

# **ALTERNATIVES**

## **INTRODUCTION**

This section describes the action alternatives that meet the purpose of and need for action. The No Action alternative was also evaluated to provide a baseline. The action alternatives were developed in response to identified issues, resulting in different approaches to achieving the purpose of the project. The alternatives present a full range of options from which the decision maker may choose to implement.

## **ALTERNATIVE 1: NO ACTION**

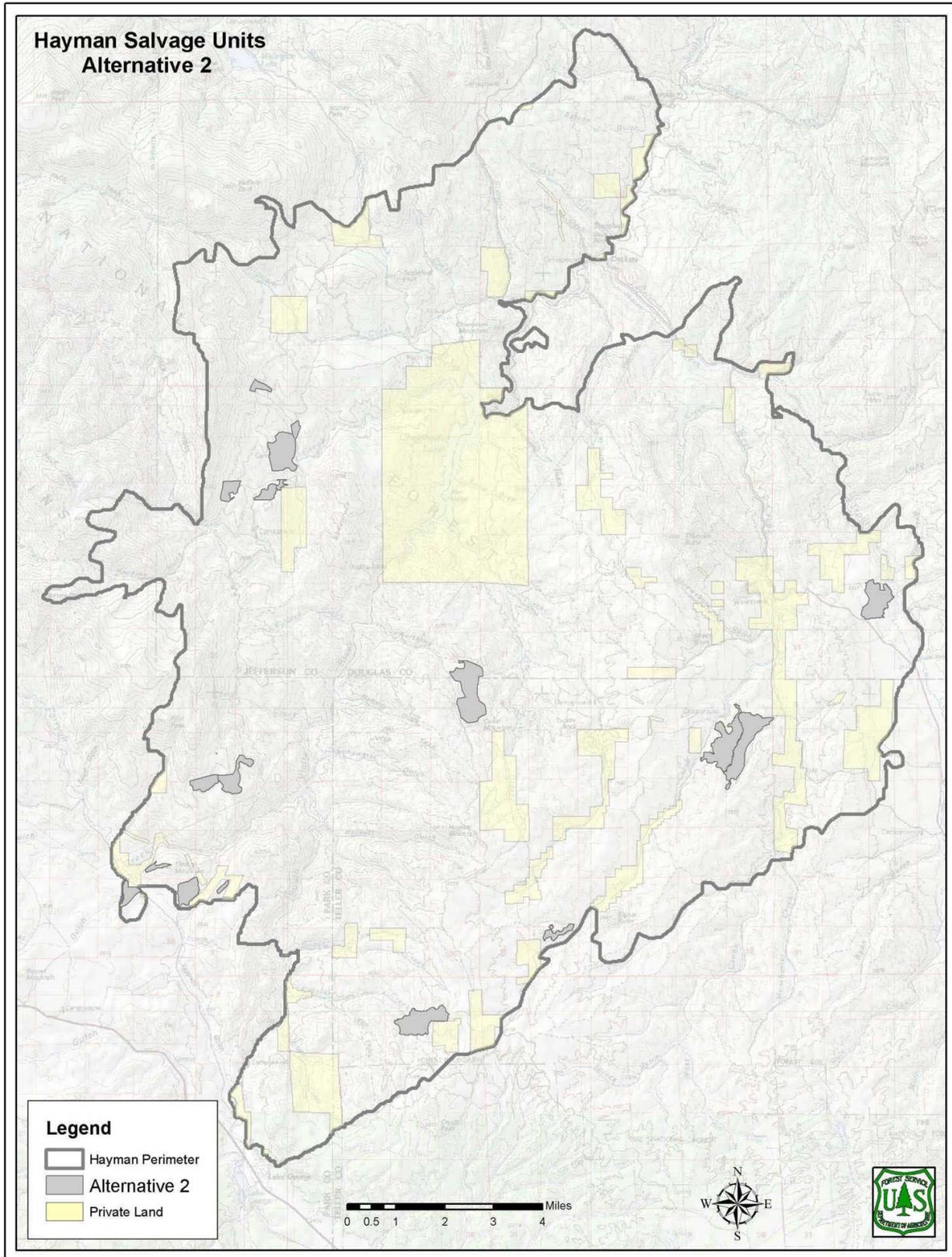
Alternative 1 is the No Action alternative. Under Alternative 1, none of the proposed actions of salvage harvesting or temporary road construction would be implemented in the Project Area. The management objective would be to allow dead and dying timber to deteriorate through natural processes and to continue other planned management activities for the Hayman Fire area. No mitigation or monitoring activities are included with this alternative.

