

# Summary of the Flagtail Fire Recovery Project Final Environmental Impact Statement

## CHAPTER 1

### Background

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In July 2002, the Flagtail Fire burned approximately 8,200 acres; 7,120 acres are located on the Malheur National Forest and the remaining 1,080 acres are on private land (see Figures 1 and 2, Map Section). The Flagtail Fire Recovery Project area consists of these 7,120 acres, of which 6,180 acres are forested, located on the Blue Mountain Ranger District within the Upper Silvies Watershed, approximately 25 miles southwest of John Day, Oregon. Figure 1 (Map Section) displays the project area in relation to the state of Oregon and the Malheur National Forest. The fire burned in four subwatersheds on National Forest land: Jack Creek, Snow Creek, Hog Creek, and Keller Creek (Figure 3, Map Section). A small part of the West Bear Valley subwatershed was also burned, but it is outside the Malheur National Forest boundary.

### Purpose of and Need for Action

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The purposes of and needs for action in the Flagtail Fire Recovery Project area (Figure 1, Map Section) are to:

- Reduce future fuel loadings to be responsive to the National Fire Plan,
- Capture economic value of the fire-killed and damaged trees expected to die,
- Provide safe and adequate road access in the fire area,
- Reduce the effects of roads on wildlife and water quality,
- Re-establish upland vegetation, and
- Designate suitable Dedicated and Replacement Old Growth areas to replace those degraded by the fire.

This action is needed in order to comply with the goals and objectives outlined in the 1990 Malheur National Forest Land and Resource Management Plan (Forest Plan), which guides natural resource management activities and establishes management standards for lands administered by the Malheur National Forest.

The needs for the proposed action are derived from the differences between current conditions and desired conditions. Desired conditions are based on Forest Plan direction and management objectives, and on recommendations from the Upper Silvies Watershed Analysis (USDA Forest Service 2001). The proposed action is designed to move resource conditions closer to the desired conditions and address the management direction provided by the Malheur Forest Plan as amended.

The two broad categories of purpose for the project are: the acceleration of ecosystem restoration, and timely commodity extraction. Each of the existing and desired conditions relevant to providing improved conditions and accomplishing commodity extraction for jobs and income can be linked to the purpose for the proposed action.

The purpose and need for an action is driven by the difference between the existing and desired condition. The proposed action is developed early in the planning process to address the differences between the existing and desired conditions. For example, the purpose for fuels reduction addressed by the proposed action is linked to the need to establish fuel conditions that will allow for future management actions that move the landscape toward historical conditions. Unit 34 (in Figure 24, Map Section) of the proposed action provides a site-specific look at a burned area that is a priority for reducing the current and predicted fuel levels. Unit 34 historically had a fuel load of around 7 tons/acre. In 10-15 years, unit 34 would have a predicted fuel load exceeding 30-50 tons/acre on the ground (Figure 17, Map Section). Fuel reduction in this unit will provide for the opportunity to implement efficient and effective future management actions consistent with long-term ecosystem recovery, which is responsive to the National Fire Plan. The proposed action utilizes the opportunity to salvage harvest the fire-killed trees or trees expected to die as a result of fire injury. Salvage from this unit is directly linked to the desire to provide jobs and income, as well as the desire to reduce future fuel loading.

## **Proposed Action**

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The proposed action is an alternative developed early in the NEPA planning process to accomplish stated purposes, needs, and goals based on the best information available at the time. It is the first alternative offered and is used to identify issues and develop other alternatives for further study. Alternative 2, described briefly below and in Chapters 1 and 2, is the proposed action that was mailed to interested parties during public scoping.

### **Purpose and Design:**

This alternative was designed to maximize recovery of the economic value of fire killed and damaged trees and to reduce future fuel loadings. The economic return would be further enhanced by providing local jobs. Reducing fuels is responsive to the hazardous fuel reduction element of the National Fire Plan. By intensively treating the burned acres, future fuel loads will be within their historical range which will help reduce the impacts of future wildfires on the environment and restore health to fire-adapted ecosystems.

This alternative meets the other identified needs, including providing safe and adequate access, reducing the effects of roads on wildlife habitat and water quality, re-establishing upland vegetation, and designating suitable Dedicated and Replacement Old Growth areas to replace those degraded by the fire.

### **Description of Specific Features:**

#### **Forest Vegetation/Structure**

In Alternative 2, approximately 4,340 acres of timber burned in 98 units (including 10 helicopter landings) would be harvested to reduce future fuel loadings and capture the

economic value of fire-killed and damaged trees (Table 2-1, Figure 24, Map Section and Appendix A). Total net volume of commercial timber harvested is expected to be about 20 million board feet (MMBF). In 4 units (units 124, 134, 148, and 152 totaling 140 acres) small diameter trees (3-9 inches DBH) in addition to commercial size trees, would be removed commercially as posts and poles during harvest. Only fire-killed trees or trees expected to die as a result of fire injury would be removed, or live trees that would jeopardize the safety of the harvest operation, would be harvested. Incidental live trees may be removed during road building and landing construction.

Harvest would be accomplished with helicopter yarding on 870 acres, skyline yarding on 800 acres, and tractor yarding on 2,670 acres; helicopter, skyline, and tractor unit landings are included in these acreages. The purchaser would subsoil about 40 acres of skid trails; landings (approximately 180 acres) would be subsoiled by the purchaser and planted with trees. Fourteen helicopter landings would be constructed and then rehabilitated after use (Figure 24, Map Section and Management Requirements, Constraints, and Mitigation Measures). Four of these helicopter landings, totaling 7 acres, are outside of harvest units. Four landings (H01, H07, H08, and H09) would be used as fueling sites as well as landings for timber. One landing site, H13, would only be used for helicopter service/fueling. All helicopter landings will be located outside of RHCAs.

