
CHAPTER 2

ALTERNATIVES

Introduction

This chapter describes and compares the alternatives considered by the Forest Service for Analysis Unit 24. It includes a discussion of how alternatives were developed, a description of each alternative considered in detail, and a comparison of these alternatives focusing on the significant issues. It also identifies Alternative 5 as the preferred alternative, which is also the Proposed Action identified in Chapter 1. Maps of the alternatives can be found in Appendix B. Chapter 2 is intended to present the alternatives in comparative form, sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public (40 CFR 1502.14).

Some of the information in Chapter 2 is summarized from Chapter 3, "Affected Environment and Environmental Consequences." Chapter 3 summarizes the scientific basis for establishing base lines and measuring the potential environmental consequences of each of the alternatives. For a full understanding of the effects of the alternatives, readers would need to consult Chapter 3.

Development of Alternatives

The proposed action and each action alternative presented in this EA provide a different response to the significant issues for Analysis Unit 24 while still meeting the stated purpose and need (see Chapter 1). Each of these alternatives represents a site-specific proposal developed through interdisciplinary team (IDT) evaluation. Identification of management actions such as regeneration, thinning and prescribed burning are made using resource data from silvicultural prescription plans, topographic maps, aerial photos and data that is available in the geographic information system (GIS).

The Interdisciplinary Team used information from the analysis of scoping comments, in conjunction with the knowledge of stand data for the Project Area, to formulate different alternative approaches (frameworks). For example, if a project issue was concern over the use of herbicides, then an alternative that used no herbicides was developed. Preliminary analysis and management direction were used to further refine the alternatives described in this Chapter.

DIRECTION COMMON TO ALL ALTERNATIVES ANALYZED IN DETAIL

The "No Action" alternative inherently requires no mitigating actions. All other alternatives were considered with the same mitigations as the "Proposed Action", where applicable. Further reference to all alternatives, except the "No Action" alternative, implies the inclusion of these mitigations.

Regeneration cuts using seed trees (Alternatives 3&5) are composed primarily of mature loblolly pine as the dominant species (>70% cover) and mature hardwoods as the codominant species (<30 %). There is a small component of shortleaf pine within the stands. There may be individual longleaf pines present. These stands are between 70 and 80 years old. There would be no prescribed burning within these stands. Existing conditions are such that selection priority of pines for retention is as follows: 1) longleaf, 2) shortleaf, and 3) loblolly. Natural shortleaf and longleaf capable of producing seeds would be left. The objective is to maintain a mixed pine forest type with shortleaf pine targeted for restoration.

For alternatives with herbicides, applications are made after harvest and once again in three years. Herbicides would be used in a manner consistent with the direction identified in the FEIS for Vegetation Management in the Coastal Plain Piedmont. Herbicide treatments would include the hand tool application of sulfometuron-methyl, triclopyr-amine, triclopyr-ester, hexazinone, and imazapyr for the purposes of release and site preparation.

In all action alternatives (Alternatives 2-5), areas proposed for thinning are predominant loblolly pine stands. Within sawtimber thinnings that receive prescribed fire, the objective is to grow a mixed pine forest type with longleaf and shortleaf pine targeted for retention. Outside of the prescribed burn area, the emphasis would be for management of a pine or pine-hardwood forest type.

The removal of timber products may require three or more sales. No sale would exceed 5 MMBF.

All action alternatives retain the late seral component prescribed by the Forest Plan as amended. Approximately 147 acres are designated as late seral. No harvest is planned in late seral stands.

Alternatives Analyzed in Detail

The proposed action (Alternative 5) and four alternatives are considered in detail. Alternative 1 is the no-action alternative, under which the Project Area would have no management actions at this time and would be subject to natural changes only. Alternatives 2, 3, and 4 represent different means of satisfying the purpose and need than the proposed action, by responding with different emphasis to the significant issues discussed in Chapter 1. Foldout maps of all alternatives considered in detail are provided in Appendix B.

