Capulin Volcano National Monument
New Mexico

National Park Service
U.S. Department of the Interior

General Management Plan / Environmental Assessment

General Management Plan / Environmental Assessment
Capulin Volcano National Monument
Union County, New Mexico

Capulin Volcano National Monument was established by presidential proclamation on August 9, 1916 (Presidential Proclamation No. 1340). There is currently no approved general management plan for the monument. The purpose of this general management plan is to establish a comprehensive vision of the monument's purpose, significance, and resource goals. The plan would also define the management strategies for protecting the monument's resources, providing for public understanding and enjoyment, ensuring organizational effectiveness, and promoting partnership opportunities that will support and complement all aspects of monument management. The plan would help the monument's staff guide programs and set priorities for resource stewardship, visitor use and experience, partnerships, facilities, and operations at Capulin Volcano National Monument.

This document examines two alternatives for managing Capulin Volcano National Monument for the next 15 to 20 years. It also analyzes the impacts of implementing each of the alternatives. The "no-action" alternative, alternative A, consists of the continuation of the existing national monument management strategy and trends and serves as a basis for comparison in evaluating the other alternative. The concept for management under alternative B would be to focus on education; outreach; interpretive programs; and research partnerships with the scientific community; the restoration of native vegetation; rehabilitation of monument facilities; and improved handicap access. Alternative B is the National Park Service's preferred alternative.

The key effects of implementing the no-action alternative (A) would be short-term, minor, adverse and long-term, minor beneficial effects on soils; long-term, negligible to minor, beneficial impacts on vegetation; long-term, negligible to minor, adverse effects on soundscapes; long-term, minor, beneficial effects on visitor use and experience ; long-term, negligible, beneficial effects on the socioeconomic environment, and long-term, minor, adverse effects on monument facilities and operations. The key effects of implementing the preferred alternative (B) would be short-term, minor, adverse, and long-term, minor to moderate, and beneficial effects on soils; short-term, minor, and adverse, and long-term, minor to moderate, and beneficial effects on vegetation; short-term, minor to moderate, and adverse, and long-term, negligible to minor, and adverse effects on soundscapes; long-term, moderate, beneficial effects on visitor use and experience ; short- and long-term, minor to moderate, beneficial effects on the socioeconomic environment; and short- and long-term, moderate, and beneficial effects on monument facilities and operations.

This *General Management Plan / Environmental Assessment* has been distributed to other agencies and interested organizations and individuals for their review and comment. The public comment period for this document will last for 30 days. Readers are encouraged to submit comments on this plan at http://parkplanning.nps.gov/cavo. You may also send written comments to Tom Thomas, National Park Service, Denver Service Center-PSD, P.O. Box 25287, Denver, CO 80225, or call Superintendent Christopher Moos at 575-278-2201, x210. Please note that NPS practice is to make comments, including names and addresses of respondents, available for public review; see "How to Comment on this Plan" for further information.

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HOW TO COMMENT ON THIS PLAN

Comments on this *General Management Plan / Environmental Assessment* are welcome and will be accepted during the 30-day public review and comment period. During the comment period, comments may be submitted using several methods as noted below.

Online: at
<http://parkplanning.nps.gov/cavo>

We prefer that readers submit comments online through the monument's planning website identified above, so that the comments become incorporated into the NPS Planning Environment and Public Comment system. An electronic public comment form is provided through this website.

Mail: Capulin Volcano National Monument
General Management Plan
National Park Service
Denver Service Center — P
P.O. Box 25287
Denver, CO 80225

or

Capulin Volcano National
Monument,
P.O. Box 40
Capulin, NM 88414

Hand delivery: at public meetings to be announced in the media following the release of this plan.

