National Park Service
U.S. Department of the Interior

Lava Beds National Monument
California

2006 Wilderness Stewardship Plan
Environmental Assessment

Wilderness Stewardship Plan
Environmental Assessment

"Wilderness management is 80-90 percent education and information and 10 percent regulation."
—Max Peterson, Chief of the U.S. Forest Service (1979-1987)

Lava Beds National Monument
California

Recommended by: _____ Date: _____

Approved by: _____ Date: _____

Table of Contents

2.0 Proposed Action and Alternatives

3.0 Environmental Analysis

List of Figures

List of Tables

Chapter 1 – PURPOSE AND NEED

1.1 Introduction and Significance

This Environmental Assessment (EA) documents the results of an analysis of the potential environmental impacts of an action proposed by the National Park Service (NPS) to implement the Lava Beds National Monument Wilderness Stewardship Plan (WSP). This plan will cover wilderness as well as backcountry areas within the monument.

The 46,560 acre Lava Beds National Monument is located within Siskiyou and Modoc counties in Northeastern California, approximately 50 miles southeast of Klamath Falls, Oregon. The monument shares borders with the Modoc and Klamath National Forests, the Tulelake National Wildlife Refuge, and several private land owners. See Figure 1-1.

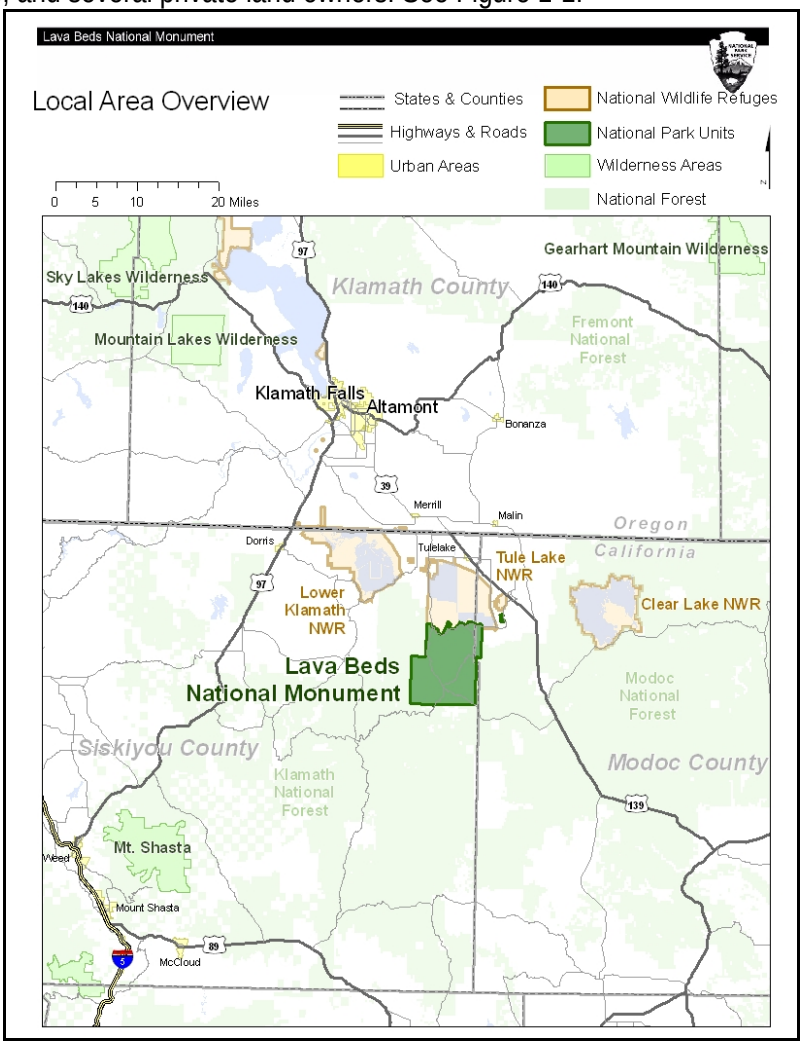

Figure 1-1 Vicinity Description

1.1 Introduction and Significance
1.2 Purpose and Need
1.3 Goals and Objectives
1.4 Previous Planning Direction, Regulation and Policy
1.5 Coordination with other Plans and Programs
1.6 Issues and Impact Topics
1.7 Issues and Impact Topics Considered and Dismissed

On October 13, 1972, two wilderness units (Schonchin and Black Lava Flow) totaling 28,460 acres were designated under public law 92- 493 at Lava Beds National Monument. Accordingly, wilderness currently represents 61% of the monument's total land area. The Lava Beds Wilderness is isolated, with the next closest wilderness area being the Mountain Lakes Wilderness, 45 miles to the northwest. See Figure 1-2.

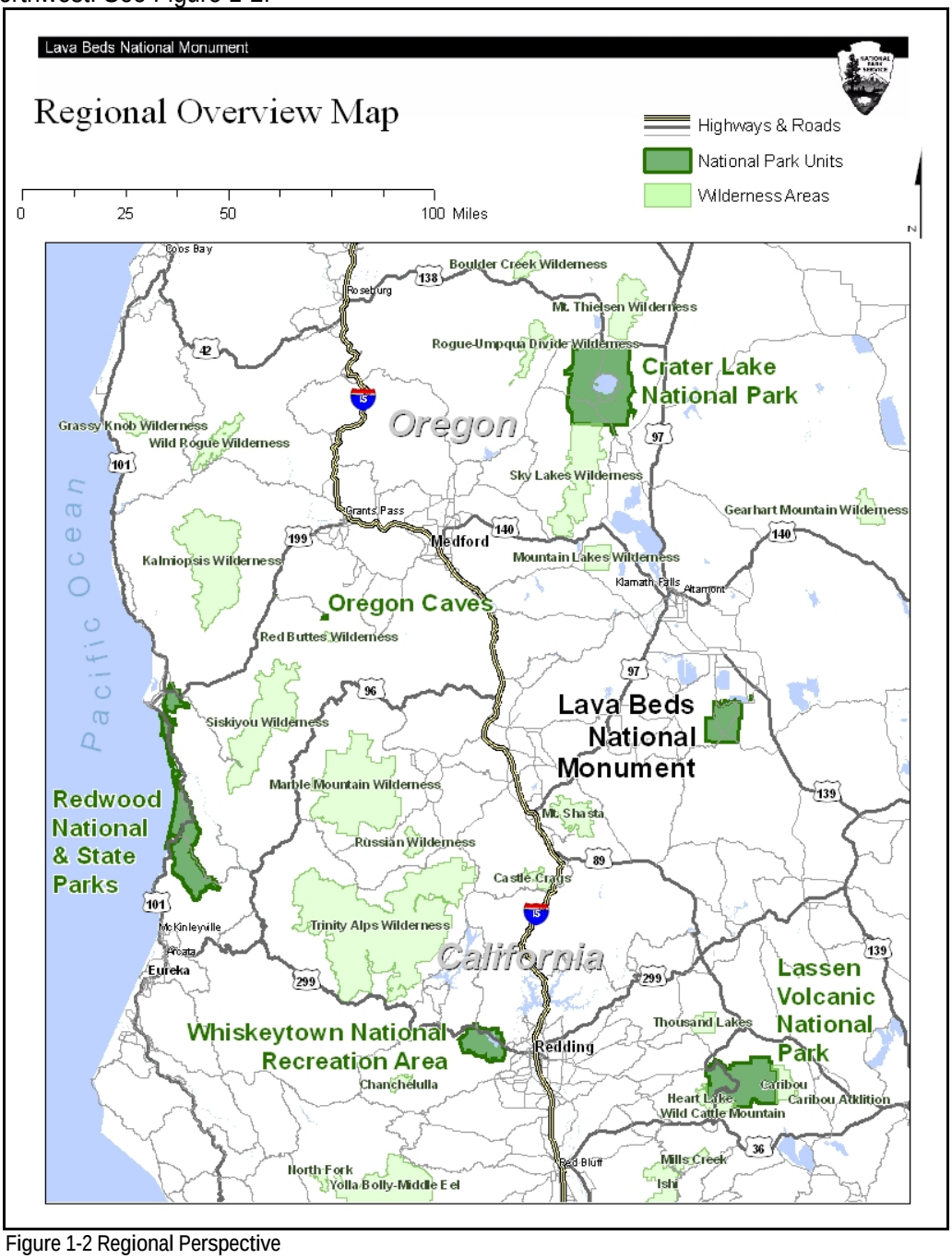

Figure 1-2 Regional Perspective

Most of the monument not designated as a wilderness is considered backcountry, except for approximately 934 acres where there are developed facilities such as: monument roads,

headquarters, campgrounds, or waysides. Lava Beds National Monument has approximately 17,166 acres of backcountry. There are a network of trails within the two Lava Beds Wilderness units and Backcountry. See Figure 1-3.

It is the goal of the park to protect all of its natural and cultural resources as best as possible. Thus, although backcountry does not get the same federal protection as wilderness, to the extent possible, they will be managed the same, in this park, in order to best conserve the resources. Wilderness areas do not exist in isolation, and the management of surrounding areas has a large impact on wilderness quality. Therefore backcountry is included in this WSP.

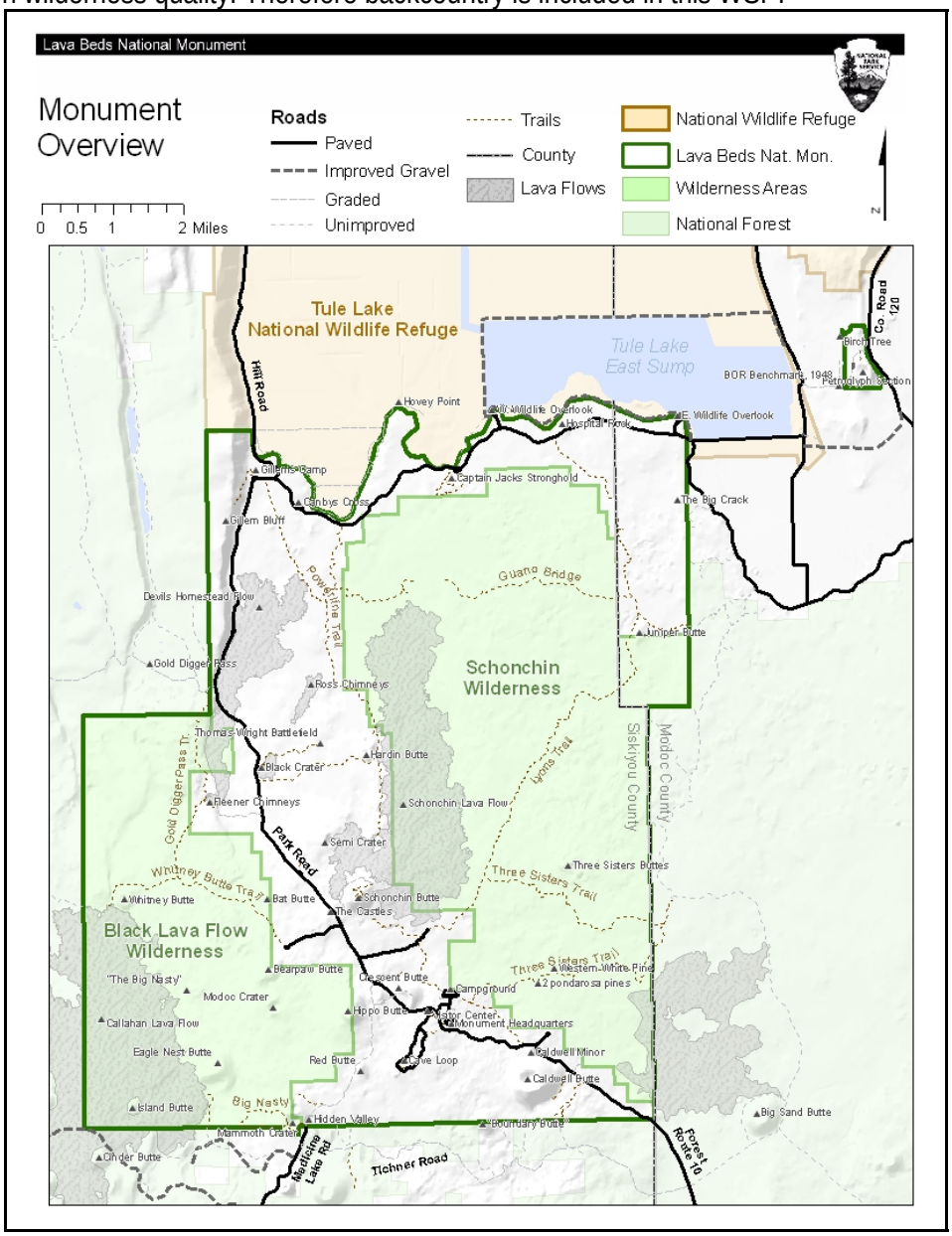

Figure 1-3 Lava Beds National Monument

1.1 Introduction and Significance
1.2 Purpose and Need
1.3 Goals and Objectives
1.4 Previous Planning Direction, Regulation and Policy
1.5 Coordination with other Plans and Programs
1.6 Issues and Impact Topics
1.7 Issues and Impact Topics Considered and Dismissed

Wilderness and Backcountry areas within the monument contain exceptional resources including geologic features, natural resources, and cultural resources.

- Volcanic features include lava tube caves, cinder cones, spatter cones and lava flows.
- Natural resources include outstanding visual and air quality, rich and varied wildlife viewing opportunities and other outstanding examples of high desert ecosystems.
- Cultural resources include archeological sites, rock art, ethnographic sites, historic structures, Modoc War fortifications and cultural landscapes.

These resources contribute to the wilderness purpose by providing recreation, scenic preservation, scientific study, education, conservation, and historical use as well as an "area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain" as described by the Wilderness Act of 1964 (Appendix B).

Within Lava Beds National Monument, there are nine official entry locations accessing the Lava Beds Wilderness. Currently, there are 38 miles of maintained trails and 12 miles of un-maintained trails in the backcountry and wilderness areas of the monument. There are no designated campsites located within the wilderness.

1.2 Purpose and Need

In the past, public concern was directed at getting areas designated as wilderness; however, with pressures such as increasing use of wilderness, the need for stewardship of wilderness arises. Wilderness stewardship is essentially management aimed at preserving an area's naturalness and solitude. This has two parts: protecting existing resources and restoring resources that have been destroyed or have undergone degradation. It includes everything done to administer an area, the formulation of goals and objectives, and all policies, standards, and field actions to achieve them. Wilderness stewardship should only do what is necessary to meet wilderness objectives and use only the minimum tools, regulation, or force required to achieve those objectives.

The main reasons for wilderness stewardship are the increase in the number of users who visit wilderness and the need to restore the dynamics that have been altered by human interference with natural processes. LABE Wilderness has been altered by human interference with natural processes such as the fire regime. While Lava Beds National Monument has not seen such dramatic increases in wilderness use as other NPS wilderness areas, this WSP will serve as a guideline to prevent and/or remedy future growth problems. This WSP will also guide the restoration of such processes.

Wilderness stewardship is also required by law. The 1964 Wilderness Act (P.L. 88-577) requires the preservation and protections of wilderness resource values. *The National Park Service Management Policies* (NPS, 2001a) state that "The superintendent of each park containing wilderness will develop and maintain a wilderness management plan to guide the preservation, management, and use of the park's wilderness area, and ensure that wilderness is unimpaired for future use and

enjoyment as wilderness." Director's Order #41: Wilderness Preservation and Management (NPS, 1999) supplement the NPS *Management Policies* (NPS, 2001a) with further planning guidance.

The Wilderness Stewardship Plan at Lava Beds National Monument does not stand alone, but implements direction provided in policy and planning documents such as:

- Lava Beds National Monument General Management Plan (LABE, 1996),
- Lava Beds National Monument Resource Management Plan (LABE, 1999b),
- Lava Beds National Monument Cave Management Plan (LABE, 1990),
- Lava Beds National Monument Fire Management Plan (LABE, 2004).

Both Lava Beds National Monument's General Management Plan and Resource Management Plan require completion of the Wilderness Stewardship Plan.

The monument currently does not have a Wilderness Stewardship Plan. There is a need to develop the plan to be in compliance with policy and planning directives and to ensure that the wilderness areas are managed for the use and enjoyment of the American people in such a manner as will leave them unimpaired for future use and enjoyment as wilderness.

The implementation of a wilderness management plan will prescribe the minimum requirements for the management and protection of wilderness. These minimum requirements are standards; they provide a baseline level of what is acceptable for the preservation of wilderness. These standards in turn determine the minimum tool that can be used for a given action.

1.3 Goals and Objectives

The following are key elements of the Wilderness Stewardship Plan that establish and provide the direction for the Monument's Wilderness Stewardship Program. These goals and objectives apply to each of the proposed alternatives and will be used to measure the success of the WSP.

Goal : To retain the primeval character and influence of the wilderness area, without permanent improvements or human habitation;

> Objective- To protect the monument's wilderness resources and manage them so as to preserve their natural conditions;
> Objective- To ensure that the wilderness area continues to generally appear to have been affected primarily by the forces of nature, with the imprint of human's work substantially unnoticeable;
> Objective- To provide outstanding opportunities for solitude or a primitive and unconfined type of recreation; and
> Objective- To protect ecological, geological, or other features of scientific, educational, scenic, or cultural value found within the wilderness area.

Goal: To establish a comprehensive plan that provides for the protection of the monument's wilderness resource on a day-to-day and long-term basis in keeping with the requirements

of the Wilderness Act.

Goal: To establish a clear system of accountability (responsibility) within the monument organization for wilderness management.

Goal: To establish a systematic and documented process for determining what the minimum requirement is for all actions affecting the wilderness resource.

Goal: To provide for the continuity of the monument's wilderness stewardship program through normal staff changes and emerging service initiatives.

Goal: To ensure the consistency of the monument's wilderness program through coordination with approved policies, director's orders, and special directives affecting wilderness.

Goal: To establish a wilderness monitoring program by which individual standards of the Monument's management program can be evaluated.

Goal: To provide a means by which the public has an opportunity to participate in the development of management actions affecting wilderness preservation.

1.4 Previous Planning Direction, Regulation, and Policy

The following provide a summary of administrative factors (laws, policies, special regulations, plans, etc.) that directly apply to the wilderness resource. These provide the foundation for developing the stewardship actions proposed in this plan.

1.4.1 Enabling Legislation Summary

Lava Beds National Monument was established by Presidential Proclamation No. 1755 on November 21, 1925 (44 Stat. 2591) to "preserve, protect and promote the scientific inquiry of the natural and cultural resources of the unique volcanic fields and associated features, perpetuating, unimpaired, the ecosystems in which they are found for the benefit, enjoyment and understanding of present and future generations."

The Schonchin and Black Lava Flow Wilderness areas were established by P.L.92-493 to protect the geologic, natural, and historical significance of the area (Appendix A).

1.4.2 Other Statutes Affecting the Park Wilderness

The following are specific legislative acts that have a direct effect on the wilderness resource:

- The NPS Organic Act of 1916 (P.L. 64-235) directs the NPS to manage the parks "to conserve the scenery and the natural and historic objects and wild life therein and to provide for the enjoyment of the same in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations"
- The Wilderness Act of 1964 (P.L. 88-577) provides criteria for determining suitability and establishes restrictions on activities that can be undertaken on a designated Wilderness area (Appendix B).

- The Code of Federal Regulations (Title 36 CFR: Parks, Forests, and Public Property) is the codification of the general and permanent rules published in the Federal Register by the executive departments and agencies of the Federal Government.
- The Federal Cave Resources Protection Act of 1988 (P.L. 100-691), secures, protects, and preserves significant caves on Federal lands for the perpetual use, enjoyment and benefit of all people.
- The Endangered Species Act of 1973 (ESA) (19 U.S.C. 1536 (c), 50 CFR 402), which requires that the effects of any agency action that may affect endangered, threatened, or proposed species must be evaluated in consultation with either the USFWS or NMFS, as appropriate
- The National Environmental Policy Act (NEPA) of 1969 (42 United States Code (USC) 4321 et seq.), which requires an environmental analysis for major Federal Actions having the potential to impact the quality of the human environment
- The National Historic Preservation Act (NHPA) of 1966 (Public Law 102-575) provides the framework for Federal review and protection of cultural resources, and ensures that they are considered during Federal project planning and execution.
- The Federal 1970 Clean Air Act (CAA) stipulates that Federal agencies have an affirmative responsibility to protect a monument's air quality from adverse air pollution impacts. LABE Wilderness is designated as Class 1, which is afforded extra protection against air pollution by the CAA.
- The Federal 1972 Clean Water Act (CWA) set requirements to establish water quality standards for all contaminants in surface waters.
- The 1990 Americans with Disabilities Act and the Wilderness Access Decision Tool
- Colorado Wilderness Act (P.L. 96-560) of 1980 ensures appropriate treatment of grazing throughout the NWPS.

1.4.3 Other Jurisdictional Influences

Lava Beds National Monument maintains a concurrent law enforcement jurisdiction. Accordingly, local, regional, and state law enforcement agencies have the authority to enforce the respective laws of the state and/or county within the boundaries of the national monument area. Regardless, the monument will attempt to maintain a cordial and cooperative relationship with all law enforcement agencies operating in proximity to the monument. Enforcement of wilderness laws and regulations are not contingent upon concurrent jurisdiction.

1.4.4 Reference to NPS Management Policies/Director's Order #41

The National Park Service's *Management Policies* (NPS, 2001a) establish consistent service-wide direction for the preservation, management, and use of wilderness. *Management Policies* are based on the statutory provisions of the 1916 NPS Organic Act (16 USC 1 et. seq.), the 1964 Wilderness Act (16 USC 1131), the enabling legislation establishing the park and/or the wilderness unit and, in Alaska, the Alaska National Interest Lands Conservation Act of 1980 (16 USC 3161 et seq.).

Additional instruction and guidance for implementing wilderness management policies, and other instructions determined to be necessary by the NPS Directorate, is provided in NPS *Director's Order #41: Wilderness Preservation and Management* (NPS, 1999).

1.4.5 Other Pre-Existing Factors Affecting the Park's Wilderness

Currently, Lava Beds Wilderness contains five features that do not comply with wilderness characteristics as defined by the 1964 Wilderness Act. A legislative proposal was submitted in 2005 to correct the boundary (Appendix G). Upon approval, the corrected wilderness boundary will

be included in this WSP. If the boundary change proposal is not approved, further analysis will determine if the five features need to be mitigated.

There are several factors adjacent to the designated wilderness that affects the wilderness characteristics. The view shed within the wilderness is affected by the lights and sounds of surrounding monument developments, towns, and cities. The lights of Tulelake, California and Klamath Falls, Oregon can be seen from various locations within the wilderness boundary. The air space above the wilderness is not restricted and airplanes can be seen and heard. In addition, monument roads can be seen and traffic can be heard from various locations within the wilderness boundary. In the winter, snowmobile use south of the monument and diesel train engines on the Southern Pacific track 15 miles distant are audible from many locations within the wilderness. In addition, commercial activities on lands adjacent to Lava Beds National Monument affect wilderness characteristics. Agricultural activities such as field burning and field plowing can affect wilderness air quality, as well as geothermal activities such as the ones purposed for Glass Mountain. One of the biggest threats from geothermal developments is the construction of power lines on the eastern slope of the medicine lake highlands, which would be visible from the wilderness.

1.4.5.1 Inholdings and Retained Rights

No inholdings exist within Lava Beds National Monument.

1.4.5.2 Mining Claims

No mining claims exist within Lava Beds National Monument

1.4.5.3 Grazing Permits

No grazing permits are allotted for Lava Beds National Monument. Grazing permits for sheep were permitted until 1974.

1.4.5.4 Native American Rights

Evidence of the Modoc Indians exists in Lava Beds National Monument in the form of village sites, artifacts, and burial sites. The following rights will be acknowledged by the Monument; however, Native American activities in the wilderness must correspond with the intent of The Wilderness Act.

- The Native American Graves Protection and Repatriation Act (Pl 101-601; 25 USC 3001 ET Seq) NAGPRA provides a systematic process for determining the rights of lineal descendants, Indian tribes and Native Hawaiian organizations to certain Native American human remains, funerary objects, sacred objects and objects of cultural patrimony with which they are affiliated, and for the disposition of discoveries on Federal and tribal land.
- The American Indian Religious Freedom Act of 1978 requires the United States to protect and preserve for American Indians their inherent right of freedom to believe, express, and exercise the traditional religions of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

- The Archaeological Resource Protection Act (ARPA) of 1979 secures, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands.

1.4.5.5 Rights of Way

There are no legal rights of way that exist in the wilderness.

1.5 Coordination with other Plans and Programs

The Wilderness Stewardship Plan is to be developed in careful coordination with other park management programs and initiatives. This section will describe that coordination

1.5.1 Previous Wilderness/Backcountry Plans and Planning Efforts

The process of wilderness designation took place between 1966 and 1973. During this time the National Park Service followed direction of the 1964 Wilderness Act to study all roadless areas for potential incorporation in the National Wilderness Preservation System (NWPS). Lava Beds National Monument held a public meeting in 1967 to discuss the proposed establishment of wilderness (LABE, Library Documents). During this meeting public opinions were heard regarding the designation of Wilderness at Lava Beds National Monument. The overall outcome of the meeting was that:

- As much of the Monument as is practically possible should receive wilderness designation
- the primary need for wilderness designation is to protect the natural features from over-development and from over use because of "too easy" access
- It is impossible to get away from the sight and sound of civilization, and therefore these influences should not be considered detrimental to wilderness designation, as long as there is no physical contact with civilization.

As a result, President Nixon proclaimed 28,460 acres of the monument as wilderness on October 13, 1972.

In April, 1973 the park completed a Backcountry Use and Operations Plan (LABE, 1973) which included only general statements about the presence and management of wilderness in the park. The 1973 plan did not have any backcountry visitor use data to reference for planning purposes. Visitor management policies were not recommended due to low projected usage beyond voluntary registration, closure of delicate areas to camping and/or stock use, prohibition of wood fires, and interpretive/information efforts by the park. This plan was signed by the park management staff at the time, but did not receive the Regional Director's signature.

A draft wilderness management plan (LABE, 1989) was developed in March of 1989. This plan did not make it beyond the draft stages but represented the first attempt at developing an official Wilderness Management Plan for Lava Beds National Monument.

In 1992 another attempt to develop a Wilderness Management Plan was made but did not progress beyond the initial outline stage (LABE, 1992). In 1999 a backcountry/caving permit document was drafted with the intent of providing backcountry use information for park records and

provide emergency information such as travel routes and contact numbers for backcountry users. This permit system was not put into practice (LABE, 1999a). In 2001 a draft Wilderness and Backcountry Management Plan was internally reviewed by the resource management division. The review stage did not progress any further. (LABE, 2001a)

1.5.2 Other Plans and Programs

This section discusses the relationship of the wilderness plan to other existing plans that have potential to affect the administration and preservation of wilderness. Each of these documents clearly identifies the presence of wilderness and provides managers with specific directions as to how wilderness minimum requirement protocols (Appendix C) will be factored into all activities affecting the wilderness resource. Conversely, the respective members of the monument staff will assume responsibility to ensure that the wilderness resources, and wilderness values, are integrated into individual program management strategies.

- The General Management Plan for Lava Beds National Monument provides primary guidance for the management and development of the monument and identifies the monument's responsibility to manage wilderness in keeping with the requirements of the 1964 Wilderness Act and Management Policies (LABE, 1996).
- The Resource Management Plan identifies natural and cultural resource projects having the capacity to impact wilderness and provides a clear statement as to how the park will apply the minimum requirement process to determining the appropriateness of these projects in wilderness(LABE, 1999b).
- The Cave Management Plan states that caves located within the monument's Wilderness areas are managed by the monument as de facto Wilderness (LABE, 1990).
- The Fire Management Plan (LABE, 2004)
- Emergency Operations Guide: Standard Operations and Procedures (LABE, 2001b)
- The Lava Beds National Monument Superintendent's Compendium (LABE Superintendents Compendium, 2004)

1.6 Issues and Impact Topics

Impact topics are derived from issues raised during internal scoping. A review of the previous WMP drafts (1989, 1992, and 2001) found that no information regarding public scoping was provided. Not every conceivable impact of a proposed action is substantive enough to warrant analysis. The following topics did merit consideration in this environmental assessment. This section discusses the general relationship between an action and a resource.

1.6.1 Wilderness Character

The NPS Wilderness *Management Policies* (NPS, 2001a) are based on provisions of the 1916 NPS Organic Act, the 1964 Wilderness Act (Appendix B), and legislation establishing individual units of the National Park System. The public purpose of wilderness in national parks includes the preservation of wilderness character and wilderness resources in an unimpaired condition, as well

as for the purposes of recreational, scenic, scientific, education, conservation, and historical use. Because the monument includes 28,460 acres of wilderness, this impact topic is evaluated in this environmental assessment.

1.6.2 Biotic Resources (Including Sensitive Species)

There are resident populations of various species of plants, fungi, reptiles, amphibians, birds, mammals, and invertebrates in the monument, therefore, impacts of the WSP alternatives on natural resources are evaluated in this analysis. The Federal Endangered Species Act prohibits harm to any species of fauna or flora listed by the U. S. Fish and Wildlife Service (USFWS) as being either threatened or endangered. Such harm includes not only direct injury or mortality, but also disrupting the habitat on which these species depend.

1.6.3 Abiotic Resources (Air Quality, Water Quality, Soil Communities)

NPS *Management Policies* (NPS, 2001a) require protection of abiotic resources. These policies are consistent with the Federal 1972 Clean Water Act and the Federal 1970 Clean Air Act. Wilderness management efforts can affect abiotic resources Therefore, impacts to air, soil, and water resources are evaluated in this analysis.

1.6.4 Cave Resources

The Lava Beds National Monument Cave Management Plan (LABE, 1990) and *NPS Management Policies* (NPS, 2001a) state that caves located within the monument's Wilderness areas are managed by the monument as de facto wilderness. In addition, The Federal Cave Resources Protection Act of 1988 secure, protect, and preserve significant caves on Federal lands for the perpetual use, enjoyment and benefit of all people. Therefore, the potential impacts of the proposed Wilderness Stewardship Plan on cave resources are addressed in this analysis.

1.6.5 Visitor Use and Experience

The 1916 Organic Act directs the Service to provide for public enjoyment of the scenery, wildlife and natural and historic resources of national parks “in such a manner and by such means as will leave them unimpaired for the enjoyment of future generations.” Wilderness stewardship activities can result in affects on visitor use and experience of the park. Therefore, the potential impacts of the proposed Wilderness Stewardship Plan on visitor use and experience are addressed in this analysis.

1.6.6 Cultural Resources

Section 106 of the National Historic Preservation Act of 1966 provides the framework for Federal review and protection of cultural resources, and ensures that they are considered during Federal project planning and execution. The monument contains many cultural resource sites including archeological sites, rock art, ethnographic sites and cultural landscapes. These cultural resources can be affected by wilderness management activities, thus potential impacts to cultural resources are addressed in this analysis.

1.6.7 Socio-Economic Environment

NEPA requires an analysis of impacts to the "human environment" which includes economic, social and demographic elements in the affected area. Therefore, this impact topic is included in this analysis.