Roadside hazard trees along open roads and along any roads used for implementation of this project would be felled to provide safe and adequate road access in the fire area. Felled hazard trees in RHCAs would be left on site or used as in-channel wood; felled hazard trees outside of RHCAs would be removed as a commercial product. Roadside hazard trees not associated with a unit may only be removed without tracked or wheeled equipment leaving the road. Commercial timber harvested through roadside hazard tree removal is included in the acres and volumes listed above.

Non-commercial sized trees determined to be hazard trees would also be felled. Many of these hazard trees occur within fuel reduction units or in areas planned for riparian fuel reduction; fuels would be reduced as described below under Fuel Loads or as described in Chapter 1 under Actions Outside of this EIS to Address Recovery Needs. In the visual corridor along County Road 63 and part of Forest Road 24 (mostly in RHCAs) wood from non-commercial sized hazard tree felling (trees averaging 2-7 inches DBH) would be left on site, used for planned riparian enhancement projects (in-channel wood or aspen fencing as described in Chapter 1, Additional Fire Recovery Projects Ongoing or Completed, and Actions Outside of this EIS to Address Recovery Needs) or, where needed to meet visual quality objectives or to reduce the likelihood of ditch failure, reduced through handpiling and burning; no commercial removal of these small diameter trees would occur, these trees would be moved by hand, and burning would be done above the road and/or outside the riparian vegetation zone. This treatment would also meet visual quality objectives in the visual corridor.

Approximately 3,960 acres within the harvest units and 330 acres outside of the harvest units would be planted to reforest areas that sustained high tree mortality. Planting would be done to accelerate recovery of forest habitats. The species and spacing for planting in each area will vary depending on the Plant Association Group. Spacings are wider than normal and are to be varied to duplicate the irregular patterns of natural reforestation. Non-forested openings up to an acre are permissible to provide vegetation diversity and wildlife forage.

One hundred ninety acres of uplands have been planted through a CE (Background, Chapter 1). Natural regeneration would occur on approximately 300 acres within the project area in areas that are expected to successfully reforest within 5 years due to the availability of a seed source. The remaining acres of the burned area are adequately stocked and would not require reforestation.

## **Fuel Loads**

Fuels, including those created by the fire and by salvage activity, would be reduced to within the range of historical levels on about 3,230 acres within the harvest units. Fuel loadings after harvest and post harvest treatments, including standing dead, will be within historical range varying from 5-25 tons per acre (Figure 18, Map Section and Appendix A), depending on plant association group. Fuel loading in units adjacent to private lands will be reduced to the lower end of the historical range to provide additional protection from wildfire. When desired fuel loadings of 5-25 tons per acre would be achieved through harvest, no post harvest treatment was proposed. Post harvest treatments were proposed when needed to further reduce fuels to the desired range. Fuel loading on remaining harvested acres would be moved toward historical levels. After treatment, down woody material is expected to meet Forest Plan standards as described in Chapter 2, Management Requirements, Constraints, and Mitigation Measures.

Fuel treatment methods on 4,320 acres salvage harvested would include yarding with tops attached, felling dead and dying trees 8-inch DBH and less, grapple piling and burning or post and pole removal, and handpiling and burning (see Glossary). Approximately 1,820 acres would have yarding with tops attached during harvest; 1,230 acres would have yarding with tops attached during harvest, with a post harvest treatment of felling the small diameter trees, grapple piling and burning piles; 140 acres in 4 units (124, 134, 148, and 152) would have yarding with tops attached, with felling the small diameter trees and removing them commercially as posts and poles during harvest; 290 acres would have yarding with tops attached during harvest, with a post harvest treatment of felling the small diameter trees, handpiling and burning piles; and helicopter units (840 acres) would only have a post harvest treatment of felling the small diameter trees, and handpiling and burning (see Figure 27, Map Section). Utilization of the biomass in landing piles could occur if there is a market, or the piles would be burned. Acres of post-harvest treatment will be verified after harvest. No fuel treatment would be necessary on about 20 acres because post harvest levels would be within Forest Plan standards and guidelines.

Fuel reduction would occur on an additional 70 acres where no harvest is occurring (Figure 27, Map Section). Treatment would include felling the small diameter trees, grapple piling and burning piles on approximately 20 acres and handpiling and burning piles on 50 acres (Appendix A).

## **Roads/Access**

Based on roads analysis (USDA Forest Service 2003), the following proposed actions for roads and access were developed. Alternative 2 would construct 0.3 miles of new system road to replace about 1 mile in the Snow Creek RHCA (see Figure 10, Map Section). The

segment in the RHCA would be decommissioned. The new road location is designed to improve water quality in Snow Creek while still providing access.

Alternative 2 would construct 3.9 miles of temporary road to allow access for harvest (Figure 10, Map Section). Temporary roads would consist of 19 short spur roads, ranging from 0.1 to 0.5 miles each. Temporary roads would be stabilized and decommissioned after harvest activities (as described in Chapter 2, Management Requirements, Constraints, and Mitigation Measures). Approximately 0.3 miles of road would be reconstructed, including 1 culvert replacement for improvement of fish passage and water quality. Sixty miles of road (including haul routes outside the fire area) would have maintenance performed to allow for access to harvest and to reduce impact to other resources.