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment — including your personal identifying information — may be made publicly available at any time. Although you may ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

SUMMARY

Capulin Volcano National Monument, in northeastern New Mexico, was established by presidential proclamation on August 9, 1916. President Woodrow Wilson declared Capulin Mountain a national monument to preserve "a striking example of recent extinct volcanoes . . . of great scientific and especially geologic interest" (Presidential Proclamation No. 1340 [39 Stat. 1792]). The proclamation was amended September 5, 1962, by Public Law 87-635 "to preserve the scenic and scientific integrity of the Capulin Mountain National Monument . . . and to provide for the enjoyment thereof by the public." To "more accurately describe the true nature of the monument," the name was changed from Capulin Mountain to Capulin Volcano by Public Law 100-225 (101 Stat. 1547) on December 31, 1987.

The primary feature of Capulin Volcano National Monument is the volcano. This well-preserved, relatively young (56,000 to 62,000 years old), symmetrical cinder cone rises steeply (more than 1,300 feet) and conspicuously from the surrounding grassland plains to an elevation of 8,182 feet above sea level. Its irregular rim is about a mile in circumference, and its crater is about 415 feet deep. The sighting of the prominent cinder cone by travelers makes it an important landmark today, as it has been for travelers for many centuries.

The monument has never had a general management plan. This plan will help the monument's staff guide programs and set priorities for resource stewardship, visitor use and experience, partnerships, facilities, and operations.

This *General Management Plan / Environmental Assessment* presents two alternatives, including the National Park Service's preferred alternative, for future management of Capulin Volcano National Monument. The alternatives, which are based on the national monument's purpose, significance, and special mandates, present different ways to manage resources and visitor use and experience, and to improve facilities and infrastructure at the national monument. Alternative A, the no-action alternative, is the continuation of current management, and alternative B is the preferred alternative.

Additional actions and alternatives were considered; however, they were dismissed from further analysis. These dismissed actions and alternatives are presented, along with rationale for dismissing them, in "Chapter 2: Alternatives, Including the Preferred Alternative."

ALTERNATIVE A, THE NO-ACTION ALTERNATIVE (CONTINUE CURRENT MANAGEMENT)

Existing conditions would continue. There would be no improvements to the visitor center. Improvements to the administrative and maintenance facilities would be limited to emergency stabilization and rehabilitation. Existing plans to improve the infrastructure would be implemented. This would include completion of proposed projects to alleviate erosion along the Volcano Road to the crater. However, these improvements provide more of the same type of road drainage system that is currently in place. No newer technologies would be incorporated.

Monument staff would continue to provide interpretation and outreach programs at current levels. Interpretive media at the visitor center would remain as it is. Formalized accessibility at the top of the volcano would continue to be limited to the restroom and adjacent parking area. Visitor access to viewing points on the crater and at the southern and western edge of the crater parking area would not meet accessibility standards. Visitor experience and resource protection efforts would be enhanced by the conversion of one employee to a natural resource program manager.

ALTERNATIVE B — EMPHASIS ON LEARNING AND RESEARCH (THE PREFERRED ALTERNATIVE)

Under this alternative the monument's management and staff would place increased emphasis on interpretation and educational and outreach programs. Visitors would have opportunities to enjoy a wide array of expanded educational and interpretive programs. These programs would also interpret the natural history of the area, including the distinct flora and fauna, and the historic and cultural context that surrounds the volcano. Partnerships with the scientific community would enhance the educational and interpretive programs.

Visitors would start their experience in a rehabilitated visitor center and still have access to the Boca, Lava, and Crater Rim trails. New trails and tours in the monument, and possibly offsite tours, could be added.

NPS staff would expand programs to restore native vegetation and eradicate exotic and invasive plant and animal species and maintain healthy ecosystems, including the restoration of the historic piñon-juniper forest and a functioning short-grass prairie system. Protection of scenic views would be enhanced.

NPS staff would work with other federal, state, and local agencies and regional entities to monitor potential impacts on resources and values and develop partnership strategies to mitigate impacts related to climate change.