ALTERNATIVE 1 - NO ACTION

The emphasis of this alternative is to propose no management actions to maintain forest stands. There would be no regeneration, thinning, or herbicide application. It does not preclude management activities in Analysis Unit 24 at some time in the future. The

choice of the No Action alternative represents a conscious decision to defer regeneration and thinnings for this entry. Separate analysis of minor actions and other action not connected to this entry such as prescribed fire could be considered. The Council on Environmental Quality (CEQ) regulations (40 CFR 1502.14d) requires that a "No Action" alternative be analyzed in every EA. This alternative represents the existing condition against which all other alternatives are compared.

ALTERNATIVE 2 – FOREST PLAN LEVEL REGENERATION

The intent of this alternative is to restore stands to a healthy state of mixed pine and mixed pine hardwood using regeneration with clearcut and seed tree management actions at a level beyond the preferred alternative (Alternative 5 – Proposed Action). Alternative 2 represents the maximum reasonable harvest level allowable within the constraints of the Forest Plan.

Alternative 2 would be accomplished through regeneration cuts using clearcut with reserves on approximately 289 acres and seed trees on forest stands covering approximately 246 acres. Herbicides would be applied to regeneration cut stands to control understory vegetation. Thinning would occur on approximately 730 acres with approximately 384 acres of sawtimber thinning and approximately 346 acres of first thinnings in pulpwood stands. Prescribed burning would occur on approximately 805 acres. Site Preparation for reforestation would also consist of both herbicide and mechanical treatments to reduce competition for new seedlings. Approximately 240 acres would be planted to longleaf pine at a spacing of 8x8 or 681 trees per acre. Approximately 49 acres are not in the burn plan would be planted to loblolly pine at a spacing of 10x12 or 363 trees per acres.

Table 2.1: Summary – Alternative 2*

Action	Total Acres (ac) or Miles (mi)	Total Harvest Volume (CCF)
Seed Tree Regeneration	246 ac	23,592
Clearcut w/reserves	289 ac	
Sawtimber Thinning	384 ac	
First Thin	346 ac	
Late Seral	147 ac	*all figures approximate
Road Reconstruction	5.0 mi	
Site Prep Herbicide	548 ac	
Prescribed Burn	805 ac	

ALTERNATIVE 3 - NO HERBICIDES

This alternative is the same as proposed action, except there would no herbicide applications. The emphasis of this alternative is to restore stands to a healthy state of mixed pine and mixed pine hardwood using regeneration with clearcut and seed tree management actions without the use of herbicides. The approximately 947 acres of

thinnings are intended to help promote resistance to the southern pine beetle. Site Preparation for reforestation would also consist mechanical treatments to reduce competition for new seedlings. Approximately 199 acres would be planted to longleaf pine at a spacing of 8x8 or 681 trees per acre. Approximately 31 acres not in the burn plan would be planted to loblolly pine at a spacing of 10x12 or 363 trees per acres. Approximately 49 acres would be regenerated by the seedtree w/reserves method. This alternative is within the guidelines set in the Forest Plan.

Table 2.3: Summary – Alternative 3*

Action	Total Acres (ac) or Miles (mi)	Total Harvest Volume (CCF)
Seed Tree Regeneration	49 ac	20,561
Clearcut w/reserves	230 ac	
Sawtimber Thinning	601 ac	
First Thin	346 ac	
Late Seral	147 ac	*all figures approximate
Road Reconstruction	5.0 mi	
Site Prep Herbicide	0 ac	
Prescribed Burn	805 ac	

ALTERNATIVE 4 - THIN ONLY

The emphasis of this alternative is to thin stands to help promote healthy trees resistant to the southern pine beetle. There would be approximately 880 acres of sawtimber thinning and approximately 346 acres of first thinning. There would be no clearcut with/reserves or seed tree regeneration and no herbicide applications. Prescribed burning would occur on approximately approximately 805 acres. A total volume of 16,520 CCF would be harvested. No reforestation or site preparation treatments are planned with this alternative. This alternative is within guidelines set in the Forest Plan.

