

Decision Notice

Boswell Creek Watershed Healthy Forest Initiative Pilot Project

USDA Forest Service
Sam Houston Ranger District, Sam Houston National Forest
San Jacinto and Walker Counties, Texas

Decision and Reasons for the Decision

Background

On August 22, 2002, President Bush announced the Healthy Forest Initiative (HFI) for Wildfire Prevention and Stronger Communities. In December 2002, the Forest Service identified the Boswell Creek Watershed Healthy Forest Initiative Pilot Project (BCWP) as one of five projects in the National Forest System to implement the President's HFI direction. The proposed treatments in the BCWP further the goals of the President's initiative, which focuses on reducing the threat of catastrophic wildfires to protect communities, firefighters, wildlife, and forest health. In addition, the BCWP will reduce the potential for accelerated losses from southern pine beetle infestations to protect habitat for the endangered red-cockaded woodpecker (RCW).

This project's purposes are to reduce hazardous fuels and to reduce the southern pine beetle (SPB) hazard. Fuel treatments are needed to change fire behavior by reducing flame lengths, fire intensity, and rates of spread. These reductions provide greater effectiveness in fire management, greater safety for firefighters and the public, and protection and improvement of habitat for the endangered RCW.

Reduced SPB hazard on the pine-dominated uplands lessens the likelihood of accelerated losses when infestations do occur. Increasing the distance between trees decreases the probability of spread of SPB to neighboring trees. Reducing SPB hazard and maintaining pine-dominated forest communities on the uplands are important in the BCWP because the area contains important recovery habitat for the RCW on the Sam Houston National Forest.

The Boswell Creek Watershed Healthy Forest Initiative Project Environmental Assessment (EA, September 2003) describes the effects of the proposed action and alternatives. The Boswell Creek Watershed Healthy Forest Initiative Project Finding of No Significant Impact (FONSI, December 2003) documents my conclusions and rationale as to why this project does not require the preparation of an environmental impact statement. I have considered public comment on these two documents and have documented my responses in Appendix 3, Boswell Creek Watershed Healthy Forests Initiative Pilot Project 30-day Notice and Comment Period Responses, which is in the project file and posted online at http://www.southernregion.fs.fed.us/texas/healthy_for_ini/index.shtml.

Decision

Based upon my review of the proposal, EA, FONSI, public comments, and the project record, I have decided to proceed with the Boswell Creek Watershed Healthy Forest Initiative Project, and its associated design criteria, which provides for the following activities:

Prescribed Burning - Dormant season and growing season burning to reduce fuels on about 7,420 acres of upland pine forest in Compartments 69, 70, 72, 73, 74, 75, 76, 77, and 83.

Prescribed fire will be allowed to back into the approximately 940 acres of moister, hardwood-dominated areas in MA-2 and burn to the extent that the fuels allow. Fire will not be excluded from the approximately 290 acres of streamside management zones (MA-4) that are embedded within the larger matrix of MA-2.

- a. In areas where thinning is also proposed, an initial prescribed burn will be conducted prior to thinning operations.
- b. The scheduling priority for prescribed burning will be for areas adjacent to private lands first.
- c. Existing firelines will be used to the extent practicable. Where feasible, roads and streams will be used as control lines. New fireline construction will be the minimum needed to protect adjacent unburned areas and private land. An estimated 9.9 miles of new fireline will be needed.

Thinning on about 3,360 acres of young pine stands and on about 1,440 acres of older, mature pine stands in Compartments 69, 70, 72, 73, 74, 75, 76, 77, and 83. Thinning will be accomplished using timber sale contracting procedures where practical.

- a. Young pine stands will be thinned to leave a residual pine basal area of 60 square feet per acre (about 135 to 195 trees per acre; the number of trees per acre depends on the average diameter of the leave trees).
- b. Thinning in young pine stands will be prioritized based on the existing basal area. Where practical, stands with the highest basal area would be given highest priority for initial treatments.
- c. Mature pine stands will be thinned to a residual pine basal area of about 70 square feet per acre. The desired spacing between the residual pine trees is 20 to 25 feet. Marking will follow the Plan's guidelines for thinning in red-cockaded woodpecker habitat, leaving the largest, oldest trees available while still meeting the average spacing guidelines. These marking guidelines are also responsive to public comments about maintaining large size trees. Shortleaf pine will be favored as a residual tree over loblolly pine where possible.