All reasonable steps would be taken to demonstrate environmental leadership and improve conditions in resource and energy consumption and to reduce the monument's carbon footprint. Visitor center rehabilitation and other facilities would incorporate energy efficiency and sustainable design.

The monument visitor center would be rehabilitated to improve visitor services and interpretive programs. Accessibility for mobility and visually impaired visitors would be improved. The administrative and maintenance facilities would be rehabilitated to improve efficiency and meet life and safety codes.

Staff housing and the restroom at the picnic area would be upgraded. The Volcano Road and parking area would be upgraded to prevent erosion of the road edge. Erosion prevention would include clearing brush on the slopes to reduce fuel and lessen the potential of a catastrophic fire, which would exacerbate erosion by destroying the piñon-juniper forest that stabilizes the slope.

Traffic would continue to be managed at the main parking area, on the cinder cone, and at the crater rim parking area.

Private guide services might be used to escort visitors and provide interpretation of geologic resources in the resource access zone (through commercial use authorizations).

NPS management would work with state, county, and local agencies to develop strategies to protect scenic views, air quality, and soundscapes.

Three zones (park development, resource access, and natural conservation) would be applied in support of the concept of this alternative (see table 4).

THE NEXT STEPS

After the distribution of the *General Management Plan / Environmental Assessment*, there will be a 30-day public review and comment period. Thereafter, the NPS planning team will evaluate comments about the plan from other federal agencies, tribes, organizations, businesses, and individuals. The NPS regional director will then sign a "Finding of No Significant Impact," which will document the National Park Service's selection of an alternative for implementation. After the "Finding of No Significant Impact" has been signed, the plan can then be implemented after a 30-day waiting period.

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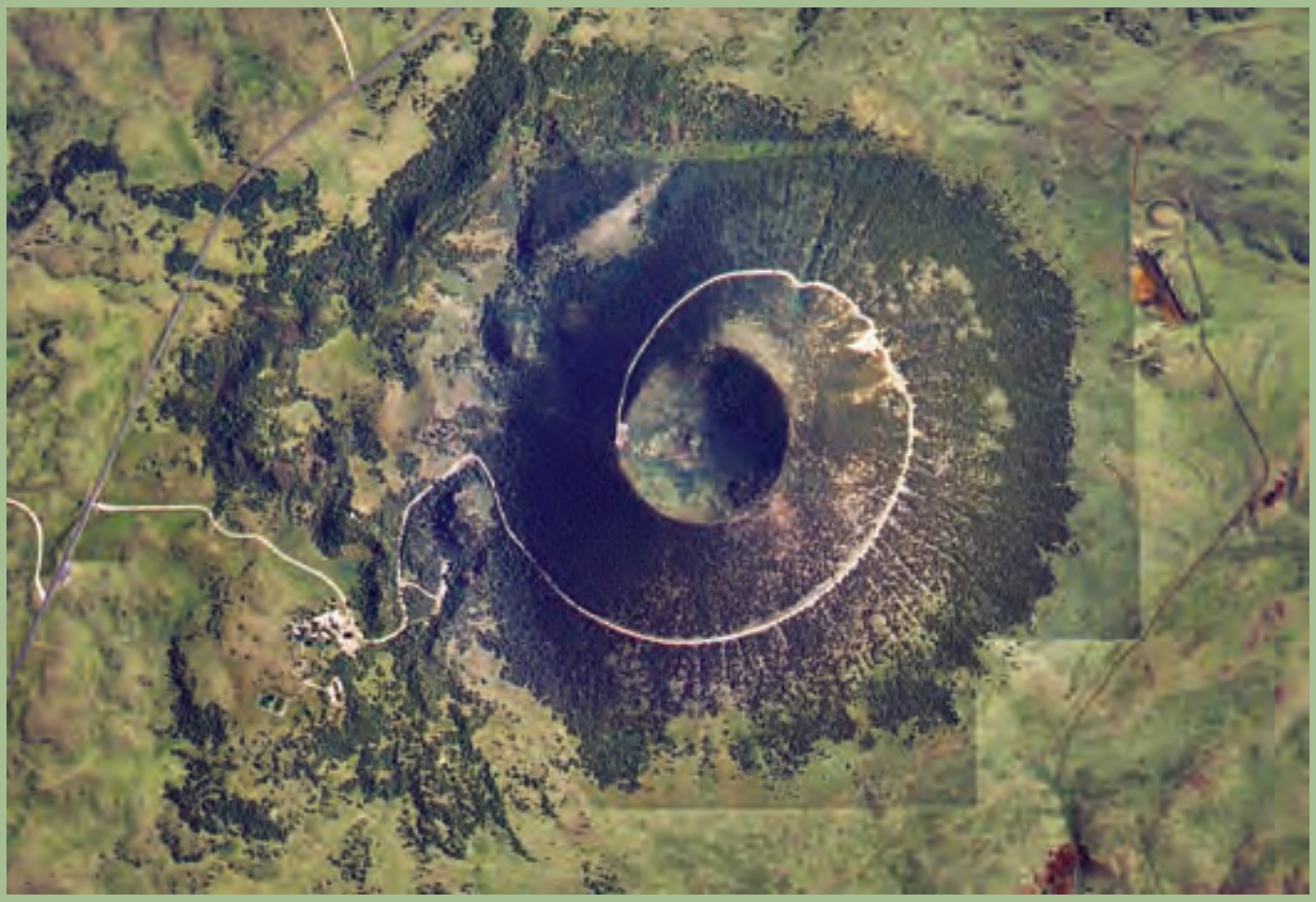