1.6.8 Fire Management

Fire is an important feature in ecological landscapes, and thus wilderness stewardship necessitates a discussion of fire. Wilderness Management can have significant constraints on how a fire is managed; therefore impacts to fire management are addressed in this analysis.

1.6.9 Human Health and Safety

Without proper training and education on wilderness survival techniques, wilderness can pose a significant danger to human health and safety; therefore, impacts to human health and safety are addressed in this analysis.

1.6.10 Operations

General park administration and operations are vital in keeping the park running. Therefore potential impacts of wilderness management on park operations are discussed as well in this WSP.

Table 1-1: Impact Topics Retained for Lava Beds National Monument Wilderness Stewardship Plan Environmental Assessment.

Impact Topic	Relevant Regulations or Policies
Wilderness Character	The Wilderness Act; Director's Order #41; NPS *Management Policies*
Biotic Resources	NPS *Management Policies;* Endangered Species Act
Abiotic Resources	NPS *Management Policies;* Endangered Species Act
Cave Resources	NPS *Management Policies*
Visitor Use and Experience	The NPS Organic Act; NPS *Management Policies*
Cultural	Section 106; National Historic Preservation Act; 36 CFR 800; NEPA; Executive Order 13007; Director's Order #28; NPS *Management Policies*
Socioeconomics	40 CFR Regulations for Implementing NEPA; NPS *Management Policies*
Fire Management	*NPS Management Policies; Director's Order #18; Reference Manuel 18*
Human Health and Safety	NPS *Management Policies 2001;* *Director's Order #18*

1.7 Issues and Impact Topics Considered and Dismissed

Certain impact topics that are sometimes addressed in NEPA documents on other kinds of proposed actions have been judged to not be substantively affected by any of the WSP alternatives considered in this environmental assessment. These topics are briefly described below including the rationale for considering, but excluding them, from further analysis.

1.7.1 Wetlands

Presidential Executive Orders mandate the protection of wetlands. Because there are no wetlands located within Lava Beds National Monument, this topic is dropped from further consideration.

1.7.2 Environmental Justice

None of the WSP alternatives would impact minority and low- income populations in a disproportionate manner. Therefore, this topic is dropped from additional consideration.

1.7.3 Front Country Developments (Utilities and Park Roads)

None of the WSP alternatives would substantively affect road, railroad, water-based, or aerial transportation in and around the park. Therefore, this topic is dismissed from any further analysis.

Generally, some kinds of projects, especially those involving construction, may temporarily impact above and below-ground telephone, electrical, natural gas, water, and sewer lines and cables, potentially disrupting service to customers. None of the WSP alternatives will cause these effects to any extent; therefore utilities are eliminated from any additional analysis.

1.7.4 Adjacent Lands

Wilderness management activities would not affect land uses outside wilderness boundaries within the park or in areas adjacent to it. Therefore, this impact topic is not included for further analysis in this environmental assessment.

1.7.5 Waste Management

None of the WSP alternatives would generate noteworthy quantities of either hazardous or solid wastes that need to be disposed of in hazardous waste or general sanitary landfills. Therefore this impact topic is dropped from additional consideration.

1.7.6 Prime and Unique Agricultural Lands

Prime farmland has the best combination of physical and chemical characteristics for producing food, fed, forage, fiber, and oilseed crops. Unique land is land other than prime farmland that is used for production of specific high-value food and fiber crops. Both categories require that the land is available for farming uses. Lands within Lava Beds National Monument wilderness are not available for farming and, therefore, do not meet these definitions. This impact topic is not evaluated further in this environmental assessment.

1.7.7 Ecologically Critical Areas

The Council on Environmental Quality requires consideration of the severity of impact on unique characteristics of the geographic area such as proximity to ecologically critical areas (e.g. biosphere reserve, world heritage site, wild & scenic rivers). Lava Beds National Monument has no designated ecologically critical areas; therefore this topic is dismissed from further analysis.

1.7.8 Indian Trust Resources

Indian trust assets are owned by Native Americans but held in trust by the United States. Indian trust assets do not occur within Lava Beds National Monument and, therefore, are not evaluated further in this environmental assessment.

1.7.9 Resource Conservation, Including Energy, and Pollution Prevention

The National Park Service's *Guiding Principles of Sustainable Design* provides a basis for achieving sustainability in facility planning and design, emphasizes the importance of biodiversity, and encourages responsible decisions. The guidebook articulates principles to be used such as resource conservation and recycling. Proposed project actions would not minimize or add to resource conservation or pollution prevention within Lava Beds National Monument and, therefore, this impact topic is not evaluated further in this environmental assessment.

Chapter 2 – PROPOSED ACTIONS AND ALTERNATIVES

This chapter describes two alternatives, the Proposed Action and No Action Alternatives, formulated to address the purpose of and need for the proposed project. These alternatives were developed through evaluation of comments provided by individuals, organizations, governmental agencies, and the monument's interdisciplinary management staff. The proposed action will operate as the Wilderness Stewardship Plan if approved.

2.1 Alternative 1 (No Action)- Do not Implement the Wilderness Stewardship Plan

2.1.1 Description

Under the no action alternative, the Wilderness Stewardship Plan will not be implemented. The No Action alternative will not provide park specific guidance for meeting legislative and policy mandates on wilderness management. A WSP tailors the federal regulations of the 1964 Wilderness Act (16 USC 1131) and Director's Order #41(NPS, 1999) to a particular park. Without a WSP, there are no specific guidelines regarding how Lava Beds National Monument's natural and cultural resources will be protected. Instead, all federal regulations are subject to the interpretation of the park managers. This alternative also is in contradiction to required laws and agency policy.

Without a WSP, specific wilderness policies are outlined in the Superintendent's Compendium. A compendium, by its very nature, is a short document that supplements existing managing documents, and addresses specific issues that arise on a year to year basis. Thus a compendium is not the ideal medium for implementing wilderness regulations.

2.2 Alternative 2 (Proposed Action)- Implement the Wilderness Stewardship Plan

2.2.1 Description

The proposed action is to implement the Wilderness Stewardship Plan. The plan states that all land designated as wilderness will be managed as a single unit and will not be divided into use zones. This plan also clarifies how the park defines and manages backcountry.

This alternative provides guidance for meeting legislative and policy mandates on wilderness management while providing recreational opportunities consistent with wilderness. It provides for implementation of goals and objectives specified in Lava Beds National Monument's 1996 General Management Plan and the 1999 Resource Management Plan. The proposed alternative provides means of protecting and restoring wilderness suitability for lands identified as Wilderness. This

alternative provides for a sequence of management actions necessary for effective and consistent wilderness management, including recreational opportunities for a broad range of visitor experiences and settings, while preserving and protecting the natural, cultural, and social resources of Lava Beds National Monument wilderness.

2.2.2 Desired Conditions

This section provides a general qualitative description of what it is hoped the wilderness area will be like in the future. It will provide clear goals so managers know what they are striving to achieve.

2.2.2.1 Wilderness Experience

This section addresses the desired conditions dealing with social and managerial elements.

- Cultural and historic sites are recognized as an integral component of the wilderness resource. Past human uses of the land are understood. Values of cultural resource sites are preserved
- There are opportunities for public use, enjoyment and understanding of the wilderness, through experiences that depend upon a wilderness setting. Outstanding opportunities for solitude or a primitive and unconfined setting exist.
- Visitors find solitude
- Wilderness dependent research is appropriate and encouraged.

2.2.2.2 Natural Resources Conditions

This section addresses the desired conditions of the natural resources and the allowable impacts of human use on the environment. Lava Beds Wilderness will remain an area characterized by an essentially unmodified natural environment: Interaction between users is very low; Evidence of other users is minimal; Area is managed to use off-site restrictions and controls on recreation use; Motorized use within the area is not permitted.

- Air quality meets Federal and State standards. There is no measurable degradation to water resources. The ability of soils to support naturally occurring vegetation communities is not significantly impaired by human activities
- Plant communities are affected by natural process and maintain their natural appearances.
- Wildlife is recognized as an integral part of the wilderness and contributes significantly to overall biodiversity. The Lava Beds Wilderness acts as a component to maintain indigenous species.

2.2.2.3 Wilderness and Backcountry

This section addresses the differences and similarities between wilderness and backcountry discussed in this plan. Wilderness is designated by congress while backcountry is considered ¼ mile off of all paved roads. In general, wilderness and backcountry are managed identically, because though an area might not federally qualify for 'wilderness' status, it is still a valuable area that should be afforded the maximum protection possible. However, greater flexibility is given to the Minimum Tool Requirement for backcountry operations (i.e. law enforcement actions, fire operations) since they do not have the federal protection.

2.2.3 Guidelines, Indicators, Standards, and Possible Management Actions

This section represents the details of how the wilderness plan will be implemented on the ground. This section presents the guidelines, indicators, and standards that establish how the wilderness will be managed to meet the wilderness goals and objectives. Standards provided in this chapter will be the minimum requirements for the management and protection of wilderness. These standards in turn determine the minimum tool that can be used for a given action. In general, the minimum tool allowed is non-motorized or non- mechanical equipment (i.e. chainsaws, bicycles etc.) This is in accordance with NPS Management Policies (36 CFR 4.30 (d)(l)). Where life and property are concerned, wilderness standards will be analyzed on a case by case basis through the Minimum Requirements Decision Guide (MRDG) process (See appendix C).

2.2.3.1 Resource Management Actions

The purpose of this section is to provide qualitative guidance and quantitative standards for managing visitor use and administrative activities so that resources are protected. Under this section, natural and cultural resource management will be described.

2.2.3.1.1 Natural

a. Ecosystem Integrity

i. Guidelines

The purpose of this section is to provide guidance for controlling human-caused impacts to ecosystem integrity.

The components of the biological and physical environment listed separately in the sections below are inherently integrated. All ecosystems can be characterized in terms of their composition, structure, and function. Specific management actions can have rippling effects on the ecosystem. The Monument will consider the interaction of the components when carrying out any actions in wilderness that affect any one element.

ii. Indicators and Standards

Indicator #1	Standards
▪ Fire Regime Intervals ▪ Wildlife population levels ▪ Presence of exotic plants/animals ▪ Absence of formerly present plant/animals	The monument will keep/restore ecosystem integrity to a condition as natural as possible. 'Natural' is defined based on long-term historic conditions.

Possible Management Actions
Complete scientific research on impacts from historic human use.
Conduct inventory and monitoring activities on park resources.
Implement approved Fire Management Plan to restore natural fire regimes.
Control exotic species.
Monitor air quality and light pollution.
Monitor visitor use.

b. Wildlife

i. Guidelines

The purpose of this section is to provide guidance for controlling human-caused impacts to wildlife and protect the wilderness wildlife resource.

The presence of certain indigenous wildlife, and their natural distribution, abundance, and behavior, reflect wilderness conditions. Lava Beds Wilderness supports a diverse range of fauna within its wilderness (Complete lists are available from the Natural Resources Department). Wilderness is critical to the survival of wilderness dependent wildlife and a major factor in the conservation of wilderness-associated species (Hendee, 2002).

The monument recognizes the wildlife related problems in wilderness stewardship including: conflicts with other legislation, disease, depredation, human safety, reintroductions, human caused disturbance, and long-term and long-distance effects.

Recreation activities can impact wildlife in four different ways (Knight and Cole, 1995). Animals can be indirectly affected through habitat modification or through pollution. They can be directly affected through exploitation- hunting, trapping, or collecting. Finally, wildlife can be directly disturbed- either intentionally or unintentionally.

The monument will manage wildlife in the wilderness by:

- Seeking natural distribution, numbers, population composition, and interaction of indigenous species of wildlife.
- Allowing natural processes, as far as possible, to control wilderness ecosystems and their wildlife.
- Keeping wildlife wild, with its behavior altered as little as possible by human influence.
- Permitting viewing activities where they are (a) biologically sound, (b) legal, and (c) carried out in the spirit of a wilderness experience.
- Favoring the protection and restoration of threatened and endangered species and wildlife dependent on or associated with wilderness conditions.
- Minimizing degradation of wilderness qualities while managing wildlife in wilderness.
- Complying with the minimum methods (tools, regulations, and force) that are required.

Wildlife is a part of Lava Beds Wilderness; its distribution, abundance, and behavior reflect the naturalness of the wilderness. Seeing species up close can be the high point of a visitor's trek.

ii. Indicators and Standards

Indicator #1	Standards
Wildlife distribution, numbers, diversity, and behavior.	The monument will maintain/restore natural wildlife

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

	distributions, numbers, diversity, and behavior of wildlife.

Possible Management Actions
Complete scientific research on wildlife populations.
Conduct inventory and monitoring activities on wildlife.
Control visitor use in sensitive wildlife habitats.
Implement approved Fire Management Plan to restore natural fire regimes.

Indicator #2	Standards
Bird species distribution, numbers, diversity, and behavior.	The monument will maintain/restore bird species richness.

Possible Management Actions
Complete scientific research on bird populations.
Conduct inventory and monitoring activities on birds.
Control visitor use in sensitive bird habitats.
Implement approved Fire Management Plan to restore natural fire regimes.

Indicator #3	Standards
Recreation activities and park developments: ▪ Impermeable surfaces ▪ Litter/contaminates ▪ Habitat Modification ▪ Direct Disturbance	The monument will keep impact of recreation activities and park developments on wildlife to a minimum.

Possible Management Actions
Conduct inventory and monitoring activities on wildlife.
Control visitor use in sensitive habitats.
Close sensitive areas of park to visitor use on seasonal basis.
Educate visitors through informational signs and direct contact to reduce impacts on wildlife.
Create a wilderness position to provide roving education in the backcountry and wilderness setting.

Indicator #4	Standards
Impacts on bat populations: ▪ Noise disturbance ▪ Light disturbance ▪ Disruption of critical microclimate conditions	The monument will keep impact of recreation activities and park developments on bats to a minimum.

Possible Management Actions
Monitor Townsend's Big-eared Bat populations (breeding and hibernacula numbers in caves).
Monitor Brazilian Free-tailed Bat populations (summer breeding colony).
Conduct annual counts of populations of these two bat species.
Temporary closure of caves.
Post informational and closure signs.

c. Vegetation

i. Guidelines

The purpose of this section is to provide guidance for controlling human-caused impacts to vegetation and protect the vegetation resource.

The presence of certain native vegetation, and their natural distribution, and abundance reflect wilderness conditions. Lava Beds Wilderness supports a diverse range of flora within its wilderness.

The monument recognizes the vegetation related problems in wilderness stewardship including: conflicts with other legislation, disease, exotics, reintroductions, and human caused disturbance.

ii. Indicators and Standards

Indicator #1	Standards
Presence of exotic flora	The monument will control exotic flora to reduce the number as much as possible.

Possible Management Actions
Conduct inventory and monitoring activities to detect exotic flora within wilderness.
Identify threat levels of exotic flora within wilderness.
Control priority exotic flora within the two wilderness units.

Indicator #2	Standards
Plant species distributions, numbers, and diversity.	The monument will maintain/restore natural vegetation distributions, numbers, and diversity.

Possible Management Actions
Conduct inventory and monitoring activities on vegetation.
Control visitor use in sensitive habitats.
Implement approved Fire Management Plan to restore natural fire regime.

d. Soil

i. Guidelines

The purpose of this section is to provide guidance for controlling human-caused soil erosion and compaction.

In 1983, a soil survey was completed for Lava Beds National Monument by the Modoc National Forest. Results from this survey confirmed 29 soil types within the monument. Two of the most common soil types within the park include searles-gwin complex and bakeoven association with the top soil horizon consisting of gravelly sandy loam to very cobbly loam. These soil types make up a large central area of the park and represent 20 percent of the monument (USDA, 1983). Lava flows occupy 7 percent of the monument.

Relatively well-developed soils in the northern section of the monument support the bunchgrass-sagebrush plant community, which is dominated by fire-tolerant grasses and shrubby sagebrush. More poorly-developed soils containing a great deal of volcanic pumice underlie the juniper-sagebrush community located throughout the mid-elevations.

Biological soil crusts (also known as cryptogamic, cryptobiotic, microbiotic, or microphytic soil crusts) occur interstitially throughout the wilderness and backcountry (Mutti, 2002). In order to conserve the scenery, natural objects, and wildlife within Lava Beds, it is important to recognize and protect organisms that help form the fundamental base of the entire ecosystem. Biological soil crusts are important soil developers whose role in plant succession can influence the dynamics of an entire ecosystem. These soil crusts can increase soil nitrogen and organic carbon concentrations, stabilize soil (effectively minimizing wind and water erosion), increase water infiltration, deter the spread of exotic plant species, and can enhance the success of native plant species (Belnap, 2001).

Soil crust near Balcony Cave- soil crust at Lava Beds can be identified by its rounded topography.

There are many human caused effects on the soil including trampling, erosion, and abrasion. Trampling compacts the soil and indirectly affects vegetation and soil microbiota. Erosion of trails is unsightly and makes them difficult to use. Erosion also diminishes the potential for vegetation growth. Backcountry use is so low that soil damage from off-trail travel is pretty much restricted to cinder buttes, which are very sensitive areas. Abrasion causes loss of organic matter and exacerbates many of the same problems.

ii. Indicators and Standards

Indicator #1	Standards
Loss of the organic litter horizon	The monument will maintain/restore soil crusts.

Possible Management Actions
Complete scientific research on impacts to soil crusts.
Conduct inventory and monitoring activities on soil crusts.
Control visitor use in sensitive areas.
Implement approved Fire Management Plan to restore the natural development of soils.

Indicator #2	Standards
Compaction of the soil: ▪ Bulk Density ▪ Permeability	The monument will prevent/reduce soil compaction.

Possible Management Actions
Conduct inventory and monitoring activities on soil compaction.
Control visitor use in sensitive areas.

Indicator #3	Standards
Soil Chemistry: ▪ pH ▪ Mineral Deposits	The monument will maintain/restore soil chemistry.

Possible Management Actions
Complete scientific research on pH and mineral deposits.
Conduct inventory and monitoring activities.

Indicator #4	Standards
Erosion on cross-country routes, trails, or buttes	The monument will prevent/reduce soil erosion.

Possible Management Actions

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Conduct inventory and monitoring activities on trails.
Identify areas susceptible to erosion.
Control visitor use in sensitive areas.
Improve trail design to reduce erosion.

e. Air

i. Guidelines

The purpose of this section is to provide guidance for controlling human-caused impacts to air and protect the wilderness air resource. Air pollution is a threat to wilderness naturalness because of its physical and biological impacts and its accompanying reduced visibility that may impact wilderness experiences.

The Clean Air Act and the NPS Organic Act provide mandates for protecting air resources in NPS areas. In Section 160 of the Clean Air Act, Congress stated that one of the purposes of the Act is to "preserve, protect and enhance the air quality in national parks, national wilderness areas, national monuments, national seashores and other areas of special national or regional natural, recreation, scenic, or historic value." According to the Clean Air Act and subsequent amendments, federal land managers have "...an affirmative responsibility to protect the air quality related values (AQRVs)...within a Class I area." AQRVs include visibility, flora, fauna, bodies of water and other resources that may be potentially damaged by air pollution. A Class I designation allows only small increments of pollution above already existing levels within the area (Sullivan, 2001).

Most air pollution is generated outside Class I area boundaries and transported into wilderness areas and national parks. These sources of pollution include electric power generation, automobiles and other mobile sources, industrial manufacturing activities, dust from roadways, construction activities and other urban and rural sources, for example. To mitigate the impacts of these sources, managers will be involved in State and local air quality planning and permitting processes and in reviewing NEPA projects with the potential to impact Class I areas. Smoke from wildland fire is an exception, in that it commonly occurs within our Class I areas. Managers will be responsible for reducing the impacts of smoke from wildland fires on visibility in Class I wilderness, while understanding and promoting the need to re-introduce the natural role of fire into wilderness ecosystems. Managers communicate routinely with regulatory agencies regarding sources that threaten resources in our Class I areas. Managers will participate in interagency partnerships for the purpose of protecting Class I air quality and related values.

Background levels of natural smoke (from natural disturbance events such as fires, volcanic eruptions, dust storms associated with drought, and land slides) have not been recognized within the clean air act and improving visibility in class 1 air sheds is actually producing a non-natural condition during any active fire season. With the number of naturally occurring wildland fires that are common, we are likely not representing the true wilderness experience of a "natural environment". Historic photos from New Mexico commonly had a "natural haze" that occurred due to natural fires burning. Having clear skies in this area is actually a byproduct of suppression during fire season. In order to maintain wilderness values, natural emissions from wildland fires should be considered acceptable including emissions from fires outside the area.

NPS managers are committed to using sustainable practices in parks that will reduce air pollution, such as the use of alternative energy sources, i.e., solar power, wind energy, and alternative fuels. Interpretation of these and other sustainable practices in parks will also help educate visitors on ways they can reduce their contribution to air pollution. (NPS, 1999)

Lava Beds National Monument and its wilderness areas are designated as Class I by the Clean Air Act and its Amendments. A Class I area is one that receives the most stringent degree of air quality protection within and around its borders. An air emissions inventory was conducted in 1998 by EA Engineering, Science, and Technology, Inc (NPS, 2000). More information on air quality monitoring at LABE is available at: http://www2.nature.nps.gov/air/Permits/ARIS/labe/index.htm

The monument will continue monitoring air quality including:

- Location of existing emission sources and air quality monitoring stations
- Air-quality related values (AQRV)- Resources that are potentially sensitive to air pollution and include visibility, soils, vegetation, and wildlife
- Photo-monitoring- Monitored 1986 to 1991
- Particulate Matter (PM10)- Monitored 1982-1986; 1994- present
- Ozone- Monitored 1995-2004
- Interagency Monitoring of Protected Visual Environments (IMPROVE) - Monitored 2000-Present (Measures the concentrations of the six primary groups of particles and trace elements).

ii. Indicators and Standards

Indicator #1	Standards
Violations of the National and State Standards: ▪ Airborne dust ▪ Particulate Matter <10microns ▪ Organic pollutants	Air quality should meet criteria as directed by the Federal Clean Air Act and State standards for critical pollutants for Class I areas.

Possible Management Actions
Continue air quality monitoring program at the monument.
Follow air quality requirements when implementing prescribed fires.
Monitor developments and potential impacts from activities outside of the monument's boundaries.

Indicator #2	Standards
Smoke from fire management operations and/or adjacent land use	Fire Management operations should be done in such a way as to be within air quality standards.

Possible Management Actions
Continue air quality monitoring program at the monument.
Follow air quality requirements when implementing prescribed fires.
Monitor developments and potential impacts from activities outside of the monument's boundaries.

Indicator #3	Standards
Pollutants from Recreational Use and Park Management: ▪ Recreational vehicles ▪ Park operations and facilities	Recreational use and park management should not degrade air quality.

Possible Management Actions
Continue air quality monitoring program at the monument.
Monitor visitor use and Park Management to mitigate impacts on air quality.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

f. Geology

i. Guidelines

The purpose of this section is to provide guidance for controlling human-caused impacts to geologic resources and protect the wilderness geologic resource.

The monument is of recent geologic origin. It is covered with volcanic rock, of which about two-thirds is basaltic lava that erupted over 11,000 years ago. Much of the lava was distributed by lava tubes, leaving flows with terrace-like borders ranging up to 9 m (27 ft.) high separated by valley-like depressions in between (Larson and Larson, 1990). There are a variety of cinder cones that rise above the general surface, as well as smaller spatter cones and chimneys. There are also several craters, the deepest of which is about 115 m (345 ft.).

The monument is home to more than 500 lava tube caves that are non-renewable resources, unique in their extent and degree of preservation, and are geologically, biologically, and culturally significant. As of May 2002, 108 of the known caves in the monument are located within wilderness boundaries. Because both biotic and abiotic cave resources are present in the wilderness, impacts to cave resources are included in this analysis.

According to NPS *Management Policies* (NPS, 2001a), management of caves, whether completely or partially in wilderness is defined as follows (§ 6.3.11.2, Caves): "All cave passages located totally within the wilderness boundary will be managed as wilderness. Caves that have entrances within wilderness but contain passages that extend outside the surface wilderness boundary will be managed as wilderness. Caves that may have multiple entrances located both within and exterior to the surface wilderness boundary will be managed consistent with the surface boundary; those portions of the cave within the wilderness boundary will be managed as wilderness."

In addition, the Lava Beds National Monument Cave Management Plan (LABE, 1990) manages caves according to the amount of use the cave receives, cave resource impacts and sensitivity, and management concerns. The four management classes are:

- Class 1: Developed-High Use.
- Class 2: Undeveloped-Moderate Use.
- Class 3: Undeveloped-Low Use.
- Class 4: Special Management.

There are no Class 1 caves within the wilderness; however, caves within the wilderness may be classified as Class 2, Class 3, or Class 4.

Cave registers are placed in wilderness caves to monitor use. Mechanical devices concealed within Wilderness caves may monitor use. Installation of these devices however, will require written justification.

ii. Indicators and Standards

Indicator #1	Standards
Damage to geologic features: ▪ Caves	There should be no damage to geologic features.

▪ Cave features ▪ Lava flows, spatter cones, chimneys, etc,.	

Possible Management Actions
Inventory and monitor geologic features.
Monitor visitor use.
Close sensitive and rare geologic features to visitor use.

Indicator #2	Standards
Presence of trash in or around caves	There should be no presence of trash within or around caves.

Possible Management Actions
Monitor visitor use.
Educate visitors through informational signs and direct contact to reduce trash impacts on caves.
Close caves impacted by trash.

Indicator #3	Standards
High use of caves in wilderness	Cave use should not exceed the level where noticeable degradation occurs.

Possible Management Actions
Inventory and monitor cave features.
Monitor visitor use.
Close caves impacted by visitor use.
Educate visitors through informational signs and direct contact.

g. Aquatic

i. Guidelines

The purpose of this section is to provide guidance for controlling human-caused impacts to aquatic resources and protect the wilderness aquatic resource.

Aquatic resources in Lava Beds National Monument include cave ice and ephemeral pool developments. These aquatic resources are important habitats for macro-invertebrates and provide reservoirs of drinking water for mammals and birds.

Lava Beds National Monument has intermittent surface water resources in the form of seeps at caves and lava rock formations which can form pools from snow and rainfall. These sites are dependent on precipitation and can remain dry for long periods during drought conditions.

The sub-surface water resource of the monument is of the greatest management concern. The monument has a 758-foot-deep well that provides the only source of water to visitors and employees for drinking, household use, and for wildland and structural fire protection.

Indicators and Standards

Indicator #1	Standards
Obvious signs of water contamination: ▪ Human waste ▪ Garbage and food waste	No measurable degradation of water quality should result from human activity, including park administrative use and management of the Wilderness.

Possible Management Actions

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Inventory and monitor water resources
Monitor visitor use.
Close access to water features impacted by visitor use.
Educate visitors through informational signs and direct contact.

Indicator #2	Standards
Ice Levels in caves: ▪ High visitor use impacting cave temperatures ▪ Physical contact with ice resources	No measurable degradation of ice levels in caves should result from human activity, including park administrative use and management of the Wilderness.

Possible Management Actions
Complete scientific research on ice caves.
Inventory and monitor ice resources.
Monitor visitor use.
Close access to ice caves impacted by visitor use and park management.
Educate visitors through informational signs and direct contact.

h. Fire

i. Guidelines

Wildland fire operations within the Wilderness Area will adhere to the requirements of the Fire Management Plan (LABE, 2004), Wilderness Act (Appendix B), NPS *Management Policies* (NPS, 2001a), NPS Wildland Fire Management Director's Orders #18 (NPS, 2003), Wilderness Preservation and Management Director's Orders #41 (NPS, 1999) and Reference Manuals #18 and #41.

All fire management activities within the Wilderness Area will employ minimum actions and tools necessary based upon the Minimum Requirement and Minimum Tool Determination (Appendix C). Once the minimum tool has been established, all fire management activities within the Wilderness Area will also follow established Minimum Impact Management Techniques (MIMT; formerly known as "MIST"). MIMT requires that tactics are commensurate with the fire behavior, and do not require compromising firefighter and public safety. All fire management activities within the Wilderness Area will follow established Rehabilitation Guidelines for Wilderness Fire Suppression Activities. A Resource Advisor will be made available to advise fire crews on all project design features and to monitor resource damage. Areas of wilderness may be closed due to high fire danger or fire management activities.

To help mitigate this impact, specific actions would be taken that are in accord with the 2004 Fire Management Plan and Environmental Assessment/FONSI. One example of a specific action would be the distribution of educational/informational materials to the wilderness visitor on what to expect during fire management activities including potential noise from chainsaws during line construction, smoke dispersion, safety, helicopter and airplane use, and information on where and when these activities would occur. In light of the above mitigation measures, there would be only minor, short-term impacts to wilderness.

In addition, the application of wildland fire use would positively impact wilderness character and resources.

The goals emphasized under the Fire Management Plan (LABE, 2004) are to:

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

- Restore and maintain natural fire regimes
- Reduce hazardous fuel accumulations near values at risk
- Reduce the likelihood of unwanted fires crossing jurisdictional boundaries
- Protect human life and property within and adjacent to the monument

The FMP manages the area within Lava Beds National Monument as two Fire Management Units (see Figure 2-1); the Protection FMU and the Fire Use FMU.

The Protection Unit includes areas adjacent to the boundary of the monument, and the area encompassing the monument's administrative facilities. In this FMU, most wildland fire ignitions would receive an immediate appropriate management suppression response commensurate with public and firefighter safety and the values at risk.

The Fire Use Unit includes the majority of the two wilderness areas interior to the Protection Unit. In this FMU, all fire management strategies are available for use, but with an emphasis on managing natural ignitions to restore and maintain natural fire regimes.

Within both Fire Management Units, prescribed fire and manual treatments would be implemented to reduce hazardous fuels, protect human life and property, and restore fire as an ecosystem process. The extent of treatment implementation could be modified depending on the amount of Wildland Fire Use activity.