## **ALTERNATIVE 2 – HARVEST IN AREAS WITHOUT BAER TREATMENTS**

Alternative 2 was developed in response to key issues of soil erosion and water quality in areas that received BAER treatments designed to mitigate fire effects, including increased erosion, runoff, and sediment delivery to streams. Areas proposed for harvest in alternative 2 were selected based on avoiding BAER treatment areas and sensitive areas listed in the “Mitigation Measures” section below. All proposed and treated BAER areas are excluded in this alternative except for 71 acres (Figure 2). The other mitigation associated with this alternative is also listed in the “Mitigation Measures” section.

Salvage would be accomplished with conventional logging practices and standard ground-based equipment, including fallers and skidders. Standing fire-killed trees would be harvested from about 2,500 acres of high- to moderate-burn severity areas. The salvage units will generally be in areas with no BAER treatments and with slopes less than 35 percent. Trees that are at least 10 inches in diameter would be harvested for sawlogs. Trees 8” to 9.9” to would be optional for removal. Slash would be mostly left onsite to aid in erosion control. This salvage would yield an estimated 6 million board feet of conifer saw logs. It is expected that timber harvest would begin during early summer 2003 and be completed in 2004.

Salvage units would be delineated using a leave tree marking method. Low severity burn areas, unburned areas, and unburned trees within the salvage units would be leave tree marked as well. Snags that meet Forest Plan Standard definitions would be left as individuals or clumps at an average density of 2.2 snags per acre. Skid trails would be designated by the sale administrator in consultation with the forest soil scientist or hydrologist.



