



CHAPTER 3

Affected Environment and Environmental Consequences

I. INTRODUCTION

This chapter presents both the existing environment of the *Moose Post-Fire Project* area and potential consequences to that environment by implementing any of the five alternatives presented in Chapter 2. Discussions of the current condition describe the physical, biological, social, and economic environment for each potentially affected resource. Discussions of environmental consequences form the scientific and analytic basis for comparing the alternatives. All direct, indirect, and cumulative effects are disclosed. The means by which potential adverse effects would be reduced or mitigated are also described (also see Chapter 2). Some resource conditions consider a larger area than the project area boundary if predicted effects extend beyond the project area. The project record contains information concerning the boundaries for each area analyzed.

The discussions of resources and potential effects take advantage of existing information included in the Forest Plan, other project documents, project-specific resource reports and related information, and other sources as indicated. Where applicable, such information is briefly summarized and referenced to minimize duplication. The project record for the Moose Post-Fire Project includes all project-specific information, including resource reports, the watershed analysis, and results of field investigations.

Analyzing Effects

Direct, Indirect, and Cumulative Effects

Direct environmental effects are caused by the proposed project activities and occur at the same time and place (40 CFR 1508.8). Indirect effects are those that occur later or at a distance from the activity but may have significance to the action in the near future. Cumulative effects result from incremental consequences of actions when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative effects can result from individually minor, but collectively significant, actions taking place over time.

Past, Present, and Reasonably Foreseeable Actions

Past, present, and reasonably foreseeable actions are activities have already occurred, are currently occurring, or are likely to occur in the vicinity of the project area and may contribute cumulative effects. The past and present activities and natural events have contributed to creating the existing condition, as described in the Affected Environment sections of Chapter 3. These activities, as well as reasonably foreseeable activities, may produce environmental effects on issues or resources relevant to the proposal. Therefore, the past, present, and reasonably foreseeable activities have been considered in the cumulative effects analysis for each resource area.

Not all past, present, or reasonably foreseeable actions affect resource areas (e.g. wildlife, recreation, etc.) the same. For instance, one reasonably foreseeable action may greatly affect a resource area while not affecting another. The cumulative effects analysis for each resource area considered those past, present, and reasonably foreseeable actions that would have relevant effects – reasons as to why past, present, and reasonably foreseeable actions had no effects are documented in the project record and are not elaborated further in this EIS.

Major Past Actions - Flathead National Forest System Lands

- Tree harvest has taken place in the Big Creek drainage since 1952, including precommercial thinning and reforestation. Approximately 26% of the drainage has been harvested (refer to the vegetation section in this chapter for further information on these past actions).
- Road construction/reconstruction/maintenance began in the 1950s. Approximately 165 miles of national forest system roads still exist within the Big Creek drainage
- Trail construction/reconstruction/maintenance
- Noxious weed treatments within the Big Creek Campground
- Construction/operation/maintenance of Big Creek Ranger Station (now known as Glacier Institute)
- Construction/operation/maintenance of Big Creek Campground
- Prescribed burning occurred in the Demers Ridge winter range area in the mid-1980s.
- Personal use firewood cutting, Christmas tree harvesting, post and poles, and bough collection
- Construction/operation/maintenance of Moose Lake Campground. The entire campground was reconstructed in 1997, making it handicap-accessible. New trails to the campsites, a new toilet, new picnic tables, new fire rings, etc. were included. The trailhead to Moose Peak was also relocated a couple of years before.
- Hunting, fishing, snowmobiling and dispersed recreation
- Snowmobile trail grooming started in 1979 in the upper portion of the Big Creek drainage. A warming hut exists on the Lakalaho Road 1696, maintained by local snowmobile groups.
- Construction and operation of Big Mountain Ski Area; 7 downhill ski runs are located in the upper portions of Big Creek (the ski area was not affected by the fire) There are potentially 9 runs planned and approved for construction under the Big Mountain Ski and Summer Resort Final EIS (1995). Between January 1985 and August 1997, there were approximately 1800 acres of land transferred from private to federal ownership in the headwaters of Big Creek. This area was extensively logged during the 1960s. The Flathead National Forest now manages the entire Big Creek basin.
- Road closures and decommissioning. Approximately sixteen to seventeen miles of road in upper Big Creek and Skookoleel Creek have been decommissioned in the past five years.
- Fire suppression since 1910 throughout the Big Creek basin.
- Wildfires: portions of the area experienced stand-replacing wildfires in 1910, 1919 and 1926. There have been very few wildfires since 1926, and none over 200 acres in size other than the Moose Fire.
- Moose fire suppression and rehabilitation: about 15 miles of fire line were constructed in the Big Creek watershed. Of this amount, approximately 8 miles were hand line and 7 miles were constructed with mechanized equipment. Fire retardant was deployed with air tankers in the Big Creek watershed between mid-August and late September.
- Trees adjacent to roads within the Moose Fire area that were identified as a hazard to firefighters and the public were felled during fire suppression actions. Removal of these trees began in the winter following the

fire and is scheduled to be completed by August 1, 2002. Approximately 450 tons of wood products are expected to be removed from the area.

- Moose Fire Burned Area Emergency Rehabilitation (BAER) projects: included replacement of several culverts, installing drain dips, and placing numerous straw wattles, fiber mats, and loose straw material to help trap sediment and reduce erosion in areas of high burn intensity (refer to the fisheries and hydrology sections in this chapter for further information on the BAER projects).
- Drain dips installed during fall 2001 along the entire length of Elelehum Road 5272.