Design Criteria Associated with the Proposed Action

1. To limit the potential for damage to residual trees, a seasonal restriction on thinning in the young pine plantations will be established. Operations will be restricted during spring sap flow when trees are especially susceptible to bark damage if scraped by equipment or other trees. Sale contracts will include a provision to delay the beginning of thinning operations until July 1 unless approved by the Forest Service.
2. To protect water quality, ephemeral streams in MA-2 requiring protection according to Plan standard FW-218 have been identified in the Hydrology and Soils Specialist Report. These streams will have a minimum 33-foot equipment exclusion zone delineated on the ground. No equipment will be allowed in the zone unless approved by the Forest Service. If other ephemeral streams that require protection are discovered during on-the-ground implementation of project activities, they will be protected according to FW-218.
3. To reduce sediment production from the transportation system and protect water quality, the following road management actions will be implemented:

- a. Road reshaping, placing additional surfacing material, reconstructing wing ditches, constructing additional wing ditches, constructing additional wing ditches, and replacing culverts on main Forest Service system roads 200, 206, 206A, 207, 207A, 213, 223, and 246 will be done.
 - b. About 6.4 miles of unclassified roads in the watershed will be decommissioned by waterbarring, seeding, and fertilizing to establish ground cover and blocked to prevent unauthorized use.
 - c. Temporary roads established to access thinning areas will be waterbarred, seeded with native plant species, and fertilized to establish ground cover and blocked to prevent unauthorized use.
4. To protect water quality and maintain the function of MA-4, no thinning or mechanical fireline construction will occur in the primary zone of perennial or intermittent streams.
 5. Monitoring of fish populations in Boswell and Briar Creeks will be conducted prior to and during project implementation.
 6. The following action will mitigate existing visual effects along Four Notch Road identified by the Forest Landscape Architect: tree marking along the straight utility corridor adjacent to the Four Notch Road will be coordinated with the Forest Landscape Architect
 7. The following actions will mitigate public concerns for visual effects along the Lone Star Hiking Trail (LSHT) raised by the public during scoping:
 - a. Within 50 feet of the LSHT, slash will be removed. Slash within 50 to 100 feet of the LSHT will be lopped to lie within 2 feet of the ground;
 - b. Where thinning will be done within 50 feet of the LSHT, designate oaks, hickory, magnolias and other flowering trees 5 inches and greater in diameter as reserve trees.
 8. To protect public safety during project activities, the Lone Star Hiking Trail will be closed to hikers when thinning operations are active or during prescribed burning.

My decision to implement the Proposed Action is based on its effectiveness in reducing hazardous fuels, reducing the southern pine beetle (SPB) hazard, and producing forest communities that meet the Plan's desired conditions for national forest land in the Boswell Creek Watershed. Fuel reduction through prescribed burning will decrease fire intensity, provide a safer environment for the public and firefighters, increase protection for adjacent private land and improvements, and protect important wildlife habitat. Thinning will reduce the existing high SPB hazard, reducing the potential for future accelerated losses and also protecting important habitat for the recovery of the RCW.

I considered the need to take action and the issues identified during scoping in making my decision. I weighed the effects of thinning and burning on the vegetation, soil and water, air, wildlife, and recreational use of the area, the key issues associated with the project, against taking no action. Fuel loads and SPB hazard are already high and will only increase in the future. Taking no action would only make the potential results of a wildland fire or SPB epidemic increasingly catastrophic. Without thinning and burning, the key environmental components are more likely to be adversely affected by wildland fires or SPB than they would be otherwise. I am not willing to accept the risks associated with no action. The Proposed

Action would have minor effects on the environmental components, provide the benefits of reducing fuels and SPB hazard, and reduce the risks associated with future wildland fires or SPB activity.

Other Alternatives Considered

In addition to the selected alternative, I considered one other alternative in detail, the No Action Alternative. The EA and specialist reports in the project file describe the potential impacts of the alternative. Under the No Action Alternative, there would be no prescribed burning or thinning in the BCWP.