Chapter 1: Introduction

A GUIDE TO THIS DOCUMENT

This *General Management Plan / Environmental Assessment* is organized in accordance with the Council on Environmental Quality's implementing regulations for the National Environmental Policy Act, NPS *Management Policies 2006*, park planning program standards, and Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision Making*. Impacts arising from the plan's implementation will be analyzed in the environmental assessment in Chapters 3 and 4, as required under the National Environmental Policy Act.

Chapter 1: Introduction sets the framework for the entire document. It describes why the plan is being prepared and what needs it must address. It gives guidance for the alternatives that are being considered; this guidance includes the national monument's legislation, its purpose, the significance of its resources, special mandates and administrative commitments, servicewide laws and policies, and other planning efforts in the area.

The chapter also details the planning issues that were raised during public scoping meetings in the initial stages of planning. These stages included public outreach using newsletters and public meetings, analysis by the planning team and park staff, and consultation with federal, state, and local officials. The alternatives in the next chapter address these issues and concerns to varying degrees. The first chapter concludes with a statement of the scope of the environmental impact analysis — specifically, what impact topics were or were not analyzed in detail.

Chapter 2: Alternatives, Including the Preferred Alternative, begins by describing the no-action alternative (alternative A), then describes management zones that will be used to manage the national monument in the future under alternative B. Alternative B, the preferred alternative, is described next. Mitigative measures proposed to minimize or eliminate the adverse impacts of some proposed actions are described just before the discussion of future studies or implementation plans that will be needed. The evaluation of the environmentally preferable alternative is followed by a discussion of alternatives or actions that were dismissed from detailed evaluation. The chapter concludes with tables summarizing the alternative actions and the environmental consequences of implementing those actions.

Chapter 3: Affected Environment describes the areas and resources that would be affected by implementing actions in the various alternatives — natural resources, visitor use and experience, the socioeconomic environment, and monument facilities and operations.

Chapter 4: Environmental Consequences analyzes the impacts on resources described in the "Affected Environment" chapter that would result from implementing the alternatives. Methods used for assessing the impacts (intensity, type, and duration of impacts) are outlined at the beginning of the chapter.

Chapter 5: Consultation and Coordination describes the history of public and agency coordination during the planning effort and any future compliance requirements needed. It also lists agencies and organizations that will receive copies of the document.