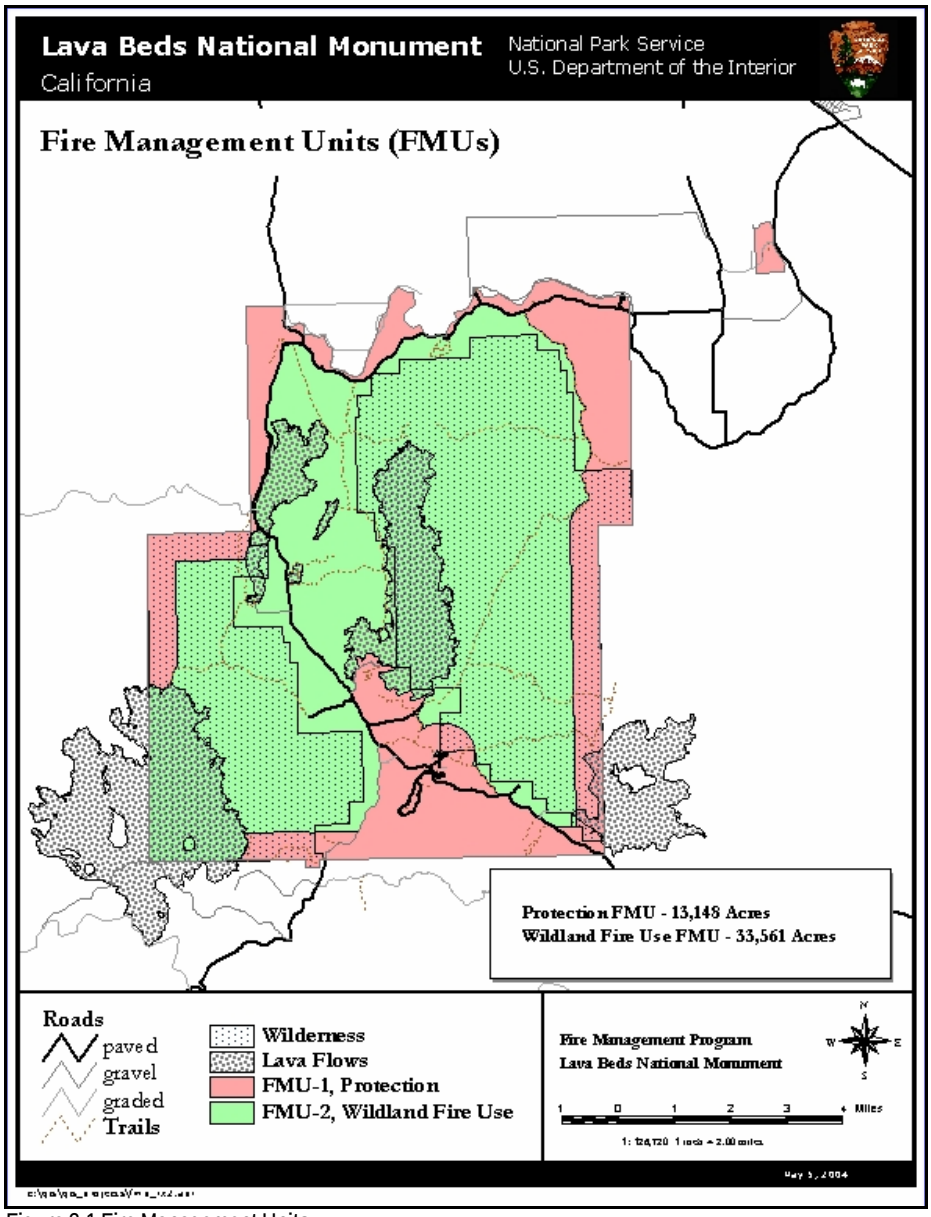

Figure 2-1 Fire Management Units

A fire that is burning in the middle of a Wilderness that has virtually no chance of reaching any valued resources will normally be managed at Stage I of the Wildland Fire Implementation Plan (WFIP) process unless it has potential to become a large fire. If a fire has some potential to reach a boundary, facility, or improvement of any type or cause smoke problems it would likely be managed at Stage II so that additional information is collected early into the management of the fire.

The Fire Effects Information System (FEIS) will be used to access information about the effect of fire on natural resources including flora, fauna, and ecosystems. FEIS can be an important tool for planning wilderness fire management programs because it can provide information necessary to

maintain near natural conditions within the wilderness (Fischer, 1989). FEIS is available at: http://www.fs.fed.us/database/feis/

Fire has been a historic force shaping the character of Lava Beds Wilderness.

ii. Indicators and Standards

Indicator #1	Standards
Natural Fire Ecology parameters: ▪ Fire Return Intervals ▪ Mosaic distribution of fire effects on vegetation ▪ Fire intensities	Maintain the natural fire ecology characteristics of the vegetation communities found within the Wilderness.

Possible Management Actions
Complete scientific research on fire ecology and vegetation characteristics.
Inventory and monitor vegetation communities.
Monitor fire effects.
Continue wildland fire use program in Wilderness.

2.2.3.1.2 Cultural

a. Archeological, Ethnographic, and Historic Structures

i. Guidelines

All cultural resources within the park wilderness are administered, maintained, and protected in keeping with the coordinated edicts of the monument's approved Resources Management Plan (LABE, 1999b), General Management Plan (LABE, 1996), and the Draft Cultural Resource Overview, Research Design, and Management Plan (LABE, 2001c) in addition to the National Historic Preservation Act and Wilderness Act. Both the National Historic Preservation Act and the Wilderness Act have similar focus, to preserve important resources for public enjoyment and enlightenment and scholarly use; therefore, the stewardship of cultural resources and the wilderness resource should not be compromised for the other (Wildesen, 1985).

The wilderness area of Lava Beds National Monument contains evidence of human occupation and use during prehistoric and historic periods. Historic structures, cultural landscapes, archeological resources and other cultural resources within the wilderness will be protected in accordance with

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

the pertinent laws and policies for cultural resources. Cultural resources in wilderness will be inventoried, monitored and evaluated. Cultural resource management actions, however, will not adversely affect the overall wilderness character of the area. Scientific research will be evaluated and permitted according to the same criteria as for natural resources. Stabilization, survey and/or protection activities may be approved on a case-by-case basis by the superintendent and appropriately documented in the RMP or other long-term records.

ii. Indicators and Standards

Indicator #1	Standards
Impacts to archeological resources by visitors and park managers.	There should be no measurable damage to archeological resources.

Possible Management Actions
Inventory and monitor archeological sites.
Monitor visitor use.
Close access to areas containing archeological resources impacted by visitor use.
Educate visitors through informational signs and direct contact.

Indicator #2	Standards
Degradation of Cultural landscapes: ▪ Visitor use and recreation ▪ Park operations and developments	Cultural landscapes are managed to preserve their historic character.

Possible Management Actions
Inventory and monitor cultural landscapes.
Complete scientific research on cultural landscapes.
Monitor visitor use.
Implement prescribed fires to restore cultural landscapes.

2.2.3.2 Visitor Experience Actions

The purpose of the "Visitor Experience Actions" section is to provide qualitative guidance or quantitative standards for managing resource activities and administrative activities so that visitor experiences are protected.

2.2.3.2.1 Wilderness Quality

a. Wilderness Experience

i. Guidelines

The monument will meet the Wilderness Act mandate, in section 2(c), for providing a quality wilderness experience. Quality wilderness experiences depend on naturalness, solitude, and managerial presence (Hendee, 2002).

- Naturalness in wilderness refers to an area that has primarily been affected by the forces of nature. Wilderness naturalness can be diminished and/or enhanced by recreational impacts, nonconforming but allowed uses, and natural ecological processes.
- Solitude in wilderness generally refers to an individual or group of visitors meeting relatively few others. Visitors' experiences are strongly affected by other visitors and their actions.
- Managerial presence, if too prominent or regulatory in attitude, can diminish the sense of wilderness. Management actions intended to solve other problems, poorly designed actions, or implementation that has not been well thought out can greatly affect wilderness visitors' experiences.

ii. Indicators and Standards

Indicator #1	Standards
Wilderness not meeting federal requirements/objectives: "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain (P.L 88-577 Section 2: c)"	100% (28460 acres) of designated wilderness meets wilderness character objectives.

Indicator #2	Standards
Number of encounters per mile with other parties and uniformed NPS personnel along a trail (includes hiking and camping)	The number of parties encountered per mile should not exceed 1 group. (see http://www.nps.gov/olym/wic/groups.htm)
* Encounters may be higher within the first ½ mile of the trail from the trailhead	

Indicator #3	Standards
Complaints on quality of wilderness experience: ▪ Solitude ▪ Natural quiet ▪ Trail infrastructure and upkeep	There should be few complaints on quality of wilderness

Indicator #4	Standards
The distribution, numbers, diversity, and behavior of wildlife as a measure of the naturalness and solitude of wilderness	Visitors should encounter a wide variety of wildlife during their wilderness experience; however, this will vary with season and group size.

Possible Management Actions
Encourage users to visit other wilderness areas within the monument.
Lower party size or mandate backcountry permits.
Talk with users about wilderness experience to determine exact problem.
Refer to guidelines and indicators and standards to determine a solution to valid complaints.

b. Risk and Challenge

i. Guidelines

Risk and challenge are inherent in the wilderness experience. Lava Beds Wilderness provides for a wide range of risk and challenge associated with hiking on lava flows, caving, encountering wildlife, etc. Visitors recognize the self-sufficiency and self-reliance needed during the visitor wilderness experience. The park will not attempt to eliminate or control risks that are part of the wilderness environment such as providing water sources or paving trails.

ii. Indicators and Standards

There are no indicators or standards for this section.

c. Natural Sound/Aircraft Over flights

i. Guidelines

The monument will do all that is necessary to reduce and mitigate impacts on the natural soundscape, including impacts from aircraft overflight. Lava Beds Wilderness is small compared to other wilderness areas; therefore, avoiding noise from cars on the main park road and snowmobile traffic on adjoining Forest Service lands is difficult in some areas.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

There is an active National Guard base in Klamath Falls, Oregon that serves as a ground for aircraft training. These training missions often involve flights over the monument area. The noise from these flights can diminish the natural quiet many visitors come to enjoy, reducing the satisfaction of many visitors.

ii. Indicators and Standards

Indicator #1	Standards
Aircraft overflights	Aircraft overflights should comply with FAA regulations: "Pilots operating fixed and rotary wing aircraft…over noise-sensitive areas should make every effort to fly not less than 2,000 feet above the surface". In addition, "avoidance of noise-sensitive areas, if practical, is preferable to overflights at relatively low altitudes." (FAA Advisory Circular (AC) 91-36C)

Possible Management Actions
Contact local airport and National Guard base when wilderness complaints are received.
Monitor level of aircraft over-flights occurring in wilderness.
Meet with those responsible on flight routes, minimum/maximum flight altitudes, time of day for flights, etc.

Indicator #2	Standards
Sources of soundscape impacts that can be over 60 db: ▪ Motorized equipment ▪ Park operations	Operating motorized equipment or machinery should not exceed a noise level of 60 decibels measured on a weighted scale of 50 feet or if any noise below that level is considered unreasonable, as referenced in 36 CFR 2.12

Possible Management Actions
Complete a baseline natural soundscape study for the park
Inventory and monitor the natural soundscape
Complete Minimum Tool requirements for all fire management activities within wilderness

d. Natural Light

i. Guidelines

The monument will do all that is necessary to reduce and mitigate impacts on the natural lightscape of the wilderness. Baseline natural light conditions can be determined based on visual estimations of night sky brightness. Two scales, the Limiting Magnitude (LM) scale and the Bortle Dark-Sky scale can be used to provide a quick, rough estimate of baseline natural light conditions (Moore, 2001: http://www.georgewright.org/184moore.pdf). More in-depth studies can be done with complex photography equipment if the opportunity and funding arise (For more information see the Park Service's "Night Sky Program" http://www.nps.gov/cany/pdfs/NightSky2003.pdf). Lava Beds Wilderness is small compared to other wilderness areas; therefore, avoiding light pollution from neighboring towns such as Tulelake, California and Klamath Falls, Oregon is difficult.

ii. Indicators and Standards

Indicator #1	Standards
Light pollution: ▪ Artificial lights on park facilities ▪ Lights from surrounding towns (streetlights,	Light pollution is kept to a minimum. The Park will strive to keep the night sky as dark as possible.

buildings etc.) ▪ Portable lights	

Possible Management Actions
Complete a baseline natural light study for the park.
Monitor night sky brightness over the wilderness.
Restrict use of artificial lighting in the park.
Where absolutely necessary, utilize minimum lighting techniques (timers, light shields).
Meet with those responsible for minimizing community light pollution.

2.2.3.2.2 Visitor Activities

a. Hiking/Day Use

i. Guidelines

Hiking is permitted in Lava Beds National Monument wilderness and backcountry areas. Hikers are required to follow Leave No Trace Outdoor Ethics.

- Preparation and Planning: Hikers are required to: (1) Know the regulations and special concerns. (2) Prepare for all weather conditions and carry water. (3) Travel in groups of 12 or less (but it is recommended that this group size break into smaller groups numbering 4-6 individuals.

- Trail Use: Hikers are encouraged to use established trails whenever possible and spread out when traveling cross country. Hikers should never leave trails on unstable cinder slopes.

- Waste Disposal: Hikers should (1) Dispose of human waste properly. Solid human waste should be deposited in cat holes that are two inches deep at a minimum and are at least 200 feet from caves, camp, and trails. Cat holes should be covered and disguised. In certain areas where cat holes are not feasible, it is recommended to cover human waste with a rock. (2) Follow the "Pack it in, pack it out" guidelines for all other waste.

- Leave What You Find: Hikers should: (1) Preserve the past: observe, but not touch, cultural or historic structures and artifacts. (2) Leave rocks, plants and other natural objects as they find them; however, edible fruits, berries and nuts may be collected for personal consumption within the monument. (3) Avoid introducing or transporting non-native species. (4) Refrain from building structures or furniture, or digging trenches.

- Respect Wildlife: Hikers should: (1) Observe wildlife from a distance. They should not follow or approach wildlife or use artificial light for viewing them. (2) Never feed animals because it alters their behavior, teaches them bad habits and your food may be unhealthy for them. (3) Protect wildlife; store your food and trash securely. (4) Leave pets at home. Pets are not permitted in this Wilderness. Pets may harass wildlife or be harmed. Pack stock and trained working service animals are permitted. (5) Refrain from hunting and trapping.

- Be Considerate of Other Visitors: Hikers should: (1) Respect other visitors and protect the quality of their experience. (2) Be courteous. Step off the trail on the downhill side when encountering pack stock. Stock may be confused or frightened encountering you on the trail. Give them space. (3) Take breaks and camp away from trails and other visitors. (4) Let nature's sights and sounds prevail. Avoid loud voices and noises, and extravagantly colorful clothing and equipment.

ii. Indicators and Standards

Indicator #1	Standards
"Leave No Trace" standards broken (see above)	All visitors must follow "Leave No Trace" ethics.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Possible Management Actions
Monitor visitor use impacts in the wilderness.
Implement temporary closures in wilderness where visitor use is causing impacts.
Provide educational materials to visitors.

b. Group Size

i. Guidelines

The monument will set a maximum party size. This party size will not vary by user type (day vs. overnight users, hikers, commercial users). The size of parties traveling within the wilderness can have significant effects on wilderness resources and the quality of visitors' experiences.

Maximum party size is 12 visitors; however, groups are recommended to break into groups of 4-6 individuals. Groups larger than 12 must break into separate parties, traveling and camping at a minimum distance of 1/2 mile apart. The maximum number of stock allowed per group is 8. A group size of 12 is a commonly used standard in many National Parks, however most of these Parks are much larger than Lava Beds and receive much more visitation, thus 12 should be seen as an absolute maximum with a possible reduction in the future. For more information on group size in wilderness areas, see the guidelines laid out for Olympic National Park (http://www.nps.gov/olym/wic/groups.htm). Occasionally the park is visited by an organization such as the Boy scouts or Sierra Club that require a larger group size for their activities. In such cases, Special Use Permits can be obtained to allow a group size of over 12 people.

In an attempt to monitor the levels of use in wilderness, the park has adopted a system of trail registers at most major trail access points. This information is used to develop backcountry and wilderness use records, strategies for mitigating environmental impacts from visitor use including site bulletins and other interpretive materials outside of the wilderness resource.

ii. Indicators and Standards

Indicator #1	Standards
Party size	12 visitors per group; 8 stock per group

Possible Management Actions
Reduce the maximum day use party size.
Educate visitors/violators.
Post signs if necessary.
Appropriate enforcement of laws by rangers on duty.

c. Permit, Quota, Reservation System

i. Guidelines

Due to current wilderness conditions and visitor use levels there will be no permits, quotas, or reservation systems established, beyond the Special Use Permits already mentioned. The wilderness conditions and visitor use levels will be monitored and, if determined necessary to protect the wilderness resource, the use of permits, quotas, and/or a reservation systems will be evaluated and potentially initiated. The permit system is the mechanism to educate and enforce wilderness values.

There will be an optional Backcountry Itinerary Form (Appendix D) available at the visitor center for wilderness visitors to register their itinerary with park rangers.

ii. Indicators and Standards

There are no indicators or standards for this section.

d. Camping

i. Guidelines

Overnight camping is permitted in Lava Beds National Monument wilderness and backcountry areas. Already existing campsites should be used when available and use should be concentrated on previously impacted sites. In pristine areas, campsites should be spread out and sites where impacts are beginning should be avoided. All hunting camps are prohibited.

No person or group may camp within 50 yards of any cave entrance or within any cave. In addition, campsites within a ¼ mile of a developed area or road are prohibited (LABE Superintendents Compendium, 2004). There should be no signs of campsites in the wilderness or backcountry. This includes: bare ground exposure, fire rings, trash, built furniture, or cut vegetation.

No open campfires, including the use of charcoal, are permitted at any time within the backcountry and wilderness areas of Lava Beds National Monument. Backpack camp stoves may be used for food preparation as needed and as wild land fire conditions permit.

Campers and day-use visitors are required to follow party size limits and sign the trail register.

ii. Indicators and Standards

Indicator #1	Standards
Campsite evidence: ▪ Fire rings ▪ Tent impact sites ▪ Trash and graffiti	There should be no evidence of campsites within the wilderness.

Possible Management Actions
Inventory and monitor campsite developments in wilderness.
Public Education.
Restoration of denuded sites.
Post signs temporarily closing area to camping.
Increase Ranger patrols of area.
Re-vegetate impacted areas.

e. Stock Use

i. Guidelines

The use of pack and saddle stock is recognized as a traditional, historically and culturally significant activity within the wilderness. Some small, localized disruption of natural ecosystems and processes by pack and saddle stock is expected and considered acceptable as the consequence of this form of backcountry use. Pack and saddle stock have several distinctive effects on park resources. These include:

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

- Removal of vegetation which may affect plant vigor, reproduction, and ultimately, density and composition. Some of the vegetation otherwise would be consumed by native herbivores. Grazing displaces native grazers by disturbance. These effects may reduce or eliminate native animals from local areas.
- Trampling of vegetation and underlying soils.
- Impacts such as deposition of stock urine and feces on trails and near camps, trampling of fragile soils, grazed appearance of forage areas, etc.
- Drift fences and hitch rails required for control of stock movement may be effective, but may compromise wilderness values.
- Introduction of exotic plants into the wilderness through pack and saddle stock feces.

Recognizing that these impacts can occur, recreational use of saddle and pack stock will be allowed within guidelines that will protect the park's natural resources and wilderness values, the processes that shape them, and the quality of experience distinctive to this use.

The effects of pack and saddle stock on trails will be minimized. Forage areas will be protected from further induced change in plant species composition, density, cover and/or vigor, and from increasing adverse effects to soils and associated sod that may lead to deteriorated productivity or unnatural erosion. Areas that appear to have been foraged will be temporarily closed to allow the vegetation to recover.

A program of education and participative support for Leave No Trace stock use is developed and maintained. Understanding and cooperation between stock users and backpackers is improved. Use levels will be determined, including number of people per party and number of stock per party. Use levels may also include the number of nights a given party may use an area, or the number of head of stock in that area.

The monument will enforce these specific stock regulations:

- Pack and saddle stock within Lava Beds National Monument includes only horses, mules, burros, and llamas. Other animals (dogs, goats, etc.,) will not be considered pack stock regardless of the ability of these animals to carry supplies and equipment.
- Goats are currently being used as SAR pack animals. Goats are permitted for SAR activities. Goats and sheep are not considered a feasible tool for the control of exotic plants in the wilderness and backcountry, due to the patchy distribution of exotic plants. The use of these animals is subject to change, contingent on future exotic plant control needs.
- Compact weed free feed is recommended for all stock in the monument. Due to the low volume of stock brought into the monument each year, compact feed is not required at this point; however this is subject to change contingent on future increases in stock use levels.
- Stock is only permitted on four trails- Lyons, Three Sisters, Whitney Butte, and Powerline. At no time is stock permitted in areas without trails. (LABE Superintendents Compendium, 2005)
    - Horses and pack animals are permitted on backcountry roads and trails within the monument with the exception of the following: the trail to Schonchin Butte Lookout; all interpretive and cave trails
    - Other conditions concerning the use of horses or pack animals: Horse and pack animal use may be temporarily prohibited by the Superintendent (or his designee)

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

during such times and at such locations where the use of the animals may create a hazardous condition or resource damage.

ii. Indicators and Standards

Indicator #1	Standards
Number of stock per group	The maximum number of stock per group will not exceed 8.

Indicator #2	Standards
▪ Damaged trail structures, trail erosion, and damaged ground vegetation ▪ Visual sightings of stock users off trail ▪ Stock waste along trails and at campsites and presence of exotic plants from stock waste	Vegetation loss, erosion, and volume of stock waste will not exceed the design limits of the trails. Stock must remain on trails.

Possible Management Actions
Inventory and monitor stock trails for resource impacts (exotic plants, erosion, etc,).
Educate groups violating the stock quota.
Use legal measures to enforce stock quota.

f. Seasonal Use

i. Guidelines

Management of the Wilderness/backcountry will remain the same during all seasons. Cross-country skiing and snowshoeing are permitted travel activities during the winter season. There will be no motorized equipment or mechanical transport (i.e. snow mobile use during the winter and bike access in the summer) (NPS Management Policies 2001 and 36 CFR 4.30 (d) (l))).

ii. Indicators and Standards

Indicator #1	Standards
Inappropriate seasonal use: ▪ Biking ▪ Snowmobile recreation ▪ 4x4 vehicle/ATV use	There should be no visible evidence of inappropriate seasonal use within the wilderness.

Possible Management Actions
Public Education.
Law Enforcement.

g. Access for Persons with Disabilities

i. Guidelines

Lava Beds National Monument will seek ways to provide opportunities for disabled individuals to enjoy wilderness, while preserving wilderness resources and character. However, by its very nature, wilderness is not readily accessible to all people and offers some visitors greater challenge and risk than others. Wheelchair use, barrier-free trails and facilities, service animals, and disability access information are discussed in this section.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Section 6.4.10 of NPS Management Policies (2001) states that the NPS will

"Make available equal opportunities for people with disabilities in all programs and activities. This requirement includes the opportunity to participate in wilderness experiences."

"Management decisions should balance the intent of access and wilderness laws, and find a way of providing the highest level of protection to the wilderness resource."

Section 507 of the Americans with Disabilities Act states that

"nothing in the Wilderness Act is to be construed as prohibiting the use of a wheelchair in a wilderness area by an individual whose disability requires use of a wheelchair, and consistent with the Wilderness Act no agency is required to provide any form of special treatment or accommodation, or to construct any facilities or modify any conditions of lands within a wilderness area in order to facilitate such use.(2) Definition.--For purposes of paragraph (1), the term "wheelchair" means a device designed solely for use by a mobility-impaired person for locomotion, that is suitable for use in an indoor pedestrian area."

The Wilderness Access Decision Tool provides guidance for dealing with issues regarding wilderness and the Americans with Disabilities Act.

Wheelchair access- National Park Service Management Policies state that wheelchairs may be used by mobility-impaired persons to access wilderness. Both manual and motorized wheelchairs are permitted in the Wilderness and backcountry areas. A manual wheelchair is defined as a device that is propelled by human power, designed for and used by a mobility impaired person. A motorized wheelchair is defined as a self-propelled wheeled device, designed solely for and used by a mobility-impaired person for locomotion, that is both capable of and suitable for use in indoor pedestrian areas. Only motorized wheelchairs that are suitable for use in indoor pedestrian areas will be allowed. Internal combustion driven motorized all-terrain wheelchairs (ATWs) for example, will not be permitted within the wilderness.

Disabled persons using authorized wheelchairs are welcome to access the wilderness to the best of their abilities. Travel off-trail and on many maintained trails will likely be difficult however, producing greater risk and challenge than travel on barrier-free trails.

Service animals- A service animal is any guide dog, signal dog, or other animal individually trained to provide assistance to an individual with a disability. Persons with a disability (a physical or mental impairment that substantially limits a major life activity) may use a service animal in the wilderness. The service animals are to be leashed and kept under control by the handler at all times.

Barrier-free trails and facilities- Currently, there are no barrier-free trails and facilities in the wilderness and backcountry areas. When trails and trail facilities are upgraded, modified or newly constructed, accessibility elements will be incorporated to ensure the highest degree of access practicable and feasible without diminishing the primitive, undeveloped character of the wilderness.

Disability Access Information- The monument will research and provide information to assist disabled travelers in accessing wilderness. This might include information on adaptive equipment, techniques and commercial outfitters. A handout will be developed listing barrier-free trails within the monument, as well as the trails that do not meet barrier-free standards but are passable to wheelchairs.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Park staff will receive training in general disability issues and specific policies and practices regarding use of the wilderness by persons with disabilities. The purpose of the training will be to increase staff awareness and knowledge in order that opportunities for physically impaired visitors to enjoy the wilderness resource are enhanced.

ii. Indicators and Standards

There are no indicators or standards for this section.

h. Hunting/Collecting

i. Guidelines

No hunting is allowed within the boundaries of Lava Beds National Monument including the backcountry and wilderness areas. The collection of mushrooms is prohibited. Collecting of edible fruit, berries, and nuts is permitted for personal consumption. (LABE Superintendent Compendium, 2004)

ii. Indicators and Standards

Indicator #1	Standards
Gun shots heard, bullets found, traps or other evidence of hunting	There should be no evidence of hunting within the wilderness.

Indicator #2	Standards
Disturbed ground or other evidence of collected mushrooms	There should be no visible evidence of collecting mushrooms within the wilderness.

Possible Management Actions

Public Education.

Appropriate enforcement of laws by rangers on duty.

i. Caving

i. Guidelines

Caves are recognized as a nationally significant resource according to The Federal Cave Resource Protection Act of 1988.

According to NPS *Management Policies* (2001):

> "All cave passages located totally within surface wilderness boundary will be managed as wilderness. Caves that have entrances within wilderness but contain passages that may extend outside the surface wilderness boundary will be managed as wilderness. Caves that may have multiple entrances located both within and exterior to the surface wilderness boundary will be managed consistent with the surface boundary; those portions of the cave within the wilderness boundary will be managed as wilderness."

Minimum impact caving (Cave safely, Cave softly) is a practice that is taught by park staff and expected of any visitor to the wilderness caves. When entering any of the wilderness caves within Lava Beds National Monument certain caving protocols must be followed according to the Cave Management Plan (1990). Every effort will be made to preserve the nature of wilderness caves.

ii. Indicators and Standards

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Indicator #1	Standards
Evidence or observance of caving "hazardously and destructively" (broken cave features, presence of trash, graffiti etc.)	There should be no evidence of inappropriate cave use within the wilderness.

Possible Management Actions
Educate violators.
Remove trash or other evidence.
Appropriate enforcement of laws by rangers on duty.
Temporarily close cave.

j. Climbing

i. Guidelines

Climbing refers to all activities associated with forms of sport rock climbing, rappelling, and ice climbing. All climbing activities, especially those requiring the placement of permanent fixtures within the Wilderness/backcountry areas, are prohibited except for certain situations such as scientific research and cave rescue scenarios. This ban is to protect the delicate geologic resources found in Lava Beds Wilderness.

Under the exceptions to climbing, the minimum requirement concept will be used to address impacts associated with caving activities and belay and rappel stations. No permanent fixtures such as anchors will be installed. Practices such as gluing, chipping, or gardening are prohibited (36 CFR 2.1 iv).

ii. Indicators and Standards

Indicator #1	Standards
Placement of permanent climbing fixtures, cleaned climbing routes, or evidence of climbing equipment (ropes, bolts, etc,).	There should be no evidence of climbing or climbing equipment within the wilderness.

Possible Management Actions
Educate violators.
Remove climbing equipment.
Appropriate enforcement of laws by rangers on duty.

k. Bicycles and other forms of Mechanical Transport

i. Guidelines

Bicycles and other forms of mechanical transport (e.g. strollers, carts, portage trailers, in-line trail skates, etc.) are prohibited in the park wilderness (36 CFR 4.30 (d)(l)). The use of bicycles and other forms of mechanical transport in the park's backcountry is likewise prohibited. Bicycling is allowed on all park roads accessible and open to private vehicles. In addition, bicycling opportunities are available on adjacent Forest Service roads.

ii. Indicators and Standards

Indicator #1	Standards

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Presence of tire tracks or observance of biking	There should be no evidence of mechanical equipment within the wilderness.

Possible Management Actions
Educate visitors/violators.
Post signs if necessary.
Appropriate enforcement of laws by rangers on duty.
Remove tire tracks.

l. Pets

i. Guidelines

Dogs, cats and other pets are not allowed in the wilderness or backcountry of Lava Beds National Monument in order to protect wilderness resources and other visitors' wilderness experience. Pets can disturb wildlife and visitors. In addition, wildlife can potentially cause harm to pets.

The use of search dogs may be authorized in emergencies. (More guidance is found in the "Emergency Services" section.)

Working service animals (animals individually trained to provide assistance to persons with a disability) are permitted. More guidance is found in the "Access for Persons with Disabilities" Section)

ii. Indicators and Standards

Indicator #1	Standards
Evidence of pets include: ▪ tracks ▪ pet waste ▪ damage to vegetation ▪ wildlife harassment	There should be no evidence of pets within the wilderness.

Possible Management Actions
Educate visitors/violators.
Post signs if necessary.
Appropriate enforcement of laws by rangers on duty.
Remove evidence.

m. Special Events and Memorializations

i. Guidelines

Management Policies (2001) require that the NPS will not sponsor or issue permits for special events to be conducted in wilderness if those events might be inconsistent with wilderness resources and character, or do not require a wilderness setting to occur. Permits will not be issued for special events in NPS wilderness areas that are commercial enterprises, competitive events, or survival exercises.

Memorializations in Lava Beds National Monument will follow Title 36 of the Code of Federal Regulations (Section 2.62) that state:

> (a)The installation of a monument, memorial, tablet, structure, or other commemorative installation in a park area without the authorization of the Director is prohibited.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

(b) The scattering of human ashes from cremation is prohibited, except pursuant to the terms and conditions of a permit, or in designated areas according to conditions which may be established by the superintendent.

Historic burial plots and historic commemorative features, such as plaques or memorials, which have been included in wilderness, may be retained as part of the historic resource. No new additions may be made to these cemeteries. The scattering of human ashes from cremation within the wilderness is prohibited. Exceptions may be made by a permit issued by the superintendent, with specific terms and conditions to ensure that wilderness conditions and visitors' wilderness experience are not adversely impacted

Special events and memorializations will be considered on a case by case basis. Approved special events and memorializations will be in compliance with The Wilderness Act and are subject to limitations on the type of equipment used and the time, duration, or location where the event may take place.

ii. Indicators and Standards

There are no indicators or standards for this section.

n. Emerging Technologies/Use

i. Guidelines

Emerging technologies and uses will be evaluated on a case by case basis. Monument Staff will stay abreast of emerging technologies and uses and make timely management decisions.

Additional new recreational uses, as they arise, will be evaluated to determine if they are appropriate and in keeping with the preservation of wilderness. A primary consideration in determining authorization of such uses will be their potential impact on wilderness resources and the visitors' wilderness experience and whether Wilderness Stewardship Plan standards and guidelines will be violated by the authorization of the activity.

ii. Indicators and Standards

There are no indicators or standards for this section.