In addition to the two alternatives considered in detail, several alternatives identified during public scoping were considered. Two responses proposed several alternative actions to the proposed actions that they believed should be developed and considered in the EA. The interdisciplinary team and I discussed these proposals and determined that these actions did not warrant development of additional alternatives with detailed discussion in the EA. These alternative actions and the rationale for their elimination are discussed below:

1. Provide educational, technical, and grant assistance to adjacent private property owners and in-holders in the BCW to treat their property and structures so that they are fire-proofed.

Response – Educational and technical assistance is already available to adjacent property owners through the Firewise program (<http://www.firewise.org/>) implemented in The National Fire Plan as well as through programs coordinated by the Texas Forest Service (<http://www.tamu.edu/ticc/firedepartment.htm>). This proposed action focuses on national forest lands adjacent to private property, which furthers the identified need to protect adjacent private ownership in addition to protecting national forest resources.

2. Manage for a denser forest canopy to increase fuel moisture and reduce wind movement, resulting in fire hazard reduction, and

3. Do not thin stands because it will increase fire hazard due to increased temperatures, lower humidity, and more wind movement in the thinned areas.

4. Increase the percentages of hardwoods in both the young and mature pine stands to provide more shading and cooling, increase the amount of fire-resistant fuel, and reduce SPB hazard.

Response (2, 3, and 4) – An alternative that includes these actions would not address the immediate needs for action, to reduce fuels and resulting fire behavior and to reduce SPB hazard. The hypothesis that denser forest canopies would reduce fire hazard is not supported by current research on the effects of fuels treatment on fire behavior. Omi and Martinson investigated the severity of four recent wildfires that burned into existing fuel treatment areas. They included one example from the Southern U.S., a slash pine forest in Mississippi. Their results support thinning as a tool to reduce fire hazard (Analysis of Other Alternatives, project file). Denser forest canopies created by increasing the hardwood percentages and not thinning would result in SPB mortality, creating an open dead canopy with extremely high dead fuel load, increasing fuel hazards. Total basal area is a factor often used in SPB hazard-rating systems developed for loblolly or shortleaf pine types, and high stand density is directly related to increased incidence of new infestations. In addition, once infestations are initiated, total basal area is positively correlated with spot expansion and trees killed per day. Increasing hardwood composition without a concurrent reduction in pine basal area reduction would increase SPB hazard. Increasing the number of hardwoods in pine-dominated stands would not decrease the amount of hazardous fuel that exists and that would continue to accumulate nor would it change the fuel model from what currently exists.

Actions 2, 3 and 4 also would affect the structure and composition of MA-2 in ways inconsistent with the Plan's desired conditions. The actions would not meet the desired pine-dominated open forest conditions and Forest Plan MA-2 goals for RCW habitat (The Plan, pages 96-102). They appear to be similar to MA-4 goals applied to the entire Boswell Creek watershed area, consideration of which is beyond the scope of this proposal.

Actions 2, 3, and 4 are consistent with MA-4 direction (The Plan, pages 145-151). The Proposed Action is also consistent with actions 2, 3, and 4. While the project vicinity includes MA-4, the Proposed Actions do not include thinning in this MA and only minimal fire incursions from adjacent upland MA-2 areas. The Proposed Actions, therefore, are consistent with both the actions 2, 3, and 4 and with The Plan's direction.

5. Protect older and larger trees. Large trees are more fire resistant and provide more shade and thus reduce fire risk.

Response – Generally, older and larger trees would be low priority for removal because they are more resistant to fire and usually provide habitat components desirable for the endangered red-cockaded woodpecker. Some larger trees may need to be removed to provide for spacing requirements to reduce SPB hazard. Incorporating measures to protect older and larger trees does not, however, require the preparation of additional alternatives. Marking guidelines have been incorporated in the proposed action to provide for protection of older and larger trees in thinning areas.

6. An alternative that addresses restoration of the original Loblolly Pine, Shortleaf Pine, and Mixed Hardwood Ecosystems using the Houston Sierra Club principles for restoration of SHNF. The principles could be developed into an alternative to help restore the BCW to its former biological diversity and health.

