

# AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

## INTRODUCTION

Chapter 3 combines two chapters often published separately in Draft Land Management Plans/Draft Environmental Impact Statements: the affected environment and environmental consequences (described below). The purpose of this chapter is to describe the ecological, social, and economic elements of sustainability of the U.S. Forest Service (USFS) and the Bureau of Land Management (BLM) public lands in the planning area, as administered by the San Juan Public Lands Center (SJPLC), and to convey how each of the alternatives are predicted to affect the natural and human environment. These two discussions have been combined in order to provide a clearer understanding of how each resource might be affected (impacted), depending on the alternative selected.

- **Affected Environment:** In this section, the current physical, biological, human, and land use environments of the planning area are discussed. This description provides a baseline against which to compare the impacts that might result from implementing any of the four alternatives.
- **Environmental Consequences:** In this section, a description and comparison of the predicted environmental consequences from implementing any of the four different alternatives are discussed. In terms of complying with the National Environmental Policy Act (NEPA), the specific purpose of this chapter is to present the analyses of the alternative management actions and to disclose the impacts of the Federal action on the human and natural environment. For this Draft Land Management Plan/Draft Environmental Impact Statement (DLMP/DEIS), the Federal action is the SJPLC's selection of an alternative, which will serve as the framework for future land use planning direction and for the appropriate use of the public lands that comprise the San Juan Public Lands (SJPL). The human environment is considered to include both the natural environment (resources) and the USFS and the BLM multiple-use and sustained-yield land management environment (resource uses).



## CHAPTER OVERVIEW

Chapter 3 describes the analysis used in the planning process to help predict how each alternative might affect resources in the planning area. Resources include ecosystem components (such as soils, forested vegetation, wildlife, etc.) as well as human uses and values (such as domestic livestock grazing, timber, recreation, heritage resources, scenic byways, etc.). The SJPLC Interdisciplinary (ID) Team evaluated each of these resource subject areas separately.

This DLMP/DEIS discusses and reviews the current conditions of each resource, as well as relevant scientific information that could affect these conditions. This is followed by a discussion of environmental consequences. This presents an analysis of the effects (impacts) of the alternatives on the resources as a result of differences in management emphasis, management area prescription allocations, management activities, and/or projected outcomes.

## IMPACT ANALYSIS, METHODS, AND ASSUMPTIONS

### Analysis of Alternatives

Effects described in this chapter are associated with projected projects, activities and alternative output levels described in Chapter 2 and the Projected Activities Appendix F that are guided by the management direction contained in the Plan. Potential subsequent projects and activities have been developed to analyze implementation of the different alternatives that are anticipated to take place over the life of the Plan or a ten to fifteen year period (some resource conditions may take longer to achieve). These projects and activities are actions that could occur but are not authorized or approved by this EIS and would be covered by subsequent NEPA analysis.

Subsequent projects and activities are projected to occur based on actions needed to move towards plan desired conditions and objectives, and are based on projected experienced budgets. However, there is some uncertainty because of factors such as budget changes, changes in environment and weather, unknown location of projects, and other unforeseen events.

If a particular allowable use or management action is not discussed for a particular resource, it is because no impacts are expected, or the anticipated impact is not considered significant.

## Impact Analysis

When applicable, definitions of the following types of impacts are included in the evaluation of environmental consequences (all possible impacts are not described and, unless otherwise stated, impacts described in this chapter are assumed to be adverse), including:

- **Direct/Indirect Impacts:** In general, direct impacts result from activities authorized by the SJPLC and generally occur at the same time and place as the management activity or action causing the impact. For example, for the action of building a road, a direct adverse impact is surface disturbance. Surface disturbance is the impact (the effect) of heavy equipment (the cause) removing existing vegetation as it grades the proposed road location. Indirect impacts often occur at some distance or time from the action. In the above example, an indirect impact could occur days after the surface is disturbed, as well as some distance from the disturbance. Heavy precipitation following the removal of vegetation and/or disturbance of the ground surface could erode soil and transport sediment into streams. The impact on stream-water quality is considered an indirect adverse impact.
- **Short- or Long-Term Impacts:** When applicable, the short-term or long-term aspects of impacts are described. For purposes of this DLMP/DEIS, short-term impacts occur during or after the activity or action and may continue for up to 2 years. Long-term impacts occur beyond the first 2 years.
- **Cumulative Impacts:** Cumulative impacts result from the interaction of impacts resulting from the implementation of an alternative, along with impacts resulting independently from unrelated actions and activities. Cumulative impacts may include public lands in the planning area, as well as both private and public lands adjacent to, or near, the planning area.