Approximately 13.1 miles of classified road and 3.9 miles of temporary road would be decommissioned, (see Chapter 6, Glossary), and 6.6 miles of classified road in the fire boundary (plus an additional 1.7 miles of road outside the boundary to the roads' terminus) would be closed year-round to all motorized vehicles to reduce the effects of roads on wildlife and water quality. About 2 miles of unclassified road extensions would also be decommissioned. Decommission activities would include removal of 15 metal and 2 log culverts and replacement with self-maintaining natural stream channel drainage to improve water quality.

Following post sale activities, about 29.2 miles of road in the fire area would remain open year-round for public motorized access (Figure 10, Map Section).

## **Wildlife Habitat**

### *Snags*

In all salvage harvest units, snags 21 inches DBH or greater would be retained at the Forest Plan standard of 2.39 snags per acre to provide habitat for cavity dependent species. If snags greater than 21-inch DBH are not available, an appropriate number of snags of the largest representative diameter class would be retained. The snags would be averaged on a 40-acre basis and would be left in small clumps where possible.

Although this snag strategy prescribes 2.39 snags per acre, helicopter units will actually retain all 10-12-inch DBH snags because of utilization standard limitations described under Alt. 2, Forest Vegetation/Structure. These snags, ranging from about 5-30 snags per acre, provide additional benefit to wildlife.

Outside salvage units, all snags would be retained except those felled along open roads to reduce safety hazards and those felled to provide coarse woody material for streams, draws, and uplands (Chapter 1, Additional Fire Recovery Projects Ongoing or Completed, Actions Outside of this EIS to Address Recovery Needs).

### *Forest Plan Management Area 13 (MA-13) - Dedicated Old Growth (DOG) and Replacement Old Growth (ROG)*

Alternative 2 would designate new old growth areas to replace those lost to the fire (see Figure 14, Map Section, for original and replacement DOG/ROG locations). The relocation of Dedicated Old Growth and Replacement Old Growth areas should maintain the integrity of the Forest's old growth network.

Dedicated Old Growth 220 will be converted to a Replacement Old Growth 220. Although this area burned with moderate to severe tree mortality, a sufficient number of large live trees remain to manage this area as replacement old growth. A new DOG 220 would be designated immediately outside the fire perimeter in the Hog subwatershed, and within a ¼ mile of the former DOG 220.

Dedicated and Replacement Old Growth 221 will be relocated outside the fire perimeter. These areas burned with severe mortality of trees; few live trees remain. Areas outside the fire perimeter do not provide a similar sized block of mature and old growth habitat. Consequently, *two* new DOG/ROGs would be established to replace the one lost in the fire. DOG/ROG 221-A will be relocated approximately 3 miles northwest in the Wickiup subwatershed. DOG/ROG 221-B will be established about 2 miles southeast in the Jack subwatershed. The new locations provide better opportunities to manage for old growth given the level of fire damage in the original location. Existing DOG/ROG 221 would be converted to General Forest (MA-1).

#### *Proposed Treatments within Replacement Old Growth (ROG)*

Existing Dedicated Old Growth 220 would be converted to Replacement Old Growth 220. Within the replacement ROG 220 salvage harvest, fuels reduction, and tree planting as discussed earlier would be conducted on 277 acres of the 325-acre area; within these acres, snags would be retained at 2.39 snags per acre. The remaining 48 acres would not be harvested because they are in RHCAs.

Existing DOG/ROG 221 would be converted to general forest (MA-1). Harvest and fuel reduction would occur as described under Forest Vegetation/Structure, Fuels Loads, Roads/Access, and Wildlife Habitat.

### **Forest Plan Amendments**

Two non-significant Forest Plan amendments would be required to implement Alternative 2 (see Chapter 2, Alternatives Considered in Detail for more information on Alternative 2).

Timber harvest and closely associated activities are expected to be completed in 2004; all other activities are expected to be completed before 2010. A Project Schedule for the proposed action is found in Chapter 2 under Project Schedule.

## **Management Areas and Objectives**

### **Relationship to the Forest Plan**

This environmental impact statement (EIS) tiers to and relies upon the analyses for the Malheur National Forest Land and Resource Management Plan (Forest Plan), as amended. Amendments include but are not limited to the Regional Forester's Eastside Forest Plans Amendment #2 and the Inland Native Fish Strategy (INFISH). Those analyses are documented in the Final Environmental Impact Statement and Record of Decision for the Forest Plan, and the environmental assessments for the Inland Native Fish Strategy and the Interim Management Direction Establishing Riparian Ecosystem and Wildlife Standards for Timber Sales (Regional Forester's Eastside Forest Plans Amendment #2), and other related documents. These documents are incorporated by reference, as appropriate, throughout this

EIS. The Forest Plan, as amended, contains both Forest-Wide Standards and Guidelines as well as Standards and Guidelines for specific management areas (such as MA-1 General Forest).

### **Regional Forester's Forest Plans Amendment**

Regional Forester's Eastside Forest Plans Amendment #2 (1995) is Forest-Wide Standards and Guidelines that contain direction for the development of timber sales. Amendment #2 changed standards for harvest of live trees, snag and down logs, goshawk habitat, connectivity of old forest, and riparian habitat. Salvage sales that do not harvest live trees, except for incidental live trees, are exempt from the ecosystem standards; but the riparian and wildlife standards still apply. The ecosystem standards do not apply since the only incidental live trees to be cut are for road and landing construction, or for safety. The riparian and wildlife standards still apply since they have concerns for resources still present in a recently burned forest (and could be affected by salvage harvest).