Response – The Houston Sierra Club lists thirteen principles for their vision of restoring the SHNF (Project file, scoping responses), but did not include an alternative that incorporates these principles. The principles appear to provide primarily for natural events to shape the composition and structure of the forest. Their principles describe fires and insect attack as natural disturbance processes that should be allowed to determine the management and ultimate composition of the forest. Therefore, the No Action Alternative is consistent with the HSC principles.

The only action that could be undertaken under the HSC principles would be prescribed fire, but only if it is implemented after “conducting research on the natural fire regime, frequency, seasonality, rate, evenness, start locations, duration, and intensity so that you can create the vegetation mosaic or patchiness on the landscape that used to exist before Anglo-Saxon settlers.” Research on historical fire occurrence and characteristics is hampered by the lack of suitable sites from which to gather data. Unlike western forests that, in many places, contain evidence of centuries of fire occurrence, the forests in the South have changed considerably due to past land uses and other human influences. In his research, Cecil Frost postulates that fire was once widespread and frequent across most of the southern United States, including east Texas. Fire occurred at the landscape scale, often covering many thousands of acres due to the lack of barriers to its spread. Frost estimated fire frequency in the area that includes the Sam Houston National Forest at 1-3 years. Even if we could, with certainty, fully describe the “natural” fire regimes in east Texas, it is very unlikely that prescribed fire could be implemented completely consistently with all the factors that the Sierra Club proposes. The primary consideration is the development of the forest's desired conditions as described in the Plan.

The Plan's direction for the application of prescribed fire was designed to move the structure and composition of the forest nearer these desired conditions. It should be noted that the 2- to 5-year fire cycle for MA-2 in the Plan (The Plan, page 119) as proposed in this project is consistent with Frost's approximation of fire frequency in east Texas.

7. Use group selection (uneven-age management) in loblolly pine plantations to reduce pine basal area and promote the development of mast-producing hardwoods.

Response – Group selection is an uneven-age management method of regeneration. The Proposed Action addresses hazardous fuels reduction, not regeneration. Extensive regeneration was done in the late 1980s as the result of large southern pine beetle infestations. Regeneration is outside the scope of the proposal.

The proponent of this alternative action also promotes group selection to shift the vegetation in the young loblolly pine stands toward a more mixed pine-hardwood composition. The use of group selection as proposed would result in vegetation inconsistent with the Plan's desired future conditions for these upland pine forests.

Public Involvement

As described in the background, the need for this action was identified in December 2002. The proposal was listed in the Schedule of Proposed Actions beginning in the 2nd Quarter of Fiscal Year 2003 report. The proposal was provided to the public and other agencies for comment during scoping from May 9 to June 11, 2003. The Forest Service received forty-four responses during scoping. In addition, as part of the public involvement process, the agency held an open house at the Sam Houston Ranger District office on May 24, 2003. Two local residents attended the open house.

Using the comments from the public and other agencies, the Interdisciplinary Team (ID) identified and analyzed the issues regarding the effects of the Proposed Action. The main issues associated with the project were related to effects on forest vegetation composition and structure; effects on erosion potential and water quality; effects on Threatened, Endangered and Sensitive Species; recreation effects on the Lone Star Hiking Trail; wildlife species and habitat effects; wildfire hazard/forest protection; air quality/smoke management; SPB hazard; the effects on old-growth forests; the effects of roads on fire starts and suppression effectiveness; fire regime; and compliance with the National Environmental Policy Act (see Scoping Response Analysis in the project file). As District Ranger, I reviewed the issues and determined that all could be addressed with the implementation of the Plan's standards and the design criteria developed by the ID Team. No additional alternatives to be considered in detail were required.

Findings Required by Other Laws and Regulations

This decision to conduct prescribed burning and thinning in the BCWP is consistent with the intent of the Forest Plan's long-term goals and objectives listed on pages 41 to 48. The project activities are consistent with the Plan's Forest-wide Standards and Guidelines (FLRMP, pages 53 to 84). The project was designed in conformance with land and resource management plan standards and incorporates appropriate land and resource management plan guidelines for prescribed burning and thinning in Management Area 2 (FLRMP, pages 103 to 133). The use of prescribed fire in MA-4 complies with the Plan's direction (FLRMP, pages 153 to 161).