2.2.3.3 Monument Management Actions

2.2.3.3.1 Administrative Actions

a. Emergency Services (SAR, EMS, LE)

i. Guidelines

Administrative actions involving the loss of human life or serious injury will be authorized by the park superintendent in keeping with the park's Emergency Operations/Search and Rescue Plan (2001). Operations within wilderness will be evaluated on a case-by-case basis, without the need to complete a full minimum requirement assessment. At the conclusion of the incident, the park will document the incident and carefully critique the use of the motorized equipment or aircraft use within the wilderness.

ii. Indicators and Standards

There are no indicators or standards for this section.

b. Administration of Scientific Activities

i. Guidelines

Scientific activities within wilderness are allowed in accordance with 36 CFR, and encouraged, when they are needed for the statutory purposes of wilderness and/or they are consistent with the parks responsibilities to preserve and manage wilderness resources.

Lava Beds National Monument will support appropriate scientific activities in wilderness and use science to improve its wilderness resource management program. The park also recognizes that appropriate scientific activities may be critical to the long-term preservation of the wilderness resource.

Research activities will only be allowed in wilderness if there is no other suitable location, or if it is necessary for the management of the wilderness. All such activities will be evaluated using the minimum requirement procedures and will include environmental compliance documentation which assesses potential impacts against benefits to wilderness.

There is one Research Natural Area located in Lava Beds Wilderness, the Schonchin Lava Tubes Research Natural Area established in 1968. This is a 134 acre plot of land set aside for research purposes (see Figure 2.2). A Research Natural Area as defined by the Forest Service Manual (Section 4063) is "A physical or biological unit in which current natural conditions are maintained insofar as possible. These conditions are ordinarily achieved by allowing natural physical and biological processes to prevail without human intervention. However, under unusual circumstances, deliberate manipulation may be utilized to maintain the unique feature that the Research Natural Area was established to protect." (Federal Committee on Ecological Reserves 1977. See FSM 4063.43 Suggested References, item 1.) Research Natural Areas are managed the same as the wilderness, except that non-manipulative research activities are allowed and encouraged. The objectives of these areas as outlined by the Forest Service Manual Section 4063 are:

- Preserve a wide spectrum of pristine representative areas that typify important forest, shrubland, grassland, alpine, aquatic, geological, and similar natural situations that have special or unique characteristics of scientific interest and importance that, in combination, form a national network of ecological areas for research, education, and maintenance of biological diversity
- Preserve and maintain genetic diversity.
- Protect against serious environmental disruptions.
- Serve as reference areas for the study of succession.
- Provide onsite and extension educational activities.
- Serve as baseline areas for measuring long-term ecological changes.
- Serve as control areas for comparing results from manipulative research.
- Monitor effects of resource management techniques and practices.

Figure 2.2 Research Natural Area in Lava Beds Wilderness

Scientific activities involving prohibitions identified in Section 4 (c) of the Wilderness Act may be conducted within the Lava Beds National Monument wilderness when:

- The desired information is essential for the understanding, health, management or administration of wilderness, and the project cannot be reasonably modified to eliminate or reduce the nonconforming wilderness use(s); or if it increases scientific knowledge, even when this serves no immediate wilderness management purposes, provided it does not compromise wilderness resources or character. The preservation of wilderness resources and character will be given significantly more weight than economic efficiency and/or convenience.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

- Compliance with the National Environmental Policy Act (including completion of documented categorical exclusions, environmental assessments/findings of no significant impact, or environmental impact statements/records of decision) and other regulatory compliance (including compliance with Section 106 of the National Historic Preservation Act) is completed.
- All scientific activities will be accomplished in accordance with terms and conditions adopted at the time the research permit is approved. Later requests for exceptions to the Wilderness Act will require additional minimum requirement review and approval.
- The project will not significantly interfere with other wilderness purposes (recreational, scenic, educational, conservation or historical) over a broad area or for a long period of time.
- The minimum requirement concept is applied to all aspects of the project affecting wilderness.

Research and monitoring devices (e.g., video cameras, data loggers, meteorological stations) may be installed and operated in the Lava Beds National Monument wilderness if: (1) the desired information is essential for the administration and preservation of wilderness and cannot be obtained from a location outside of wilderness without significant loss of precision and applicability, and (2) the proposed device is the minimum requirement necessary to accomplish the research objective safely.

Devices located in wilderness will be removed when it becomes no longer essential. The need for permanent research equipment caches within wilderness will be evaluated on an individual case basis. Temporary caches (less than one year) will be evaluated using the minimum requirement concept.

All scientific activities, including the installation, servicing, removal, and monitoring of research devices, will apply minimum requirement concepts and be accomplished in compliance with *Management Policies* and Director's Order #41: Wilderness Preservation and Management.

ii. Indicators and Standards

There are no indicators or standards for this section

c. Rehabilitation and Re-vegetation

i. Guidelines

Re-vegetation and rehabilitation plans are prepared when necessary and approved by the Chief of Resource Management and the Superintendent. Wilderness areas are re-vegetated only with native species of similar genotypes. Seeds and plants are collected as close as possible to the area being re-vegetated; avoiding removal of vegetation from the immediately impacted site. Collections are made in less sensitive areas and propagated or grown in the monuments nursery.

ii. Indicators and Standards

There are no indicators or standards for this section.

d. Interpretation and Education

i. Guidelines

In the context of interpretive and educational planning, Lava Beds will: operate public education programs designed to promote and perpetuate public awareness of, and appreciation for, wilderness character, resources and ethics, while providing for acceptable use limits; focus on fostering an understanding of the concept of wilderness that includes respect for the resource,

willingness to exercise self-restraint in demanding access to it, and an ability to adhere to appropriate, minimum-impact techniques; and encourage the public to use and accept wilderness on its own terms; i.e., the acceptance of an undeveloped, primitive environment and the assumption of the potential risks and responsibilities involved in using and enjoying wilderness areas. Lava Beds will address the primary interpretive themes for wilderness. Education is among the most effective tools for dealing with wilderness use management problems and should generally be applied before more restrictive management tools.

The park will establish three basic objectives for its wilderness educational programs:

- To foster public understanding and appreciation of the National Parks and their significant cultural, natural, and recreational values, including wilderness, and, through this understanding, support their preservation.
- To encourage and facilitate appropriate, safe, and minimum impact use of the parks (i.e. Leave No Trace Ethics).
- To promote public understanding and acceptance of the Service's policies and programs.

Wilderness education will be considered as a significant tool for ensuring the protection of wilderness resources and character. National Park Service *Management Policy* also requires that an effective public wilderness education program be developed and implemented.

Lava Beds National Monument is committed to providing interpretive and educational activities that assist the visitor in understanding the problems and issues of wilderness management and resource values, as well as promoting safety consciousness, enjoyment, and respect for the park wilderness.

The park will also utilize its established Public Outreach Program to reach other elements of the public which may not visit the park, or that live in neighboring communities. Coordination with neighboring land management agencies, which administer wilderness, will be established as a priority to ensure consistency in wilderness educational messages.

1. Establishing Wilderness Interpretive Themes:
Interpretive themes provide a broad base to communicate specific messages to ensure the preservation and protection of wilderness values. These themes provide significance statements about the wilderness which can subsequently be used as guides to specific topics and programs. These topics and programs become the stories through which the values of wilderness are conveyed to the public and NPS staff. The themes serve as building blocks for interpretive products and services. Themes are also intended to encompass wilderness as a whole, but at the same time, are used to focus in on specific issues of concern.

Lava Beds National Monument's Wilderness Interpretive Themes will be based on those identified in Reference Manual #41: Wilderness Preservation and Management. Individual interpreters in the park will have the freedom to use the educational style and technique which works for them; however, the specific personal and non-personal services will tier off of, and capture the essence of, these broader themes.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Interpretation provides opportunities for people to forge intellectual and emotional connections to the meanings inherent in wilderness resources. Interpretive themes communicate specific messages based upon the significance of the wilderness resource and experience to the American people. They are the stories through which the values of wilderness are conveyed to the public. These themes connect wilderness to larger ideas as well as universal meanings and values. They are the building blocks on which interpretive products and services for wilderness are based. The interpretive themes for National Park Service wilderness areas are:

PRIMARY INTERPRETIVE THEMES FOR WILDERNESS EDUCATION	
Theme A	The concept of wilderness, codified in law, originated in the United States with the conviction that some wild land resources are most valuable to Americans left in their natural state. *(e.g. social, scientific, economic, educational, recreational , and cultural value*)
Theme B	As a foundation for healthy and diverse ecosystems, officially designated wilderness and other remaining wild lands provide critical habitat for rare and endangered species and play a significant role in the overall health of natural systems worldwide. *(e.g. watersheds, air quality).*
Theme C	By law, wilderness is managed differently than other federal lands in order to retain its primeval character and preserve wilderness as a special place for humans to examine their relationship to the natural world.
Theme D	Wilderness offers opportunities for personal renewal, inspiration, artistic expression, pride of ownership of our shared heritage, and the prospect of hope for the future. Wilderness has inspired and continues to inspire a distinctive genre of literature and art, enriching millions of lives in the United States and around the world.
Theme E	Wilderness provides opportunities for physical and mental challenge, risk and reward, renewal, self-reliance, solitude, and serves as a haven from the pressures of modern society. *(e.g. exploration, discovery, and recreation)*
Theme F	The survival of wilderness depends on individual and societal commitment to the idea of wilderness and on appropriate visitor use, behavior, and values. *(e.g. appreciation, values, skills).*
Theme G	Wilderness provides a unique setting for teaching ecosystem stewardship as well as science, math, literature, art and other subjects using an interdisciplinary approach. *(e.g. civics, outdoor skills, music, and others).*
Theme H	Wilderness contains primitive areas relatively undisturbed by human activities where scientific research may reveal information about natural processes and living systems that may have wide-ranging applications and may serve as global indicators of ecological change.
Theme I	Cultural and archeological sites found in wilderness can provide a more complete picture of human history and culture. *(This includes indigenous peoples, conquests, colonialism and resistance, freedom, independence, and ingenuity, a sense of connectedness, stewardship, and human survival.)*
Theme J	The Wilderness Act created a National Wilderness Preservation System that preserves some of the most unique ecological, geological, scientific, scenic, and historical values in the National Park System, Fish and Wildlife Refuge System, National Forest System, and in public lands administered by the Bureau of Land

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

	Management, and that the public and Congress have determined to require special protection.
Theme K	Wilderness visitors must accept certain inherent risks associated with weather, terrain, water, wildlife, and other natural elements. Visitor safety cannot be guaranteed, but can be enhanced with proper trip planning, appropriate skill, and responsible behavior.

2. Identifying Target Audiences: Lava Beds National Monument will take a multi-faceted approach to wilderness education and outreach programs which span all management divisions, and will be directed at a wide variety of audiences. Interpretive efforts will be directed not only at park visitors, but will target populations that might never visit the park, but who may live in the area, region, or other parts of the country. Efforts will also be made to educate park staff and local communities on the meaning and scope of wilderness preservation as it applies to the mission of Lava Beds National Monument, and the National Park Service.

Lava Beds National Monument will target six broad audiences. Each may be broken into more specific target audiences.

- Wilderness Visitors
- Park Visitors
- NPS and Cooperating Association Staffs
- Student Education Program Participants (i.e. schools, girl and boy scouts, etc.)
- Neighboring Communities
- Non-government Organizations including Friends Groups

3. Media/Delivery Mechanisms: Wilderness messages must be conveyed in a compelling way. Every attempt will be made to match messages and the way they are delivered to the target audience. There must be diversity in the types of media and delivery mechanisms. Lava Beds National Monument will also utilize a multitude of products and services to tell its wilderness story. These are broken into personal and non-personal services which include:

Personal Services: Personal Services are those that involve direct contact between park staff, or those acting in conjunction with the park, and the public. These services include interpretive, education, and outreach programs, and other special programs. The following are on-going or planned wilderness education efforts.

- Wilderness Interpretive Programs (i.e. walks and evening talks)
- Education Programs
- Outreach Program
- Informal and Roving Contacts
- Leave No Trace Programs
- Cooperating Association Seminars
- Special Events
- Park Training Programs

Non-personal Services: Non-personal services are those which contact both visitors and non-visitors through other than face-to-face means. Examples include print and electronic media, permanent exhibits, temporary displays, and information kiosks. The following are on-going or planned wilderness education efforts.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

- Park Film
- Leave No Trace Video
- Press Packets
- Park Newspaper
- Permanent Exhibits (i.e. Visitor and Wilderness Information Centers, Waysides)
- Temporary Displays
- Site Bulletins
- Park Web Site
- Printed Informational Pieces for local business
- Cooperating Association Sales Items
- Staff Wilderness Handbook

ii. Indicators and Standards

There are no indicators or standards for this section

e. Commercial Uses (Photography, Filming, etc.)

i. Guidelines

All commercial users must obtain a special use permit for wilderness activities, with the exception of News photography.

Proposals that include activities that do not meet Wilderness Stewardship Plan standards and guidelines require Project Clearance. Exceptions will only be granted if filming-related impacts are short-term, over a small area and complete restoration is possible. These will be specifically outlined on the permit.

ii. Indicators and Standards

There are no indicators and standards for this section.

f. Administration of Potential, Recommended, Suitable and Study Areas

The monument does not contain potential, recommended, suitable or study areas; therefore this will not be addressed in this plan.

g. Interagency Coordination and Partnerships

The wilderness receives maximum protection through coordination of the individual wilderness management programs of adjoining federal agencies. NPS wilderness values are not compromised or reduced by the policies or practices of the adjoining agencies. The park visitor experiences the least amount of management confusion when moving from one agency jurisdiction to the other. Policies addressing group sizes, stock use, stay limits, and other management considerations are coordinated and standardized as much as possible

One hundred forty one Wilderness Areas, totaling 13,977,287 acres, are located in California. The Lava Beds National Monument Wilderness, at 28,460 acres, is located in north central California. Where possible, consistency in wilderness management objectives, techniques and practices will be sought with other wilderness areas while ensuring that Lava Beds National Monument wilderness resources and character are protected in keeping with NPS policies. Intra-agency and interagency wilderness management communication will be fostered through individual

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

communication and regional workshops. Coordination with other National Park Service areas with designated wilderness and backcountry will be actively pursued at the Washington Office, Field Directorate Office, NPS System Support Offices, and at the park level. In addition, management of the Lava Beds National Monument Wilderness will be coordinated with adjacent federal, state, and local land managers; the area's Native American tribes; and with other public and private organizations as appropriate.

A primary wilderness management objective for Lava Beds National Monument is to coordinate the management of the monument's wilderness with the adjacent Forest Service management areas in the adjoining Modoc National Forest. Coordination between Forest and Park will also include working together along with other local and regional groups, communities, and agencies to preserve wilderness values in the region.

2.2.3.3.2 Administrative/Management Facilities

a. Trail and Trailhead Management

i. Guidelines

This section addresses how trails and trail-related impacts will be managed within the monuments wilderness and/or backcountry. Currently there are 50 miles of trails in the backcountry and wilderness areas of the monument including 38 miles of maintained trails and 12 miles of un-maintained trails. Figure 1-3 illustrates the approved trail system.

The primary goal of the trails system is to provide visitor access to the wilderness in a manner that protects wilderness resources and the visitor's wilderness experience. Additional goals include long-term sustainability of the trails system, visitor safety without compromise to wilderness values, and separation of user types where appropriate.

The four primary elements of the wilderness trails management program:

1) Inventory and monitor conditions of trails and trail facilities,
2) Provide on-going maintenance of trails to WMP standards,
3) Restore degraded trails to WSP standards, and
4) Maintain the historic nature of pre-existing roads in the wilderness, as they are part of the monuments cultural history, except for natural re-growth into them.

An annual trail maintenance program that emphasizes on-going resource protection will be implemented to reduce the need for major repair/rehabilitation projects. Annual trail maintenance priorities will be based on resource protection, visitor safety, trail classification, visitor use levels, and type of use. Priorities will be proposed and reviewed by the inter-divisional Trail Steering Committee.

The following minimum requirement guidelines have been established for routine trail maintenance activities. Under normal circumstances, the use of motorized and mechanical equipment in the monument wilderness is prohibited. Emergency projects requiring use of chainsaws, rock drills, explosives, aircraft or other Wilderness Act 4(c) exceptions require individual minimum requirement assessment.

Many visitors are exposed to Leave-No-Trace messages primarily at trailhead information signs. This photo was taken just beyond the trailhead information sign and register on the Whitney Butte Trail.

Table 2-1: Trail Class Allocations for Backcountry and Wilderness Trails

TRAIL NAME	TRAIL DESCRIPTION	TRAIL MILES	Existing Conditions	Proposed actions
			Trail class	
Big Nasty Trail	Loop trail	2	C	C
Bunchgrass Trail	Trail between overlook and campground	1	C	C
Caldwell	Caldwell access road	1	C,C1	C,C1
Gillem Bluff Trail	Trail from Gillem's Camp to top of Bluff	.7	C	C
Gold Digger Pass Trail	Trail from Gold Digger Pass Road to Whitney Butte Trail	3.1	FIRE	FIRE
Gold Digger/Fleener Spur	Trail from Gold Digger Pass Trail to Fleener Chimneys	.2	FIRE	FIRE
Guano Bridge Trail	Trail from Lyons Trail East to Guano Bridge	3	F	F
Hardin Butte Trail	Trail/road between main monument road to H.B.	2	C1	C1
Heppe	Trail to Heppe Ice Cave	.4	C	C
Juniper Butte Trail	trail between east boundary & Lyons Trail	.9	C1	C1
Lyons Trail	Connecting Hospital Rock trailhead to Skull Cave trailhead	9.4	C	C
Missing Link Trail	Trail between Bunchgrass Trail and Symbol Bridge parking lot	.7	C	C
Powerline Trail	Trail Between Hardin Butte & Schonchin Butte	1.4	F	F

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

Extension				
Powerline Trail	Trail between Gillem's Camp & Hardin Butte	5	C1	C1
Ross Chimney's	Spur trail from Powerline Trail	.2	F	F
Sheep Herder Trail	Trail from main road to Powerline Trail	1.4	F	F
Stronghold Loop Path	To Stronghold Inner & Outer Loops	.03	C	C
Stronghold Outer Loop	Captain Jacks Strong Hold	1	C	C
Symbol Bridge Trail	Trail from parking lot to Symbol Bridge	1	C	C
Three Sisters Trail	Loop trail utilizing part of Lyons Trail and Missing Link trail.	7.7	C	C
Whitney Butte Trail	Trail accessing west boundary from Merrill Ice Cave trailhead	3.4	C	C

*C – Backcountry/Wilderness Trails- Backcountry and wilderness trails are 2-3 feet wide. These trails are moderately improved and maintained for light use by visitors of intermediate ability. No machinery, including powered or un-powered wheeled vehicles in wilderness areas. Non-wilderness: no restrictions if impact is limited to trail tread and the actual area of the trail right-of-way that is being worked on.

*FIRE – Fire Trails- Fire trails are kept clear of vegetation as necessary for use as fire lines. They often follow old roads. Fire trails are not maintained as hiking trails but are available in an as is condition. Some fire trails are shown on the Lava beds Topographic Map as un-maintained trails. These trails are unimproved and if used by visitors, the users are of above average ability.

*C1 – Administratively Drivable Trails- Backcountry, non-wilderness trails that are drivable. These trails are open to administrative vehicle use, but are closed to private vehicles. The visitor is limited to equestrian and hiking uses. These are identified as trails on the Lava Beds Topographic map, and are lightly used by visitors of intermediate ability. They are maintained to remain passable for occasional use by law enforcement, fire, and resource management vehicles.

*F – Un-maintained Trail- Un-maintained trails. The trails exist and may be shown on the Lava Beds Topographic Map as un-maintained trails. These trails are for light use by visitors of high ability. An example is Guano Bridge Trail.

*For more detailed information, refer to the Lava Beds National Monument Trail Maintenance Standards (2000).

ii. Indicators and Standards

Indicator #1	Standards
Eroded Gullies, expanding trail width, drainage disruptions, cutting switchbacks, damaged trail structures, safety hazards, and formation of social trails.	All trails will be maintained to the highest standards as defined in the trail standards.

Possible Management Actions-
Monitor trail conditions on an annual basis.
Restore degraded trails to park trail standards when encountered.

b. Signs and other Route Markers

i. Guidelines

Management Policies (2001) note specific requirements regarding signs in wilderness. It states that "signs detract from the wilderness character of an area and make the imprint of man and

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

management more noticeable." Signs are to be placed only where necessary for protection of wilderness resources or when essential for visitor safety. Normally signs in wilderness will be limited to distance and route markers.

The number of signs needed within the wilderness will be minimized by providing high quality maps and information to visitors before they enter the wilderness. Signs will be kept to the minimum number, size, and wording required to meet wilderness protection or visitor safety objectives. Sign standards will be established that ensure minimal intrusion, through use of designs and materials compatible with the wilderness setting. Signs will not be located on trees, except for boundary signs. The types of signs permitted in the Lava Beds National Monument Wilderness are listed below.

- Boundary signs. Boundary signs may be located in all areas of the wilderness. Signs will be placed at points where the boundary intersects maintained trails. In areas outside maintained trail corridors, regulation NPS metal or plastic signs are permitted. Flagging may be used to temporarily mark boundaries until official NPS signs are posted.
- Regulation signs. Rule and regulation signs are permitted along the boundary (where necessary), at trailheads and on wilderness ranger station bulletin boards. They are allowed as a temporary measure in areas where standards have been exceeded and regulation-posting is the minimum necessary action.
- Safety signs. Since visitors are to come prepared for the risk and challenge offered by the natural environment, safety signs may be placed within the wilderness only in rare circumstances. Specific cave safety signs may be placed if significant safety hazards exist that are not usually expected in wilderness and for which adequate notification cannot be provided outside of wilderness. Project Clearance is required. In special temporary circumstances where there is an immediate significant threat to safety, warning signs may be placed in any class without Project Clearance, but are to be removed immediately when no longer needed. Such safety closures may be due to fires, hazardous animals, law enforcement situations or trail maintenance blasting.
- Interpretive signs. Interpretive signs, describing natural and cultural history, will be limited to non-wilderness trails. Handouts at the visitor center or trailheads may be made available to communicate interpretive information to visitors traveling into the wilderness.
- Directional/mileage signs. Directional/mileage signs are permitted at trail junctions to indicate destination, direction, and mileage.
- Permanent route markings. Permanent route markings (such as metal tree markers) will not be permitted in areas within the wilderness boundary.
- Cairns. Cairns will only be permitted if they are necessary for resource protection purposes.
- Blazes. Cutting or painting of blazes is not allowed in the wilderness.
- Flagging. Use of flagging is only allowed for temporary purposes and is to be kept to the minimum amount necessary. Flagging is to be removed by the responsible party immediately following project completion. The use of flagging for boundary marking (temporarily) is accepted from the above standards.

ii. Indicators and Standards

There are no indicators and standards for this section.

c. Ranger Stations, Visitor Use Shelters, and Equipment Caches

i. Guidelines

There are no ranger stations located within Lava Beds Wilderness. No new ranger stations will be constructed in the wilderness.

2.2.3.1 Resource Management Actions
2.2.3.2 Visitor Experience Management Actions
2.2.3.3 Monument Management Actions
2.2.3.4 NPS Administrative Requirements

There are no visitor use shelters located within Lava Beds Wilderness. NPS *Management Policies* (2001) state that in wilderness, "the construction or reconstruction of shelters for public use generally will not be allowed since wilderness users should be self-supporting in terms of shelter." Visitors will be expected to enter the Lava Beds National Monument Wilderness prepared for self-sufficient travel and camping in the rigorous weather and terrain associated with its environment. No new shelters will be constructed in the wilderness.

The placement of equipment caches by park staff and researchers is permitted in the wilderness. Written permission is required by the superintendent or Chief of Resource Management to place an equipment cache in the wilderness. Acceptable types of caches are: food/water, gear, and tools. The caches must be camouflaged to the best of their ability. Caches must be removed after use or monitored yearly if placed in the wilderness over a long time period.

Geocaches are prohibited in Wilderness and Backcountry and will be pulled out if found. Geocaching is the practice of designating a location and placing a marker or container there for other people to find. These locations are specifically advertised for travelers to find them. Permanent containers run counter to the principles of wilderness and even having a location advertised to travelers is harmful, as it promotes social trails. In Backcountry, 'virtual' geocaches, or ones with no marker or container associated with them, are allowed.

ii. Indicators and Standards

There are no indicators or standards for this section.

d. Food Protection Systems

i. Guidelines

Portable food protection systems are permitted in all areas but must be removed at trip end. No permanent food hanging wires, bear boxes, etc. are provided or permitted. If unacceptable impacts between visitors and wildlife occur, or potential for problems is high, visitors may be required to carry portable food storage containers in those locales. Alternatively, areas may be closed to visitors.

ii. Indicators and Standards

There are no indicators or standards for this section.

e. Sanitation and Waste Management Facilities

i. Guidelines

There are no sanitation or waste management facilities in the wilderness. Wilderness visitors must carry out all trash following the pack it in, pack it out standard and Leave No Trace (NPS Management Policies 2001 (6.4.3.2)).

Wilderness visitors must dispose of human waste in individual catholes or pack it out. If sanitation becomes a problem the 'pack-out' option will become obligatory.

- Catholes must be in a site that is out of the way and more than two hundred feet from water, trail, and camps.

- Cat holes are recommended to be two inches deep at a minimum and must be covered up with topsoil afterwards, with the surface camouflaged. In certain areas where cat holes are not feasible, it is recommended to cover human waste with a rock.

Defecation and urination are prohibited in all caves (Superintendents Compendium, 2004).

ii. Indicators and Standards

There are no indicators or standards for this section.

f. Communication Facilities

i. Guidelines

There are no communication facilities/towers within the wilderness. No permanent communication facilities/towers are allowed within the wilderness. The installation as well as routine maintenance of communication facilities/towers would cause great damage to the wilderness. Cinder buttes are very fragile areas and would suffer greatly from such a facility. Furthermore the visual scar from a communication facility/tower runs counter to wilderness values.

ii. Indicators and Standards

There are no indicators or standards for this section.

2.2.3.4 NPS Administrative Requirements

2.2.3.4.1 NPS Administration of 4(c) Exceptions

Section 4 (c) of the Wilderness Act states that:

> *Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet the minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area) there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.*

The NPS *Management Policies* interprets this statutory provision as:

All management decisions affecting wilderness must be consistent with a minimum requirement concept… When determining minimum requirement, the potential disruption of wilderness character and resources will be considered before, and given significantly more weight than economic efficiency and convenience. If a compromise of wilderness resource or character is unavoidable, only those actions that preserve wilderness character and/or have localized, short-term adverse impacts will be acceptable. (NPS Management Policies 6.3.5 Minimum Requirement)

2.2.3.4.2 Minimum Requirement Process

The purpose of this section is to identify what process the park will use to determine "minimum requirement" and specify under what circumstances the process will be applied.

The objective of the park's established minimum requirement process will be to ensure that both the letter and spirit of the Wilderness Act, specifically Section 4 (c) minimum requirement exceptions, are applied to all administrative activities having the capacity to impact wilderness.

The minimum requirement process is intended to provide a formal process for assessing alternative ways to address an issue as well as comparing each alternative's effects on wilderness character.

Any proposed administrative activity that is not adequately addressed in the wilderness plan, but has the potential to affect the wilderness, will also be analyzed through the park's Minimum Requirement Decision Guide (MRDG) (see Appendix C). The project sponsor will submit a Park Project Clearance Request, including the minimum requirement analysis for review. The analyses will clearly identify how minimum requirement decisions were developed and include reference to the applicable NEPA compliance documents (Categorical Exclusion, Environmental Assessment, and Environmental Impact Statement). Approval will be documented with the superintendent's signature, and a permanent record of the analyses retained in the park's files.

2.2.3.4.3 Wilderness Plan Implementation and Responsibilities

This section provides an overview of how the monument will implement the approved Wilderness Stewardship Plan. Staff responsibilities are outlined and the wilderness plan implementation cycle is described.

The following individual(s) and organizational groups will be responsible for implementing the individual elements of the Lava Beds National Monument Wilderness Stewardship Plan:

Wilderness Program Coordinator: The basic responsibilities for the wilderness stewardship program at Lava Beds National Monument will be assigned to the Division Chief position in the Division of Resources Management. This person will serve as the primary contact for all issues affecting the wilderness resource and be responsible for ensuring that wilderness resource and values are effectively integrated into all other park operations having the potential to impact wilderness. These responsibilities include the development and review of the monument's Wilderness Stewardship Plan, the implementation of the approved minimum requirement protocols to assess all actions impacting wilderness, wilderness-related NEPA compliance, and coordinating wilderness training. It will also be the responsibility of the Wilderness Program Coordinator to effectively coordinate the park wilderness program with all other divisions and organizations within the park.

Other Staff Responsibilities: Protection of the Lava Beds National Monument wilderness will be considered an interdivisional responsibility. Park disciplines with responsibilities for wilderness management include visitor services and resource protection (law enforcement rangers), maintenance, natural resources, and resource interpreters. Seasonal staff directly involved in wilderness management includes law enforcement rangers, maintenance staff, and resources management staff.

Law enforcement and resource management staff are expected to be highly knowledgeable about wilderness resources. They conduct trips into wilderness on foot, contacting users, providing information and education, monitoring visitor use levels, and doing basic trail and camp area maintenance. Law enforcement rangers are also responsible for visitor protection and emergency operations.

The park maintenance division is responsible for on-going maintenance of trails including clearing, brushing and drainage, and major rehabilitation of damaged trail segments. Minimum requirement protocols will be applied to these functions at all times.

The Visitor Services & Resource Protection staffs as well as Resource Interpreters are responsible for providing visitors with information on trip planning, Leave No Trace practices, safety considerations and areas of special concern. They are the primary contact for specific wilderness information.

The resources management division is responsible for monitoring wilderness conditions. This includes the collection, input, and analysis of data on resource impacts. In addition, they are responsible for trail and campsite rehabilitation and re-vegetation projects.

Implementation of the WSP

The Wilderness Stewardship Plan will be implemented over the next fifteen years and will be revised if there is an immediate need or approximately every 15 years. The park will adopt the following protocols for assessing the need for management actions within wilderness:

1. Monitor conditions
2. Compare with standards
3. Take management actions to maintain and/or restore wilderness conditions
4. Prepare "State of the Wilderness Report"
5. Repeat the above four steps every three years

These protocols will be carried out every three years to determine the resource, visitor experience, and managerial conditions. In addition, a "State of the Wilderness Report" will be compiled and filed with the resource management division of Lava Beds National Monument. To reduce variables in monitoring from year to year and to reduce work load, a monitoring check-list and "State of the Wilderness Report" template will be developed.

2.3 Environmentally Preferred Alternative

The National Park Service is required to identify the environmentally preferred alternative(s) for any of its proposed projects. That alternative is the alternative that will promote the national environmental policy expressed in NEPA (Section 101 (b)). This includes alternatives that:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- reserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life's amenities; and
- Enhance the quality of renewable resources and approach the maximum attainable recycling of exhaustible resources.

In essence, the environmentally preferred alternative would be the one(s) that "causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (DOI, 2001).