Past Actions - Coal Creek State Forest

- Timber sales and road construction

Current and Reasonably Foreseeable Actions - Flathead National Forest System Lands

- April 1, 2002 temporary closure order resulting from the snowmobile agreement restricts snowmobiles to specific roads and areas in the North Fork. A programmatic amendment of the Forest Plan to address winter motorized access is ongoing. This amendment proposes changes to existing Forest Plan direction that may affect use and distribution of future snowmobile activity and is expected to be completed in the late winter or early spring of 2003.
- Numerous activities to revegetate and reforest sites throughout the Moose Fire area including planting shrubs on about 200 acres in winter ranger areas (about 100 acres in MA 9 and 100 acres in MA 13. [See map in project record V-3.]). Activities are expected to begin in the spring of 2002 and may take two years to complete. Post-harvest reforestation activities are addressed as proposed actions in the *Moose Post-Fire Project EIS*.
- Roads and culverts throughout the Big Creek and Coal Creek watersheds require improvements to meet best management practices (BMPs) and accommodate elevated levels of run-off anticipated from the fire. Activities are expected to begin in the summer 2002 and would likely continue for the next 2-3 years. This road maintenance work, which includes roads planned for timber hauling associated with proposed harvest activities, is addressed in the *Moose Fire BMP Implementation Project*. This BMP project primarily includes installation of road drainage structures (e.g. stream culvert replacements, cross-drain culverts, drain-dips). This project would involve the replacement of up to 77 culverts in the Big Creek drainage (8 culverts in the Coal Creek drainage) that currently do not meet INFISH and/or BMP size requirements or are otherwise deemed at high risk of failure. Seven of these culverts have been identified as barriers to fish passage and their replacement would provide fish access to several miles of habitat for the first time since the original road construction.
- Trail maintenance/reconstruction – The fire damaged several trails for a total of 21.2 miles. Of these, 10.6 miles need maintenance activities. These trails will receive clearing, hazard tree removal (on either side of the trail or over the trail where necessary), water bars, and retread. Work may begin in the summer of 2002, depending on funding, and some work may not be completed until 2004. Trails include:
 - Du Hein (River) Trail 383
 - Demers Ridge Trail 266
 - Glacier View Mountain Trail 381
 - Forks Patrol Trail 452
 - Elelehum Trail 255
 - Deadhorse Trail 194

Trail work on Forks Patrol and Elelehum will include total reconstruction on 10.6 miles of trail and would occur under a contract. See map in project record.

- Moose Peak burn – In 1998, a decision was authorized to use a series of prescribed burns to restore whitebark pine in the Moose Peak vicinity between Coal Creek and Mathias Creek to the north, and the Deadhorse and Hallowat drainages to the south and east. Approximately 2,000 acres was targeted for burning within the Moose Peak area. This area will be reevaluated to determine whether this project will occur. (Refer to map, project record V-4).
- Noxious weed monitoring and treatment – Monitoring and treatment of noxious weed infestations in the Moose fire areas will begin in 2002. The *2001 Forest-wide Noxious and Invasive Weed EA and Decision Notice* authorizes this work. Treatment areas may include: open roads, gravel pits, Big Creek Campground, Glacier Institute, and planned roads for decommissioning.
- Commercial Mushroom Harvest – A signed decision authorizes commercial and personal mushroom harvesting within the Moose fire area. Mushroom harvest began in May 2002, with harvesting expected to end by August 2002. See decision and map in project record V-2. Included in this project is a temporary road closure order (until April 2003) that restricts the same open roads that are identified for closure in Alternative 2 of this DEIS.
- Routine road maintenance – Routine road maintenance is likely to occur as needed on 25.5 miles of existing roads within the project area. These actions include road blading, done on an annual basis, and culvert cleaning when needed.
- Road decommissioning resulting from past planning decisions; approximately 12 miles of road still need some work to meet decommissioning needs in the Werner Creek grizzly bear subunit and 7 miles are needed in the Lower Big Creek grizzly bear subunit. This work is expected to be completed in 2002 (refer to fisheries and hydrology sections in this chapter for further information; also refer to Map 2-3 to see the locations of these roads to be decommissioned).
- Recreational public uses such as sightseeing, hiking, camping and snowmobiling are expected to continue. Public use is anticipated to increase over the next 10 years.
- Special forest product gathering for personal use is likely to occur, such as berry picking, firewood and Christmas tree cutting, evergreen bough and cone collection, particularly in those areas unaffected by the fire.
- The closure order for firewood cutting in the fire area currently in effect will be rescinded after harvest activities. Additional signs will be placed in riparian areas to ensure that no firewood cutting occurs in these areas (which are also specified in all firewood cutting permits) once the closure order is lifted.
- Improving road drainage on a small road used by Winter Sports Inc. to access Chair 7 (refer to hydrology section in this chapter for further information).
- Compliance with the Big Creek fishing closure will be encouraged by signs located on bridges and other likely access points.

Current and Reasonably Foreseeable Activities on Coal Creek State Forest

- *Coal Creek State Forest Moose fire Salvage and Reforestation Project – Phase 1.* During the recent winter of 2001 and 2002, the Department of Natural Resources and Conservation have salvaged approximately 986 acres. They have built approximately 0.5 miles of short, temporary jump-up and extension roads. These roads are planned for decommissioning. Western larch and rust-resistant western white pine will be planted during July of 2002. Road maintenance activities will be done to Coal Creek Road 317, Road 909, spurs off of Road 909 on Coal Ridge, and Dead Horse Road 1693. During the spring of 2002, noxious weeds will be monitored.

- *Coal Creek State Forest Moose fire Salvage and Reforestation Project – Phase II.* The Department of Natural Resources and Conservation selected Alternative D (modified) for their Phase II project. It will log up to about 1202 acres, some of which is optional and helicopter logging only. No temporary roads will be built. Planting will follow.
- Mushroom harvesting is occurring on State lands, and is expected to continue through August 2002.