The back of the document contains an appendix, a bibliography, and a list of the planning team and consultants.

BACKGROUND

This *General Management Plan / Environmental Assessment* presents and analyzes two alternative future directions for the management and use of Capulin Volcano National Monument. Alternative B is the National Park Service's preferred alternative. The potential impacts of both alternatives have been identified and assessed in chapter 4.

General management plans are intended to be long-term documents that establish and articulate a management philosophy and framework for decision making and problem solving in national park system units — such as Capulin Volcano National Monument. General management plans usually provide guidance for a 15- to 20-year period.

The approval of a plan does not guarantee that the funding and staffing needed to implement the plan will be forthcoming. Actions directed by general management plans or in subsequent implementation plans are accomplished over time. Budget restrictions, requirements for additional data or regulatory compliance, and competing national park system priorities may prevent the immediate implementation of many actions. Major or especially costly actions could be implemented 10 or more years into the future.

BRIEF DESCRIPTION OF THE NATIONAL MONUMENT

Capulin Volcano National Monument consists of 793 acres located in Union County in the northeast corner of New Mexico, where the rolling grasslands meet the foothills of the Sangre de Cristo Mountains. The site is on New Mexico Highway 325, about 3 miles north of the town of Capulin. The town of Capulin is at the intersection of NM 325 and U.S. Highway 64/87, which is one of the main routes between Texas and the mountains of southern Colorado. The national monument offers visitors excellent opportunities for observing and understanding volcanic formations (see Location map).

The primary feature of Capulin Volcano National Monument is the volcano. This well-preserved, relatively young (56,000 to 62,000 years old), symmetrical cinder cone rises more than 1,300 feet from the surrounding grassland plains to an elevation of 8,182 feet above sea level. Its irregular rim is about a mile in circumference, and its crater is about 415 feet deep.

Capulin Volcano's lava field covers nearly 16 square miles, most of it outside the boundary of the monument. The greater volcanic area surrounding the monument, called the Raton-Clayton Volcanic Field, contains at least 100 recognizable volcanoes. This vast geologic context helps visitors understand and appreciate the geological history of northern New Mexico.

About 50,000 people visit Capulin Volcano each year. Visitors are able to drive to the rim of the volcano and hike around the rim and down into the crater. The unobstructed, panoramic views of the volcanic field, distant snow-capped mountains, and portions of four states (Colorado, New Mexico, Oklahoma, and Texas) available from the rim are an important resource of the monument.

PURPOSE OF THE PLAN

The approved general management plan will be the basic document for managing Capulin Volcano National Monument for the next 15 to 20 years. The purposes of this plan are as follows:

- Confirm the purpose, significance, and special mandates of Capulin Volcano National Monument.

- Clearly define resource conditions and visitor use and experiences to be achieved in the national monument.
- Provide a framework for national monument managers to use when making decisions about how best to protect the resources; how to offer quality visitor opportunities and experiences; how to manage visitor use; and what kinds of facilities, if any, to develop in or near the national monument.
- Ensure that this framework for decision-making has been developed in consultation with interested stakeholders and adopted by the NPS leadership after an adequate analysis of the benefits, impacts, and economic costs of alternative courses of action.

The 1916 Organic Act that established the National Park Service (NPS) as an agency and governing its management provides the fundamental direction for the administration of Capulin Volcano National Monument (and other units and programs of the national park system). This general management plan builds on these laws and the legislation that established Capulin Volcano National Monument to provide a vision for the future.

The "Servicewide Laws and Policies" section calls readers' attention to topics that are important to understanding the management direction at the national monument. Table 1 summarizes the mandates and policies and includes conditions toward which management is striving, regardless of which alternative is selected. The alternatives in this plan address the desired future conditions that are not mandated by law and policy and must be determined through a planning process.

This general management plan does not include descriptions of how particular programs or projects should be prioritized or implemented. Those decisions would be addressed in future, more-detailed planning efforts. All future plans would tier from the approved general management plan and would be based on the goals, future conditions, and appropriate types of activities established in the approved general management plan.