In this case, both alternatives can meet the above goals; however the No Action alternative is not as equipped to deal with every potential situation as the Proposed Action, therefore the Proposed Action is the environmentally preferred alternative.

2.4 Alternatives Considered but Dismissed

2.4.1 Alternative 3 (Zone the Wilderness)

This alternative would develop different management direction for different sections or zones of the established wilderness. There will be different management objectives, standards, and actions in different parts of a wilderness because of the diversity or resources, uses, and conditions. This alternative is not practical for Lava Beds Wilderness because of the small size and low visitor use. Zoning remains practical for certain management actions within Lava Beds, such as fire management, however for overall wilderness management it is not feasible.

2.4.2 Alternative 4 (Manage Backcountry and Wilderness Differently)

This alternative would not enforce wilderness regulations in the backcountry. This alternative could lead to the degradation of the natural and cultural resources at Lava Beds National Monument backcountry.

2.4.3 Alternative 5 (Do Not Follow Wilderness Regulations)

This alternative would not enforce wilderness regulations in the wilderness. This alternative does not implement the 1964 Wilderness Act and Lava Beds Wilderness designation.

2.5 Comparison of Alternatives and Impacts

A comparison of the two alternatives by the wilderness stewardship plan strategy is shown below in Table 2-2. Table 2-3 summarizes how the two alternatives compare in response to the project needs and objectives and the impact topics.

Table 2-2: Summary of Alternative Responses to Project Needs and Objectives

	Alternative 1 (No Action) Do not implement the WSP	Alternative 2 (Proposed Action) Implement the Wilderness Stewardship Plan
Project Needs & Objectives		
To protect the monument's wilderness resources and manage them so as to preserve their natural conditions	Project Needs and Objectives not achieved	Project Needs and Objectives achieved
To ensure that the wilderness area continues to generally appear to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable	Project Needs and Objectives not achieved	Project Needs and Objectives achieved
To provide outstanding opportunities for solitude or a primitive and unconfined type of recreation; and	Project Needs and Objectives not achieved	Project Needs and Objectives achieved
To protect ecological, geological, or other features of scientific, educational, scenic, or cultural value found within the wilderness area.	Project Needs and Objectives not achieved	Project Needs and Objectives achieved

Table 2-3: Summary of Alternative Responses to Impact Topics

	Alternative 1 (No Action) Do not implement the WSP	Alternative 2 (Proposed Action) Implement the Wilderness Stewardship Plan
Wilderness Character	Negative or minor impacts due to lack of directed stewardship. There will be limited guidance for protecting the wilderness character as a whole.	Wilderness Character improved due to stewardship guidance.
Biotic Resources	Negative or minor impacts due to lack of directed stewardship. There will be limited guidance for protecting and preserving biotic resources such as wildlife and vegetation in wilderness.	Guidance given to protect and preserve biotic resources present in the wilderness.
Abiotic Resources	Negative or minor impacts due to lack of directed stewardship. There will be limited guidance for protecting and preserving abiotic resources such as air, water, and soil in the wilderness.	Guidance given to protect and preserve abiotic resources present in the wilderness.

Cave Resources	Negative or minor impacts due to lack of directed stewardship. There will be limited guidance for protecting and preserving cave resources in the wilderness.	Guidance given to protect and preserve cave resources present in the wilderness.
Visitor Use and Experience	Negative or minor impacts due to lack of directed stewardship.	Guidance given to protect and preserve visitor use and quality experience of the wilderness.
Cultural	Negative or minor impacts due to lack of directed stewardship. There will be limited guidance for protecting and preserving cultural resources.	Guidance given to protect and preserve cultural resources present in the wilderness.
Socioeconomics	Very minor effects on local and regional economy; no adverse impact to poor and/or minority populations.	Very minor effects on local and regional economy; no adverse impact to poor and/or minority populations.
Fire Management	Negative or minor impacts due to lack of directed stewardship. There will be limited guidance on the use of fire management techniques in the wilderness.	Fire Management improved due to stewardship guidance.
Human Health and Safety	Human Health and Safety not impacted negatively or positively; however, there is a lack of guidance for responding to medical emergencies.	Human Health and Safety not impacted negatively or positively; however, better guidance provided in responding to medical emergencies.

Chapter 3 – Environmental Analysis

This chapter describes the natural and human components of the existing environmental conditions and the probable environmental consequences (effects) of implementing the Action and No Action alternatives. This chapter also provides the scientific and analytical basis for comparing the alternatives. The probable environmental effects are quantified where possible; where not possible, qualitative descriptions are provided.

This analysis summarizes the probable impacts in broad general terms and therefore is not project specific. Given that this Environmental Assessment (EA) provides for only a general programmatic level of environmental implementation analysis, additional environmental compliance will be done prior to the implementation of future Wilderness management activities (Resources Management Actions, Visitor Experience Management Actions and Managerial Management Actions) to identify site-specific concerns and necessary mitigations measures. In cases where an EA may be required, this will include identification of Minimum Tool in advance with opportunity for public review.

3.1 Wilderness Resources and Values

3.1.1 Affected Environment

Between 1972 and 1974, two wilderness units (Schonchin and Black Lava Flow) totaling 28,460 acres were designated under public laws 92-493 and 93-477 at Lava Beds National Monument. Accordingly, wilderness currently represents 61% of the monument's total land area. Lava Beds National Monument manages its caves within designated wilderness areas as underground "wilderness" (NPS 1996). Within Lava Beds National Monument, there are nine official entry locations accessing the Lava Beds Wilderness. Currently, there are 38 miles of maintained trails in the backcountry and wilderness areas of the monument.

The Wilderness Act defines wilderness as "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements…" Lava Beds National Monument Wilderness provides opportunities to see various plant and animal life as well as outstanding natural features, cultural and geologic. There is some evidence of past disturbance of the ecosystem processes such as exotic/introduced species located within wilderness as well as minor impacts from grazing and constructed trails. Lava Beds National Monument Wilderness provides outstanding opportunities for solitude and a primitive and unconfined type of recreation. No forms of mechanical transport, no permanent roads, and only "minimum tools" are permitted in wilderness. There are no designated campsites located within the wilderness. There are currently no administrative structures in the wilderness. The viewshed and soundscape are slightly impaired by the proximity to local towns; however, human awareness of the surrounding wilderness landscape is prominent.

The Lava Beds Wilderness is isolated, with the next closest wilderness areas being the Mountain Lakes Wilderness 45 miles to the northwest, and the Mt. Shasta Wilderness 40 miles to the southwest. The Warner Mountain wilderness, which can be seen from the Lava Beds wilderness, is roughly 70 miles to the southeast. The Modoc and Klamath National Forests form the immediate border of Lava Beds Wilderness.

3.1.2 Environmental Consequences

3.1.2.1 Alternative 1 (No Action)- Do not implement the WSP

Under the no action alternative, the wilderness stewardship plan will not be implemented. The No Action alternative will not provide park specific guidance for meeting legislative and policy mandates on wilderness management. Without a WSP, Lava Beds National Monument's wilderness character will not be ensured the maximum protection.

3.1.2.2 Alternative 2- Implement the Wilderness Stewardship Plan

Under alternative 2, a WSP will be implemented to establish and clearly articulate the objectives to be met through management. The WSP will apply generic national policies to specific local conditions to provide guidance so that the wilderness resources and visitor opportunities are provided maximum protection.

3.1.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair but enhance wilderness character that is (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for wilderness character with regard to the above three criteria.

3.2 Biotic Resources (Including Sensitive Species)

3.2.1 Affected Environment

Wilderness at Lava Beds National Monument supports a wide variety of both flora and fauna. Both the flora and fauna benefit from the wilderness resource and can be categorized as being wilderness dependent, associated, or exotic. The Flora and fauna have both ecological and economic benefits to the wilderness visitor (Hendee, 2002).

Wildlife

Despite harsh, semi-arid conditions, native wildlife species have adapted to the environmental constraints present in the region. There are no permanent terrestrial water resources in Lava Beds National Monument. Some animals obtain water from caves, while others use Tule Lake (Sump

1B) which forms the north boundary of the monument. Because of the harsh environmental conditions, some species of wildlife migrate to and from the monument seasonally, while others remain as permanent residents.

Informal inventories of animal species occurring in the monument have been ongoing since the area was designated a monument in 1925. Since the 1960's, monument staff and researchers have been conducting a full array of formal inventories to document the fauna found at the monument. The results of thirty plus years of inventories are shown below (Table 3-1).

Table 3-1: Known Numbers of Species by Taxa at Lava Beds National Monument.

Taxa	Species Count
Mammals	56
Birds	233
Reptiles	12
Amphibians	2
Fish	0

There are no fish species present at Lava Beds due to the semi-arid conditions. Amphibians have specific habitat requirements that are severely reduced in the monument and therefore are found in very limited numbers.

Of the 303 inventoried vertebrate species within the monument, the bald eagle (*Haliaeetus leucocephalus*) is the only listed federally threatened species (USFWS, 2006). Approximately 50% of the California population of the federally listed threatened bald eagle uses the Klamath Basin as a wintering area. The monument provides two of the five primary winter roosting sites for this population (Caldwell/Cougar Bald Eagle Winter Roost Management Plan, 1992). Although one of these roost sites is not located in Wilderness, all eagles in the park must fly over wilderness areas to reach their feeding grounds in and around Tulelake. During inclement weather, they utilize these wilderness areas in the daytime for roosting. The number of bald eagles using these monument roost sites has fluctuated from a high count of 278 in 1984 to as low as 4 – 5 birds in 2004. Roosting habitat is comprised of the ponderosa pine forests that occur at the southern portion of the monument.

The state of California, over the years, has maintained a state species of concern for flora and fauna. At this time, the state is no longer maintaining this list, however there continues to be lists of at-risk species (Sacramento Fish and Wildlife Office, 2006). Species of concern on the state list during the last few years for Lava Beds has included five bat species and eight bird species. These species, found below in Table 3-2, are known to occur within the monument and could be influenced by wilderness management activities.

Table 3-2: Federal and State Animal Species of Concern.

Species	Status	Habitat
Bald eagle *(Haliaeetus leucocephalus)*	Federally Threatened	Ponderosa pine woodlands used for winter roosting
Fringed myotis *(Myotis thysanodes)*	Species of Concern	Lava tube caves
Townsend's big-eared bat *(Corynorhinus townsendii)*	Species of Concern	Lava tube caves
Long-legged myotis *(Myotis volans)*	Species of Concern	Lava tube caves
Small-footed myotis *(Myotis ciliolabrum)*	Species of Concern	Lava tube caves
Yuma myotis *(Myotis yumanensis)*	Species of Concern	Lava tube caves
Red-breasted Sapsucker *(Sphyrapicus rubber)*	Species of Concern	Ponderosa pine woodlands
White-headed Woodpecker *(Picoides albolarvatus)*	Species of Concern	Ponderosa pine woodlands
Flammulated Owl *(Otus flammeolus)*	Species of Concern	Ponderosa pine woodlands
Lewis' woodpecker *(Melanerpes lewis)*	Species of Concern	Ponderosa pine woodlands
Olive-sided Flycatcher *(Contopus cooperi)*	Species of Concern	Ponderosa pine woodlands
Western Burrowing Owl *(Athene cunicularia hypugaea)*	Species of Concern	Sagebrush grasslands
Swainson's Hawk *(Buteo swainsoni)*	Species of Concern	Sagebrush grasslands
Greater Sage Grouse *(Centrocerius urophasianus)*	Species of Concern	Sagebrush grasslands

The five species of bats that are listed by the state of California in Table 3-2 all occupy lava tube cave habitats within Lava Beds National Monument. The monument has been conducting an annual hibernaculum and maternity survey of the Townsend's big-eared bat populations since 1996. While this species has experienced a drastic decline in numbers elsewhere in the western U.S. as a result of habitat destruction and roost disturbance (Pierson and Fellers 1998), Lava Beds National Monument remains a stronghold. Cave roost monitoring at the monument has confirmed

populations of this species have been stable and are currently increasing. This trend is attributed to the habitat preservation and bat colony protection actions taken by the National Park Service (Fuhrmann, 2004). The other four species of bats in Table 3-2 are found in low numbers on an annual basis in the lava tube caves and foraging at night over the monument. These bats have been detected during monument night surveys using Anabat equipment, which detects bats sonar as they fly and feed overhead using echolocation.

Five of the eight birds that are listed by the state of California in Table 3-2 are found in the ponderosa pine woodlands of the monument. These woodlands occur primarily in the southern end of the park, both inside and outside wilderness areas. The Lewis's Woodpecker, Olive-sided Flycatcher and Flammulated Owl are migratory species that breed during the summer at the monument. The Red-breasted Sapsucker and White-headed Woodpecker are resident species. All five species can be considered common, except for the Flammulated Owl which is considered uncommon in the monument.

Three of the eight birds that are Species of Concern for the state of California in Table 3-2 are found in the sagebrush grassland habitats of the Monument. Western Burrowing Owl is a rare bird for the monument, only observed a few times a year, and is dependent on burrows and healthy grasslands. The Swainson's hawk is a migrant that breeds during the summer in the Klamath Basin. This hawk is considered uncommon in the summer months at the monument and primarily feeds on insects and rodents. This hawk will nest in open grasslands where isolated trees provide a nest platform away from predators. The Swainson's hawk has not been confirmed to be a breeding species within Lava Beds National Monument. The Sage Grouse is a species of bird that is becoming very rare in the region surrounding Lava Beds. There are historic records documenting this bird at the monument, but no confirmed sighting of this species has been made in the monument for three decades. This species of bird is very dependant upon intact sagebrush habitats for breeding, nesting and foraging.

Vegetation Resources

The natural landscape at Lava Beds National Monument has been divided into 23 different vegetation associations (Erhard, 1979). While there is a great deal of species overlap between these 23 plant associations, there are certain key species that define broader community types that reflect differences in moisture, temperature and disturbance regimes. Based on the distinctive historical fire regimes, four dominant plant communities have been identified within the monument, along with the special environments in the surface lava flows and around lava tube caves. The four communities and their dominant species are listed in Table 3-3. (See also Figure 3.1)

Table 3-3: Major Plant Community Types of Lava Beds National Monument.

Community Type	Dominant Species
Perennial Bunchgrass	Bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber's needlegrass *(Achnatherum thurberianum*), squirrel-tail *(Elymus elymoides*), phlox *(Phlox spp.*), rabbitbrush (*Chrysothamnus nauseosus* and *C. viscidiflorus*), Indian paintbrush *(Castelleja* spps.*)*, mariposa lily *(Calochortus macrocarpus*)
Sagebrush Steppe	Mountain big sagebrush *(Artemisia tridentata ssp. vaseyana)*, curl-leaf mountain-mahogany (*Cercocarpus ledifolius* var. *intermontanus*), bitterbrush *(Purshia tridentata*), bitter cherry (*Prunus emarginata)*, choke cherry *(Prunus virginata*), Idaho fescue *(Festuca idahoensis)*, bluebunch wheatgrass (*Pseudoroegneria spicata*), Thurber needlegrass *(Achnatherum thurberianum*), and western needlegrass *(Achnatherum occidentalis)*
Juniper Woodland	Western juniper (*Juniperus occidentalis*), curl-leaf mountain-mahogany (*Cercocarpus ledifolius* var. *intermontanus*), mountain big sagebrush *(Artemisia tridentata ssp. vaseyana)*, bitterbrush *(Purshia tridentata*), bitter cherry (*Prunus emarginata)*, choke cherry *(Prunus virginata*), sulphur buckwheat *(Eriogonum umbelatum*), veri-leaf phacelia *(Phacelia heterophylla ssp. virgata*), and western needlegrass *(Stipa occidentalis)*
Pine Forest	Ponderosa pine (*Pinus ponderosa*), Jeffrey pine (*Pinus jeffreyi*), white fir *(Abies concolor*), greenleaf manzanita (*Arctostaphylos patula*), Pacific serviceberry (*Amelanchier alnifolia),* snowbrush *(Ceanothus velutinous),* alumroot *(Heuchera cylindrica* var*. glabella),* Idaho fescue *(Festuca idahoensis)*, and bluebunch wheatgrass (*Pseudoroegneria spicata*)
Lava Flows	Purple sage (*Salvia dorii* var. *incana*), desert ocean spray (*Holodiscus microphyllus* var. *glabrescens*), fernbush (*Chamae-atiaria millefolium*), California figwort (*Scrophularia californica*), lichens (several species), and mosses (several species)

Perennial bunchgrasses occupy most of the northern half of the monument, generally at elevations between 4000 and 4500 feet above sea level. Although bluebunch wheatgrass, Thurber's needlegrass, and other native grasses are the dominant plants in this community, there has been some incursion of woody shrubs and isolated junipers into this community over the last century. These changes have come about largely through suppression of natural fire. The grasslands are open, rolling country, and are generally drier than the other plant communities.

The Sagebrush Steppe community occupies the majority of the monument, generally between elevations of 4500 to 5000 feet above sea level. Mountain big sagebrush, bitterbrush, cherry species, and rabbit brush species are the dominant shrubs in this community. The presence of mature western juniper and curl-leaf mountain-mahogany indicates patches on this landscape that have experienced fire-free intervals outside the expected range of variability (generally greater than 80+ years) (Miller et al 2003).

Juniper woodlands occur in the southeast portion of the monument extending from Valentine Cave north to the Three Sisters Butte, and from the Schonchin Lava Flow east to the monument boundary. This plant community is characterized by a fuel limited combination of western juniper, curl-leaf mountain mahogany, mountain big sagebrush, bitterbrush, and western needlegrass. This area is in a continual state of change between shrub steppe and juniper woodland, where western juniper trees are part of the historic pre-settlement vegetation.

The Pine Forest community is largely confined to the southern end of the monument at elevations above 5000 feet, although patches of forest can extend downhill as low as 4600 feet. Ponderosa and Jeffrey pines are the dominant tree species, with varying amounts of shrubs and grasses occupying the understory. This plant community historically experienced frequent, low-intensity surface fires with mean fire return intervals of 8-10 years. The increasing density of white fir trees found in this plant community indicates a departure from the historical fire regime.

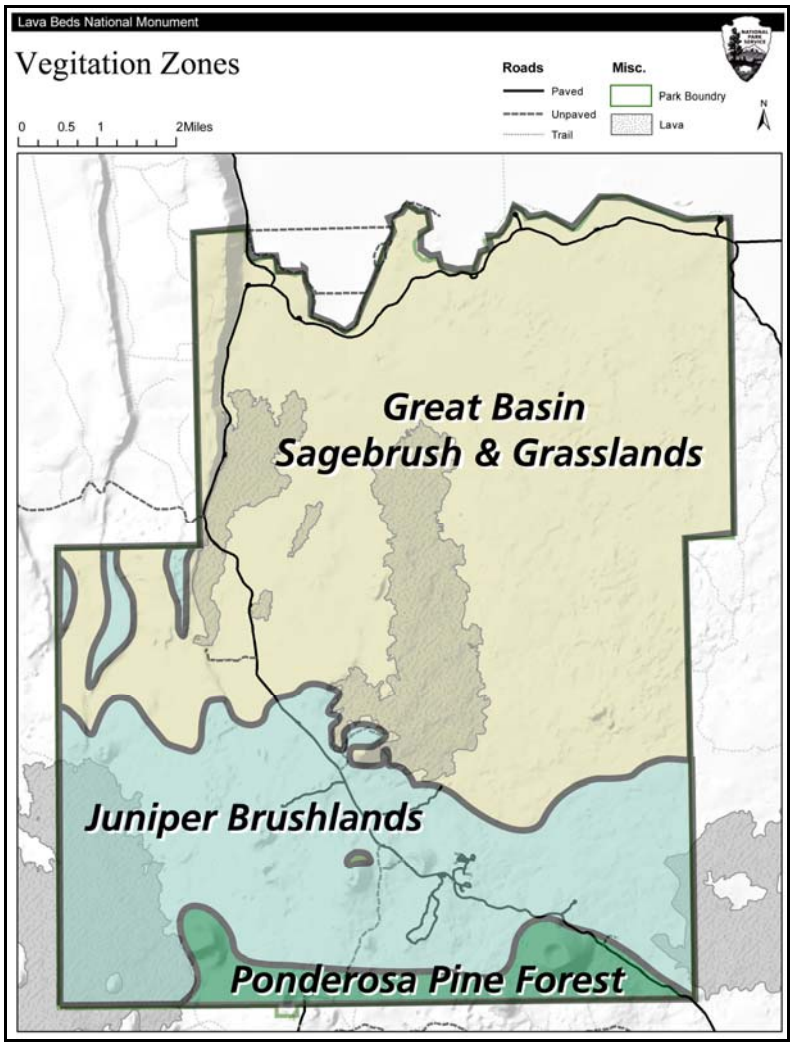

Figure 3.1 General Plant Community Types in Lava Beds National Monument.

In addition to the four dominant communities, Lava Beds contains extensive lava flows and numerous lava tubes. These can be found at any elevation, and plant species partly reflect the elevation of the flow. The limited plant abundance and distribution that is observed on the flows is due in part to undeveloped and nutrient-poor soils. Lichen and moss species are the first pioneering plants to colonize on weathered lava, with eventual emergence of grasses, forbs, and even small shrubs and trees over time.

Non-native Vegetation

Non-native plant species threaten the natural environment at Lava Beds National Monument. The aggressive spread of these species is of great concern to the delicate ecological balance found within the monument's natural environments. Thirty-five species of alien plants have been documented within the park boundaries of Lava Beds. These species of plants have been found

along road shoulders, in developed visitor use areas and in sensitive resource areas of the monument's backcountry.

Non-native plants pose serious effects on the environments in which they invade. Native plants and animals suffer these effects most severely. The native plants and animals compete against invasive plant species and are often suppressed due to the presence of these exotics in the area. Few if any native species utilize these plants as a food source. As these exotic plants invade the areas in which the native plants grow, the native species decrease thus causing a reduction in food and shelter for wildlife. Wildlife populations decline as they are forced to forage elsewhere. The ecological balance between the native plants and animals of the area becomes severely impacted as more exotic species become introduced or further occupy larger areas of habitat within the monument. Four species of non-native plants are described in Table 3-4. These four species provide an overview of typical threats the wilderness faces with exotic plants. Priority exotic plant species that are controlled within the wilderness and backcountry of Lava Beds include Common Mullein *(Verbascum thapsus)*, Canadian thistle (*Cirsium arvense*) and, Perennial Pepperweed (*Lepidium latifolium*).

Table 3-4. Non-Native Vegetation Descriptions

Non-Native Vegetation	Description
Cheatgrass *(Bromus tectorum)*	The most widespread invasive plant found at Lava Beds, which covers more than 15,000 acres of the park. Cheatgrass is a nonnative, typically winter annual grass that has the ability to change an area's fire regime and associated ecosystem. Cheatgrass reproduces only by seed. Often the critical factor opening niches for cheatgrass invasion is a heightened disturbance regime.
Tumbling Mustard *(Sisymbrium altissimum)*	Covers approximately 3,000 acres of the park. Like cheatgrass, this species is extensively spread throughout the park making it infeasible to control directly. This exotic is native to Europe and thrives in disturbed areas such as fields, roadsides, and burned sites. This weed is an annual plant that produces yellowish flowers and hundreds of seeds per plant.
Common Mullein *(Verbascum thapsus)*	A widespread exotic plant throughout Lava Beds, covering over 650 acres of park lands. Mullein is a branched biennial. In the first year a rosette of basal leaves is produced. An erect flowering stem reaching up to six feet is produced the second year. The leaves are paddle shaped, upward becoming lance shaped. The spike-like stalk becomes covered with yellow flowers blooming from June to August. Mullein seeds can remain viable for over 100 years. Mullein is an invasive

	species introduced from Eurasia. Mullein is invasive along roadsides, disturbed or burned sites, waste places, open areas, dry sandy soils, but can establish in undisturbed backcountry.
Tumbleweed *(Salsola tragus)*	This annual forb occupies road shoulders and developed areas of the park in isolated patches where disturbance has been recent. Tumbleweed is a dense plant consisting of an intricate branch arrangement. It grows into a round bushy clump and is covered in thorns. The thorns serve as a deterrent from predators allowing the exotic to grow uninhibited. The plant produces tiny black seeds which disperse as the dead plant blows across the desert floor.

3.2.2 Environmental Consequences

3.2.2.1 Alternative 1 (No Action)- Do not implement the WSP

The 'No action' alternative does not provide a formal standard for which to measure biological degradation. It does not outline threats to these resources or identify priorities for tackling these threats.

3.2.2.2 Alternative 2- Implement the Wilderness Stewardship Plan

The proposed action outlines various strategies for how to mitigate environmental impact on the biotic environment. It identifies priorities for research, I&M, and exotic plant species control. Furthermore by setting a standard of maintaining the biotic environment at its 'natural' level, it provides a concrete goal that can be strived for, while at the same time allowing for the flexibly to deal with future threats.

3.2.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair but enhance biotic resources that are (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for biotic resources with regard to the above three criteria.

3.3 Abiotic Resources (Water Quality, Soil Communities, and Air Quality)

3.3.1 Affected Environment

Water Quality

Lava Beds is located in a semi-desert ecosystem. Annual rainfall for the park averages 15.4 inches as measured over the last 57 years at the Lava Beds National Monument headquarters office (Weather data, LABE Resource Office, 1947-2004).

There are no streams, rivers, or lakes in Lava Beds. The only permanent water sources are found within approximately twenty ice caves. The ice resources within these caves are usually located well beyond the entrance of the cave and found in the dark zone of the cave. Many of these ice cave resources are used by wildlife as a permanent water resource. Ephemeral water sources are also found throughout the park in lava rock pockets that collect rainwater and snowmelt. These water sources are usually very small in size but are also visited heavily by wildlife during certain periods of the year. Many caves also contain ephemeral ice formations and short-term water resources that are present during winter and spring. Climatic influences affect ice cave development and ice level fluctuation. Monitoring has been conducted on ice level fluctuation over time. Data from this project is correlated with climate data to better understand how ice caves are affected by changes in climate.

Due to the lack of surface water in the monument, water quality monitoring at Lava Beds has been limited to ice caves and park wells. In 1999, a baseline water quality analysis was conducted on ice caves that included measurements on pH, alkalinity, dissolved oxygen, ammonia nitrogen, free carbon dioxide, nitrite nitrogen, hardness and chloride (Cannon, 1999). Since 2002, the USGS has been monitoring ground water levels at Lava Beds. This project has been in operation to determine water sources and detect the array of ground water level fluctuations. Since this project was started, minor ground water level reductions and fluctuations have been documented along with no changes in certain sampling sites.

Soil Communities

In 1983, a soil survey was completed for Lava Beds National Monument by the Modoc National Forest. Results from this survey confirmed 29 soil types within the monument. Two of the most common soil types within the park include searles-gwin complex and bakeoven association with the top soil horizon consisting of gravelly sandy loam to very cobbly loam. These soil types make up a large central area of the park and represent 20 percent of the monument (USDA, 1983). Lava flows occupy 7 percent of the monument.

Relatively well-developed soils in the northern section of the monument support the bunchgrass-sagebrush plant community, which is dominated by fire-tolerant grasses and shrubby sagebrush. More poorly-developed soils containing a great deal of volcanic pumice underlie the juniper-sagebrush community located throughout the mid-elevations.

Air Quality

Air is considered a natural resource in all NPS units and many park values and resources are dependent on good air quality. The Federal Clean Air Act (CAA), amended in 1990, was enacted to preserve, protect, and enhance air quality in regions of the United States, which are of special national or regional natural, recreational, scenic or historic value. The CAA identified a classification scheme to facilitate the prevention of significant deterioration (PSD) of air quality.

Lava Beds is a Class I air shed. Class I areas receive the highest degree of protection with only a small amount of certain kinds of additional air pollution allowed. Mandatory Class I areas were designated by Congress and include national wilderness areas over 5,000 acres. Lava Beds falls into this category. The CAA declares a "National Visibility Goal" to prevent and remedy visibility impairment in Mandatory Class I areas caused by human air pollution. Visibility refers to the clarity of the atmosphere and is typically measured as the distance one can see at a particular location and time. The absorption and scattering of light by both gasses and particles in the atmosphere restricts visibility. Natural factors which contribute to decrease visibility include fog, precipitation, blowing dust and snow, and relative humidity above 70%. Human activities that reduce visibility include the combustion of fossil fuels which transforms emissions into tiny visibility-reducing particles termed "aerosols". The CAA has identified national ambient air quality standards (NAAQS) to protect public health and welfare. NAAQS have been set for six pollutants: particulate matter less than 10 microns (PM10), carbon monoxide, nitrogen oxide, sulfur dioxide, ozone, and lead. These pollutants are called "criteria pollutants", because the standards satisfy criteria specified in the CAA. The main air pollutants of concern at Lava Beds are ozone, sulfur dioxide, PM2.5 and PM10 (DOI 2004a).

Air quality monitoring and pollution control is subject to regulations of the California Environmental Protection Agency Air Resources Board (ARB), which has established 35 Air Pollution Control Districts or Air Quality Management Districts (air districts) within the state. Each of these air districts is required by law to implement a district-wide smoke management program (CEPA 2004b).

Lava Beds National Monument is located in the Siskiyou and Modoc air districts of the Northeast Plateau Air Basin. The Basin currently meets federal and state air quality standards with the exception of particulate matter less than 10 microns (CEPA 2004a). Major sources of PM10 in the area include wood burning stoves from local sources, seasonal prescribed and natural fire occurrence, and agricultural burning and field preparation. PM10 monitoring started in 1994.

The air quality related values of Lava Beds NM are those resources that are potentially sensitive to air pollution and include visibility, soils, vegetation, and wildlife. Visibility is a very sensitive air quality related value in Lava Beds. Although visibility in the monument is still superior to that in many parts of the country, visibility in the monument is often impaired by light-scattering pollutants (haze), particularly from agricultural burning, wood stove emissions, wildland fires and prescribed burns. The U.S. Environmental Protection Agency's Regional Haze regulations require States to establish goals for each Class I air quality area to improve visibility on the haziest days and ensure no degradation occurs on the clearest days. As part of the Interagency Monitoring of Protected Visual Environments (IMPROVE) network, visibility in Lava Beds has been monitored using an aerosol sampler (2000-present) and an automatic 35mm camera (1983-1991).

The IMPROVE sampler measures concentrations in the PM2.5 range for sulfate, nitrate, organics, elemental carbon and soil. In addition to these parameters, key trace elements, such as selenium, lead, arsenic, vanadium and nickel are measured. These trace elements can provide information on the sources of the primary groups of particles. An analysis of 1990-1999 data from two nearby parks with long-term data (Crater Lake NP and Lassen Volcanic NP) indicates that visibility in the area is improving on the clearest days and degrading on the haziest days.

Monitoring of air quality indicators is done throughout the year through cooperative agreements with the California Environmental Protection Agency Air Resources Board and an IMPROVE station installed by the University of California, Davis Crocker Nuclear Lab Air Quality Group.

Several plant species that occur at Lava Beds National Monument, including Pinus jeffreyi (Jeffrey pine), Pinus ponderosa (ponderosa pine), and Populus tremuloides (quaking aspen) are known to be sensitive to ozone. Ozone has been monitored with passive samplers from 1995- present. Ozone concentrations appear to be among the lower values recorded for California parks. However, trend data from 1993-2002 in nearby Lassen Volcanic NP indicate that ozone is increasing in some areas of northern California (Sullivan et al. 2001).

