

Chapter 1: Purpose and Need for Action

Document Structure

The Forest Service prepared this Environmental Assessment (EA) in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This EA discloses the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action and the other alternatives.

Chapter 1. Purpose and Need for Action

This chapter includes information on the historical and existing resource conditions of the project area, the desired conditions of the project area, the Purpose and Need for the project, and the agency's proposal for achieving that Purpose and Need. This section also describes the decisions to be made.

Chapter 2. Alternatives Considered

This chapter details how the Forest Service informed the public of the proposal and how the public responded. Alternative methods for achieving the Purpose and Need were developed and are described in this section. These alternatives were based on key issues raised by the Interdisciplinary (ID) Team, other agencies, and/or the public. This chapter also includes Design Criteria to reduce impacts to specified resources identified. Finally, this section provides summary tables of the environmental consequences associated with each alternative.

Chapter 3. Affected Environment and Environmental Consequences

Chapter 3 describes the existing condition and potential environmental effects of implementing the Proposed Action and other alternatives. This chapter is organized by resource area.

Appendices

The appendices provide more detailed information to support the analyses presented in the EA. Included are a Monitoring Plan, Best Management Practices (BMPs), Vegetation Treatment Descriptions, List of Preparers, Bibliography, and a Glossary that defines abbreviations, acronyms, and terms used.

Project Area

The Mid Swan Blowdown Salvage Project Area lies in the Swan Valley, extending from Goat Creek on the north to Lion Creek on the south. National Forest System (NFS) lands occupy approximately 4000 acres of the project area (89 percent) and other private landowners own approximately 480 acres (11 percent). Elevation within the project area ranges from 3300 feet to 4140 feet (See Vicinity Map 1-1).

Historic Condition

Fires were frequent in the Upper Swan Valley until the early 1900's, with the earliest fire evidence dating from about 1241 AD. On average, a fire occurred about every 8 years (range of 3 to 23 years) between 1586 and 1929 in the Upper Swan Valley. The last major fire occurred in 1929 (Barrett, 2002). Barrett (1998) reported that 1768, 1814, 1850, 1889, 1910, 1919, 1929 were important fire years in the Swan Valley. The fire of 1910 burned 717 acres within the Mid Swan Project Area.

These fires resulted from natural causes, such as lightning and traditional burning by Indians. Most Indian fires occurred in the valley grasslands and lower-elevation forests dominated by ponderosa pine, Douglas-fir, and western larch. These fires were likely ignited to improve big game browse, berry production, food gathering and hunting, improved travel, communication and horse grazing (Barrett 1981).

In the summer of 2003, the Crazy Horse Fire burned approximately 11,000 acres total occurring within 15 miles of the project area. The Holland Peak Fire burned roughly 1600 acres on the east side of the Swan Valley 14 miles from the Mid-Swan Blowdown Project Area in the summer of 2005. These fires are the largest and most recent fires in the Upper Swan Valley. Both fires burned mosaically with variable intensities.

Historical accounts indicate that epidemic insect outbreaks have occurred in the area in the past. The most well documented epidemic was an outbreak of spruce bark beetles in the Swan Valley following a large scale wind event in 1949 (Project File Exhibit R-2).

H. B. Ayers recorded observations of the Swan Valley in 1899 during his mission to survey the timber of the then Lewis and Clark Forest Reserve. His journals describe large expanses of the Swan Valley dominated by large trees of ponderosa pine, Douglas-fir, and western larch grown in an open canopy on the valley, benches and foothills and denser stands of shade-tolerant species on the stream bottoms and high elevations.

“The lands of the upper valley, where the rather scant covering of larch and lodgepole pine at first gives the impression of very poor soil, but upon close examination it is found that the sparseness of tree growth is largely due to frequently occurring fires which have thinned the forest.” (Ayers 1898)

The heavily timbered forests of western Montana were traditionally relatively poor in game compared to the plains. Big game populations dropped to a historic low in the 1890s and early 1900s. Numbers began to rise again with the creation of the forest reserves, the enforcement of game laws, and later the establishment of numerous game refuges. In the days before many settlers had arrived in Montana, deer and elk were found mainly on the prairies and in the mountain valleys. In the late 1800s, they began moving into the mountains and forests with the pressures of hunting, agriculture, logging, and fires (McKay 1994).