**Figure 2 – Alternative 2 - Harvest In Areas Without BAER Treatments**

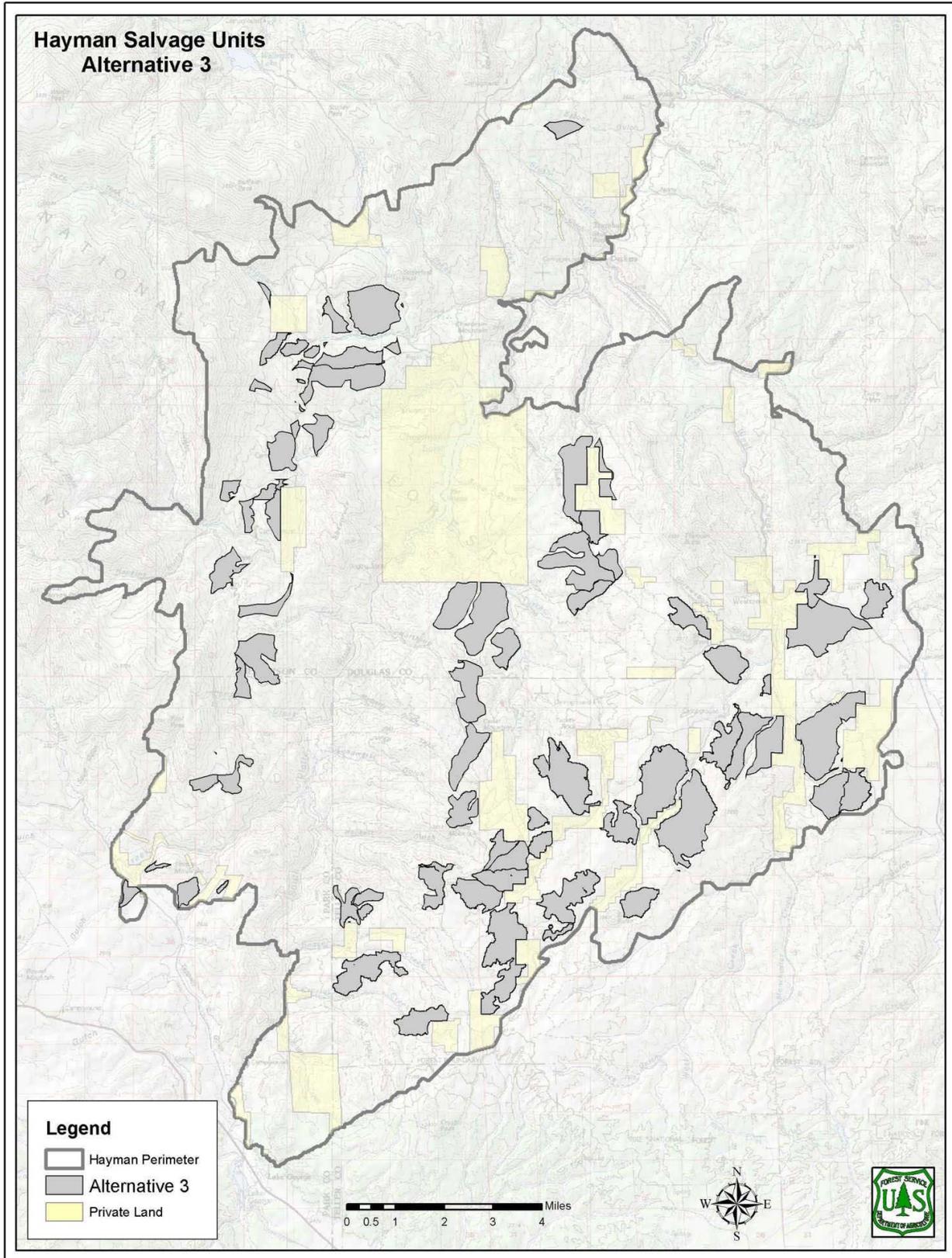


Figure 3 – Alternative 3 – Proposed Acton

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Existing forest roads would be used wherever possible to access harvest units and to haul logs. However, up to one mile of temporary road would be constructed. No new permanent roads would be constructed. Temporary roads would generally be constructed on slopes less than 35%, but short sections (less than ¼ mile) may be on slopes up to 50%. The temporary roads would be recontoured and restored to as near as natural conditions as possible after salvage activities are completed. Affected Forest System road conditions would be assessed and maintained as needed.

### ALTERNATIVE 3 – PROPOSED ACTION

Alternative 3 is the Forest Service Proposed Action (Figure 3). Alternative 3 is the same as Alternative 2 except that fire-killed trees would also be salvaged from 11,800 acres of high/moderate severity burned areas that received BAER treatments plus other untreated areas. Trees would be salvaged from a total of 17,500 acres.

Like Alternative 2, salvage would be accomplished with conventional logging practices and standard ground-based equipment, including fallers and skidders. Standing fire-killed trees would be harvested from about 17,500 acres of high- to moderate-burn severity areas. The salvage units will generally be in areas slopes less than 35 percent. Salvage would occur in selected BAER treatment areas (Table 1). Trees at least 10 inches in diameter would be harvested for sawlogs. Trees 8” to 9.9” to would be optional for removal. Slash would be mostly left onsite to aid in erosion control. This salvage would yield an estimated 44 million board feet of conifer saw logs. It is expected that timber harvest would begin during early summer 2003 and be completed in 2004.