3.3.2 Environmental Consequences

3.3.2.1 Alternative 1 (No Action)- Do not implement the WSP

The 'No action' alternative again does not offer a formal standard for which to measure abiotic degradation. It does not identify areas of concern, or suggest possible actions to take.

3.3.2.2 Alternative 2- Implement the Wilderness Stewardship Plan

The proposed action defines abiotic degradation and suggests possible actions to mitigate impacts on the abiotic environment. A stated goal of protecting abiotic resources cannot be realized unless there is a framework in place identifying the issues at stake and suggesting how they can be tackled. A WSP provides this framework.

3.3.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair but enhance abiotic resources that are (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for abiotic resources with regard to the above three criteria.

3.4 Cave Resources

3.4.1 Affected Environment

There are over 500 known caves and other lava tube features within the monument, with a combined length of over 28 miles of passageway. Lava Beds has the largest known concentration of lava tube caves in the lower 48 states. Caves in Lava Beds National Monument typically were formed during the eruption of basaltic lavas in the late Pleistocene (over 10,000 years ago), a process which has not happened historically in the area, thus they are non-renewable geologic resources. Lava Beds contains over 30 separate lava flows located in the monument that range in age from 2,000,000 years BP to 1,110 years BP. Many of these lava flows contained segments of lava tube systems that once carried flowing lava as far as 10 mi (16.7 km) from its source. Cave resources at Lava Beds typically contain abundant well-preserved lava features such as levees and gutters, lava cascades, linings, balconies, natural bridges, lava lakes, rafted blocks, blisters, and lava stalactites and stalagmites. Caves also contain small secondary mineral deposits, including calcite, gypsum, and opal speleothems. Loose boulders, called breakdown, which form from the collapse of the ceiling or walls are also commonly found in many caves.

As of May 2002, 108 of the total known caves in the monument are located within wilderness boundaries. According to NPS Management Policies (2001), management of caves, whether completely or partially in wilderness is defined as follows (§ 6.3.11.2, Caves): "All cave passages located totally within the wilderness boundary will be managed as wilderness. Caves that have entrances within wilderness but contain passages that extend outside the surface wilderness boundary will be managed as wilderness. Caves that may have multiple entrances located both within and exterior to the surface wilderness boundary will be managed consistent with the surface boundary; those portions of the cave within the wilderness boundary will be managed as wilderness."

Because both biotic and abiotic cave resources are present in the wilderness, impacts to cave resources are included in this analysis. The cool, damp climate within the caves offers different plant and animal species a variety of microclimates that allow for their existence in near-desert conditions where they would not ordinarily survive. Lichens, mosses, ferns, and vascular plants, tree frogs, and various insects and mammals (e.g. pika) are found in and around cave entrances. The deeper passages of the caves can harbor bats, woodrats, bacterial colonies (known as cave slime), and cave adapted insects, as well as other creatures adapted to the cool, damp, dark conditions inside. Many caves support bat populations, including one of the northernmost maternity colonies of Brazilian free-tailed bats (*Tadarida brasiliensis*). A relatively large population of Townsend's big-eared bats (*Corynorhinus townsendii*), a species of special concern, occupies monument caves throughout the year forming some of the largest bat hibernaculums on the west coast.

Many caves are culturally significant, both archaeologically and historically. Prehistoric rock art and artifacts in and near the entrances to caves are evidence of early human use of the caves. The caves of Lava Beds were well known and used by Native Americans, as evidenced by pictographs and artifacts inside and close to cave entrances. Many cave-related archeological

sites are documented in the monument. More recently, the Modoc Indians used caves, collapses, and ledges to strategic advantage in the Modoc War of 1872-73, hiding from and firing on federal troops during the conflict.

In summary, Lava Beds' caves are non-renewable resources, unique in their extent and degree of preservation, and are geologically, biologically, and culturally significant.

3.4.2 Environmental Consequences

3.4.2.1 Alternative 1 (No Action)- Do not implement the WSP

A 'No action' option again does not establish a baseline for what damage is acceptable in caves, nor does it provide guidance on how to proceed in conservation efforts.

3.4.2.2 Alternative 2- Implement the Wilderness Stewardship Plan

The implementation of the WSP provides concrete guidance for how to manage the cave resources so as to best conserve them.

3.4.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair but enhance cave resources that are (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for cave resources with regard to the above three criteria.

3.5 Visitor Use and Experience

3.5.1 Affected Environment

Lava Beds National Monument is open year-round. Approximately half of the visitation occurs during the summer months of June through August. Annual visitation between 1980 and 1995 consisted of a low of 92,000 in 1984 and a high in 1993 and 1994 of 180,000. Visitation is projected to increase to about 210,000 in 2010 based on an expected increase rate of 1 percent per year. This is consistent with growth rates projected for other northern California recreation destinations (NPS 1996). The average visitor stay is approximately 5 hours.

Over the past decade day hiking, overnight use (backpacking), and caving were the park's principal wilderness activities. Pack and trail riding stock use accounts for less than 1% of wilderness use. Caving and hiking account for most of the day use activity within the wilderness. Day use far exceeds overnight use. Average overnight use of the Lava Beds National Monument backcountry was approximately 26 visitor nights. A record 103 visitor nights was recorded in the monument Wilderness in 1995 (number of visitors multiplied by the number of nights = visitor nights). The year 1997 was second with 32 visitor nights and 1991 third with 28 visitor nights.

Visitor exploration of caves is one of the most popular activities within Lava Beds National Monument. In backcountry caves and caves located in wilderness areas where cave registers are used, visitation can be extremely low. Between 1995 and 2000, 18 backcountry caves contained registers to document use. The range of visitation in these caves fluctuated between a cave with 15 visitors over the five year period and a cave with 4,000 visitors during the same period.

Hiking on monument trails is another popular visitor experience at Lava Beds. In the backcountry of Lava Beds there are 16 trails totaling 9.3 miles. In the wilderness of Lava Beds, there are 7 trails totaling 30.4 miles.

Monument wide, the bulk of overnight use occurs in June, July, and August. Day use winter activities are limited to occasional hikers and snowshoeing, depending on the year's snowfall levels.

3.5.2 Environmental Consequences

3.5.2.1 Alternative 1 (No Action)- Do not implement the WSP

The 'No action' alternative does not ensure that wilderness values are promulgated into the future. It does not establish definitions of what wilderness experience should be, or provide tools for measuring wilderness character. Thus, without a WSP it is more difficult to ensure that future generations can experience and enjoy wilderness as much as today.

3.5.2.2 Alternative 2- Implement the Wilderness Stewardship Plan

The proposed action outlines concrete regulations that can be implemented and enforced, in order to best preserve wilderness character. Having these regulations formerly stated in a WSP ensures continuity in their implementation.

3.5.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair but enhance visitor use and experiences that are (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for visitor use and experiences with regard to the above three criteria.

3.6 Cultural Resources

3.6.1 Affected Environment

The wilderness of Lava Beds contains a diverse and valued suite of cultural resources within its boundaries including archeological resources, ethnographic resources, and cultural landscapes. On March 21, 1991, the Modoc Lava Beds Archeological District was entered in the National

Register of Historic Places. The Archeological District includes all lands of the monument, except Petroglyph Point, which is already listed on the National Register of Historic Places as an archeological site. The Archeological District also extends onto some U.S. Fish and Wildlife Service lands to the north. The District resources include historic sites from the Modoc War of 1872-l873 and archeological sites that reflect over 7000 years of occupation including the more recent occupation by the Modoc Indians.

Archeological resources "are the remains of past human activity and records documenting the scientific analysis of these remains." These include rock shelters, campsites, resource procurement sites, lithic reduction sites, spiritual "Vision Quest" sites, burial and cremation sites, habitation sites, Modoc War fortifications, and rock art. Three archeological settlement zones have been identified in the monument. These include the lakeshore zone, ice cave zone, and the intermediate zone. The lakeshore zone located in the northern section of the monument, is the most archeologically sensitive consisting of the primary habitation zone prehistorically. The ice cave zone is also archeologically sensitive since seasonal habitation occurred in the vicinity of available water. The remainder of the park, or the intermediate zone, is less sensitive and the archeology reflects prehistoric foraging behavior. Approximately 19% of the monument has been surveyed for archeological resources and it is estimated that hundreds, if not thousands of additional sites remain unrecorded. The monument recently completed a Draft cultural resources overview that provides in-depth discussion of the monument's archeological resources (LABE, 2001c).

Ethnographic resources "are basic expressions of human culture and the basis for continuity of cultural systems" and encompasses both the tangible (native languages, subsistence activities) and intangible (oral traditions, religious beliefs). Lava Beds National Monument lies within the traditional Modoc tribal territory. The Modoc inhabited an area extending from Mount Shasta east to Goose Lake and north into present day Oregon. Ethnographic literature and consultations with local Native Americans, primarily the Modoc Indians and The Klamath Tribes, suggest that numerous ethnographic sites exist within the monument. The monument is currently completing a cultural resources overview that will provide in-depth discussion of the park's ethnographic resources (LABE, 2001c).

The National Park Service manages historic and prehistoric structures that have historical, architectural, and/or engineering significance. Lava Beds National Monument manages and protects 30 of these structures that are on the List of Classified Structures (LCS). Within the wilderness of Lava Beds there are currently no known LCS structures.

Cultural landscapes "are settings we have created in the natural world." They are intertwined patterns of natural and constructed features that represent human manipulation and adaptation of the land. Currently Lava Beds does not have a Cultural Landscape Plan, although a Level I Cultural Landscape Inventory (CLI) was completed in 1998. The CLI states "Lava Beds National

Monument contains five cultural landscapes that are listed, eligible, or potentially eligible for the National Register of Historic Places (NRHP)." Two of the highest priority landscapes are the Modoc Lava Beds Archaeological District and the Civilian Conservation Corps facilities construction (LABE 1999b). Both of these landscapes have the potential to contain segments of the Lava Beds wilderness.

Wilderness Stewardship can directly affect cultural resources. Examples include trail management on historic routes and in caves, placement of signs, minimum tool standards, and visitor use levels and impacts to cultural landscapes.

3.6.2 Environmental Consequences

3.6.2.1 Alternative 1 (No Action)- Do not implement the WSP

The 'No action' alternative does not allow for large scale analysis of impacts and coordination of conservation efforts. It does not allow for analysis of how cultural resources interact with biotic and abiotic resources, and how conservation efforts in one realm also affect the other.

3.6.2.2 Alternative 2- Implement the Wilderness Stewardship Plan

A WSP provides concrete guidance for how to conserve cultural resources, and it shows how different resources interact. For example a robust fire management plan not only promotes natural vegetation communities, but it also improves the park soils, and restores cultural landscapes

3.6.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair but enhance cultural resources that are (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for cultural resources with regard to the above three criteria.

3.7 Socio-Economic Environment

3.7.1 Affected Environment

Lava Beds National Monument straddles Modoc and Siskiyou counties of northern California, with a combined population of 53,750. The population of neighboring Klamath County, Oregon is 63,775. According to the United States Census Bureau, education, health and social services, agriculture, forestry, commodity transportation, and retail trade are the major elements of the tri-county economies (USCB, 2004).

In addition to the monument, the upper Klamath Basin is home to several National Wildlife Refuges, a Volcanic Scenic By-Way, Crater Lake National Park, and numerous natural amenities and community services which bring visitors to the area each year. Agriculture and timber

employment is not expected to increase in the near future, and the counties look to increasing economic diversification to aid economic growth. Tourism is an important part of a growing employment sector that includes the Arts, entertainment, outdoor recreation and tourism (USCB, 2004).

The monument averaged 125,997 recreational visitors for the years 1992-2003 (DOI 2004b). Each visitor is required to pay an entrance fee. Single, private, non-commercial vehicles are charged $10; pedestrians, single motorcyclists, and bicyclists are charged $5; and commercial buses are charged anywhere from $25 to $200, depending on capacity. More than 70% of the monument's annual visitation comes during the period May-October (DOI 2004b).

Using the MGM2 model developed by researchers at Michigan State University, it is possible to derive a rough estimate of the economic benefits to the local community due to monument visitation (DOI 2004c). The model uses as inputs the number of annual recreation visits, broken down into local, non-local day use, and overnight visits, including stays at motels and campgrounds, to generate estimates of economic effects on the local community due to the presence of the NPS unit. The following inputs were used to calculate the economic benefits of the monument:

- 22,420 local visits, from the three surrounding counties of Modoc, Siskiyou, and Klamath Counties
- 22,420 visitors who stayed overnight in motels
- 7,390 visitors who stayed overnight in campgrounds, RVs, or backcountry camping
- 61,654 non-local day-users (DOI 2004c)

The model uses a nationwide average of party size and length of stay in motels and campgrounds for National Park visitors, as well as average spending per party at a rural National Park, to convert the visitation information to estimates of economic benefits. Using the above inputs it is estimated that Lava Beds National Monument brings in approximately $2,180,000 in local wages and 130 jobs for persons involved in the tourism industry.

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations, directs federal agencies to identify and address any disproportionately high adverse human health or environmental effects of its projects on minority or low-income populations.

Minority populations constitute approximately 14% of the total population in the tri-county area compared to a national average of 25% (USCB 2004). Using the Census Bureau's categories, the largest racial group is American Indian and Alaska native (4%), followed by those who said they were of two or more races (3%), and those who said they were some other race (3%). Asian, Black or African American, and Native Hawaiian groups each made up less than 1% of the tri-county population. In addition, 9% of the population identified themselves as Hispanic or Latino; persons in this category can be of any race.

The median household income for Modoc, Siskiyou and Klamath Counties was $29,530 in 1999 (USCB, 2004) compared to the national median income of $41,994 for the same year. In 1999, more than 19% of tri-county residents were reported to be living in poverty, compared to a national average of 12.4%. Modoc and Klamath counties experienced unemployment rates ranging from 7.0 – 9.9% for the 12 month period between February 2003 and January 2004, while Siskiyou County reported > 10% unemployment. These unemployment rates are significantly higher than the national average of 6.0% for the same period (USBLS 2004).

3.7.2 Environmental Consequences

Socio-economic impacts were quantitatively assessed using U.S. Census Bureau data on personal income, population data, and poverty measures. The proposed action does not really affect the socio- economic environment one way or another, except that having a WSP in place better ensures that the quality of the wilderness remains consistent into the future. This in turn is beneficial for tourism.

3.7.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair the Socio-economic environment that is (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for the socio-economic environment with regard to the above three criteria.

3.8 Fire Management

3.8.1 Affected Environment

Lava Beds National Monument fire management plan follows a Fire Regime Restoration Emphasis. The goals of the fire management plan are to:

- Restore and maintain natural fire regimes
- Reduce hazardous fuel accumulations near values at risk
- Reduce the likelihood of unwanted fires crossing jurisdictional boundaries
- Protect human life and property within and adjacent to the monument

The FMP manages the area within Lava Beds National Monument as two Fire Management Units; the Protection FMU and the Fire Use FMU.

The Protection Unit includes areas adjacent to the boundary of the monument, and the area encompassing the monument's administrative facilities. In this FMU, most wildland fire ignitions would receive an immediate appropriate management suppression response commensurate with public and firefighter safety and the values at risk.

The Fire Use Unit includes the majority of the two wilderness areas interior to the Protection Unit. In this FMU, all fire management strategies are available for use, but with an emphasis on managing natural ignitions to restore and maintain natural fire regimes.

Within both Fire Management Units, prescribed fire and manual treatments would be implemented to reduce hazardous fuels, protect human life and property, and restore fire as an ecosystem process. The extent of treatment implementation could be modified depending on the amount of Wildland Fire Use activity.

3.8.2 Environmental Consequences

3.8.2.1 Alternative 1 (No Action)- Do not implement the WSP

While there is a separate Fire Management Plan for the park; it is not explicitly put in the context of wilderness management. Without a WSP, the importance of fire management with respect to wilderness conservation is not made explicit, and therefore fire management is not given the importance it deserves.

3.8.2.2 Alternative 2- Implement the Wilderness Stewardship Plan

The proposed WSP works alongside the Fire Management Plan to restore wilderness to its natural state. The ultimate goals of the two documents are the same. The WSP does not restrict or impair the fire management of the park, but rather it reinforces it.

3.8.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair but enhance Fire Management that is (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for fire management with regard to the above three criteria.

3.9 Human Health and Safety

3.9.1 Affected Environment

Lava Beds National Monument Wilderness has inherent risks and dangers to human health and safety. There is a comprehensive Emergency Operations Guide (Standard Operating Procedure) document dedicated to ensuring the safety of the public and monument employees. Numerous

safety measures are followed to maintain the highest safety standards possible for monument visitors, employees, and residents, and landowners/residents living adjacent to the monument.

Monument personnel follow several safety standards and best management practices to minimize their exposure to hazardous conditions while working. Hazardous conditions include diurnal fluctuations in temperature and humidity, unsure footing on steep and rocky terrain, poisonous snakes and insects, smoke, burning organic material, and long work periods. Employees regularly review the job hazards identified for each wilderness project. The job hazard analysis includes a list of potential hazards for each task and provides the proper implementation techniques, personal protective gear, and hazard mitigation measures.

3.9.2 Environmental Consequences

The proposed action does not affect human health and safety one way or another. With the proposed alternative as with the no action alternative, safety always comes first, and when human life is at risk the Minimum Requirement Decision Guide is used to determine the course of action with the least environmental impact.

3.9.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair human health and safety that are (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for human health and safety with regard to the above three criteria.

3.10 Operations

3.10.1 Affected Environment

Lava Beds National Monument is a small park, yet there are many park operations that must be performed regularly for the park to run smoothly. These include rehabilitation/renegotiation work, interpretation and education functions, trail maintenance, maintenance of park facilities and much more.

3.10.2 Environmental Consequences

3.10.2.1 Alternative 1 (No Action)- Do not implement the WSP

Although Standard Operating Procedures (SOPs) for the park do exist, they are not put in the context of wilderness management. Without a WSP it is not made clear what the SOPs are for and why they are in place.

3.10.2.2 Alternative 2- Implement the Wilderness Stewardship Plan

The implementation of the WMP clearly places the SOPs in the context of wilderness management and adds to them. Park operations will be able to continue as usual for the most part, though operations in wilderness areas will have to be modified so as to incur the minimum impact.

3.10.3 Conclusion

On condition that the WSP was codified under a minimum requirement assessment, the implementation of Alternative 2 would not impair but enhance park operations that are (1) necessary to fulfill specific purposes identified in the enabling legislation of the monument, (2) key to the natural or cultural integrity of the monument or opportunities for enjoyment of the park, and (3) identified as a goal in the monument's general management plan and other National Park Service planning documents. Alternative 1 would not ensure the maximum protection for park operations with regard to the above three criteria.

3.11 Cumulative Effects

This cumulative effects analysis considers the past, present, and reasonably foreseeable future actions on land uses that could intensify or offset the effects on the resources and that may be affected by the Wilderness Stewardship Plan alternatives. Cumulative effects vary by resource and the geographic areas considered here are the monument and adjacent areas. In some instances, activities may result in both negative and positive impacts when considering the short and long-terms. As a result, some resource categories in Table 3-5 show both positive and negative impacts resulting from a particular activity. The information provided in Table 3-6 is the basis for the cumulative effects described in Table 3-5.

Table 3-5: Factors Affecting Cumulative Effects Determination

	Wilderness Character	Biotic Resources	Abiotic Resources	Cave Resources	Visitor Use and Experience	Cultural Resources	Socio-economics	Fire Management	Human Health and Safety
Implementation of WSP	+	+	+	+	+	+	+	+	+
No implementation of WSP	-	-	-	-	-	-	-	-	-
Visitation to the monument	+	+	+	+	+	+	+	+	+
Research and monitoring efforts in the monument	+	+	+	+	+	+	+	+	+

DIRECT/INDIRECT EFFECTS KEY: (+) Positive/beneficial; (-) Negative/detrimental; (Blank) Neutral/no effect

3.1 Wilderness Resources and Values
3.2 Biotic Resources
3.3 Abiotic Resources
3.4 Cave Resources
3.5 Visitor Use and Experience
3.6 Cultural Resources
3.7 Socioeconomic Environment
3.8 Fire Management
3.9 Human Health and Safety
3.10 Operations

Table 3-6: Cumulative Effects Summary

Resource	Past and Present Actions	Proposed Actions	Future Actions	Cumulative Effects
Wilderness Character	Wilderness was established in 1972. Wilderness protected and managed according to the Wilderness Act of 1964.	Wilderness Stewardship activities would not result in significant impacts to wilderness; wilderness stewardship activities would help protect the wilderness resource.	Similar to proposed actions	Wilderness would be significantly protected by proposed wilderness stewardship activities
Biotic Resources	Establishment of the park and the wilderness helped protect biotic resources; past management efforts may have impacted sensitive species	Wilderness Stewardship activities would not result in significant impacts to biotic resources; wilderness stewardship activities would help protect the biotic resource.	Similar to proposed actions	Biotic Resources would be significantly protected by proposed wilderness stewardship activities; the Proposed Action Alternative would positively impact the biotic resources
Abiotic Resources	Sources outside the wilderness emit pollutants and particulate matter affecting air, soil, and water quality. Adverse soil impacts (soil erosion or loss) from past roads, park buildings and improvements, wildland fires and suppression efforts	Wilderness Stewardship activities would not result in significant impacts to abiotic resources; wilderness stewardship activities would help protect the abiotic resource.	Similar to proposed actions	Abiotic Resources would be significantly protected by proposed wilderness stewardship activities; the Proposed Action Alternative would positively impact the abiotic resources. There will still be effects caused by sources outside the wilderness boundary.
Cave Resources	Establishment of the park helped protect cave resources; Establishment of wilderness protected cave resources	Wilderness Stewardship activities would not result in significant impacts to cave resources; wilderness stewardship activities would help protect the cave resource.	Similar to proposed actions	Cave resources continue to be protected; Wilderness Stewardship Plan would not result in significant cumulative impacts
Visitor Use and Experience	Establishment of the park, improved roads and trails provided access for recreation opportunities; increased population growth results in increased recreational use; proposed designation of wilderness improves recreational experience	Wilderness Stewardship activities would not result in significant impacts to Visitor Use and Experiences; wilderness stewardship activities would help protect Visitor Use and Experience.	Increased recreation use as population grows	Long-term enhancement of recreation resources and opportunities; Wilderness Stewardship Plan would not result in significant cumulative impacts; the Proposed Action Alternative would contribute the most to visitor use and experience
Cultural Resources	Establishment of the park helped protect cultural resources; before wilderness management and designation may have impacted un-recorded sites	Wilderness Stewardship activities would not result in significant impacts to cultural resources; wilderness stewardship activities would help protect cultural resources.	Similar effects as described in Past and Present Actions	Cultural resources continue to be protected; Wilderness Stewardship Plan would not result in significant cumulative impacts; the Proposed Action Alternative would contribute the most to cultural resources

3.1 Wilderness Resources and Values
3.2 Biotic Resources
3.3 Abiotic Resources
3.4 Cave Resources
3.5 Visitor Use and Experience
3.6 Cultural Resources
3.7 Socioeconomic Environment
3.8 Fire Management
3.9 Human Health and Safety
3.10 Operations

Resource	Past and Present Actions	Proposed Actions	Future Actions	Cumulative Effects
				protection while the no action alternative would contribute the least
Socioeconomics	Establishment of the park and visitor use benefits local and regional economies	Wilderness Stewardship would result in benefits for the local economy; wilderness stewardship would help promote visitation, providing wilderness use benefits to the local economy.	Similar effects as described under Past and Present Actions	Socio-economics would remain relatively unchanged; Wilderness Stewardship Plan would not result in significant cumulative impacts; the proposed action alternative and no action would contribute similarly to socio-economic cumulative impacts
Fire Management	Establishment of fire management within wilderness has helped restore and maintain vegetation communities	Wilderness Stewardship activities would not result in significant impacts to Fire Management; wilderness stewardship would improve Fire Management operations within wilderness	Implementation of wilderness natural fire use and prescribed fire increases	Fire Management would continue to be implemented under the Wilderness Stewardship Plan with no significant cumulative impacts; the proposed action alternative and no action would contribute similarly to fire management cumulative impacts.
Human Health and Safety	Human Health and Safety has been managed since the establishment of the park	Wilderness Stewardship activities would not result in significant impacts to Human Health and Safety	Increased recreational use as population grows	Human Health and Safety would continue to be managed under the Wilderness Stewardship Plan with no significant cumulative impacts; the proposed action alternative and no action would contribute similarly to human health and safety cumulative impacts.

3.1 Wilderness Resources and Values
3.2 Biotic Resources
3.3 Abiotic Resources
3.4 Cave Resources
3.5 Visitor Use and Experience
3.6 Cultural Resources
3.7 Socioeconomic Environment
3.8 Fire Management
3.9 Human Health and Safety
3.10 Operations

Chapter 4 – CONSULTATION AND COORDINATION NEED

4.1 Persons, Organizations, and Agencies Consulted

Lava Beds National Monument began the development of the Wilderness Stewardship Plan and Environmental Assessment in 2001. The following persons, organizations, and agencies were contacted for information and/or assisted in identifying important issues, developing alternatives, or analyzing impacts of this environmental assessment.

United States Fish and Wildlife Service, Klamath Falls, Oregon. Species list update for Federally threatened, endangered and proposed species. 27 June, 2006.

Judy Alderson, National Park Service, Environmental Specialist, Alaska Regional Office
Al Augustine, Fire Management Officer, Lava Beds National Monument
Jim Deshayes, Chief of Maintenance, Lava Beds National Monument
Kelly Fuhrmann, Natural Resource Specialist, Lava Beds National Monument
Terry Harris, Chief Ranger, Lava Beds National Monument
Alan Schmierer, National Park Service, Regional Environmental Coordinator, PWR, Oakland Office
Barney Stoffel, Biological Science Technician, Lava Beds National Monument

4.2 List of Preparers

Craig Dorman, Superintendent, National Park Service
Tim Downing, 2006 Wilderness Conservation Associate, Student Conservation Association
David Hays, Resource Management Specialist, Lava Beds National Monument
David Larson, Chief of Resources Management, National Park Service
Mariana Morris, 2005 Wilderness Conservation Associate, Student Conservation Association

4.3 Persons, Organizations, and Agencies Who Will Receive This Environmental Assessment

This EA will be available for public review and comment for a 30- day period. A notice announcing its availability is being sent out to interested parties through the Monument's mailing list, including federal, state, and municipal agencies, and individuals. Hard copies of the EA are being provided to area libraries in Klamath Falls, Oregon and Alturas, California. Hard copies will also be sent to The Klamath Tribes, California Wilderness Coalition, and the Wilderness Watch.

Hard copies of this EA are available upon request. This EA will be posted on the park's website at: http://www.nps.gov/labe, under the "Management Docs" link, during the entire comment period.

The Wilderness Stewardship Plan and EA will also be available for public review on the Planning, Environment and Public Comment (PEPC) website at: http://parkplanning.nps.gov/labe.

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APPENDICES

The following appendices are for amplification and support of critical analysis in the NEPA document. They are to provide additional public information. They contain additional information needed to expand or clarify elements of the Wilderness Stewardship Plan EA.

A. Public law 92-493
B. The Wilderness Act
C. Minimum Requirements Decision Guide (MRDG)
    Overview
    Worksheets
D. Legal Description of the Wilderness Boundary
E. Backcountry and Wilderness Use Itinerary Form
F. State of the Wilderness Outline –In development. Refer to section 2.2.3.5c for description.
G. Legislative Support Data Package

Appendix A

Public Law 92-493
92nd Congress, H. R. 5838
October 13, 1972

An Act

86 STAT. 811

To designate certain lands in the Lava Beds National Monument in California, as wilderness.

Black Lava Flow and Schonchin Lava Flow areas, Calif. Reclassification and designation.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in accordance with section 3(c) of the Wilderness Act (78 Stat. 892; 16 U.S.C. 1132(c)), those lands within the area generally known as the Black Lava Flow in the Lava Beds National Monument comprising about ten thousand acres, as depicted on the map entitled "Wilderness Plan, Lava Beds National Monument, California", numbered NM-LB-3227H and dated August 1972, and those lands within the area generally known as the Schonchin Lava Flow comprising about eighteen thousand four hundred and sixty acres, as depicted on such map, are hereby designated as wilderness. The map and a description of the boundary of such lands shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior.

Map and description, filing with congressional committees.

SEC. 2. As soon as practicable after this Act takes effect, a map of the wilderness area and a description of its boundaries shall be filed with the Interior and Insular Affairs Committees of the United States Senate and the House of Representatives, and such map and description shall have the same force and effect as if included in this Act: *Provided, however*, That correction of clerical and typographical errors in such map and description may be made.

Administration.

SEC. 3. The area designated by this Act as wilderness shall be known as the "Lava Beds Wilderness" and shall be administered by the Secretary of the Interior in accordance with provisions of the Wilderness Act governing areas designated by that Act as wilderness areas, except that any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

78 Stat. 890. 16 USC 1131 note.

Approved October 13, 1972.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 92-1421 (Comm. on Interior and Insular Affairs).
SENATE REPORT No. 92-1252 accompanying S. 666 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD, Vol. 118 (1972):
Oct. 2, considered and passed House.
Oct 4, considered and passed Senate, in lieu of S. 666.

GPO 83-139

Appendix B

THE WILDERNESS ACT

Public Law 88-577 (16 U.S. C. 1131-1136)
88th Congress, Second Session
September 3, 1964

A N A C T

To establish a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled.

SHORT TITLE

SECTION 1. This Act may be cited as the "Wilderness Act."

WILDERNESS SYSTEM ESTABLISHED - STATEMENT OF POLICY

SECTION 2. (a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by the Congress as "wilderness areas," and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as "wilderness areas" except as provided for in this Act or by a subsequent Act.

(b) The inclusion of an area in the National Wilderness Preservation System notwithstanding, the area shall continue to be managed by the Department and agency having jurisdiction thereover immediately before its inclusion in the National Wilderness Preservation System unless otherwise provided by Act of Congress. No appropriation shall be available for payment of expenses or salaries for the administration of the National Wilderness Preservation System as a separate unit nor shall any appropriations be available for additional personnel stated as being required solely for the purpose of managing or administering areas solely because they are included within the National Wilderness Preservation System.

DEFINITION OF WILDERNESS

(c) A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man

himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

NATIONAL WILDERNESS PRESERVATION SYSTEM EXTENT OF SYSTEM

SECTION 3. (a) All areas within the national forests classified at least 30 days before the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "wilderness," "wild," or "canoe" are hereby designated as wilderness areas. The Secretary of
Agriculture shall:

(1) Within one year after the effective date of this Act, file a map and legal description of each wilderness area with the Interior and Insular Affairs Committees of the United States Senate and the House of Representatives, and such descriptions shall have the same force and effect as if included in this Act: Provided, however, That correction of clerical and typographical errors in such legal descriptions and maps may be made.