### **Management Areas**

The Flagtail Fire Recovery Project area includes approximately 7,120 acres of National Forest lands that are allocated by the Forest Plan, as amended, to management areas (see Figure 23, Map Section). Management area designations overlap; when a specific segment of land falls under the goals or standards of two or more management areas, acres are assigned to the higher priority management area. The following is a description of management areas in the Flagtail Fire project area:

#### **Management Area 1 – General Forest (4,350 acres)**

This management area provides for timber production on a sustained yield basis while providing for other resource values. The goal is to develop equal distribution of age classes to optimize sustained timber production. Generally, acres for MA 1 and MA 2 (see below) are combined (see Figure 23, Map Section).

The Forest Plan establishes an objective in MA 1 of creating a healthy forest condition characterized by a variety of age classes, through control of stocking levels, species mix, and protection from fire, insects, disease, and other damage.

#### **Management Area 2 - Rangeland**

Management Area 2 consists primarily of non-forested grasslands and low elevation ponderosa pine sites unsuitable for timber production, and is usually included as non-forested lands within other management areas, primarily MA 1 – General Forest. The goal of this MA is to emphasize forage production on a sustained yield basis while providing for other resources and values. See MA 1 for acres.

### **Management Area 3A – Non-Anadromous Riparian Areas and Riparian Habitat Conservation Areas (RHCAs) (800 acres)**

Management Area 3A consists of lakes, perennial streams and seasonally flowing streams; lands adjacent to lakes, perennial and seasonal streams; floodplains and wetlands; wet, moist areas such as meadows, springs, seeps, bogs, and wallows; and quaking aspen stands in watersheds that do not support anadromous fish (see Figure 23, Map Section). The goal of this MA is to protect or enhance riparian-dependent resources in watersheds supporting resident fish. MA 3A includes areas not addressed in INFISH, for which standard Riparian Habitat Conservation Area (RHCA) buffers were not defined but which are protected under Forest Plan standards for MA 3A; these areas include dry aspen stands and ephemeral draws.

The 1995 Inland Native Fish Strategy (INFISH) Decision Notice and subsequent correction amended the Malheur Forest Plan, establishing interim standards and guidelines for management of riparian resources. One standard establishes RHCAs across all management areas. RHCAs are generally wider than the riparian buffers established as MA 3A and incorporates both MA 3A and adjacent MAs. The Flagtail project area contains 800 acres of RHCA; 250 acres of RHCA is designated as MA 3A. Riparian-dependent resources receive primary emphasis in all RHCAs. All project actions must be in compliance with INFISH.

The project area is not under the direction from Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (1995) (PACFISH) because it is located at the northern end of the Great Basin with no connection to the ocean and hence contains no anadromous fish. Therefore, PACFISH direction was not used for this project.

Best Management Practices (BMPs) are the primary mechanisms to enable the achievement of water quality standards (Environmental Protection Agency 1987). BMPs have been selected and tailored for site-specific conditions to arrive at the project level BMPs for the protection of water quality.

### **Management Area 13 – Old Growth (880 acres – additional acres of MA-13 are overlapped by RHCAs)**

Management Area 13 is composed of mature and over mature trees (150 years or older). It is managed to provide: habitat for wildlife and plant species dependent on mature and over mature forest conditions; ecosystem diversity; and preservation of aesthetic qualities across the landscape. These areas are equally distributed across the Forest, providing an old growth network. Wildlife species dependent on these habitats include the pileated woodpecker and pine marten. MA-13 includes both Dedicated Old Growth (DOG) and Replacement Old Growth (ROG) areas (see Figure 23, Map Section).

The Forest Plan (Management Area 13) provides direction for designating, refining, and managing Dedicated Old Growth and Replacement Old Growth areas. Direction recommends making these changes in conjunction with the timber sale planning process.

Replacement areas may not have all the characteristics of old growth, but are managed to achieve those characteristics so that when a Dedicated Old Growth area no longer meets the needed habitat requirements, the Replacement Old Growth can take its place.

## **Management Area 14 – Visual Corridors (1,090 acres)**

Management Area 14 consists of visible and potentially visible landscapes along major travel routes, and state scenic waterways where the traveling public has a high to medium sensitivity to scenery. The project area is within the Izee Viewshed, which is Management Area 14 (Viewshed Corridors) and encompasses those areas that are seen from County Road 63 (see Figure 23, Map Section). The goal of MA 14 is to manage corridors within scenic viewsheds with primary consideration given to their scenic quality and the growth of large diameter trees. Forest Plan Correction #1, dated January 31, 1995, allows salvage harvest in a visual corridor without a corridor viewshed plan. The direction is to manage the Izee Viewshed with visual quality objectives of partial retention in the foreground and modification in the middleground while providing for other uses and resources.

## **Management Area 19 – Administrative Sites (no acres mapped)**

Management Area 19 includes work centers and other administrative sites. Bear Valley Work Center is covered under Management Area 19. These sites are not displayed on management area maps, though Bear Valley Work Center can be found on Figure 3 (in the Map Section). The goal of MA 19 is to provide and maintain sites for facilities necessary for the administration of Malheur National Forest lands. The direction is to manage these sites for administrative needs. Consideration of these sites' historic and architectural value is part of the management direction for this management area.