Table 2.4: Summary – Alternative 4*

Action	Total Acres (ac) or Miles (mi)	Total Harvest Volume (CCF)
Seed Tree Regeneration	0 ac	16,520
Clearcut w/reserves	0 ac	
Sawtimber Thinning	880 ac	
First Thin	346 ac	
Late Seral	147 ac	*all figures approximate
Road Reconstruction	5.0 mi	
Site Prep Herbicide	0 ac	
Prescribed Burn	805 ac	

ALTERNATIVE 5 - PROPOSED ACTION (PREFERRED ALTERNATIVE)

The emphasis of this alternative is to restore stands to a healthy state of mixed pine and mixed pine hardwood using clearcut with reserves regeneration and seed tree regeneration management actions. Thinnings are intended to help promote resistance to the southern pine beetle. This alternative is within the guidelines set within the Forest Plan.

Alternative 5 would be accomplished through a combination of approximately 249 acres of clearcut with reserves and using seed tree regeneration on approximately 49 acres. Herbicides would be applied to regeneration cut stands to control understory vegetation. Thinning would occur on approximately 947 acres with approximately 601 acres of sawtimber thinning and approximately 502 acres of first thinnings. An additional 156 acres of first thinning was added to this alternative to improve forest health conditions in the analysis unit. Prescribed burning would occur on 805 acres. A total volume of 20,561 CCF would be harvested. Site Preparation for reforestation would also consist of both Herbicide and mechanical treatments to reduce competition for new seedlings. Approximately 199 acres would be planted to longleaf pine at a spacing of 8x8 or 681 trees per acre. The remaining acres regenerated by clearcut with reserves, are not in the burn plan. In these areas planting may be delayed up to three years or the areas not be planted at all depending on the amount of natural pine regeneration and pine seed source. If planting is needed it would be planted to loblolly pine at a spacing of approximately 10x12 or 363 trees per acres.

Under this alternative the option is given to regenerate 49 acres (stand 3 Comp. 250) by using seed tree or clearcut w/reserves. Using the seed tree option the stand would receive the normal irregular seed tree harvest method and have a desired future condition of loblolly-shortleaf pine stand. Under the clearcut w/reserves option, planting would be delayed until the third year regeneration check or not done at all if adequate natural pine regeneration is adequate on the site. The desired future condition of this area would be a pine-hardwood stand.

Table 2.5: Summary – Alternative 5*

Action	Total Acres (ac) or Miles (mi)	Total Harvest Volume (CCF)
Seed Tree Regeneration or Clearcut w/reserves (no planting)	49 ac	20, 561
Clearcut w/reserves	230 ac	
Sawtimber Thinning	601 ac	
First Thin	346 ac	
Late Seral	147 ac	*all figures approximate
Road Reconstruction	5.0 mi	

Site Prep Herbicide	279 ac	
Prescribed Burn	805 ac	

Comparison of Alternatives

This section compares outputs, objectives and effects of the alternatives in terms of the significant issues for Analysis Unit 24. The discussions of effects are summarized from Chapter 3. The table below provides an overview comparison of information from the alternative descriptions.

Table 2.6: Comparison of Activities by Alternative*

Activity	Unit of Measure	Alternative 1 No Action	Alternative 2 Forest Plan	Alternative 3 No Herbicide	Alternative 4 Thin Only	Proposed Action
Timber Harvest						
Clearcut w/Reserves Regeneration	Acres	0	289	230	0	230
Seedtree w/Reserves Regeneration	Acres	0	259	49	0	49
Sawtimber Thinning	Acres	0	384	601	880	601
First Thinning	Acres	0	346	346	346	346
Total Harvest Area	Acres	0	1,278	1,226	1,226	1,226
Total Harvest Volume	CCF	0	23,592	20, 561	16,520	20, 561
Reforestation						
Plant Longleaf for Mixed Pine	Acres	0	240	199	0	199
Plant Loblolly for Pine/ Hardwood	Acres	0	49	31	0	31
Herbicide Site Preparation	Acres	0	548	0	0	279
Site Prep Burn	Acres	0	548	279	0	279
Roads						
Construction	Miles	0	0	0	0	0
Reconstruction	Miles	0	2.88	2.88	2.88	2.88
Maintenance	Miles	0	9.98	9.98	9.98	9.98
Temporary	Miles	0	0	0	0	0