(2) Maintain, available to the public, records pertaining to said wilderness areas, including maps and legal descriptions, copies of regulations governing them, copies of public notices of, and reports submitted to Congress regarding pending additions, eliminations, or modifications. Maps, legal descriptions, and regulations pertaining to wilderness areas within their respective jurisdictions also shall be available to the public in the offices of regional foresters, national forest supervisors, and forest rangers.

Classification. (b) The Secretary of Agriculture shall, within ten years after the enactment of this Act, review, as to its suitability or nonsuitability for preservation as wilderness, each area in the national forests classified on the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "primitive" and report his findings to the President.

Presidential recommendation to Congress. The President shall advise the United States Senate and House of Representatives of his recommendations with respect to the designation as "wilderness" or other reclassification of each area on which review has been completed, together with maps and a definition of boundaries. Such advice shall be given with respect to
not less than one-third of all the areas now classified as "primitive" within three years after the enactment of this Act, and the remaining areas within ten years after the enactment of this Act.

Congressional approval. Each recommendation of the President for designation as "wilderness" shall become effective only if so provided by an Act of Congress. Areas classified as "primitive" on the effective date of this Act shall continue to be administered under the rules and regulations affecting such areas on the effective date of this Act until Congress has determined otherwise. Any such area may be increased in size by the President at the time he submits his recommendations to the Congress by not more than five thousand acres with no more than one thousand two hundred acres in any one compact unit; if it is proposed to increase the size of any such area by more than five thousand acres or by more than one thousand two hundred and eighty acres in any one compact unit the increase in size shall not become effective until acted upon by Congress. Nothing herein contained shall limit the President in proposing, as part of his recommendations to Congress, the alteration of existing boundaries of primitive areas or

recommending the addition of any contiguous area of national forest lands predominantly of wilderness value. Notwithstanding any other provisions of this Act, the Secretary of Agriculture may complete his review and delete such areas as may be necessary, but not to exceed seven thousand acres, from the southern tip of the Gore Range-Eagles Nest Primitive Area, Colorado, if the Secretary determines that such action is in the public interest.

Report to President. (c) Within ten years after the effective date of this Act the Secretary of the Interior shall review every roadless area of five thousand contiguous acres or more in the national parks, monuments, and other units of the national park system and every such area of, and every roadless island within, the national wildlife refuges and game ranges, under his jurisdiction on the effective date of this Act and shall report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness.

Presidential recommendation to Congress. The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendation with respect to the designation as wilderness of each such area or island on which review has been completed, together with a map thereof and a definition of its boundaries. Such advice shall be given with respect to not less than one-third of the areas and islands to be reviewed under this subsection within three years after enactment of this Act, not less than two-thirds within seven years of enactment of this Act, and the remainder within ten years of enactment of this Act.

Congressional approval. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress. Nothing contained herein shall, by implication or otherwise, be construed to lessen the present statutory authority of the Secretary of the Interior with respect to the maintenance of roadless areas within units of the national park system.

Suitability. (d)(1) The Secretary of Agriculture and the Secretary of the Interior shall, prior to submitting any recommendations to the President with respect to the suitability of any area for preservation as wilderness;

Publication in Federal Register. (A) give such public notice of the proposed action as they deem appropriate, including publication in the Federal Register and in a newspaper having general circulation in the area or areas in the vicinity of the affected land;

Hearings. (B) hold a public hearing or hearings at a location or locations convenient to the area affected. The hearings shall be announced through such means as the respective Secretaries involved deem appropriate, including notices in the Federal Register and in newspapers of general circulation in the area: Provided. That if the lands involved are located in more than one State, at least one hearing shall be held in each State in which a portion of the land lies;

(C) at least thirty days before the date of a hearing advise the Governor of each State and the governing board of each county, or in Alaska the borough, in which the lands are located, and Federal departments and agencies concerned, and invite such officials and Federal agencies to submit their views on the proposed action at the hearing or by not later than thirty days following the date of the hearing.

(2) Any views submitted to the appropriate Secretary under the provisions of (1) of this subsection with respect to any area shall be included with any recommendation to the President and to Congress with respect to such area.

Proposed modification. (e) Any modification or adjustment of boundaries of any wilderness area shall be recommended by the appropriate Secretary after public notice of such proposal and public hearing or hearings as provided in subsection (d) of this section. The proposed modification or adjustment shall then

be recommended with map and description thereof to the President. The President shall advise the United States Senate and the House of Representatives of his recommendations with respect to such modification or adjustment and such recommendations shall become effective only in the same manner as provided for in subsections (b) and (c) of the OF WILDERNESS AREAS

SECTION 4. (a) The purposes of this Act are hereby declared to be within and supplemental to the purposes for which national forests and units of the national park and wildlife refuge systems are established and administered and:

(1) Nothing in this Act shall be deemed to be in interference with the purpose for which national forests are established as set forth in the Act of June 4, 1897 (30 Stat. 11), and the Multiple-Use Sustained-Yield Act of June 12, 1960 (74 Stat. 215).

(2) Nothing in this Act shall modify the restrictions and provisions of the Shipstead-Nolan Act (Public Law 539, Seventy-first Congress, July 10, 1930; 46 Stat. 1020), the Thye-Blatnik Act (Public Law 733, Eightieth Congress, June 2, 1948; 62 Stat. 568), and the Humphrey-Thye-Blatnik-Andresen Act (Public Law 607, Eighty-fourth Congress, June 22, 1956; 70 Stat. 326), as applying to the Superior National Forest or the regulations of the Secretary of Agriculture.

(3) Nothing in this Act shall modify the statutory authority under which units of the national park system are created. Further, the designation of any area of any park, monument, or other unit of the national park system as a wilderness area pursuant to this Act shall in no manner lower the standards evolved for the use and preservation of such park, monument, or other unit of the national park system in accordance with the Act of August 25, 1916, the statutory authority under which the area was created, or any other Act of Congress which might pertain to or affect such area, including, but not limited to, the Act of June 8, 1906 (34 Stat. 225; 16 U.S.C. 432 et seq.); section 3(2) of the Federal Power Act (16 U.S.C. 796 (2); and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).

(b) Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

PROHIBITION OF CERTAIN USES

(c) Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

SPECIAL PROVISIONS

(d) The following special provisions are hereby made:

(1) Within wilderness areas designated by this Act the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restrictions as the Secretary of

Agriculture deems desirable. In addition, such measure may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.

(2) Nothing in this Act shall prevent within national forest wilderness areas any activity, including prospecting, for the purpose of gathering information about mineral or other resources, if such activity is carried on in a manner compatible with the preservation of the wilderness environment. Furthermore, in accordance with such program as the Secretary of the Interior shall develop and conduct in consultation with the Secretary of Agriculture, such areas shall be surveyed on a planned, recurring basis consistent with the concept of wilderness preservation by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present; and the results of such surveys shall be made available to the public and submitted to the President and Congress.

Mineral leases, claims, etc. (3) Notwithstanding any other provisions of this Act, until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall, to the same extent as applicable prior to the effective date of this Act, extend to those national forest lands designated by this Act as "wilderness areas"; subject, however, to such reasonable regulations governing ingress and egress as may be prescribed by the Secretary of Agriculture consistent with the use of the land for mineral location and development and exploration, drilling, and production, and use of land for transmission lines, waterlines, telephone lines, or facilities necessary in exploring, drilling, production, mining, and processing operations, including where essential the use of mechanized equipment and restoration as near as practicable of the surface of the land disturbed in performing prospecting, location, and, in oil and gas leasing, discovery work, exploration, drilling, and production, as soon as they have served their purpose. Mining locations lying within the boundaries of said wilderness areas shall be held and used solely for mining or processing operations and uses reasonably incident thereto; existing rights, all patents issued under the mining laws of the United States affecting national forest lands designated by this Act as wilderness areas shall convey title to the mineral deposits within the claim, together with the right to cut and use so much of the mature timber therefrom as may be needed in the extraction, removal, and beneficiation of the mineral deposits, if the timber is not otherwise reasonably available, and if the timber is cut under sound principles of forest management as defined by the national forest rules and regulations, but each such patent shall reserve to the United States all title in or to the surface of the lands and products thereof, and no use of the surface of the claim or the resources therefrom not reasonably required for carrying on mining or prospecting shall be allowed except as otherwise expressly provided in this Act: Provided, That, unless hereafter specifically authorized, no patent within wilderness areas designated by this Act shall issue after December 31, 1983, except for the valid claims existing on or before December 31, 1983. Mining claims located after the effective date of this Act within the boundaries of wilderness areas designated by this Act shall create no rights in excess of those rights which may be patented under the provisions of this subsection. Mineral leases, permits, and licenses covering lands within national forest wilderness areas designated by this Act shall contain such reasonable stipulations as may be prescribed by the Secretary of Agriculture for the protection of the water of the land consistent with the use of the land for the purposes for which they are leased, permitted, or licensed. Subject to valid rights then existing, effective January 1, 1984, the minerals in lands designated by this Act as wilderness areas are withdrawn from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral leasing and all amendments thereto.

Water resources. (4) Within wilderness areas designated by this Act, (1) the President may, within a specific area and in accordance with such regulations as he may deem desirable, authorize prospecting for water resources, the establishment and maintenance of reservoirs, water-conservation works, power projects, transmission lines, and other facilities needed in the public interest, including the road construction and maintenance essential to development and use thereof, upon his determination that such use or uses in the specific area will better serve the interests of the United States and the people thereof than will its denial; and (2) the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture.

(5) Other provisions of this Act to the contrary notwithstanding, the management of the Boundary Waters Canoe Area, formerly designated as the Superior, Little Indian Sioux, and Caribou Roadless Areas, in the Superior National Forest, Minnesota, shall be in accordance with regulations established by the Secretary of Agriculture in accordance with the general purpose of maintaining, without unnecessary restrictions on other uses, including that of timber, the primitive character of the area, particularly in the vicinity of lakes, streams, and portages: Provided, That nothing in this Act shall preclude the continuance within the area of any already established use of motorboats.

(6) Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.

(7) Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.

(8) Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish in the national forests.

STATE AND PRIVATE LANDS WITHIN WILDERNESS AREAS

SECTION 5. (a) In any case where State-owned or privately owned land is completely surrounded by national forest lands within areas designated by this Act as wilderness, such State or private owner shall be given such rights as may be necessary to assure adequate access to such State-owned or privately owned land by such State or private owner and their successors in interest, or the State-owned land or privately owned land shall be exchanged for federally owned land in the same State of approximately equal value under authorities available to the Secretary of Agriculture:

Transfers, restriction. Provided, however, That the United States shall not transfer to a State or private owner any mineral interests unless the State or private owner relinquishes or causes to be relinquished to the United States the mineral interest in the surrounded land.

(b) In any case where valid mining claims or other valid occupancies are wholly within a designated national forest wilderness area, the Secretary of Agriculture shall, by reasonable regulations consistent with the preservation of the area as wilderness, permit ingress and egress to such surrounded areas by means which have been or are being customarily enjoyed
with respect to other such areas similarly situated.

Acquisition. (c) Subject to the appropriation of funds by Congress, the Secretary of Agriculture is authorized to acquire privately owned land within the perimeter of any area designated by this Act as wilderness if (1) the owner concurs in such acquisition or (2) the acquisition is specifically authorized by Congress.

GIFTS, BEQUESTS, AND CONTRIBUTIONS

SECTION 6. (a) The Secretary of Agriculture may accept gifts or bequests of land within wilderness areas designated by this Act for preservation as wilderness. The Secretary of Agriculture may also accept gifts or bequests of land adjacent to wilderness areas designated by this Act for preservation as wilderness if he has given sixty days advance notice thereof to the President of the Senate and the Speaker of the House of

Representatives. Land accepted by the Secretary of Agriculture under this section shall become part of the wilderness area involved. Regulations with regard to any such land may be in accordance with such agreements, consistent with the policy of this Act, as are made at the time of such gift, or such conditions, consistent with such policy, as may be inch bequest.

(b) The Secretary of Agriculture or the Secretary of the Interior is authorized to accept private contributions and gifts to be used to further the purposes of L REPORTS

SECTION 7. At the opening of each session of Congress, the Secretaries of Agriculture and Interior shall jointly report to the President for transmission to Congress on the status of the wilderness system including a list and descriptions of the areas in the system, regulations in
effect, and other pertinent information, together with any recommendations they may care to make.

Approved September 3, 1964.

Legislative History:

House Reports: No. 1538 accompanying H.R. 9070 (Committee on Interior & Insular Affairs) and No. 1829 (Committee of Conference).

Senate Report: No. 109 (Committee on Interior & Insular Affairs).

Congressional Record:

Vol. 109 (1963): April 4, 8, considered in Senate.
April 9, considered and passed Senate.

Vol. 110 (1964): July 28, considered in House.
July 30, considered and passed House, amended,
in lieu of H.R. 9070.

August 20, 1964, House and Senate agreed to conference report.

Appendix C

MINIMUM REQUIREMENTS DECISION GUIDE (MRDG) OVERVIEW

... except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act..."

– The Wilderness Act, 1964

Introduction

The Minimum Requirement Decision Guide (MRDG) is designed to assist wilderness managers in making appropriate decisions in wilderness. Use of the MRDG requires familiarity with the difference between wilderness and other public lands as defined by the Wilderness Act

This Overview document provides general information about the MRDG process, its origination, and how it relates to other processes such as NEPA. Please refer to the accompanying *MRDG Instructions* and *MRDG Worksheets* for specific information about completing the MRDG.

Wilderness Act Guidance

The concept of Minimum Requirement comes from Section 4(c) of the Wilderness Act of 1964:

> "Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area." (Emphasis added)

Applicable actions include, but are not limited to, scientific monitoring, research, recreational developments (trails, bridges, signs, etc.), and activities related to special provisions mandated by the Wilderness Act or subsequent legislation (such as grazing, exercising mineral rights, access to inholdings, maintenance of water developments, and commercial services).The following three boxes contain excerpts from the Wilderness Act of 1964 that may be useful reminders of key provisions of the law applicable to the use of this Minimum Requirements Decision Guide.

What is the purpose of wilderness?

"In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States…, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness." Section 2(a)

What is wilderness?

"…lands designated for preservation and protection in their natural condition…" Section 2(a)

"…an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation…" Section 2(c)

"…generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable…" Section 2(c)

"…has outstanding opportunities for solitude or a primitive and unconfined type of recreation…and may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." Section 2(c)

How is wilderness administered?

"…shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness…" Section 2(a)

"A wilderness, in contrast with those areas where man and his works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man is a visitor who does not remain." Section 2(c)

"An area of wilderness is…protected and managed so as to preserve its natural conditions and… its preservation and use in an unimpaired condition..." Section 2(c)

"…each agency administering wilderness... shall be responsible for preserving the wilderness character of the area..." Section 4(b)

"…wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use." Section 4(b)

National Park Service Guidance

National Park Service Management Policies section 6.3.5 (2001) require that all management decisions affecting the wilderness must be consistent with the minimum requirement concept which determines:

- Whether the proposed management action is appropriate or necessary for administration of the area as wilderness and does not pose a significant impact to wilderness resources and character; and
- The techniques and types of equipment needed to ensure that impact to wilderness resources and character is minimized.

Use of this Guide

The MRDG is a process to identify, analyze, and select management actions that are the minimum necessary for wilderness administration. It applies this direction from the Act and incorporates a two-step process. Step 1 determines whether it is ***necessary*** to take action. If action is found to be necessary, then Step 2 provides guidance for determining the ***minimum*** action.

The MRDG can be used as:

- a process for evaluation and documentation;
- a guide to help discuss proposals with interested parties; or
- a review of on-going management practices to determine if they are necessary or if a less intrusive practice can be implemented.

The level of detail and effort necessary to utilize the MRDG process depends on the scope and complexity of the issue or problem being considered. One person might adequately analyze simple actions; complex actions may require the coordination of several specialists. The MRDG Worksheets provide a series of questions about the necessity of taking any action to resolve a situation and the most appropriate methods or tools to use. The decision to approve an action is a critical aspect of wilderness management. At times, the decision is not straightforward and requires a delicate balancing act.

Emergencies

Do not use the MRDG for emergency situations; follow procedures already outlined in approved emergency plans. The minimum requirements concept should be incorporated into such plans when they are being prepared, so that minimum necessary methods and tools are being utilized to meet the needs of the emergency.

Safety

The safety of wilderness visitors, employees, volunteers, and contractors is a priority in all decisions and actions. Complying with Section 4(c) of The Wilderness Act and conducting a minimum requirements analysis using the MRDG does not alter or diminish this need.

The MRDG is intended to help identify, analyze and select management actions that are the minimum necessary for wilderness without compromising safety. A fair and honest evaluation of all available options, within agency safety requirements, is needed to make an appropriate decision for wilderness. Wilderness managers are encouraged to learn, cultivate, and share traditional and primitive skills and develop alternative minimum impact methods and tools that allow activities to be accomplished safely with a minimal amount of degradation to the wilderness character.

MRDG INSTRUCTIONS

Introduction

The Minimum Requirements Decision Guide (MRDG) is designed to assist wilderness managers in making appropriate decisions for wilderness. These instructions refer to completing the MRDG *Worksheets*.

Use of this document assumes familiarity with the Wilderness Act, other relevant legislation, and agency policy.

The MRDG is derived from Section 4(c) of the Wilderness Act and involves two steps. Step 1 determines whether action is ***necessary***. If action is necessary, then Step 2 provides guidance for determining the ***minimum*** necessary action.

Worksheet Instructions

Step 1: Determine if it is necessary to take action.

Description: Briefly describe the situation that may prompt action. This is not a description of a possible method or tool, but rather the situation that prompts the possible need for action. This step should not be used to justify use of motorized equipment or mechanical transport, or to approve placement of a structure, facility, or temporary road.

Correct Examples of description	Incorrect examples of description
An administrative cabin is deteriorating	Need to restore the administrative cabin
A request is received for access into a valid, existing mining claim	Need to build a temporary road for mining claim access.
Blown down trees are blocking trails	Need to use chainsaws to clear the blown down trees
Lack of information on a wildlife species	Need to land a helicopter to survey population
Fire alters wildlife habitat	Need to re-seed area to maintain wildlife habitat
User conflict complaints between stock users and hikers	Need to survey visitors about user conflicts or close trail to one type of use
A trail bridge has washed out	Need to replace the washed out bridge, using mules for supplies
Riverbank erosion is destabilizing a pioneer cabin listed on the National Historic Register	Need to sling-load rock gabions to stop erosion
Lack of information on air quality in Class I wilderness airshed	Need to set up air quality monitoring station in wilderness
Invasive species present	Need to use motorized sprayer to treat invasives

A. Describe Valid Existing Rights or Special Provisions of Wilderness Legislation

Are there valid existing rights or is there a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that allows consideration of action involving Section 4(c) uses? Cite law and section.

If there is special provision language (e.g.. maintenance of dams and water storage facilities with motorized equipment and mechanical transport, control of fire, insects and disease, access to private lands, etc), whether in the Wilderness Act of 1964 or subsequent designation legislation, some actions may be required that would otherwise be prohibited. The exact reference to the legislation is needed in this box. Examples include:

- Existence of public use cabins and subsistence use and access in Wilderness (Alaska National Interest Lands Conservation Act of 1980, P.L. 96-487, Sec. 1315(c)).
- Use of motorboats of ten horsepower or less in the Okefenokee Wilderness (Wilderness Act of 1964, P.L. 88-577, Sec. 4(d)(1); Okefenokee Wilderness Act of 1974, P.L. 93-430, Sec.2).

Some Valid Existing Rights or the provisions of special legislation may be satisfied by an option outside wilderness. Such possibilities should be explored.

B. Describe Requirements of Other Legislation

Do other laws require action?

Laws not directly concerned with wilderness (such as the Endangered Species Act or National Historic Preservation Act) may influence the need for actions in Wilderness. In some instances, the administrator is asked to satisfy the requirements of at least two laws. For example:

- Recovery of an endangered species dependent on wilderness ecosystems (Endangered Species Act).
- Treatment of site listed on the National Register of Historic Places (National Historic Preservation Act).

Apparent conflicts between the Wilderness Act and other legislation may require innovative approaches. Not all apparent conflicts are genuine.

C. Describe Other Guidance

Does taking action conform to and implement relevant standards and guidelines and direction contained in agency policy, unit and wilderness management plans, species recovery plans, tribal government agreements, or state, local government, or interagency agreements?

Review guidance for conformance and carefully consider the context of the guidance, plan or agreement. Plans developed using a NEPA analysis are decisions that provide stronger guidance than plans developed with less public or interdisciplinary involvement. Examples include:

- A programmatic decision to treat invasive weeds has already been addressed in a unit level plan that included wilderness. No decision was made regarding the method of treatment.
- The need for bridges, fords, or in-stream structures has been addressed in a fish species recovery plan. The plan does not dictate the type of structure, method of construction, or tools required.

Even if relevant programmatic decisions have already been made that satisfy Step 1 of a Minimum Requirements analysis, both Step 1 and Step 2 should be completed to determine the minimum tool or method.

D. Describe Options Outside of Wilderness

Can this situation be resolved by action outside of wilderness?

Examples that might be explored include:

Putting up nest boxes outside wilderness boundaries.

Surveying visitors about user conflicts at the trailhead or visitor center, rather than on the trail or at their wilderness campsite

Locating trail destination and distance signs can be located at trailheads outside wilderness (unless already determined by agency policy).

Locating monitoring or other administrative structures outside wilderness.

E. Wilderness Character

How would action contribute to the preservation of wilderness character, as described by the components listed below?

Section 2(a) of the Wilderness Act directs us to manage wilderness areas for the preservation of their wilderness character. Similar direction is repeated in Section 4(b). It is recommended that particular attention is paid to the general guidance in the Wilderness Act, as outlined in the MRDG Overview, and to NPS policy. In addition, at least four major components of wilderness character are mentioned in Section 2(c) of the Wilderness Act. These are:

"Untrammeled" – Wilderness is ideally unhindered and free from modern human control or manipulation.

"Undeveloped" – Wilderness has minimal evidence of modern human occupation or modification.

"Natural" – Wilderness ecological and evolutionary systems are substantially free from the effects of modern civilization.

"Outstanding opportunities for solitude or a primitive and unconfined type of recreation" – Wilderness provides opportunities for people to experience natural sights and sounds, solitude, freedom, risk, and the physical and emotional challenges of self-discovery and self-reliance.

This list of wilderness character components is not comprehensive. Other components can be defined that are of particular importance and reflect the character of your wilderness. An example of an action altering wilderness character is:

Taking management action to control invasive weeds might increase naturalness, while at the same time, greater manipulation of the wilderness decreases the untrammeled character of the area; the presence of employees and use of equipment to control invasive weeds may decrease visitor's opportunities for solitude in certain sections of this wilderness.

F. Describe Effects to the Public Purposes of Wilderness

How would action support the public purposes for wilderness (as stated in Section 4(b) of the Wilderness Act) of recreation, scenic, scientific, education, conservation, and historical use?

Identify which of these public purposes would be degraded or enhanced by administrative action. For example:

If a main trail bridge is not replaced, it may affect recreation since the stream is otherwise impassable most of the year.

A secondary trail bridge makes travel easier for only a short time of year, and therefore not replacing it may not significantly impact recreation.

Scientific activities may be accomplished by limited visits to the area by researchers instead of a research installation.

Step 1 Decision: Is it necessary to take action? Evaluate the responses made to all questions in Step 1 and determine whether there is a need to proceed to Step 2. If the responses indicate potential adverse impacts from taking action, document whether there is sufficient reason to proceed to Step 2.

Step 2: Determine the minimum tool.

Description of Alternative Actions

For each alternative, describe what methods and techniques will be used, when the action will take place, where the action will take place, what mitigation measures are necessary, and the general effects to wilderness character.

The description of alternatives and effects varies by the complexity of the action. Identify and describe a full range of feasible alternatives, including necessary mitigation measures that represent the various actions, and the methods and tools that could be used. Include a "No Action" alternative to allow for a comprehensive comparison of effects. Complete a form for each alternative action being considered.

Compare the potential effects of each alternative on wilderness character by describing the effects of implementation using the criteria below. This list is not all-inclusive, and other criteria which address the special features or unique character of each wilderness should be developed as needed. Use the criteria for comparing the effects of each applicable phase of the action including design, construction, management, removal, or restoration.

Alternative Comparison Criteria

Biological and Physical Resource
- Describe the potential for protection, impairment, or restoration of natural conditions (air, water, soil, wildlife, fish, plants, etc.) including endangered, threatened, or rare species, natural biological diversity, and self-regulating ecosystems.
- Discuss effects related to protecting natural conditions within the regional landscape (i.e. insects, disease, or non-native species).

Social and Experiential Resource
- Identify how opportunities for visitors to experience solitude or a primitive and unconfined type of recreation will be protected or impaired.
- Describe the effects on wilderness character that will be noticeable to the visitor.

Heritage and Cultural Resource
- Describe any effects on protection or management of historic, pre-historic, listed or eligible items, sites, structures, or landscapes.

Special Provisions
- Explain how the special provisions and rights (grazing, mining, water developments, access to non-federal land, etc.) identified in the Wilderness Act (Sections 4 and 5) or subsequent legislation, are managed to minimize degradation of wilderness character.

Safety of Visitors, Personnel, and Contractors and Work Methods
- Describe any safety concerns associated with implementing the alternative on agency personnel, volunteers, and/or contractors.
- Identify any potential public safety hazards resulting from implementation of the alternatives.
- Discuss use of primitive and traditional skills and tools.

Economic and Time Constraints
- Describe the costs and the amount of time it will take for implementation of the alternative.
- Explain how each alternative satisfies any significant timing requirements or identified need for urgency.

Additional Wilderness-specific Comparison Criteria

Identify any other decision factors that are relevant to the unique characteristics and special features of this wilderness.

Step 2 Decision: What is the Minimum Tool?

Select the alternative that represents the minimum requirements necessary to administer the areas as wilderness.

Describe the rationale for selecting it.

Describe management requirements for minimizing effects including location, timing, frequency of action, design standards, etc. List any maintenance, monitoring, or reporting requirements. To aid in tracking and reporting the number and type of authorizations, check the box for each Section 4(c) use that is included in the selected alternative.

Approvals

Depending on agency policy, include the signatures of the Agency Administrator who has the authority to approve Section 4(c) uses and sign the MRDG. Check your agency policy and consult with your regional or state wilderness program managers to determine the current policy.

MRDG WORKSHEETS

Please refer to the accompanying *MRDG Instructions* for filling out this guide.

Step 1: Determine if it is necessary to take action.

Description: Briefly describe the situation that may prompt action.

A. Describe Valid Existing Rights or Special Provisions of Wilderness Legislation

Are there valid existing rights or is there a special provision in wilderness legislation (the Wilderness Act of 1964 or subsequent wilderness laws) that allows consideration of action involving Section 4(c) uses? Cite law and section.

Yes: ☐ No: ☐ Not Applicable: ☐

Explain:

B. Describe Requirements of Other Legislation

Do other laws require action?

Yes: ☐ No: ☐ Not Applicable: ☐

Explain:

C. Describe Other Guidance

Does taking action conform to and implement relevant standards and guidelines and direction contained in agency policy, unit and wilderness management plans, species recovery plans, tribal government agreements, state and local government and interagency agreements?

Yes: ☐ No: ☐ Not Applicable: ☐

Explain:

D. Describe Options Outside of Wilderness

Can this situation be resolved bv action outside of wilderness?

Yes: ☐ No: ☐ Not Applicable: ☐

Explain:

E. Wilderness Character

How would action contribute to the preservation of wilderness character, as described by the components listed below?

Untrammeled:

Undeveloped:

Natural:

Outstanding opportunities for solitude or a primitive and unconfined type of recreation:

Other unique components that reflect the character of this wilderness:

F. Describe Effects to the Public Purposes of Wilderness

How would action support the public purposes for wilderness (as stated in Section 4(b) of the Wilderness Act) of recreation, scenic, scientific, education, conservation, and historical use?

Explain:

Step 1 Decision: Is it necessary to take action?

Yes: ☐ No: ☐ Not Applicable: ☐

Explain:

If action is necessary, proceed to Step 2 to determine the minimum tool for action.

Step 2: Determine the minimum tool.

Description of Alternative Actions

For each alternative, describe what methods and techniques will be used, when the action will take place, where the action will take place, what mitigation measures are necessary, and the general effects to wilderness character.

Alternative # _____

Description:

Effects:

Biological and Physical Resource

Social and Experiential Resource

Heritage and Cultural Resource

Special Provisions

Safety of Visitors, Personnel, and Contractors and Work Methods

Economic and Time Constraints

Additional Wilderness-specific Comparison Criteria

Step 2 Decision: What is the Minimum Tool?

The selected alternative is:

Describe the rationale for selecting this alternative:

Describe any monitoring and reporting requirements:

Pease check any Wilderness Act Section 4(c) uses approved in this alternative:

- ☐ mechanical transport
- ☐ motorized equipment
- ☐ motor vehicles
- ☐ motorboats
- ☐ landing of aircraft
- ☐ temporary road
- ☐ structure or installation

Be sure to record and report any authorizations of Wilderness Act Section 4(c) uses according to agency procedures.

Approvals	Signature	Name	Position	Date
Prepared by:				
Recommended:				
Recommended:				
Approved by:				

The Minimum Requirements Analysis and NEPA Analysis

The Minimum Requirements Decision Guide is designed to flow into a NEPA format, if needed. Portions of the MRDG may be transferable to a subsequent NEPA analysis.

Agency NEPA guidelines do not necessarily require a process to determine if administrative action in wilderness is necessary or to select the tool and method that causes the least adverse effect to wilderness character. The minimum requirements analysis provides a method to determine the necessity of an action and how to minimize impacts; NEPA analysis compares and discloses the environmental effects of alternatives, documents a decision, and requires public involvement.

Process Comparison

Minimum Requirements Analysis	*NEPA Analysis*
STEP 1: Determine if Action is necessary.	
Description	Purpose and need for action Existing environment or condition
Valid existing rights, special provisions, other legislation, or other guidance from policy or plans (Step 1 A-C)	Management direction
Wilderness character (Step 1 E) Public purposes of wilderness (Step 1 F)	Issues
STEP 2: Determine the minimum tool.	
Alternative descriptions	Proposed Action and Alternatives
Alternative comparison criteria	Alternative comparison by issues
Effects to wilderness character	Environmental consequences
Selected alternative	Decision
Rationale	Reasons for the decision
Monitoring/reporting requirements	Decision conditions

The Minimum Requirements Analysis and the Planning Process

The degree to which a Minimum Requirements analysis can be useful in the planning process will vary depending on the scope of the process and the objectives for the plan. Listed below are the three typical planning levels in use by the agencies and a suggested use of the Minimum Requirements Analysis.

Planning Level	Use of Minimum Requirements Analysis
Comprehensive Land Use Planning (i.e. forest plans, park plans, refuge plans, resource management plans, and wilderness management plans) – Establish or modify general unit standards and guidelines and/or make land use allocations	Use the minimum requirements to help screen alternatives in anticipation authorizing needed actions in the future while insuring the preservation of wilderness character.
Programmatic Planning (i.e. Trail Plans, Weeds Treatment Plans, Monitoring Plans, Restoration Plans, Step Down Plans, etc.) - Analysis of multiple, similar, or routine project proposals or activities (trail maintenance, monitoring, dam maintenance, etc.) in one assessment	Use the Minimum Requirements Decision Guide to prepare a single analysis for similar, current, and potential actions. Create a 'decision tree' or 'GO/NO GO checklist' to be able to assess the necessity for action involving the Section 4(c) uses as similar needs come along in the future.
Project or Site Specific Planning (i.e. wildlife survey, stream crossing, trail repair, weed treatment, etc.) - Analysis of site-specific or non-recurring actions.	Use the Minimum Requirements Decision Guide to determine if action is necessary and, if so, determine the minimum tool.