## **Other Ownership**

Approximately 1,080 acres within the fire area are private property (see Figure 2, Map Section). None of the private lands are within the Flagtail Fire Recovery Project boundary, but conditions and actions on private lands are considered for cumulative effects. Most of the fire-killed trees on private land have already been salvaged, and planting is underway (see Appendix J).

## **Existing Condition**

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The existing condition in the project area is the result of past activities as well as the Flagtail Fire, fire suppression activities, suppression rehabilitation activities, and restoration activities that occurred from July 2002 through October 2003. Resource specialists referred to the Upper Silvies Watershed Analysis (USDA Forest Service 2001) for pre-fire conditions. Chapter 1 contains a brief description of the existing conditions in the Flagtail Fire area. An expanded discussion can be found by resource area in Chapter 3.

## **Desired Condition**

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The desired character of this area is an environment that is healthy, sustainable, and supports the uses of the National Forest. Sustainability refers to the ability of forest vegetation, non-forest vegetation, and other resources to endure despite natural disturbances such as fire, insects, disease, and invasive species. Desired conditions are based on Forest Plan direction and management objectives, and on recommendations from the Upper Silvies Watershed

Analysis (USDA Forest Service 2001). The proposed project activities described in this FEIS do not address all the desired conditions in the project area.

Because of the major changes caused by the stand-replacing Flagtail Fire, desired condition should be considered on two time frames, short-term (2-20 years) and long-term (20-150+ years). Desired conditions for resources is fully described in Chapter 1.

## Key Issues

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Significant issues, otherwise known as key issues, for the Flagtail Fire Recovery Project came from the public, other agencies, organizations and businesses, and Forest Service resource specialists in response to the Proposed Action. Issues are defined as a point of discussion, debate, or dispute about environmental effects. Key issues are used to formulate alternatives, prescribe mitigation measures, and analyze environmental effects. Issues are “significant” because of the extent of their geographic distribution, the duration of their effects, or the intensity of interest or resource conflict (40 CFR 1508.27). Five key issues were originally identified by the Interdisciplinary Team (IDT) and most were emphasized by the public. A sixth key issue, on scenery, was elevated from other analysis issues to a key issue based on analysis conducted between Draft and Final EIS, and to be responsive to public involvement. All key issues were approved by the Responsible Official.

Key issues are normally considered the basis for alternative development. However, there are a variety of ways to address key issues within any specific alternative. Key issues may be addressed by simply avoiding environmental consequences by elimination of an action that would impact a given resource. For example, if impacts to a specific stream segment are a key issue, the project alternatives that avoid all potential impacts to the stream segment address this issue. Mitigation attached to specific alternatives may also address key issues.

### **Key Issue #1 – Fuels**

At the heart of this issue is the scientific controversy relevant to the benefits of using salvage harvest to reduce fuels in order to reduce potential effects of future fire events. Some advocate a passive approach to fuels management in burned areas and recommend natural processes are best for management of fuels. Others suggest that salvage harvest is the best way to reduce the potential for another cycle of heavy fuel accumulations therefore, limiting future management opportunity to use prescribed fire to restore the landscape to historical conditions.

### **Key Issue #2 - Wildlife**

Several public letters raised concern over the snag strategy.

Wildlife species use burned forest habitats differently than live, green forests. In post-fire habitats, minimum Forest Plan snag standards may not be sufficient to assure use by all primary cavity excavators. Snag density, size and distribution influence use levels and vary by individual species. Salvage logging could potentially have negative impacts on cavity dependent species, particularly such species as the black-backed woodpecker. The alternatives retain varying levels and sizes of snags.

**Key Issue #3 - Soil**

Concern has been expressed that using mechanized equipment to reduce future fuels through timber sales would increase soil erosion and decrease soil productivity (mainly through compaction, displacement of soil, or a decrease in ground cover). Ground-based yarding systems may increase erosion on soils burned with high and moderate severity.

**Key Issue #4 – Water**

The issue centers on whether or not the salvage harvest of fire-killed trees is consistent with the need to maintain aquatic habitats. This issue is linked to the current watershed and stream channel conditions resulting from the fire but also includes concern over conditions from a variety of past and ongoing activities such as grazing, logging and road building and the resulting transportation system. Some suggest that any ground disturbing activity following a fire like Flagtail should be avoided. Others suggest that some level of activity can be conducted, such as salvage harvest, without interrupting the processes of long-term ecosystem recovery. While there is no immediate ecological reason to salvage harvest fire-killed trees, there are opportunities to improve watershed function, such as relocating roads out of riparian areas, replacing drainage structures, and decommissioning roads near streams.

**Key Issue #5 – Scenery**

The Flagtail Fire has reduced the visual quality rating in the visual corridor along Grant County Highway 63 from a Visual Quality Objective (VQO) of Foreground Partial Retention to Modification. Harvest of fire-killed trees in units located in the foreground could further reduce the visual quality rating to Maximum Modification.

**Key Issue #6 – Socio-Economics**

Due to decay and checking of wood, there is a need for immediate harvest to recover the economic value from fire-killed trees. The design of restoration treatments may make timber harvest uneconomical. Economically viable timber sales are important to local communities. The social and economic well-being of residents and local governments is dependent on employment and revenues generated from timber sales, fuel treatment, and reforestation.