**TABLE 1: HARVEST ACRES  
BY BAER TREATMENT**

<b>BAER treatment</b>	<b>Acres</b>
Scarify hand seed	5,073
Air seed only	2,564
Scarify air seed	2,222
Air Straw mulch	1,941
<b>Total BAER</b>	<b>11,800</b>
No BAER treatment	5,747
<b>Total Acres</b>	<b>17,500</b>

Salvage units would be delineated using a leave tree marking method. Low severity burn areas, unburned areas, and unburned trees within the salvage units would be leave tree marked as well. Snags that meet Forest Plan Standard definitions would be left as individuals or clumps at an average density of 2.2 snags per acre. Skid trails would be designated by the sale administrator in consultation with the forest soil scientist or hydrologist.

Existing forest roads would be used wherever possible to access harvest units and to haul logs. However, up to nine miles of temporary road would be constructed. No new permanent roads would be constructed. Temporary roads would generally be constructed on slopes less than 35%, but short sections (less than ¼ mile) may be on slopes up to 50%. The temporary roads would be recontoured and restored to as near as natural conditions as possible after salvage activities are completed. Affected Forest System road conditions would be assessed and maintained as needed.

## **ALTERNATIVES CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS**

As a result of scoping comments, conservation and local economy alternative and the original proposed 50,000 acres alternative were considered but eliminated from detailed analysis for the reasons stated below.

### **Alternative A: Conservation and Local Economy Alternative**

Scoping comments suggested a Conservation and Local Economy alternative be considered. This alternative would involve fuel reduction assessments and treatments on private lands, road restoration and removal, access to forest products (fuelwood, specialty products), restoration treatments as warranted, noxious weed management, public education and collection of scientific data. Intent of this alternative is also to promote the local job market.

Several aspects of this proposal are being considered as part of the overall fire restoration, specifically road restoration and removal, reforestation, watershed restoration treatments, noxious weed management and collection of scientific data. The Forest Service is currently working with other agencies and non-profit organizations to assist local private landowners affected by the fire with restoration efforts and fire education. As in past fires, residents will be able to collect forest products at a later date. Timber salvage may result in jobs and income for the communities affected by the fire. Because the suggested actions are currently being conducted or considered outside of this salvage-focused EA, this alternative was not carried forward for detailed analysis.

### **Alternative B: Harvest 50,000 acres**

Scoping commenters also suggested that the Forest Service consider salvaging dead or dying timber on at least 50,000 acres. This alternative was eliminated from detailed consideration because it is not technically feasible to recover this many acres in a timely fashion. In order to be commercially viable, the dead or dying timber must be removed as quickly as possible from the area. It is anticipated that any timber left after 2004 will not be commercially viable. In addition, harvesting the fire-killed timber available from 50,000 acres would be impractical. Road access and construction constraints would make it unfeasible to recover timber values from much of the Hayman burned area. Local and regional timber harvesters and companies likely do not have the capability to accomplish such a task. For the above reasons, the harvesting of 50,000 acres alternative was eliminated from detailed analysis.

## **MITIGATION MEASURES**

This section describes proposed mitigation measures that would be associated with the implementation of either of the action alternatives. These were identified by the Interdisciplinary Team as a range of relevant, feasible mitigation measures that could improve the project from

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which the decision maker may choose to implement. Mitigation measures are based on federal, state, and local laws and regulations, current technology, and best management practices. Enforcement of mitigation measures would be within the jurisdiction of the Forest Service issuing permits and approvals for timber salvage activities.

One type of mitigation is to avoid impacts altogether (40 CFR 1508.20). Thus, the harvest areas in both action alternatives were designed to avoid sensitive areas (see Figure 2 and 3). Proposed salvage would not occur in the following areas: 1) Slopes greater than 35 percent; 2) Manitou Experimental Forest; 3) South Platte River segments and ¼ mile buffer being considered for Wild and Scenic River designation 4) Lost Creek Wilderness; 5) Inventoried Roadless Areas; 6) aquatic and riparian zones and 100 foot buffer; 7) Pawnee Montane skipper, Preble's meadow jumping mouse, and bald eagle proposed and known habitats; 8) known heritage resource sites; 9) selected research plots; and 10) hydromulched and Colorado Cares BAER units. Under alternative 2, all BAER units (except 71 acres) would also be avoided (see Figure 2).

