods to ensure areas are properly prepared for future seed/seedlings. These areas may also be made available for commercial or firewood sale areas. (Up to 225 acres proposed= ST + SW)

Prescribed Burn Site Preparation – After chemical or mechanical site preparation activities have been conducted, prescribed burning may be employed in the even-aged regeneration harvest areas. This treatment would further reduce brush, downed-woody fuels, and duff and litter accumulations that may impede regeneration establishment. A detailed description of burning is provided later in this document under ecosystem prescribed burning. (225 acres proposed= ST+SW)

Hand Plant Shortleaf Pine – If adequate amount of pine regeneration (150 trees per acre) is not established within 5 years in natural regenerated areas (ST & SW), pine seedlings would be planted on an 8 X 10 spacing to meet target stocking levels. (92 and 133 acres proposed, respectively)

Wildlife Openings – Activities for maintenance of existing and the creation of wildlife openings include brush hogging, disking, fertilizing, and seeding with native warm and cool season grasses and forbs. Existing wildlife openings total 5.4 acres and a 0.22 mile linear opening. Actions would create an additional 0.73 acres of wildlife opening. These actions may be accomplished through commercial or firewood sale areas.

Pond Construction – Activities would include construction of 4 ponds. New ponds will be constructed with heavy equipment. Disturbed soils will be stabilized with seeding of native seeds and forbs and mulched. The areas may also be utilized for commercial or firewood purposes.

Pond Maintenance – Activities would include repairing spillways, installing signs and clearing vegetation. Disturbed soils will be stabilized with native grasses and forbs and mulched.
Traditional methods of controlling nuisance vegetation within and surrounding ponds have proven unsuccessful or impracticable. With Forest Supervisor approval, the use of aquatic labeled herbicides would be used to control non-native or invasive aquatic vegetation. There are 6 ponds within Project Area that would be improved/maintained.

Invasive/Noxious Plant Species Control – Identified invasive species (i.e. fescue, Japanese honeysuckle, Chinese privet, multi-flora rose) would be eliminated from the road surface, ditches, and forest floor throughout the Project Area using various techniques. These techniques would include a combination of herbicide application, prescribed burning, light disking, and seeding with native warm season grasses.

Ecosystem Prescribed Burning- Will continue as proposed under the Little Fir Burn EA (2010).

Fireline Maintenance – When necessary for burn access, up to a 10-foot wide swath of brush and ground vegetation would be removed from existing firelines by blading using a bulldozer. After the burns are completed, these firelines would be waterbarred and seeded with native grasses and forbs where needed to restore vegetative cover to the exposed soil.

Temporary Road Construction – Approximately 7 miles of temporary road construction is necessary to access harvest areas. After harvest, these roads would be closed with earthen berms or gates, limed, fertilized, seeded and planted with native warm and cool season grasses and nonpersistent cultivars and utilized as temporary wildlife openings.

System Road Pre-haul Maintenance – Prehaul maintenance would be required on approximately 1 mile of road prior to timber hauling. Activities include brush removal, spot gravel, surface protection, blading, culvert replacement and drainage reconditioning as necessary to restore the road to its original design function.

System Road Construction – Approximately 2.5 miles of medium standard road construction would be required to access and haul timber from stands proposed for harvest. This road would then be added to the district road inventory and maintained as needed.

System Road Reconstruction – Approximately 5 miles of system road reconstruction would be required to support management activities, reduce erosion and sedimentation, and ensure safe travel on the existing road network. Activities could include any road improvements or realignment that results in an increase of an existing road's traffic service level, expands its capacity, changes its original design function, or relocates an existing road or portions of an existing road and treatment of the old roadway.

Install Road Closure Devices – Metal gates or earthen berms would be installed to provide road closure. The closure devices would be installed on roads identified for closure or those built as temporary access for timber harvest.

Road Closures- In order to reduce soil erosion, sedimentation, illegal activities, and to comply with the Travel Management Rule as outlined by the Motor Vehicle Use Management (MVUM) maps, several miles of existing authorized roads and unauthorized roads may be closed with gates or earthen berms as funds are available. See Transportation section for complete outline of changes/corrections to Motor Vehicle Use Management designation and INFRA database.

Rock Resources – Permits would be offered to the public for collection of rocks by private individuals within existing mine areas or road construction and reconstruction corridors. That is, rocks may be collected within areas of disturbance associated with existing mine areas or road construction and reconstruction.