Many other natural and human induced disturbance factors have influenced forest vegetation in and around the project area including: wind, floods, invasive species, residential and commercial development, transportation systems, and timber harvest.

Existing Condition

The Mid Swan Salvage Blowdown Project Area contains some of the most highly productive sites found on the Swan Lake Ranger District. A mix of forest conditions exist, which are largely due to elevation/topographical variations. The project area consists mostly of the warm-moist valley bottoms changing to moderately warm benches and cool moist midslopes to the east. The following excerpts

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from the Upper Swan Valley Landscape Assessment (Project File Exhibit R-2) describe these mixed-forest conditions.

The warm-moist valley bottoms include the undulating flat lands of the valley floor with its many wetlands. This is a warm moist habitat that is mostly forested with a large diversity of conifer and deciduous tree species. Openings in the forest are numerous, largely due to human settlement. These areas contain a mix of western larch, western white pine, lodgepole pine, Douglas-fir, ponderosa pine, Engelmann spruce, grand fir and subalpine fir on the more well drained sites. The neighboring riparian zones are bordered with cottonwood, birch and aspen. Disturbances in this area included primarily low and mixed severity fire, and occasionally high severity fire. High intensity winds have also occurred at intervals and caused extensive blowdown.

The moderately warm benches to the east include a pattern of riparian and potholes along its entire length, with ponderosa pine and western larch growing mostly on the drier areas. It is a mixture of forest types with deciduous species and Engelmann spruce around the wetlands and along riparian areas, and mixed stands of lodgepole pine, grand fir, subalpine fir, Douglas-fir and western red cedar. Historically, these tended to be open grown stands, where fire disturbances tended to be of low severity to mixed severity. A number of these historically open stands are now crowded with younger trees, mostly Douglas-fir and lodgepole pine, increasing the risk for intense fires that might kill the large, older ponderosa pine, western larch, and Douglas-fir.

The cool-moist mid slopes to the east includes a transition between the moderately warm benches to the west and the cold-steep uplands to the east. Tree species in this area include Douglas-fir, lodgepole pine, western larch, western white pine, Engelmann spruce, grand fir, western red cedar and subalpine fir. Disturbances in this area included a combination of low, mixed, and high severity fires. High severity winds causing blowdown have also occurred in the area causing increased insect problems.

Two recent stand altering, large scale wind events occurred within the project area. The earlier wind event affecting the project area occurred during the month of June 2008 in the vicinity of Goat Creek as high winds moved from west to east. Most of the tree damage associated with this storm affected stands occurring in the Swan River State Forest. However, some damage to Forest Service lands was suffered.

The later and larger event occurred on the evening of July 4, 2008. The storm moved from west to east across the Swan Valley and appeared to be straight line wind. On the west side of the valley the storm centered around the Piper Creek Drainage and on the east side of the valley it was focused along the Lion Creek Drainage. Forested stands on all ownerships were affected by this wind event. Assessments revealed variability in damage severity, type, and distribution. Small groups of trees were commonly affected. A limited number of areas greater than a few acres in size were severely affected. In those areas, the majority of the overstory trees were damaged. Damage to individual trees includes uprooting, stem breakage, and severe bending. Stem breakage includes single to multiple breakpoints in tree boles. Some areas have abundant trees with intact roots and no stem breakage, but contain trees which are severely bent. It appears that dominant and codominant trees with large crowns were damaged more frequently than smaller crowned trees. The species affected also varied and includes ponderosa pine, western larch, Douglas-fir, lodgepole pine, Engelmann spruce and scattered other species. It appears that some of the wind damage occurred in areas of natural openings, or adjacent to previous harvests. However some of the wind damage also occurred in forested areas with concentrations of large trees, varying soil conditions and varying topographic positions.