Right-of-Way	Miles	0	1.0	1.0	1.0	1.0
RCW Habitat Enhancement						
Midstory Removal	Acres	0	66	66	66	66
Compliance with Current Direction						
Fulfillment of Desired Future Condition	Reply	No	Yes	Yes	Yes	Yes
Consistent with Forest Plan	Reply	No	Yes	Yes	Yes	Yes
Consistent with VMCPPEIS	Reply	No	Yes	Yes	Yes	Yes
Consistent with NFMA	Reply	No	Yes	Yes	Yes	Yes
Consistent with RPA	Reply	No	Yes	Yes	Yes	Yes

*all figures approximate

ISSUE 1: SOIL PRODUCTIVITY

The “No Action” alternative would not result in any impacts to soil productivity due to its lack of ground-disturbing activities. Potential impacts to soil productivity do exist for the “Proposed Action” and Alternatives 2 through 4; however, these impacts would be mitigated through measures found in Appendix C, Chapter 1, and Chapter 3 of this environmental assessment. Further discussion of soil productivity can be found in Chapter 3 of this environmental assessment.

ISSUE 2: WATER QUALITY

No impacts to water quality would result from the “No Action” alternative, as no ground-disturbing activities would occur. The potential for impacts upon water quality do exist for the “Proposed Action” and alternatives 2 through 4. These impacts, however, would be mitigated through measures found in Appendix C, Chapter 1, and Chapter 3 of this environmental assessment.

ISSUE 3. AIR QUALITY

No impacts to air quality are expected through implementation of any of the alternatives considered in detail.

ISSUE 4. VEGETATION

No impacts to sensitive plant habitat would result from the “No Action” alternative. The potential for impacts on sensitive plant habitat do exist for the “Proposed Action” and Alternatives 2 through 4. These impacts, however, would be minimized due to mitigation measures found in Appendix C, Chapter 1, and Chapter 3 of this environmental assessment.

ISSUE 5. FOREST HEALTH

Under the “No Action” alternative, forest health concerns are not addressed. The “Proposed Action” and Alternatives 2 through 4 on the other hand, do address forest health through the thinning of overstocked timber to reduce southern pine beetle risk. The “Proposed Action” and Alternative 2, 3, and 5, also would result in a long-term commitment to forest health by re-establishing the longer-lived and more insect-resistant longleaf pine to a significant part of the landscape. Chapter 3 further discusses forest health and its relation to the alternatives.

ISSUE 6. THREATENED, ENDANGERED, AND SENSITIVE SPECIES

Threatened, endangered, and sensitive species are neither impacted nor addressed under the “No Action” alternative. The “Proposed Action”, and alternatives 2 through 4, each have impacts on and addresses threatened, endangered, and sensitive species because of its harvest and regeneration activities. Further explanation of the impacts to threatened, endangered, and sensitive species are addressed in Chapter 3.

ISSUE 7. MANAGEMENT INDICATOR SPECIES

The “No Action” alternative would not impact management indicator species. The “Proposed Action” and Alternatives 2 through 4 could potentially impact management indicator species through thinning and regeneration of forested tracts. Chapter 3 further discusses the impacts of the alternatives upon management indicator species.

ISSUE 8. ECONOMICS

The “No Action” alternative would have no impact on economics. The “Proposed Action”, and alternatives 2 through 4 would, through the sale of the harvested timber, produce favorable returns to the county and the Treasury. Economics is further discussed in Chapter 3 of this document.

ISSUE 9. RECREATION

The “No Action” alternative does not address concerns about recreation. Recreational concerns are addressed in the “Proposed Action” and alternatives 2 through 4 through better access provided by road reconstruction. Further discussion of the impacts to recreation can be found in Chapter 3.

ISSUE 10. HERITAGE RESOURCES

The “No Action” alternative would not impact heritage resources in any way. Potential impacts to heritage resources do exist for the “Proposed Action” and alternatives 2 through 4; however, these impacts would be mitigated through protective measures set

forth in our Memorandum of Understanding. Heritage resources are further discussed in Chapter 3 of this document.

ISSUE 11. PUBLIC HEALTH AND SAFETY

Public Health and Safety issues in land management mostly concern herbicides. An explanation of the concerns and mitigation measures which would result in protection of public health and safety for the “Proposed Action” and each of the alternatives considered in detail is discussed in Chapter 3 and Appendix G of this environmental assessment.