The following mitigation measures are for both action alternatives:

### **Natural Resources**

- Best management practices (BMPs) for water quality protection would be applied to all ground-disturbing activities. All roads would be maintained according to Regional guidance.
- The effectiveness of BMPs and other measures would be monitored to ensure compliance with the Forest Plan and Clean Water Act. The monitoring program would measure the success of BMPs and help improve future mitigation methods. The monitoring program would also identify unforeseen problems that require remedial measures or salvage restrictions. This monitoring would involve field measurements and inspections.
- Temporary logging roads and landing decks would be scarified and seeded after work is completed. Skid trails steeper than 15% would be water-barred and sediment catchments would be placed 10-20' below water bar outlets or 50'-100' below culvert outlets.
- All roads would have the appropriate drainage structure frequency in accordance with R2 supplemental guidance for FSH 2509.25
- All slash will be scattered with a maximum depth of 18 inches.
- Restrict salvage activities to slopes of 25% or less, with the exception of sections of 300 feet or less on slopes up to 35%, where necessary.
- Rare plant survey would be conducted where needed. If populations of any Regional Forester Sensitive Species plants are found during implementation of the proposed project, skid trails, temporary roads, and log landings would be relocated away from that site.
- Conduct pre-treatment noxious weed surveys and apply appropriate control measures where noxious weeds are found.

## **Heritage Resources**

- Provide salvage logging project managers and contract inspectors with maps and GPS readings indicating locations and extent of all significant or potentially significant cultural properties. Provide direction to avoid these locations and their near vicinities. Provide barriers and/or wrapping for vulnerable cultural properties. Inspect these locations during the progress of the logging activities to insure significant cultural sites are protected.
- Before logging, inspect significant and potentially significant cultural sites to identify erosion vulnerability. To forestall erosion at vulnerable sites, increase protected area and barrier if necessary. Install straw bales, wattling or other suitable material if water channeling is a possible threat. Monitor erosion during the logging operations and post-logging cleanup.

## **Socioeconomic Resources**

- Ensure adequate management controls and law enforcement are in place to minimize off road use where necessary. Add physical barriers (e.g., boulder and earthen barriers, fencing, and slash) along roads if needed to discourage off-road vehicle use. Obliterate and recontour as necessary, temporary roads immediately after salvage activity in each unit to discourage off-road vehicle use.
- Restrict hauling operations on weekends, holidays, and as needed to reduce user conflicts.
- Visual sensitive design and location measures would be applied to help maintain the integrity of natural views of the Hayman Burn Area as seen from the main roads and viewing areas. These measures may include removing slash, scarifying and seeding disturbed areas, and mimicking the natural shape of openings (i.e., avoid rectilinear salvage unit shapes). Temporary roads would also be aligned to minimize visual impacts.

## **Specific Mitigation for BAER Units under Alternative 3**

- Increase buffer to perennial streams to 200 feet. No harvest within 125 feet and no equipment within 200 feet of streams.
- Replace BAER treatments in-kind where ground cover has been disturbed. Treatments must be of equal effectiveness or greater than the original BAER treatments.
- Skid trails in scarified and seeded units would again be scarified and seeded after salvage operation is complete in such units.