Past, present and reasonably foreseeable future actions and trends considered in the cumulative effect analysis are described in the affected environment discussions for each resource section and/or within the cumulative effects narratives.

Quantification of cumulative impacts is difficult for the resources, land uses, and management actions due to:

- uncertainties regarding the location, scale, and/or rate of changes on public lands resulting from the alternatives;
- uncertainties about the location, scale, and rate of changes on private lands adjacent to, or near, the planning area that would occur irrespective of the alternative; and
- uncertainties about the location, scale, and rate of changes resulting from the general human population growth of the surrounding area.

Also germane to the discussion of cumulative impacts are the boundaries used to define impact sources and levels. These differ by resource. For example:

- for wide-ranging wildlife, such as deer and elk, the cumulative impact area may include offsite habitats that are used to some extent by onsite populations, and that are subject to impacts from development in the offsite areas;
- for air quality, the cumulative impact area may be an entire airshed, including all emission sources that affect the same air quality parameters potentially impacted by the implemented alternative;
- for surface water quality, the cumulative impact area may be one or more watersheds, including all pollutant sources that affect the same water quality parameters potentially impacted by the implemented alternative; and
- for socioeconomics, the cumulative impact area may be one or more towns or counties, including all sources of beneficial and adverse impacts on tax revenues, employment, housing, and/or quality of life considerations reasonably (i.e., not too remotely) affected by changes related to the implemented alternative.

Although these are only examples, they illustrate that cumulative impact boundaries may not only differ considerably among resources, but that the boundaries may be either natural or artificial.

All of the environmental impacts associated with the implementation of any of the alternatives would be in addition to ongoing existing impacts occurring on USFS- and BLM-administered lands in the planning area, as well as both public and private lands adjacent to, or near, the planning area. Even where an estimate of cumulative impacts resulting from offsite causes is available (e.g., the number of oil and gas wells in surrounding counties in 20 years), it is not known how much long-term surface disturbance would result; to what degree adverse impacts would be avoided or mitigated; or how the impacts would affect other resource values and land uses, such as hunting, OHV-travel, hiking, scenic driving, livestock grazing, and so forth. Therefore, the descriptions of cumulative impacts for the individual resources addressed in this chapter may be qualitative as well as quantitative.

Beyond the 20-year planning horizon, the impact assessments are more speculative and less reliable. This is due to a large number of economic, geopolitical, environmental, regulatory, technological, and/or other factors that could affect conditions in the planning area beyond 20 years (and are themselves subject to change in unexpected ways and/or degrees). In general, however, it can reasonably be assumed that the planning area would continue to support existing multiple uses beyond the 20-year timeframe.

## METHODS AND ASSUMPTIONS

Due to the programmatic and strategic nature of this DLMP/DEIS, the timing and specific location of project-specific actions that could impact resource values are not defined. Moreover, the relationship between cause (future actions) and effect (impact on resources) is not always known or quantifiable. For these reasons, the analysis of alternatives is both qualitative and quantitative, and is based on a series of assumptions. Assumptions common to all alternatives and all resources are listed below, whereas assumptions unique to specific resources and resource uses are discussed under the appropriate resource section.

- All alternatives are implemented in compliance with standard practices, best management practices (BMPs), guidelines for surface-disturbing activities, and applicable laws, standards, policies, and implementation plans, as well as with all USFS and BLM polices and regulations.
- An oil and gas lease grants the lessee the “right and privilege to drill for, mine, extract, remove and dispose of all oil and gas deposits” in the leased lands, subject to the terms and conditions incorporated in the lease (BLM Form 3100-11, Lease for Oil and Gas). The Secretary of the Interior has the authority and responsibility to protect the environment within Federal oil and gas leases; therefore, restrictions are imposed on the lease terms.
- Provisions in leases that expressly provide the SJPLC the authority to deny or restrict development, in whole or in part, depend on a opinion provided by the U.S. Fish and Wildlife Service (USFWS) regarding impacts to endangered or threatened species or to habitats of plants and animals that are listed or proposed for listing. If the USFWS concludes that the development likely would jeopardize the continued existence of any endangered or threatened plant or animal species, then the development may be denied in whole or in part.
- Comparison of impacts among resources is intended to provide an impartial assessment to help inform the decisionmaker and the public. The impact analysis does not imply or assign a value or numerical ranking to impacts. Actions resulting in negative impacts to one resource may impart a beneficial impact to other resources.
- Key planning issues identified in Chapter 1 provide the focus for the scope of impact analyses presented in this chapter.
- In general, impacts described in this chapter are considered important if they result from, or relate to, the key planning issues described in Chapter 1, and the context and/or intensity of impacts suggest impacts to public health and safety or potential impacts to unique resources.
- The comparison of individual alternatives is qualitative, relative to Alternative A (the No-Action Alternative), and based on impact findings, professional judgment and consideration of the context and intensity of allowable uses and management actions anticipated to impact resources and resource uses.
- Analysis of environmental consequences focuses on the anticipated incremental and meaningful impact of management actions and the allowable uses proposed under each alternative. The impact of past and present actions is encompassed within the description of existing conditions, Affected Environment, discussed concurrently in this chapter along with Environmental Consequences.