Aerial and ground surveys observed four major insect agents within the project area: mountain pine beetle, Douglas-fir beetle, spruce beetle, and fir engraver. Pine engraver beetles were observed in some wind damaged ponderosa pine. Low numbers of Douglas-fir beetle, spruce beetle, western balsam bark beetle, and Douglas-fir pine beetle were observed in wind damaged trees. Bark beetle activity seemed to be widespread and relatively frequent. In 65 percent of the units, bark beetle evidence was observed in wind damaged trees. Almost all observations were Douglas-fir beetle in wind thrown Douglas-fir trees, with some mountain pine beetle seen in wind damaged ponderosa pine.

Desired Condition

The desired future conditions described for the Flathead National Forest Land and Resource Management Plan (Forest Plan) Management Areas (MA), in conjunction with the other Forest Plan direction outlined below, provide the parameters for identifying and defining project-specific desired future conditions. The following desired future conditions will help guide management of the project consistent with the Forest Plan, the key issues, and the current ecological conditions of the Mid Swan Blowdown Salvage Project Area.

- Emphasize cost-efficient production of timber while protecting the productive capacity of the land and timber resource.
- Special consideration will be given to white-tailed deer winter range within this management area.
- Manage riparian areas throughout the Forest to enhance vegetation and wildlife diversity and maintain or enhance water quality and fisheries.
- Emphasize water and soil protection and old-growth habitat.
- The visual landscape may be altered.
- Roaded natural-appearing recreation opportunities environment will be provided.

Management Direction

The Forest Plan embodies the provisions of the National Forest Management Act (NFMA), its implementing regulations, and other guiding documents. The Forest Plan sets forth in detail the direction for managing the land and resources of the Flathead National Forest. Forest Service Manuals and Handbooks also provide direction and were applied to the development of this project.

Activities are planned on units within Management Areas (MAs) described in the Forest Plan. The large majority of the project is located within MA-5 and MA-9. A smaller number of acres within the project area are located within MA-12. Actual harvest units are planned solely within MA-5 and MA-9. Management emphasis in MA -5 is timber/scenery on lands near the Highway 83 travel corridor. Management emphasis in MA-9 is timber/deer winter range. More detail on Forest Plan management direction is contained in Chapter 3, and alternative summaries in Chapter 2 show forest plan management direction for each unit.

Purpose and Need

Based upon the existing condition of the project area and consistent with Forest Plan direction, the Swan Lake Ranger District ID Team identified the following management activities:

- **Recover merchantable timber from areas affected by wind damage;**

- **Provide wood products for local communities.**

The following objectives would be accomplished through proposed activities.

- **Recover merchantable timber from areas affected by wind damage:**
 - Meet Forest Plan guidance for the management areas where the wind damage has occurred;
 - Reduce forest fuels buildup adjacent to public and private lands;
 - Improve the general health, resiliency, and sustainability of forested communities; and
 - Reduce the risk of insect epidemics and disease infestations within the project area.

Provide wood products for the local economies:

- Contribute to short-term forest products for the local timber industry and provide for long-term sustainability of timber on NFS lands.

Proposed Action

The Swan Lake Ranger District ID Team has identified the following management activities to move toward the desired future (vegetative) condition of recovering merchantable timber from areas affected by wind damage and providing wood products from the Mid Swan Salvage Blowdown Project Area:

- Salvaging **690 acres** of blowdown timber with commercial harvest prescriptions (tractor, tractor/skyline, forwarder, and/or skyline systems). An estimated 9568 CCF (cubic hundred feet) or 5200 MBF (thousand board feet) of commercial timber products would be produced.
- Hand planting of **90 acres** of desired species within salvage units.
- Constructing two segments of temporary road totaling approximately **0.3 miles** in order to implement prescriptions requiring mechanized treatment and to provide for product removal. These roads would be reclaimed following their use.
- Utilizing **0.5 miles** of skid trails for forwarding logs with a tractor from the felled location to a landing, where they are loaded on trucks and hauled away. In some instances, it may be necessary to have a designated skid trail outside of the unit boundary a short distance to a nearby landing location adjacent to the haul route. Skid trails would be reclaimed following their use using drain dips, outsloping, scarifying, seeding, and recontouring.
- Applying BMPs to all temporary roads constructed and roads temporarily opened, as well as all system roads as requirements of the timber sale. Approximately **16.8 miles** of system roads would have BMPs applied to reduce sediment yields.