**TABLE 2: COMPARISON OF ALTERNATIVE EFFECTS**

<b>Issue</b>	<b>Alternative 1 – No Action</b>	<b>Alternative 2 – Harvest in Areas without BAER Treatments</b>	<b>Alternative 3 – Proposed Action</b>
<b>Soil and Water</b>	No change in soil loss or water quality.	Adding slash to ground cover on fire-damaged soils areas without BAER treated would have the greatest positive effect on erosion rates. Ground disturbing activities on fire-damaged soils could cause minor increases in erosion and runoff pollution. BMPs would minimize these impacts.	Same as alternative 2 for areas without BAER treatments. Ground disturbing activities in BAER treated areas would reduce BAER effectiveness by about 15% for 1 or 2 years. In addition to BMPs, disturbed BAER treatments would be replaced in-kind to minimize impacts.
<b>Vegetation</b>	No change in forest structure or live vegetation.	No direct effects on live trees. Disturb up to 375 acres of recovering ground vegetation on severely or moderately burnt areas. This would delay vegetation recovery on these acres for 1 or 2 years.	Same as alternative 2, except an additional 2,250 acres of severely burnt areas with BAER treatments and recovering ground vegetation would be disturbed, delaying recovery by 1 or 2 years.
<b>Wildlife</b>	No effect.	4% of the burned snags in the Project Area would be removed having a slight effect on snag-dependent species. Ground disturbing activities would slow recovery of vegetative habitat. Salvage operations and truck traffic may temporarily displace or disturb wildlife. May affect some species, however the effects would not or likely would not be adverse.	Up to 28% of the Hayman fire snags would be removed having a slight effect on snag-dependent species. Salvage operations would have the same type of effects as alternative 2, but would affect up to seven times more area. May affect some species, however the effects would not or likely would not be adverse.
<b>Fisheries</b>	No effect.	Negligible effect on fish habitat and populations.	Like Alternative 2, effects on fisheries would be negligible. However, a larger upland area would be disturbed potentially affecting more stream habitat.
<b>Heritage Resources</b>	No effect.	Erosion caused by ground-disturbing activities could indirectly affect heritage resources.	Same as alternative 2, but has a greater potential for effects because up to seven times more area would be affected.
<b>Local and Regional Economy</b>	No harvest products or revenues would be produced.	The local/regional economy would benefit from timber harvest-related employment and expenditures for one year. Alternative 2 revenues would be an estimated \$68,850 and Present Net Value an estimated -\$119,544. Other beneficial effects include indirect cost savings up to \$985,000 from increased reforestation and fire-suppression efficiencies. Visitor avoidance of salvage areas may cause minor adverse effects on recreation-related businesses.	The local/regional economy would benefit from timber harvest-related employment and expenditures for one year. Alternative 3 would have the greatest economic benefit, producing \$473,850 in revenues. Present Net Value would be -\$822,744. Other beneficial effects include indirect cost savings up to \$6,914,700 from increased reforestation and fire-suppression efficiencies
<b>Recreation</b>	No effect.	Salvage operations and increased log truck traffic would cause minor temporary effects on recreation.	Similar effects as Alternative 2, except for greater magnitude of effects due to larger salvage area and more log truck traffic.
<b>Visual Resources</b>	No effect.	Salvage activities on 2,500 acres and resulting changes in forest landscape structure would have minor short-term adverse effects on natural views within the Hayman Fire area.	Salvage activities on 17,500 acres and resulting changes in forest landscape structure would have minor short-term adverse effects on natural views within the Hayman Fire area.
<b>Transportation</b>	No effect.	Up to 1,800 log trucks would haul logs over forest and non-forest roads. Heavy truck traffic could damage roads requiring additional maintenance. Likelihood of traffic conflicts would increase.	Up to 12,500 log trucks would haul logs over forest and non-forest roads. Heavy truck traffic could damage roads requiring additional maintenance. Likelihood of traffic conflicts would increase.
<b>Fuels</b>	Ground fuel loads increase as fire-killed trees fall and accumulate fuels.	Short-term increase in fuel loads on 2,500 acres. However, long-term fuel loads and associated hazards would be much less than unharvested burn areas.	Short-term increase in fuel loads on 17,500 acres. However, long-term fuel loads and associated hazards would be much less than unharvested burn areas.