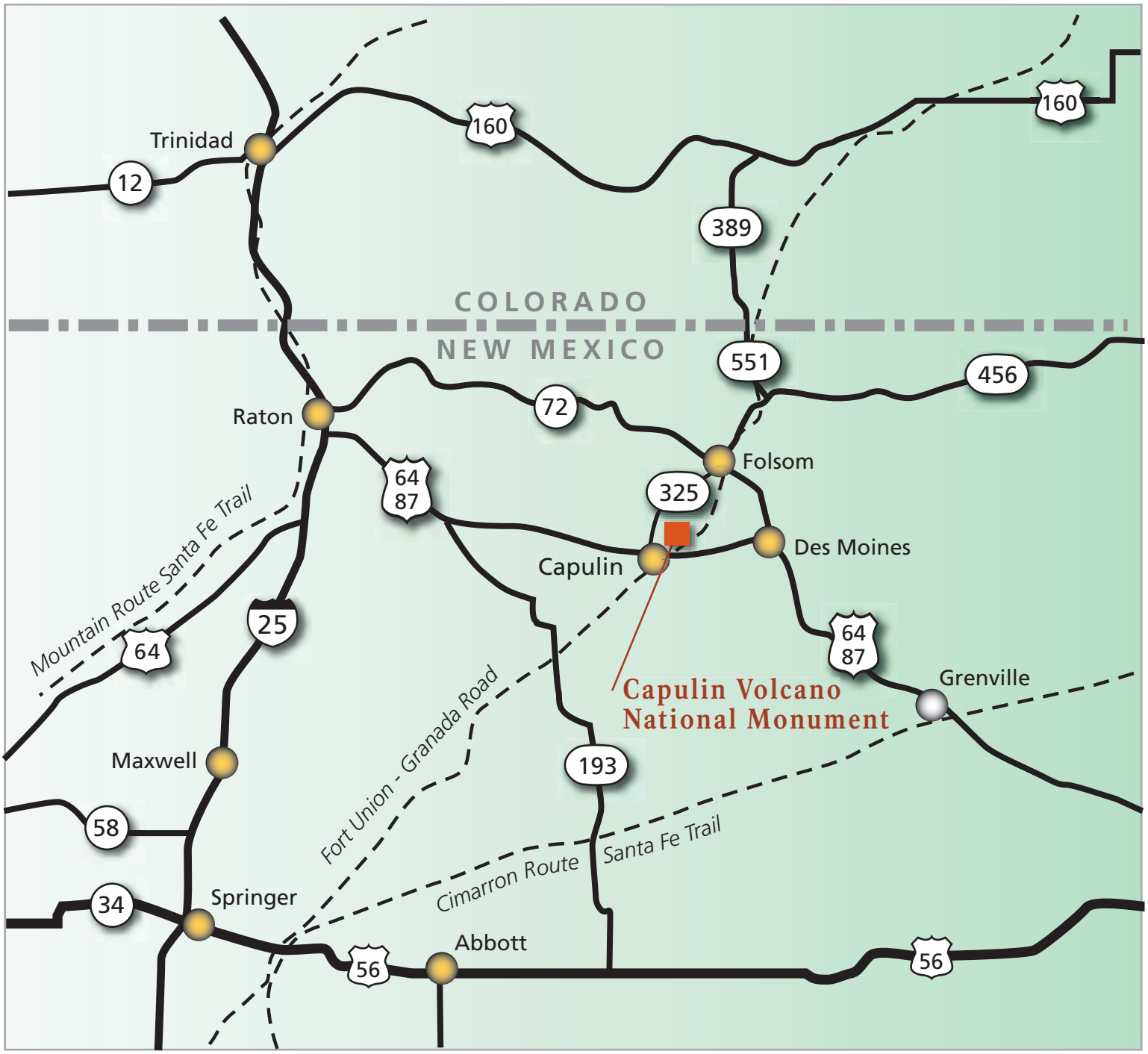
NEED FOR THE PLAN

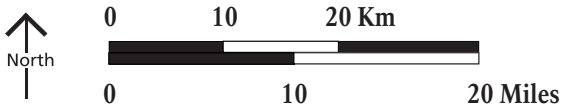
This new plan for Capulin Volcano National Monument is needed because the monument has never had a general management plan. A general management plan will describe how visitors enjoy and use the national monument and the facilities needed to support those uses, how resources are managed, and how the National Park Service manages its operations. The plan would address existing management issues.

A general management plan is also needed to meet the requirements of the National Parks and Recreation Act of 1978 and NPS policy, which mandate the development of a general management plan for each unit in the national park system.

THE NEXT STEPS

After the distribution of the *General Management Plan / Environmental Assessment,* there will be a 30-day public review and comment period. Thereafter, the NPS planning team will evaluate comments about the plan from other federal agencies, tribes, organizations, businesses, and individuals. If appropriate, the NPS regional director would then sign a "Finding of No Significant Impact," which will document the National Park Service's selection of an alternative for implementation. After the "Finding of No Significant Impact" has been signed, the plan would then be implemented after a 30-day waiting period.





Location

Capulin Volcano National Monument

United States Department of the Interior / National Park Service

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IMPLEMENTATION OF THE PLAN

The implementation of the approved plan would depend on future funding. The approval of a plan does not guarantee that the funding and staffing needed to implement the plan would be forthcoming. Full implementation of the approved plan could take place many years in the future.

Implementation of the approved plan also could be affected by other factors. After the general management plan has been approved, additional feasibility studies and more detailed planning and environmental documentation would be completed, as required, before any proposed actions could be carried out.

FOUNDATION FOR PLANNING AND MANAGEMENT

PURPOSE AND SIGNIFICANCE

The national monument's purpose and significance provide a foundation upon which all planning and management decisions are based. Purpose statements are based on Capulin Volcano National Monument's establishing legislation and NPS policies. They clarify the reasons the national monument was set aside as a unit of the national park system and provide the foundation for the management and use of the national monument.