ISSUE 12. CIVIL RIGHTS AND ENVIRONMENTAL JUSTICE

Civil rights and environmental justice would be upheld and protected in the “Proposed Action” and in each of the alternatives considered in detail. Further explanation of the impacts to civil rights and environmental justice can be found in Chapter 3 of this environmental assessment.

Table 2.7: Summary of Comparison of Alternatives by Significant Issue

Issue	Alt. 1 No Action	Alt. 2 Forest Plan	Alt. 3 No Herb.	Alt. 4 Thin Only	Alt. 5 Proposed
1. Soil Disturbance					
Acres with decreased soil productivity	None	None with mitigation	None with mitigation	None with mitigation	None with mitigation
2. Water Quality					
Decrease in quality of aquatic habitat	None	None with mitigation	None with mitigation	None with mitigation	None with mitigation
Increase in cost of downstream uses	None	None with mitigation	None with mitigation	None with mitigation	None with mitigation
3. Air Quality					
Decrease below National Ambient Air Quality Standards	None	None with mitigation	None with mitigation	None with mitigation	None with mitigation
4. Vegetation					
Impact to sensitive plant habitat	None	None with mitigation	None with mitigation	None with mitigation	None with mitigation
Age Class Diversity	Low	High	High	Low	High
Sustainable Harvest Level	N/A	No	Yes	N/A	Yes
5. Forest Health					
Risk of Southern Pine Beetle Infestation	High	Low	Low	Medium	Low
6. Threatened, Endangered, and Sensitive Species					

Detrimental impacts to TES Habitat	None	None with mitigation	None with mitigation	None with mitigation	None with mitigation
Positive impacts to TES Habitat	None	Yes	Yes	Yes	Yes
7. Management Indicator Species					
Detrimental impacts to MIS Habitat	Decreased Early Seral	None with mitigation	None with mitigation	Decreased Early Seral	None with mitigation
% Early Seral Habitat	3%	27%	16%	3%	16%
% Late Seral Habitat	51%	27%	38%	51%	38%
8. Economics					
County Returns	0	\$336,255	\$269,932	\$171,526	\$269,932
Cost/Benefit Ratio	N/A	1.86	1.66	2.13	1.82
9. Recreation					
Impact to Recreational Settings	None	Increased dispersed access	Increased dispersed access	Increased dispersed access	Increased dispersed access
Impact to Scenic Resources	None	No lasting effect with mitigation			
10. Heritage Resources					
Negative impact to cultural resources	None	None with mitigation	None with mitigation	None with mitigation	None with mitigation
11 Public Health & Safety					
Negative impacts to public health and safety	None	None with mitigation	None with mitigation	None with mitigation	None with mitigation
12. Civil Rights					
Social groups inequitably affected	None	None	None	None	None

Alternatives Not Considered in Detail

UN-EVEN AGED MANAGEMENT

Un-even aged management was considered but eliminated from further consideration because it would not meet the need for ensuring the forest health conditions needed to sustain healthy stands. This alternative does not meet direction outlined in the Forest Plan, for the stands where management is prescribed this entry. The desired future condition calls for a steady-state forest of relatively balanced age classes interspersed with patches of older seral stages and unregulated areas. The forest would be relatively intensively managed with small pine sawtimber-poles and large hardwood sawtimber the end product objective. Uneven aged management would create a wide mix of age classes. This form of management leaves seed source and shade condition not suitable for regeneration without extensive and repeated site preparation.

When forest plan standards are applied to this project, they can be related directly to purpose and needs. As described in Chapter 1, shade conditions and seed source availability associated with any form of uneven-aged management under existing stand conditions would not establish the restoration of interior pine forests with a historic longleaf component. Since this is not a suitable silvicultural treatment to accomplish this objective, then only even-aged methods are applicable. The other aspect with respect to interior pine forests historic to the Homochitto is that they were relatively open with a grassy and low shrub understory. Fire was one of the components of the ecosystem. If regeneration and older age classes are mixed in close proximity, regeneration is damaged. Therefore the fire component would not be adequately applied and interior pine forest conditions could not be established.

