

## CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

### Introduction

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This chapter summarizes the physical, biological, social, and economic environments of the analysis area and the effects of implementing each alternative on those environments. It also presents the scientific and analytical basis for the comparison of alternatives presented in the tables at the end of Chapter 2.

Each of the following resource analyses includes an Affected Environment Section that describes the geographic and temporal scope used to describe current resource conditions. These boundaries are used to determine the extent and magnitude of effects in the subsequent section on environmental consequences. The effects area for a particular resource is strongly related to the science (biology, geology, ecology) of that resource and may not be confined to the boundaries of the analysis area. For example, the effects area for air quality analysis comprises much of northwest Montana.

The Environmental Consequences sections discuss in detail the environmental effects that would occur for each alternative. It forms the scientific and analytical basis for the alternative comparisons presented at the end of Chapter 2 and in the summary (40 CFR 1502.16). The effects of the No-Action alternative (Alternative A) form a baseline against which all other alternatives are evaluated. Each narrative begins with a brief explanation of how effects were analyzed and the models used for each resource. When the effects or impacts are associated with an issue, as described in Chapter 2, its relevance and tie with the issue is discussed and plays an important role in the evaluation of alternatives.

All of the action alternatives include varying intensities of timber harvest, travel management, and rehabilitation. Therefore, the environmental effects of the alternatives vary. The level of detail for each resource analysis depends on the character of that resource, the amount of information available, importance of effects, and the scale of analysis most informative or relevant for that affected resource.

Environmental effects can be direct, indirect, or cumulative. They can be long or short in duration. Effects can be quantitative or qualitative, adverse or beneficial, actual or potential. It is important to consider timing and location of effects. Direct effects are those that are caused by the action and occur at the same time and place. Indirect effects are those that are caused by the action and are later in time or further removed in distance, but are still reasonably foreseeable (40 CFR 1508.8). In most cases direct and indirect effects are discussed together. Cumulative effects are those that result from the incremental impact of the action when added to other past, present, and reasonable foreseeable future actions (40 CFR 1508.7). Therefore, the discussion of effects first considers the direct and indirect effects of each alternative and does not consider cumulative effects unless direct and indirect effects exist. Chapter 1 described other actions (past, other present, reasonably foreseeable)

that have the potential to contribute to cumulative effects for the resources in the area. In this chapter, these actions are considered by each resource.

As the effects on a resource for each alternative are read, the supplemental maps should be referred to for the location of activities and area of analysis.

Discussions under each resource include a description of the regulatory framework associated with each resource. Environmental laws such as the National Forest Management Act (NFMA), Endangered Species Act, Clean Water Act, and Clean Air Act provide the direction to the Forest Service for management of forest resources. These laws are interpreted and defined through the Code of Federal Regulations (CFRs), Administrative Rules of Montana (ARMs), Land and Resource Management Plan (LRMP) direction, Forest Service Manual direction, and Forest Service policy. The regulatory framework associated with each resource is helpful in relating national and Forest direction to resource analysis procedures. The regulatory framework section is included in the Affected Environment section, with regulatory consistency findings at the end of the effects analysis for each alternative.

### **Relationship of this FEIS to Land and Resource Management Plan Direction**

The general management direction of the Flathead National Forest is found in the LRMP. The LRMP document provides Forest-wide goals and objectives for its diverse resources (pp. II-1 through II-57), as well as more specific management direction for sub-units of the Forest, referred to as Management Areas. Please see Appendix B for a description of the Management Areas found in the Logan Creek area.

Consistency of the alternatives with LRMP direction is determined after the effects analysis is completed. If one of these alternatives or the components of the alternatives that make them not consistent with the LRMP are selected in the Record of Decision, a non-significant, project-specific LRMP amendment or amendments would be part of the Record of Decision.

### **General Area Description and History**

The area considered for potential projects on National Forest System land in the proposed action and its alternatives encompasses the Logan Creek drainage (exclusive of Sheppard and Griffin Creeks) for a total of approximately 61,266 acres (See Figure 1-2). The Flathead National Forest administers 79 percent of this area. Private land accounts for about 10 percent of the area, with the remainder evenly split between corporate and state lands.

The area consists of continental glaciated lands in the Stillwater River drainage including Tally Lake, which is approximately 1239 acres. The major subdrainage is Logan Creek, which drains into the valley of the Stillwater River. Valley bottom elevations range from 3000 feet to approximately 3800 feet in level rolling bench land topography with slopes generally between 0 and 15 percent.

Ridgeline elevations encompassing the core of the area range from approximately 5300 feet to a maximum of 6297 feet at Ashley Mountain on the southwestern boundary. The Tally Lake

Gorge has steep ledgy canyon lands adjacent to the east, west, and southern portions of the lake. The topography within the upland sector of the area is benchy rolling mountain canyon land with slopes usually 10 to 40 percent and generally broad ridgetops with slopes between 0 and 20 percent. The Star Meadow area located in the west central portion of the analysis area is a broad marshy valley bottom with a series of beaver ponds intermingled with brush and marsh grasses.

The area is influenced by moist air masses most of the year from the northern Pacific Ocean (Barrett et al. 1991). A weather station in Olney (elevation 3170 feet) recorded mean summer and winter temperatures of 60 degrees F and 22 degrees F, respectively with an average annual precipitation of 23.7 inches; approximately 50 percent of the precipitation occurs as snowfall. Summers are short and cool. Summer thunderstorms usually approach from the southwest in the late afternoon. The prevailing winds come from the west and southwest.

European Americans homesteaded the Stillwater Valley from the 1860s through the early 1900s and picked the choicest land to develop. A few outlying trapper cabins existed along Logan Creek. The Old Fort Steele Trail generally paralleled the Stillwater River to the east and was the main access route to the Logan Creek area. The trail received more use after the discovery of gold in Canada in approximately 1864. The Great Northern Railroad was completed along the same corridor in 1904. From the 1890s through the 1920s, logging within the watershed supplied ties for railroad construction. Most of this logging occurred on private and state lands. A primitive road system accessing the Star Meadow and Reid Creek Area was completed by the early 1914.

The major use of National Forest System lands in the Logan Creek area has been timber production, beginning in the late 1950s. Road building and salvage harvest continued into the 1980s in response to heavy mortality in lodgepole pine from the mountain pine beetle. State and private timber harvesting also occurred throughout this period.

Homesteading in the Logan Creek area began in earnest in the early 1900s. Today there are over 100 landowners within the analysis area, perhaps a third of whom are year-round residents. Residents in Logan Creek vicinity parcels appear to appreciate the remoteness of the area. Many do not have telephone or electric service.

People visit the Logan Creek area for a variety of recreational and subsistence pursuits. These include hunting, fishing, firewood gathering, hiking, mountain biking, snowmobiling, driving, and camping. The Tally Lake Campground is a major fee campground in the area and will be discussed in detail in the recreation section of this document.