Significance statements identify the resources and values that are central to managing the national monument and express the importance of the monument to our natural and/or cultural heritage. Significance statements do not inventory the national monument's resources; rather, they describe the monument's distinctiveness and help to place it in regional, national, and international contexts. Understanding the national monument's significance will help managers make decisions that preserve the resources and values necessary to fulfill the monument's purpose.

Monument Purpose

Purpose statements are based on Capulin Volcano National Monument's legislation and legislative history and NPS policies. The statements reaffirm the reasons for which the national monument was set aside as a unit of the national park system and provide the foundation for the area's management and use.

These statements help neighbors, visitors, cooperating agencies, and other users understand the framework in which monument managers make decisions. The following purpose statements have been refined over time.

President Woodrow Wilson established Capulin Mountain National Monument by presidential proclamation in 1916. President Wilson declared Capulin Mountain a national monument to preserve "a striking example of recent extinct volcanoes . . . of great scientific and especially geologic interest." The proclamation was amended September 5, 1962, by Public Law 87-635 "to preserve the scenic and scientific integrity of the Capulin Mountain National Monument . . . and to provide for the enjoyment thereof by the public." To "more accurately describe the true nature of the monument" the name was changed from Capulin Mountain to Capulin Volcano by Public Law 100-225 on December 31, 1987.

In keeping with the presidential proclamation and the directive of Congress, the purposes of Capulin Volcano National Monument are as follows:

- To preserve the scientific, educational, and scenic values of Capulin Volcano and provide for the understanding and enjoyment thereof by the public.
- To protect the cinder cone and volcanic features that resulted from the eruption of Capulin Volcano.
- To provide an opportunity for collaborative relationships that enhances resource protection and visitor understanding of geologic formations and other natural and cultural features.