Project Scope

Scope of the Proposed Action

The Proposed Action would result in timber sales expected to be sold in 2009. It is hoped that timber harvest would be completed within 1 season to maximize value after the sale date, but economic conditions, timing of the offer, and other factors may lead to the project requiring 1 to 2 or more years for harvest to be completed. Implementation of road work associated with timber sales should begin once the project is awarded. Reforestation activities would be completed no more than 5 years after logging is completed. Management activities would be completed by 2019.

Scope of the Analysis

The Council on Environmental Quality (CEQ) regulations implementing the NEPA require that all Federal agencies consider the following three types of actions to determine the scope of the analysis (40 CFR 1508.25).

Connected Actions

Connected actions include closely-related actions that automatically trigger other actions that may require NEPA analysis; cannot or would not proceed unless other actions are taken previously or simultaneously; or are interdependent parts of a larger action and depend on the larger action for their justification. These actions are part of the proposed action and include all activities needed to complete the proposed project and provide for resource protection during and after project completion. Connected actions contained in the proposed action include, but are not limited to:

- Post-timber sale activities (such as slash piling for hazard reduction and revegetation of disturbed areas);
- Watershed BMPs described in Appendix B,
- Project Design Criteria described in Table 2-14 associated with the action alternatives; and
- Tree planting and monitoring of reforestation success.

Similar Actions

Similar actions are actions with similarities to other actions that provide a basis for evaluating their environmental consequences, such as similar timing or geography. A number of these actions have been identified and evaluated in the analysis of environmental consequences (EA, Chapter 3). These are current and reasonably foreseeable actions described in the following section on cumulative actions.

Cumulative Actions

Cumulative actions are past, present, and reasonably foreseeable actions that may have cumulatively significant impacts when considered with the proposed action. The effects of these actions on NFS lands have been evaluated in the environmental analysis of the Proposed Action and its alternatives. Actions considered in the cumulative effects analysis are presented in more detail in Chapter 3.

Decisions to be Made

The Responsible Official for this proposal is the Forest Supervisor, Flathead National Forest. After the close of the EA review and comment period, the Forest Supervisor will consider comments submitted by the public, interested organizations and government agencies (Federal, State, and local) and respond to these comments in the Decision Notice. She will decide whether and how to meet the Purpose and Need to recover merchantable timber in areas affected by wind damage and provide wood products for local communities in the Mid Swan Salvage Blowdown Project Area. In addition, based on the findings in the EA, the Forest Supervisor will make the following decisions documented in the Decision Notice:

- The location, design, and scheduling of proposed activities, temporary road construction, and silvicultural practices;
- Design Criteria to protect or enhance resources; and

- Specific project monitoring requirements needed to assure Design Criteria are implemented and effective.

Applicable Laws and Executive Orders

A partial list of Federal laws and Executive Orders pertaining to project-specific planning and environmental analysis on Federal lands follows. While most pertain to all Federal lands, some of the laws are specific to Montana. Disclosures and findings required by these laws and orders are contained in Chapter 3 of this EA.

- Multiple-Use Sustained Yield Act of 1960.
- National Historic Preservation Act of 1966 (as amended).
- National Environmental Policy Act of 1969 (as amended).
- Clean Air Act of 1970 (as amended).
- Endangered Species Act of 1973 (as amended).
- Forest and Rangeland Renewable Resources Planning Act (RPA) of 1974 (as amended).
- National Forest Management Act (NFMA) of 1976 (as amended).
- Clear Water Act of 1977 (as amended).
- American Indian Religious Freedom Act of 1980.
- Archeological Resource Protection Act of 1988.
- Cave Resource Protection Act of 1988.
- Executive Order 11593 (cultural resources).
- Executive Order 11988 (floodplains).
- Executive Order 11990 (wetlands).
- Executive Order 12898 (environmental justice).
- Executive Order 12962 (aquatic systems and recreational fisheries).

Information Sources

The analysis and decision processes for this project are based on the consideration of the best available science. The manner in which best available science is addressed can be found within the disclosure rationale throughout the EA, biological assessments (BA), biological opinions (BO), and the project file.

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