When applied to pine hardwood regeneration, since the majority of the regenerated stands in the Project Area are currently loblolly pine, it would be difficult to convert stands to mixed pine/hardwood, which is a specific objective of this EA. The difficulty is based upon two factors: 1) The heavy pine seed source would tend to dominate regeneration and result in a perpetuation of pine dominations with a developed midstory; and 2) Shade conditions would favor more shade tolerant hardwoods over oak and other hard mast producers. This would likely result in failure to meet hardmast component objectives stated at various locations in Chapter 4 of the Forest Plan. This alternative was eliminated from further analysis because it would not support the purpose and need of promoting forest health, restoring longleaf pine, and establishing pine/hardwood conditions outside of the established prescribe burning areas. (see Chapter 1, Purpose and Need).

NATURAL REGENERATION OF ALL REGENERATION UNITS

An alternative that would require all regeneration units to be reforested naturally was considered but eliminated from further analysis. Regenerating a stand naturally has several benefits. The most recognizable is there is no cost of stand initiation. However, this type of regeneration is very risky in that it is dependent on a good seed source and seedbed preparation. There is a lack of a good seed source of longleaf pine, which is a Desired Future Condition and Purpose & Need. Regenerating by seedtree or shelterwood on stands where a longleaf component or pine/hardwood regeneration is the objective would also result in a very large loblolly seedsource, which, because of its aggressive initial growth characteristics, would rapidly dominate the site, suppressing both longleaf pine and desirable hardwoods. By not eliminating this seedsource to the extent possible, natural regeneration methods make failure to establish the mixed pine and pine/hardwood desired future conditions probable. Loblolly seedlings could be suppressed artificially, but the cost of controlling vegetation by applying herbicides or the use of mechanical equipment would be high, and the use of mechanical equipment is inappropriate for soil and slope conditions in these stands. For this reason, the alternative was eliminated from further analysis because it would not support the purpose and need of the project.

ECOSYSTEM RESTORATION WITHOUT SALE OF TIMBER

An alternative was considered which would allow for the restoration of the native diversity and species and improve forest health without conducting a timber sale. Restoring the native longleaf pine on sites now occupied by loblolly pine requires that the overstory trees be felled to reduce loblolly seeding and provide the sunlight necessary for longleaf seedling development. Reduction of southern pine beetle risk also involves the felling of trees. To evaluate this option we assumed a cost of \$150 per MBF to fell the trees, dispose of them with a whole-tree chipper, and spread the chips evenly through the stands. Multiplying this by the approximate 8,531 MBF in the Proposed Actions produces a cost of \$1,279,650. This cost would fall entirely upon the tax payers of the United States, as would the cost of cultural treatments needed to meet the propose of the project. These cultural treatments, such as site preparation and planting, are generally funded by the Knutson-Vandenburg Fund, which uses moneys from a timber sale to reforest the sale area. It was the intent of Congress that funds generated through the sale of timber is used for the purpose of these types of projects. Such an alternative may also be outside the intent of the law, since both the National Forest Management Act (NFMA) and the Resource Planning Act (RPA) provide utilization language for timber harvested on the National Forests. For these reasons, this alternative was considered unreasonable and was eliminated from further analysis.

PLANTING LONGLEAF ON ALL SUITABLE-SOIL SITES WITH NO CONSIDERATION TO BURN BLOCK BOUNDARIES

An alternative was considered which would plant longleaf pine on all regeneration sites with soils suitable to its growth with no consideration to burn block boundaries. Longleaf Pine grows well in both Smithdale Sandy Loam and Providence Silt Loam. Longleaf pine requires a higher degree of fire maintenance to suppress competition from taking over a site. Any lack of fire would reduce the amount of success a longleaf plantation would have unless manual and chemical release were used over time. This alternative was considered too costly and inefficient to implement. However, even though cost was considered, it was not the primary basis for eliminating this alternative from detailed development. Longleaf is planted in areas to establish the historic interior pine forest community, not to establish longleaf as a forest crop. This desired community adds to diversity within the Analysis Unit and supports a specific set of management indicator species such as the red-cockaded woodpecker. Fire is inherent to this community. Without fire, the desired future condition is not supported and the resulting community does not take full advantage of natural relationships which develop in unburned stands. The desired pine/hardwood conditions would not develop outside the burning areas.