Appendix D

United States Department of the Interior
NATIONAL PARK SERVICE
DENVER SERVICE CENTER
7200 W. Alameda
Denver, Colorado 80226

IN REPLY REFER TO:

December 1972

LAVA BEDS NATIONAL MONUMENT

Modoc and Siskiyou Counties
California

Lava Beds National Wilderness Area

Definition of Boundaries

As Designated by Public Law 92-493

Dated October 13, 1972

LAVA BEDS NATIONAL WILDERNESS AREA

Designated by Public Law 92-493

The wilderness area is depicted on map NM-LB-3227-H dated October 13, 1972, Lava Beds National Monument and said area is described as follows:

MOUNT DIABLO MERIDIAN

Wilderness No. 1

T. 44. N. R. 4 E., partly unsurveyed,

Sec. 6, N 1/2 NE 1/4 NE 1/4;

T. 45 N., R. 3 E., partly unsurveyed;

Secs. 11, 13, 14, 23 thru 26, 35 and 36;

Sec. 2, fractional;

Sec. 1, fractional, SW 1/4 SW 1/4 NE 1/4 NE 1/4, S 1/2 S 1/2 NW 1/4 NE 1/4, S 1/2 S 1/2 N 1/2 NW 1/4, S 1/2 NW 1/4, SW 1/4 NE 1/4, W 1/2 W 1/2 SE 1/4 NE 1/4, SE 1/4 SW 1/4 SE 1/4 NE 1/4, S 1/2 SE 1/4 SE 1/4 NE 1/4, and S 1/2;

Sec. 12, W 1/2, and S 1/2 S 1/2 SE 1/4;

T. 45 N., R. 4 E.,

Sec. 30;

Sec. 6, fractional, SW 1/4 SW 1/4 NW 1/4, and W 1/2 W 1/2 SW 1/4;

Sec. 7, S 1/2 SW 1/4 SW 1/4, and SW 1/4 SE 1/4 SW 1/4;

Sec. 18, SE 1/4 NE 1/4 NW 1/4, W 1/2 NE 1/4 NW 1/4, SE 1/4 NW 1/4, W 1/2 W 1/2, E 1/2 SW 1/4, and W 1/2 W 1/2 SE 1/4;

Sec. 19, W 1/2 W 1/2 E 1/2, W 1/2, E 1/2 SW 1/4 SE 1/4, and SE 1/4 SE 1/4;

Sec. 20, S 1/2 SW 1/4, and SW 1/4 SE 1/4;

Sec. 29, W 1/2 E 1/2 and W 1/2;

Sec. 31, NE 1/4 NE 1/4, N 1/2 SE 1/4 NE 1/4, SW 1/4 SE 1/4 NE 1/4, W 1/2 E 1/2, W 1/2, W 1/2 E 1/2 SE 1/4, and SE 1/4 SE 1/4 SE 1/4;

Sec. 32, N 1/2 NW 1/4 and N 1/2 S 1/2 NW 1/4;

Containing 10,000 Acres more or less.

Wilderness No. 2

T. 45 N., R. 4. E.,

Secs. 10 thru 15, 23, 24 and 25;

Secs. 1, 2, and 3 fractionals;

Sec. 4, fractional, E 1/2, E 1/2 E 1/2 W 1/2, W 1/2 E 1/2 NW 1/4, SE 1/4 NW 1/4 NW 1/4, E 1/2 SW 1/4 NW 1/4 NW 1/4, NE 1/4 NW 1/4 SW 1/4 NW 1/4, and N 1/2 NE 1/4 SW 1/4 NW 1/4;

Sec. 9, E 1/2, and E 1/2 E 1/2 W 1/2;

Sec. 16, E 1/2 E 1/2, E 1/2 W 1/2 E 1/2, W 1/2 W 1/2 NE 1/4, E 1/2 E 1/2 NW 1/4, NE 1/4 NE 1/4 SW 1/4, and NW 1/4 NW 1/4 SE 1/4;

Sec. 22, E 1/2, S 1/2 S 1/2 SE 1/4 NW 1/4, SE 1/4 SE 1/4 SW 1/4 NW 1/4, E 1/2 E 1/2 W 1/2 SW 1/4, and E 1/2 SW 1/4;

Sec. 26, N 1/2, N 1/2 N 1/2 S 1/2, N 1/2 S 1/2 N 1/2 S 1/2, S 1/2 S 1/2 NE 1/4 SE 1/4, and SE 1/4 SE 1/4;

Sec. 27, NE 1/4 NE 1/4, N 1/2 NW 1/4 NE 1/4, N 1/2 NE 1/4 NW 1/4, E 1/2 NE 1/4 NW 1/4 NW 1/4 and, N 1/2 SE 1/4 NE 1/4;

Sec. 36, NE 1/4, N 1/2 NW 1/4, E 1/2 E 1/2 SE 1/4 NW 1/4, E 1/2 NW 1/4 SE 1/4, and NE 1/4 SE 1/4;

T. 46 N., R. 4. E.,

Secs. 22, 23, 25, 26, 27, 34, 35 and 36;

Sec. 13, SW 1/4 NE 1/4 SW 1/4, S 1/2 NW 1/4 SW 1/4, SW 1/4 SW 1/4, W 1/2 SE 1/4 SW 1/4, SE 1/4 SE 1/4 SW 1/4, and S 1/2 SW 1/4 SE 1/4;

Sec. 14, S 1/2 N 1/2 SE 1/4, S 1/2 NE 1/4 SW 1/4, SE 1/4 NW 1/4 SW 1/4, E 1/2 SW 1/4 SW 1/4, SE 1/4 SW 1/4, and S 1/2 SE 1/4;

Sec. 21, E 1/2 NE 1/4 NE 1/4, S 1/2 NE 1/4, E 1/2 SE 1/4 NW 1/4, NE 1/4 NE 1/4 SW 1/4, S 1/2 NE 1/4 SW 1/4, SE 1/4 NW 1/4 SW 1/4, E 1/2 SW 1/4 SW 1/4, SE 1/4 Sw 1/4, and SE 1/4;

Sec. 24, W 1/2 SE 1/4 NE 1/4, W 1/2 E 1/2, W 1/2, W 1/2 E 1/2 SE 1/4, SE 1/4 NE 1/4 SE 1/4, and SE 1/4 SE 1/4;

Sec. 28, E 1/2, E 1/2 W 1/2, and E 1/2 W 1/2 W 1/2;

Sec. 33, E 1/2, E 1/2 NW 1/4, E 1/2 W 1/2 NW 1/4, NE 1/4 NW 1/4 SW 1/4, N 1/2 SE 1/4 NW 1/4 SW 1/4, N 1/2 NE 1/4 SW 1/4, N 1/2 S 1/2 NE 1/4 SW 1/4, S 1/2 SE 1/4 NE 1/4 SW 1/4, and E 1/2 SE 1/4 SW 1/4;

T. 46 N., R. 5 E., partly unsurveyed,

Sec. 31;

Containing 18,460 Acres more or less.

Appendix E

National Park Service
U.S. Department of the Interior

Lava Beds National Monument
California

Backcountry and Wilderness Use Itinerary

Please respect the Wilderness Resource. This is a place for solitude and self-sufficiency, for meeting nature on its own terms with a minimum of intrusive, artificial technology. Travel is restricted to foot. No motorized equipment or wheeled transportation are permitted. *Certain exceptions apply under the Americans With Disabilities Act.*

Please follow LEAVE NO TRACE principles. Many of these Principles of Leave No Trace are backed up by Federal and Monument regulations. Please take time to become familiar with them. They will make your Wilderness visit more enjoyable for yourself, other visitors, the wildlife and the Wilderness resource.

PLAN AHEAD AND PREPARE

- Know the regulations and special concerns.
- Areas may be closed due to high fire danger or fire management activities.
- Weather can be very hot and quite cool on the same day; there is no water.
- Travel in small groups or split larger parties.

TRAVEL ON DURABLE SURFACES

- Use established trails whenever possible, spread out when traveling cross country and never leave the trail on unstable cinder slopes.
- Use existing campsites when available and concentrate use on previously impacted areas. In pristine areas, spread out use and avoid sites where impacts are just beginning.
- Do not camp in or within 50 yards of a cave or within 1/4 mile of a developed area or road.

DISPOSE OF WASTE PROPERLY

- Pack it in, pack it out.
- Deposit solid human waste in 6 to 8 inch catholes at least 200 feet from caves, camp or trails. Cover and disguise the cathole.

LEAVE WHAT YOU FIND

- Preserve the past: observe, but do not touch, cultural or historic structures and artifacts.
- Edible fruits, berries and nuts may be collected for personal consumption within the monument; otherwise, leave rocks, plants and other natural objects as you find them.
- Avoid introducing non-native species.
- Do not build structures or dig trenches.

MINIMIZE CAMPFIRE IMPACTS

- In this Wilderness, campfires are not permitted. In times of low fire danger, stoves may be used. Please be careful.

RESPECT WILDLIFE

- Observe wildlife from a distance. Do not follow or approach them or use artificial light for viewing them.
- Never feed animals; it alters their behavior, teaches them bad habits and your food may be unhealthy for them.
- Protect wildlife; store your food and trash.
- Pets are not permitted in this Wilderness. Pets may harass wildlife or be harmed. Trained working service animals are permitted.
- Hunting, trapping and hunting camps are prohibited.

BE CONSIDERATE OF OTHERS

- Respect the quality of others experience.
- Be courteous. Step off the trail on the downhill side when encountering pack stock. Stock may be confused or frightened encountering you on the trail. Give them space.
- Camp away from trails and other visitors.
- Let nature's sights and sounds prevail. Avoid loud voices and noises, and extravagantly colorful clothing and equipment.

CAVE SOFTLY, CAVE SAFELY

- Carry proper safety equipment such as lights, helmets, and proper shoes.

Wilderness and Backcountry Itinerary

This backcountry and wilderness use itinerary form serves the purpose of notifying the Visitor Services Office of visitor activities taking place in the backcountry and wilderness of Lava Beds National Monument.

Group Leader:	
Number in Party:	
Date/Time of Departure:	
Date/Time of Return:	
Intended Route:	
Intended Destination:	
Emergency Contact Name: Telephone #: Address:	

I attest that the information provided above is accurate and that all protocols will be strictly adhered to.

Signature: _____

Appendix F

State of the Wilderness Outline – Refer to section 2.2.3.5c for description

Appendix G

Lava Beds National Monument Wilderness Boundary Adjustment

Legislative Support Data Package

Required for all Legislative Proposals

☑ 1. **Explanation of the proposal**

A Wilderness boundary adjustment is proposed that will correct the Wilderness acreage and boundary, exclude five improvements, add resources not designated as Wilderness, and improve boundary management. This wilderness boundary adjustment is in fulfillment of the Monument's General Management Plan (1996) and Wilderness Stewardship Plan (Completion expected in 2005).

☑ 2. **Justification for each element in the proposal**

According to Public Law 92-493, LABE has 28,460 acres of designated Wilderness. Using GIS and the legal description of the Wilderness boundary, the actual area is 28,059 acres. This documents a discrepancy between the acreage recorded in the legislation and the acreage calculated by GIS and USGS in 1993.

The Wilderness boundary, as originally established, contains five features that do not comply with Wilderness characteristics as defined by the 1964 Wilderness Act. The Wilderness Act defines Wilderness as "an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvement or human habitation" Section 2(c). A previously installed campground amphitheater, paved trail, two road segments, and an NPS closed landfill (referred to as "improvements" in rest of document) were inadvertently included within the Wilderness boundary at LABE.

Natural resource landscapes at LABE, which qualify as Wilderness, are not included in the present Wilderness. This comprises part of a backcountry trail that is partially in Wilderness and being managed as Wilderness already.

Current boundaries are difficult to define and manage. The boundary contains 78 corners making it difficult to locate the boundary by park rangers, resource managers, and visitors. The proposed boundary adjustment will reduce the number of corners to 34.

☑ 3. **Congressional Interest**

The local delegation has not been contacted because this in an internal Wilderness boundary adjustment within Lava Beds National Monument. The management of the proposed lands will not be altered and has no impact beyond park boundaries.

☑ 4. **Position(s) of State and Local Governments toward the proposal**

State and Local Government have not been contacted because this in an internal Wilderness boundary adjustment within Lava Beds National Monument. The management of the proposed lands will not be altered and has no impact beyond park boundaries.

☑ 5. **Position(s) of other Federal agencies**

Other Federal agencies have not been contacted because this in an internal Wilderness boundary adjustment within Lava Beds National Monument. The management of the proposed lands will not be altered and has no impact beyond park boundaries.

☑ 6. **Positions of pertinent public organizations/professional associations**

Lava Beds National Monument staff support the Wilderness Boundary Adjustment. There are no pertinent public organizations/professional associations contacted because this in an internal Wilderness boundary adjustment within Lava Beds National Monument. The management of the proposed lands will not be altered and has no impact beyond park boundaries.

☑ 7. **Media coverage/resources**

There has been no media coverage of this proposal.

☑ 8. **Pertinent existing authorities**

Craig Dorman
Park Superintendent
1 Indian Well Headquarters
Tulelake, CA 96134
Craig_Dorman@nps.gov
530-667-8101

David Larson
Chief of Resource Management
1 Indian Well Headquarters
Tulelake, CA 96134
David_Larson@nps.gov
530-667-8106

Mariana Morris
SCA Wilderness Conservation Associate
1 Indian Well Headquarters
Tulelake, CA 96134
Mariana_Morris@partner.nps.gov
530-667-8137

☑ 9. **Previous or pending legislation**

-Wilderness Act of 1964
-Public Law 92-493 established two Wilderness areas in Lava Beds National Monument totaling 28,460 acres on October 13, 1972.

☑ 10. **Existing or proposed agreements**

There are no agreements that are related with the proposal.

☑ 11. **Summary of costs**

Short-term costs include placing signs with Wilderness boundary information at Wilderness access points and the production of maps with the correct Wilderness boundary information. This cost would occur with or without this proposal since the current Wilderness boundary is not properly marked. Certain efficiencies will occur which result in operational and management cost savings. There are no known long-term costs of the proposal.

☑ 12. **Broad marketing strategy**

Visitors will be educated of the Wilderness boundary adjustment at the visitor center with maps and Wilderness Education Programs. A press release will notify local news media of the correction of the Wilderness boundary within the park.

Indicate Type of Proposal:

- ❑ **New Areas (includes new area studies)**
- ☑ **Boundary Adjustments**
- ❑ **General Authorities**
- ❑ **Development and Land Acquisition Ceilings**
- ❑ **Special Designations/Areas**
- ❑ **Other**

Boundary Adjustments

☑ 11. **Positions of area landowners concerning the proposal**

The Wilderness boundary change is an internal adjustment; therefore local area landowners have not been contacted. There will be no impacts external of the park boundaries.

☑ 12. **Photographic/visual support material-** Examples of Affected Wilderness Area

Figure 1: Campground Amphitheater in Wilderness

Figure 2: Road Segment in the Northern section of the E-Wilderness area

☑ 13. **Existing area fact sheet**

Lava Beds National Monument was established on November 21, 1925 to preserve the unique geological, natural, and historical features of the local landscape.

The monument occupies 72 square miles within Siskiyou and Modoc counties in northeastern California, and is the site of the largest concentration of lava tube caves in the United States. The monument lies roughly 40 miles east of the crest of the southern Cascades on the northern flank of the Medicine Lake Highlands and exhibits elevations from 4000 to 5700 feet (1219 to 1737 meters). The region in and around the monument is unique because it occurs at the junction of the Sierra- Klamath, Cascade, and Great Basin geologic provinces.

In addition to its geologic features, the monument encompasses the main battlefields of the Modoc War of 1872- 73, the only Indian war fought in California. Lava Beds National Monument also includes Petroglyph Point, one of the largest panels of Native American rock art in the U.S.

The monument also protects 28,460 acres of high desert wilderness. The NPS wilderness management policies are based on provisions of the 1916 NPS Organic Act, the 1964 Wilderness Act, and legislation establishing individual units of the national park system. The public purpose of wilderness in national parks includes the preservation of wilderness character and wilderness resources in an unimpaired condition, as well as for the purposes of recreational, scenic, scientific, education, conservation, and historical use.

☑ 14. **Current park staffing**

Superintendent- Craig Dorman (530-667-8101)

Administration- 4 Persons

Chief of Administration- Jean Corrigan (530-667-8102)

Resource Management- 3 Persons plus seasonals

Chief of Resources- David Larson (530-667-8106)

Maintenance- 5 Persons

Chief of Maintenance- Jim Deshayes (530-667-8134)

Protection- 2 Persons

Chief Ranger- Terry Harris (530-667-8110)

Fire- 5 Persons plus seasonals

Fire Management Officer- Al Augustine (530-667-8122)

Interpretation- 3 Persons plus seasonals

Kale Bowling-Schaff (530-667-8112)

☑ 15. **Visitation** (current year and previous five years)

Total Park Recreation Visits for FY 2004- Not Yet Reported
Total Park Recreation Visits for FY 2003- 122,913
Total Park Recreation Visits for FY 2002- 114,468
Total Park Recreation Visits for FY 2001- 109,298
Total Park Recreation Visits for FY 2000- 111,573
Total Park Recreation Visits for FY 1999- 132,972

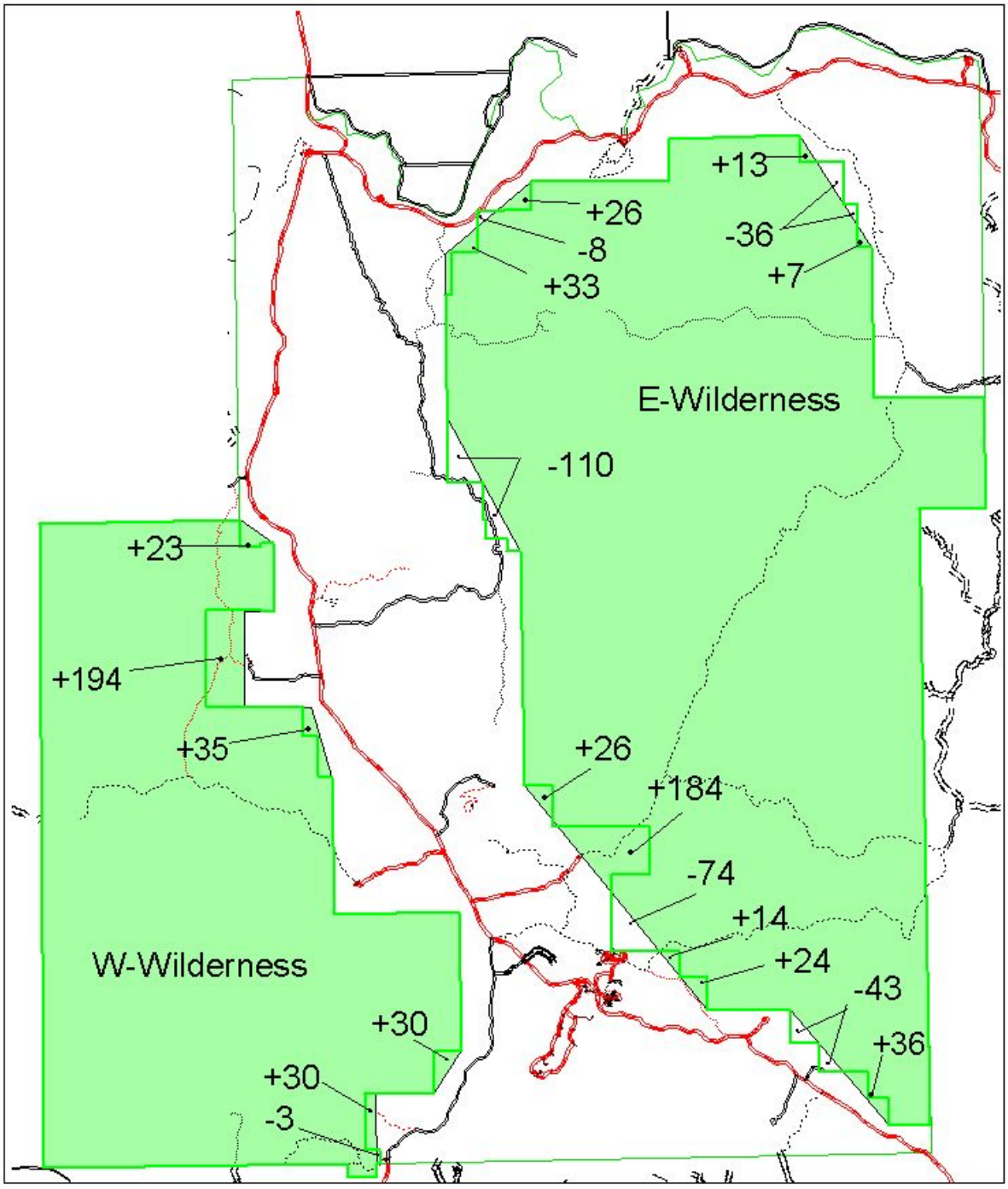
☑ 16. **Visitation forecasts with or without legislation** (if applicable)

There will be no impact on visitation from this proposal. Visitation is expected to rise 5%.

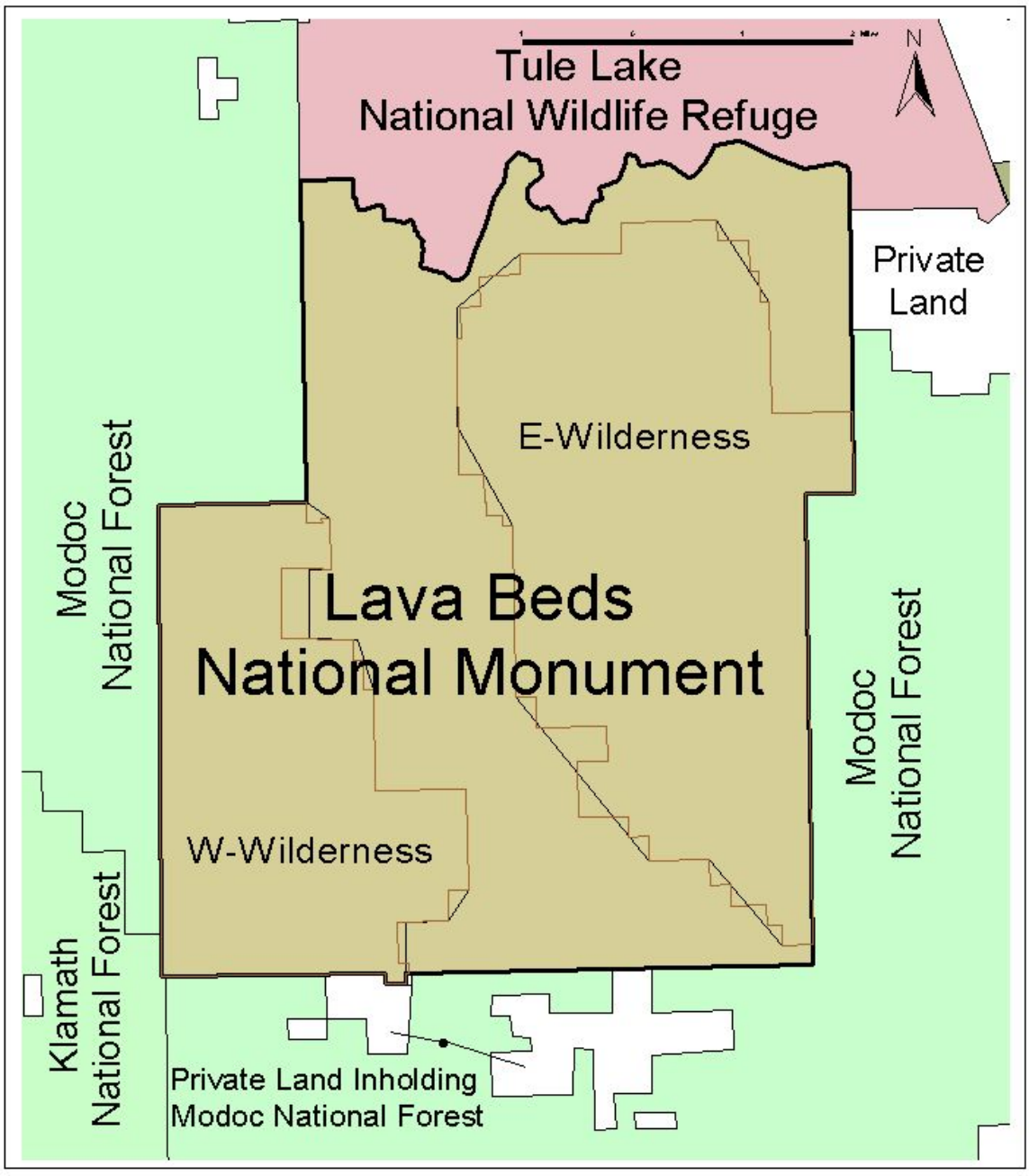
☑ 13. **Visitation at nearby areas/attractions**

There will be no impact on visitation at nearby areas/attractions due to this proposal.

☑ 17. **Boundary adjustment map**

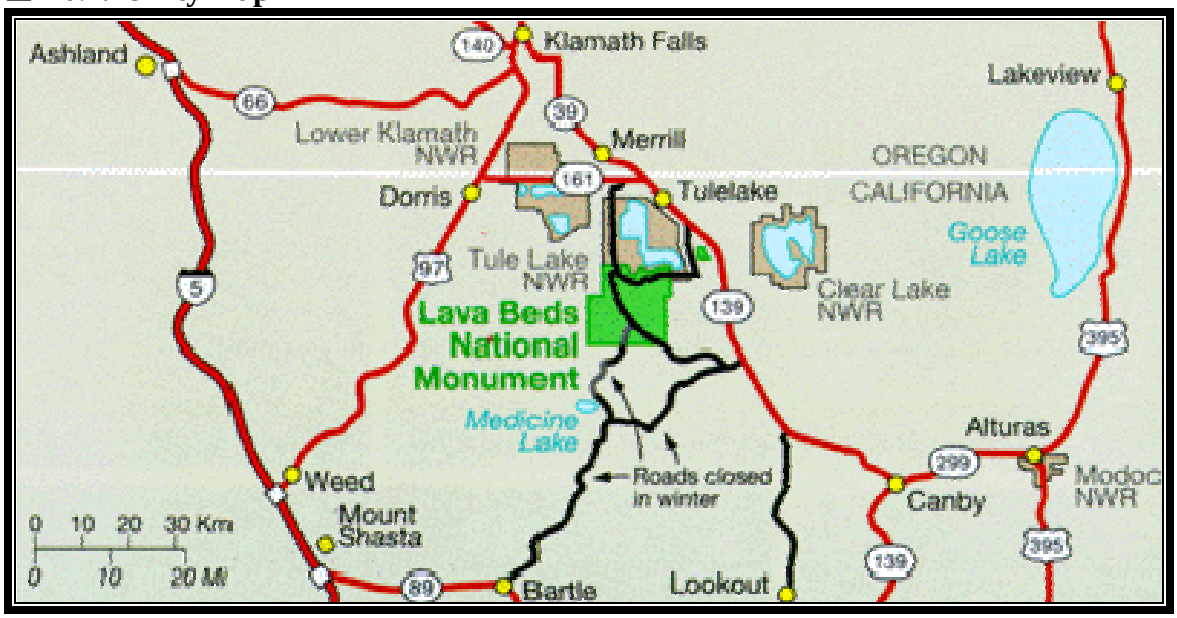


☑ 18. **Landownership map** (page size and exhibit)



❑ 19. **General development plan**

☑ 20. **Vicinity map**



☑ 21. **Development schedule for additions proposed in legislation**

There are no planned developments for the addition proposed land in Wilderness. A Wilderness Stewardship Plan is being developed for all Wilderness areas within the Monument.

☑ 22. **Additional staffing required due to new additions**

No Additional staffing will be required due to the Wilderness boundary adjustment.

☑ 23. **Landownership data**

All land involved in this proposal is within Lava beds National Monument.

☑ 24. **Land acquisition and relocation costs including persons displaced**

There are no fiscal impacts from this Wilderness boundary adjustment proposal.

☑ 25. **Tax revenues and assessed valuations**

There are no fiscal impacts from this Wilderness boundary adjustment proposal.

❑ 26. **Suggested program level for land acquisitions**

☑ 27. **Alternatives**

Three alternatives to this boundary adjustment proposal were considered:

1) Reasonable Buffer- This option would have adjusted the Wilderness boundary by creating a 400m buffer around the improvements, paved roads, unpaved roads, trails, and headquarters. The net change under this option was +1094 acres. The Wilderness boundary would follow features of the park improving location, protection, and interpretation of the Wilderness area; however, it was not selected because it significantly altered the established Wilderness Boundary.
2) Zero Net Gain/Loss - This option would have removed a minimum amount of Wilderness that contained the improvements and added an equal amount of area to result in no change of Wilderness acreage. Original Wilderness boundary would be maintained with no potential impacts on park management activities or

conflict with National Wilderness Policy within NPS. This option was not selected because backcountry areas of Lava Beds N.M. proposed for inclusion into the Wilderness would not occur and the Wilderness boundary would remain difficult to manage.

3) No Action- This option would not remove the improvements from the Wilderness within Lava Beds National Monument. The Wilderness boundary would remain as described in Public Law 92-493 that established 28,460 acres of designated Wilderness within LABE. This option was not selected because non-qualifying features would remain within the Wilderness.

☑ 28. **Land acquisition summary to date**
No land outside of Monument Boundaries will be acquired for this Wilderness Boundary change. The proposed adjustment option adds 675 acres and removes 274 acres of Wilderness within Lava Beds National Monument. This equals a net change in Wilderness of +401 acres from the actual acreage of 28,059 and a net change of 0 acres from the original 28,460 acres documented in Public Law 92-493.

❑ 29. **Copies (3 each) of relevant planning documents**
Copies of the documents and description of scoping/public involvement.

☑ 30. **NEPA compliance documents**
Original scoping/public involvement was conducted on February 17, 1967 for the proposed establishment of a wilderness in Lava Beds. Public input was obtained to determine the Wilderness boundary for the Wilderness area that was designated on October 13, 1972. This boundary adjustment is a minor adjustment to those boundaries and will have no impact or effect on the public or management of the Wilderness areas.

☑ 31. **Proposed fee schedule** (user and entrance)
There is no proposed fee for the Wilderness area. The normal Monument entrance fee of $10 is charged on a per-vehicle basis for all non-commercial vehicles entering the park.

❑ 32. **Fee receipts for the past five years**

❑ 33. **Fee monies returned to park**

❑ 34. **Hazardous Substances Determination (602 DM 2.5D)**

❑ 35. **Federal Land Acquisition Priority List statement**