**Decision Framework**

The Responsible Official for this proposal is the Forest Supervisor of the Malheur National Forest. Based on response to the Draft EIS and the analysis disclosed in this Final EIS, the Responsible Official will make a decision and document it in a Record of Decision (ROD) which will follow within 30 days of the Final EIS. The Responsible Official can decide to:

- Select the proposed action, or
- Select an action alternative that has been considered in detail, or
- Modify an action alternative, or
- Select the no-action alternative.

Alternatives 2, 3, 4, and 5 will require a non-significant Forest Plan amendment related to MA 13 (old growth) designation. Alternative 2 will require a non-significant Forest Plan amendment related to visual quality objectives (see Chapter 2, Alternatives Considered in Detail). The Responsible Official will also determine if the selected alternative is consistent with the Forest Plan, as amended, or whether to amend the Forest Plan.

## CHAPTER 2

### Alternative Development Process

This chapter of the FEIS describes in detail five alternative ways to manage land and resources in the Flagtail Fire project area. The Proposed Action was developed using the District Ranger's specific direction detailed in the Project Initiation Letter, dated October 11, 2002. Public participation to review and comment on proposed activities in the Flagtail Fire area began in February 2003 and continues with this FEIS. Forest Service resource specialists were part of an interdisciplinary team (IDT) that worked on development of action alternatives. Based on comments received from the public and other agencies, direction given by Forest leadership, and through incorporating Forest Plan amendments, existing State and Federal laws, and Forest Service interim direction, the range of options/differences between alternatives is limited. The alternatives were designed to stay within the framework of ecological stewardship and the Malheur Forest Plan.

All the action alternatives described in the FEIS and the DEIS were developed with some common themes. All action alternatives would to varying degrees:

- Remove fire-killed trees or trees expected to die as a result of fire injury. In Alternatives 2, 3, and 5, removal of trees occurs through salvage harvest; in Alternative 4 removal involves only small (8-inch or smaller DBH) trees. Incidental live trees (trees expected to live) will only be removed to construct roads and landings and to eliminate safety hazards during logging operations.
- Use planting to reforest the burn area.
- Reduce future fuel loads to be consistent with the National Fire Plan.
- Minimize the construction of new roads.
- Reduce road impacts on wildlife habitat and water quality.
- Relocate Dedicated Old Growth (DOG) and Replacement Old Growth (ROG) areas burned by the fire because they are no longer suitable habitat.
- Apply water quality Best Management Practices (BMPs) in the design and implementation of the alternatives to protect water quality (see Appendix F).
- Avoid controversy of perceived effects to streams and riparian areas by not harvesting any trees in RHCAs and MA 3A. Any tree (8-inch DBH or larger) felled for safety in RHCAs and MA 3A will remain in RHCAs/MA 3A.
- Avoid effects on sensitive areas such as heritage sites and sensitive plant sites by not proposing harvest in those areas.
- Provide some level of employment to the local community.

Each action alternative analyzed in detail discloses environmental effects associated with its implementation, thereby facilitating a comparison of alternatives. This comparison of effects along with projected environmental consequences detailed in Chapter 3 provides the Responsible Official with information needed to make an informed choice between alternatives.

The IDT and Responsible Official felt the alternatives to be analyzed in detail represented a range of reasonable alternatives (40 CFR 1502.14 (a)) and that they address the underlying needs of reducing fuel loadings, capturing economic value of the killed and damaged trees, providing safe and adequate access, reducing the effects of roads on wildlife habitat and water quality, re-establishing upland vegetation, and designating suitable Dedicated and Replacement Old Growth areas to replace those degraded by the fire. The No Action Alternative is defined as no change from management activities as they now exist.

## **Alternative 1**

The purpose of this alternative is to allow current processes to continue, along with associated risks and benefits, in the Flagtail analysis area.

The “No Action” alternative is required by NEPA. In this document the “no action” alternative means the proposed project (which includes all activities identified in the proposed action) would not take place in the Flagtail analysis area at this time. Alternative 1 is designed to represent the existing condition. It serves as a baseline to compare and describe the differences and effects between taking no action and implementing action alternatives.

## **Alternative 2 – Proposed Action**

This alternative was designed to maximize recovery of the economic value of fire killed and damaged trees and to reduce future fuel loadings. The economic return would be further enhanced by providing local jobs. Reducing fuels is responsive to the hazardous fuel reduction element of the National Fire Plan. By intensively treating the burned acres, future fuel loads will be within their historical range, reducing the impacts of future wildfires on the environment and restoring health to fire-adapted ecosystems.

This alternative meets the other identified needs, including providing safe and adequate access, reducing the effects of roads on wildlife habitat and water quality, re-establishing upland vegetation, and designating suitable Dedicated and Replacement Old Growth areas to replace those degraded by the fire.

## **Alternative 3**

Wildlife species use burned forest habitats differently than live, green forests. In post-fire habitats, minimum Forest Plan snag standards may not be sufficient to assure use by all primary cavity excavators. Snag density, size and distribution influence use levels and vary by individual species. Alternative 3 was designed to leave higher levels of snag habitat distributed in a way that accommodates a broader range of cavity excavator species while also implementing the goals and objectives of the National Fire Plan. Implementation of this strategy will reduce fuel loadings, but to a lesser extent than Alternative 2. This alternative also meets the other identified needs, including capturing economic value of the killed and damaged trees, providing safe and adequate access, reducing the effects of roads on wildlife habitat and water quality, re-establishing upland vegetation, and designating suitable Dedicated and Replacement Old Growth areas to replace those degraded by the fire.