PRESCRIBED BURNING ONLY

An alternative was considered in which the only management action would be prescribed burning. The district fuel reduction prescribed burning program is analyzed separately, and is mentioned in this project only to disclose the total management process proposed

for this Analysis Unit. Timber sale funds are used to prescribe burn only when the fire is directly associated with the sale area, such as burning to remove slash or improve wildlife habitat, or when fire is used for site preparation of a harvested area before regeneration or brown-spot control in young longleaf pine plantations. The Prescribed Burning program on the Homochitto National Forest is not dependant on timber harvests, and is expected to take place where needed (such as longleaf pine stands) whether or not timber harvests have occurred in the area or on the forest as a whole. In the absence of a timber sale, such as the selection of Alternative 1, prescribed fire in the burning block in Analysis Unit 24 would be paid for through appropriated funds. While prescribed burning is an integral part of forest management in the Homochitto ecosystem and burning is used as a tool to help mimic historic forest structure, fire alone would not provide sustainability of forest resources or reduce the risk from insects and disease. Therefore, this alternative was eliminated from further analysis because it would not support the purpose and need of promoting forest health, restoring longleaf pine, and establishing pine/hardwood conditions outside of the established prescribe burning areas. (see Chapter 1, Purpose and Need).

HARVESTING EQUIPMENT RESTRICTIONS

An alternative that required cut-to-length logging equipment to be used in timber harvesting activities was considered. The most common types of equipment used in logging operations of the Homochitto National Forest are rubber-tired feller-bunchers, rubber-tired grapple or cable skidders, and loaders. Trees are generally felled by machine or by chainsaw, then skidded as whole trees to a log landing, where the logs are delimbed and loaded onto trucks. The Forest Service imposes a limit to the amount of damage caused to the residual stand during a logging operation. It is the responsibility of the contracted logger to provide and use whatever equipment is necessary to ensure residual stand protection. A Forest Service Representative examines Sale areas frequently during all harvest operations to insure that contract provisions are being met. If unacceptable damage is occurring, the FSR has the right and responsibility to take whatever measures are necessary to prevent further damage, including halting logging operations or levying fines for damage to residual trees. In extreme cases such damage could result in a breach of contract by the harvesting company. Cut-to-length equipment can be inefficient and damaging while handling the larger logs on the Homochitto; therefore, requiring harvesters of this variety may be more potentially damaging to forest resources than current methods. Mitigations limiting log length to 40 feet in thinnings are currently in effect, and should alleviate damage to residual stems while also further decreasing potential negative soil and watershed effects. The contract provisions and oversight of harvest operations by Forest Service timber sale administrators have been effective in the past in minimizing residual stand damage on the Homochitto National Forest. There is therefore no indication that limitations on logging methods or types of equipment are necessary for protection of the residual stand. No cause/effect relationship was identified for this project by the Interdisciplinary Team. Therefore, this issue was considered to be beyond the scope of this environmental assessment.

HARVEST FEWER ACRES

Through the Interdisciplinary Team process, alternatives were considered which included harvest at levels lower than those of the “Proposed Action”. The Interdisciplinary Team considered all stands within the analysis unit with respect to forest health and other management needs. Determination of the “Proposed Action” was by Interdisciplinary Team concurrence of the optimum combination of treatment actions to meet the purpose and need. Other stands (potential harvest opportunities) were excluded from the “Proposed Action” because the density and separation of pine within the stands offset potential negative forest health impacts. Acres within the “Proposed Action” were determined to have clear, direct, and easily supportable forest health needs, as addressed in the Forest Plan and other pertinent direction. Table 1.5: *Relationship of Proposed Actions to Purpose and Need* provides clarification of the need for the proposed actions. Through the Interdisciplinary process, the “Proposed Action” and “Thinning Only” alternatives inherently represent reduced harvest. Reduced harvest was also considered in the *Ecosystem Restoration Without Sale Of Timber* alternative. To manufacture an alternative that does not meet basic forest health needs, for the sole purpose of providing another alternative, is not appropriate, because such alternatives do not meet the standards for reasonableness under NEPA. In asking for such an alternative, the respondent is requesting the Forest Service to either not meet forest health needs or to develop unreasonable alternatives.