## Resource Protection Measures

Federal laws require that the USFS and the BLM ensure the long-term productivity of public lands. Both land management agencies, working cooperatively under a Service First partnership administered by the SJPLC for this planning area, have established regulations and policies to implement these laws. Additionally, the SJPLC has established standards, guidelines, and planning/design criteria that aim to protect the environment in the planning area from extreme or undesirable consequences. These standards and guidelines apply to all management activities and desired future conditions regardless of the alternative selected for implementation. (These guidelines and design criteria are described in detail in Volume II of this DLMP/DEIS, under Alternative B, the Preferred Alternative)

Mitigation measures, as defined by 40 CFR 1508.20, include:

- avoiding the impact altogether by declining to take an action, or part of an action;
- minimizing impacts by limiting the degree or magnitude of an action or its implementation;
- rectifying the impact by repairing, rehabilitating, and/or restoring the affected environment;
- reducing or eliminating the impact over time by preservation and maintenance operations during the life of an action; and/or
- compensating for the impact by replacing or providing substitute resources or environments.

At the programmatic planning level, planning/management area guidelines and design criteria should provide the appropriate mitigation measures for all of the alternatives (See Volume II, Alternative B, the Preferred Alternative. Under each resource section described under Alternative B – also referred to as “the Plan” by the USFS – the key legal and administrative guidance, such as laws, regulations, policies, and area-wide guidelines, are listed.) At the project level, analysis may indicate the need for additional mitigation in order to resolve site-specific issues. Monitoring efforts will help the SJPLC determine the effectiveness of mitigation measures. (See the Monitoring and Evaluation section of Volume II, Alternative B, the Preferred Alternative.)

## Relationship between Programmatic and Site-Specific Analysis

This DLMP/DEIS is a programmatic document. It discusses environmental effects on a broad scale. Over the lifetime of the Final Land Management Plan (FLMP), the selected alternative and the accompanying area-wide guidelines and design criteria will set management direction by establishing and affirming rules and policies for use of natural resources.

This document contains a planning area-wide level of analysis; therefore, it does not predict what will happen when such broad-based standards and guidelines are implemented on individual, site-specific projects. Nor does it convey the long-term environmental consequences of any site-specific project. The actual effects (impacts) will depend on the extent of each project, the environmental conditions at the site (which can vary widely across the public lands), and the mitigation measures and their effectiveness.

In this chapter, the focus is on presenting and discussing which consequences are most likely to occur under each alternative in relation to different resources, and why they are likely to occur. By combining this broad-based assessment with site-specific information, the reader can make a reasonable prediction about the kinds of environmental effects that could result from a specific project.

Given the complexity of natural systems, this DLMP/DEIS does not describe every environmental process or condition. This would be an impractical, if not impossible, undertaking. The purpose of this DLMP/DEIS is to provide a survey of the broader environmental, social, and economic factors that are relevant to the programmatic planning process.

After the Final Land Management Plan/Final Environmental Impact Statement (FLMP/FEIS) Record of Decision (ROD) is approved, the analysis presented in this DLMP/DEIS will be used in “tiering.” (The NEPA defines “tiering” as the coverage of general matters in broader EISs with subsequent narrower statements or environmental analyses that incorporate by reference the general discussions, allowing discussions to then concentrate solely on the issues specific to the statement subsequently prepared. Tiering is appropriate when it helps the lead agency, or agencies in this case, to focus on the new issues and exclude from consideration issues already decided). Thus, the broader analysis and conclusions analyzed in this document can then be used as a starting point for future site-specific project planning in the planning area. Each future project’s environmental effects analysis document will incorporate, by reference, the information found in the FLMP/FEIS, without the need to repeat the broader analysis process.