## Alternative 4

Alternative 4 was developed to reduce fuel loadings and provide local employment without commercial timber harvest, in response to comments generated during the scoping process that advocated natural recovery processes. Alternative 4 does not propose commercial timber harvest, but does propose treatment of trees 8-inch DBH and smaller to reduce future fuel loadings. Grapple piling would occur but no ground-based yarding would be necessary. Alternative 4 provides no timber to the economy, but fuels treatment would generate employment and revenue. All snags greater than 8-inch DBH would be retained under Alternative 4 to provide primary cavity excavator species. Grazing would be the same as under Alternative 1. This alternative also meets the other identified needs, including providing safe and adequate access, reducing the effects of roads on wildlife habitat and water quality, re-establishing upland vegetation, and designating suitable Dedicated and Replacement Old Growth areas to replace those degraded by the fire.

## Alternative 5

Alternative 5 was designed to more closely mimic snag distributions expected at the landscape level. This snag distribution was derived from the Regional snag inventory data in DecAID (Mellen et al. 2002). This data indicates that dry forests typically supported lower snag levels than those created by the Flagtail Fire. In addition, snag inventory data suggests that snag levels (snag density and size) varied greatly across the landscape based on natural site conditions. Some areas likely had high concentrations of snags and other areas had few or no snags. Snag level prescriptions varied between salvage units based on a variety of criteria including forest type, aspect and slope, visual quality in the County Highway 63 visual corridor, proximity to the Wildland Urban Interface, and economics.

Implementation of this strategy will reduce future fuel loadings. This alternative also meets the other identified needs, including capturing economic value of the killed and damaged trees, providing safe and adequate access, reducing the effects of roads on wildlife habitat and water quality, re-establishing upland vegetation, and designating suitable Dedicated and Replacement Old Growth areas to replace those degraded by the fire.

## Forest Plan Amendments

Each of the action alternatives would require one or two non-significant Forest Plan amendments to implement the alternatives.

Selecting Alternative 2 would include two site-specific, non-significant amendments (one being Management Area designations related to old growth, the second being a short-term reduction in Visual Quality Objectives) to the Malheur National Forest Plan, as amended. Alternatives 3 and 5 would include two site-specific, non-significant amendments (one being Management Area designations related to old growth, the second allowing distributing the snag patches on a unit basis for better utilization by the species, and not a 40-acre block basis) to the Malheur National Forest Plan, as amended. Alternative 4 would include one site-specific, non-significant amendment (Management Area designations related to old growth) to the Malheur National Forest Plan, as amended. Additional information on the

number and type of amendments necessary for each action alternative can be found in Chapter, Alternatives Considered in Detail, under each alternative.

## **Alternatives Considered but Eliminated from Detailed Study** \_\_\_\_\_

Federal agencies are required by NEPA to rigorously explore and objectively evaluate all reasonable alternatives and to briefly discuss the reasons for eliminating any alternatives that were not developed in detail (40 CFR 1502.14). Ten alternatives were considered, but eliminated from detailed consideration for reasons summarized in Chapter 2.

## **Management Requirements, Constraints, and Mitigation Measures** \_\_\_\_\_

The Forest Service management requirements, constraints, and mitigation measures to be used as part of the action alternatives. Those management requirements, constraints, and mitigation measures can be found in Chapter 2.

## **Identification of the Preferred Alternative** \_\_\_\_\_

Alternative 5 has been identified as the preferred alternative for the Flagtail Fire Recovery Project. This alternative is described in detail in this chapter under Alternative 5 in Alternatives Considered in Detail and includes Tables 2-1, 2-2, and 2-3, as well as Management Requirements and Mitigation Measures described for Alternative 5.

## Chapter 3

### Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative.

**Table 2-1: Comparison of Alternatives by Activity**

Activity	Unit of Measure	Alt. 1 (NA)	Alt. 2 (PA)	Alt. 3	Alt. 4	Alt. 5
<b>Harvest</b>						
Harvest Unit*	Acres	0	4,340	3,330	0	3,920
Salvage Harvest	Acres	0	4,340	2,870	0	3,740
Net Harvest Volume	MMBF	0	20.4	9.8	0	15.0
<b>Harvest Method</b>						
Tractor	Acres	0	2,670	1,990	0	2,470
Skyline	Acres	0	800	430	0	540
Helicopter	Acres	0	870	450	0	730
Leave Patches within Units*	Acres	0	0	460	0	180
<b>Post Harvest Treatment/Mitigation</b>						
Subsoiling	Acres	0	240	180	0	210
<b>Reforestation</b>						
Natural Regeneration	Acres	4,590	300	300	300	300
Planting	Acres	0	4,290	4,290	4,290	4,290
<b>Fuel Treatment</b> (Acres may be treated with more than one method)						
Hand Piling	Acres	0	1,180	940	1,780	1,080
Post and Pole Removal	Acres	0	140	130	0	140
Grapple Piling	Acres	0	1,250	1,380	3,000	1,180
Yard top Attached	Acres	0	3,480	2,390	0	2,980
<b>Roads</b>						
New Road Construction	Miles	0	0.3	0.3	0	0.3
New Temp. Roads	Miles	0	3.9	2.9	0	3.3
Roads Decommissioned within 100 feet of Cat. 1-4 streams	Miles	0	4.2	4.2	3.4	4.2
Culverts Removed	Each	0	17	17	16	17
Culverts Replaced	Each	0	1	1	0	1
<b>Access</b> (Roads Decommissioned category includes roads formerly closed; Roads Closed category includes only roads newly closed)						
Roads Open	Miles	46.5	29.2	29.2	30.1	29.2
Roads Decommissioned	Miles	0	13.1	13.1	11.9	13.1
Roads Closed	Miles	0	6.6**	6.6**	6.6**	6.6**
Unclassified Roads Decommissioned	Miles	0	2	2	2	2
<b>Wildlife/Old Growth</b>						
Relocates DOG/ROG	Qualitative	No	Yes	Yes	Yes	Yes
<b>Fisheries</b>						
Fish access improved by culvert replacement	Miles	0	2.0	2.0	0	2.0
<b>Economics</b>						
Timber Value	\$ million	0	3.0	1.3	0	2.0

\*Harvest unit acres consist of the entire unit including acres that would be untreated because they are designated as leave patches.

\*\*In closing roads 6300-660, -661, and -662 inside the fire area, an additional 1.7 miles of roads (6300-664 and -665, and part of -662) would be closed outside the fire boundary to these roads' terminus.

**Table 2-2: Comparison of Alternatives by Issue and Measurement**

Resource Issue	Unit of Measure	Alt. 1 (NA)	Alt. 2 (PA)	Alt. 3	Alt. 4	Alt. 5
<b>Fuels</b>						
Fire severity and fire intensity in 20 years as measured by fuel loading *	See Below	*	*	*	*	*
Fire intensity in 20 years as measured by flame length	Feet	7.1	2.0	2.0	7.1	2.0
<b>Wildlife</b>						
Snag Density in Salvage Units (Snags 10" DBH and greater)	Number Retained /Acre	All, 3-105**	2.39	>13	All, 3-105**	2.39 - >13
Cavity Excavator Use Level***	Tolerance Level (%)	50-80+	5-30	30-50	50-80+	5 - 50
Number of untreated acres providing natural, post-burn snag levels (% forested acres)	Acres (% of forested acres)	6,180 (100%)	1,795 (30%)	3,309 (53%)	6,180 (100%)	2,440 (40%)
<b>Soils</b>						
Tractor Harvest on Severely and Moderately Burned Soils	Acres	0	1,410	1,120	0	1,300
<b>Water</b>						
Sediment Input from Roads	Qualitative	No change	Reduce	Reduce	Reduce	Reduce
Roads within 100 ft of Cat 1-4 streams in the project area	Miles	9.1	4.8	4.8	5.7	4.8
Road/Stream crossings in the project area	Each	42	24	24	25	24
Temperature	Qualitative	No change	No change	No change	No change	No change
<b>Scenery</b>						
Snags 10 inches DBH and larger remaining in foreground units	Snags 10" +DBH/acre	All, 10-80**	2.39	≥13	All, 10-80**	≥13
Resultant VQO in visual corridor	VQO in short-term (less than 15 years)	Modification	Maximum Modification	Modification	Modification	Modification
<b>Economics</b>						
Commercial Harvest	Net Volume (MMBF)	0	20.4	9.8	0	15.0
Present Net Value	\$ millions	0	-0.4	-1.5	-2.6	-1.0
Jobs Provided	Number	0	355	170	0	260

\* The fuel loadings vary by fire regime and plant association group; see Table 2-3, below.

\*\* Alternatives 1 and 4 do not conduct commercial harvest. Data for these two alternatives are presented to show snag levels in the absence of commercial harvest of snags 10" DBH and greater. Alternative 4 conducts fuels treatment of dead tree 8" DBH or less.

\*\*\* Displaying cavity excavator use levels as an overall range for multiple species provides a relative difference between alternatives; however, a more accurate portrayal is displayed by individual species in Chapter 3, Tables WL-8 through WL-12.

**Table 2-3: Comparison of Alternatives - Fuels Issue and Measurement**

Fire Regime **/ Plant Association Group	Historical Tons/Acre	Alt. 1 *	Alt. 2 *	Alt. 3 *		Alt. 4 *	Alt. 5*	
				Salvage	No Salvage & Treat Small Fuels		Salvage	No Salvage & Treat Small Fuels
1/Hot Dry, Ponderosa Pine	5-7	42	8	12	15	34	12	N/A
1/ Warm Dry, Mixed Conifer	7-15	46	12	13	17	33	12	20
3/Cool Dry, Lodgepole Pine	15-25	48	21	19	22	28	21	N/A
3/Riparian Class 1 and 2	7-25	44	N/A	N/A	N/A	N/A	N/A	N/A

\* All values are tons per acre.

\*\* Fire Regimes, 1 - Fire Regime 1 is low severity fire with a fire return interval of 0 to 35 years.

3 - Fire Regime 3 is mixed severity fire with a fire return interval of 35 to 100+ years (See Chapter 3 Fire/Fuels).

## CHAPTER 4

Chapter 4 documents the Forest Service personnel who assisted in preparation of this environmental impact statement, and the individuals, Federal, State, and local agencies, tribes, and non-Forest Service persons consulted during the development of this environmental impact. Chapter 4 also includes a Public Involvement Summary, and it documents who received a copy of the FEIS. A section entitled Comments Received on the Draft Environmental Impact Statement and Agency Responses was added to the FEIS, Chapter 4; it displays written comments received on the *Flagtail Fire Recovery Project DEIS*. A letter number and comment number were assigned for tracking purposes. Each individual letter is followed by the Agency's response.