Monument Significance

Significance statements build on the monument's purpose and clearly state why, within a national context, the monument's resources and values are important enough to warrant its designation as a unit of the national park system. These statements identify the resources and values that are central to managing the area and express the importance of the area to our country's natural and cultural heritage.

The following are the significance statements for Capulin Volcano National Monument:

- Capulin Volcano is a classic cinder cone and striking example of a recently extinct volcano.
- Capulin Volcano is part of the geologically diverse Raton-Clayton Volcanic Field, the easternmost volcanic field in North America.
- With a historic road to the rim, Capulin Volcano is one of the most accessible cinder cones in the United States for scientific investigation, education, and enjoyment.
- The dramatic view from the top of the volcano provides people with an exceptional opportunity to connect with and understand the geological and cultural landscape.

FUNDAMENTAL RESOURCES AND VALUES

Fundamental resources and values are systems, processes, features, visitor experiences, stories, and scenes that deserve primary consideration in planning and management because they are critical to maintaining the national monument's purpose and significance. The term fundamental resources generally refer to those resources within the monument boundary. Fundamental values are those which, like views and vistas, transcend the monument's boundaries but still contribute to visitor appreciation of the monument. Fundamental resources and values can be changed only if there is new scientific information or the park unit is expanded to include new resources or values. The fundamental resources and values listed below are the most important of the monument's resources and values, all of which were considered during the planning effort.

- the intact cinder cone and crater
- the relative height of the cone to the immediate surrounding landscape
- the lava flows, and other volcanic and geological features
- clean/clear air
- an unobstructed view of the Raton-Clayton Volcanic Field
- night sky
- vegetative communities, primarily short-grass prairie and piñon-juniper forest
- national register-eligible Volcano Road
- High Plains transition zone characteristic of northeastern New Mexico
- natural quiet and solitude

PRIMARY INTERPRETIVE THEMES

Interpretive themes are ideas, concepts, or stories that are central to the monument's purpose, significance, identity, and visitor experience. The primary interpretive themes define concepts that every visitor should have the opportunity to learn. Primary themes also provide the framework for the monument's interpretation and educational programs, influence the visitor experience, and provide direction for planners and designers of the monument's exhibits, publications, and audiovisual programs. Below are the primary interpretive themes for Capulin Volcano National Monument:

- Dramatic yet accessible, Capulin Volcano invites people to explore an exceptional cinder cone volcano, and offers opportunities for educational study and personal inspiration.
- The geologically diverse Raton-Clayton Volcanic Field created an evocative and evolving landscape that opens the door to an understanding of how geological forces shape our world.
- At the meeting place between the short-grass prairie and the Rocky Mountains, Capulin Volcano National Monument protects a natural and cultural environment that is rich in opportunities to explore and study a dramatic volcanic landscape.
- Capulin Volcano provides an opportunity for visitors to understand and appreciate

the fascinating science of volcanism that is explored at a number of sites in the national park system.

SERVICEWIDE LAWS AND POLICIES

This section identifies what must be done at Capulin Volcano National Monument to comply with federal laws and NPS policies. Many management directives are specified in laws and policies guiding the National Park Service and are therefore not subject to alternative approaches. For example, there are laws and policies about managing environmental quality, such as the Clean Air Act, the Endangered Species Act, and Executive Order 11990: "Protection of Wetlands"; laws governing the preservation of cultural resources, such as the National Historic Preservation Act; and laws about providing public services, such as the Architectural Barriers Act Accessibility Standards — to name only a few.

Some of these laws and executive orders are applicable solely or primarily to units of the national park system. These include the 1916 Organic Act that created the National Park Service, the General Authorities Act of 1970 (the National Parks Omnibus Management Act), and the March 27, 1978, Redwood Amendment to this act, relating to the management of the national park system. Other laws and executive orders, such as the Endangered Species Act, the National Historic Preservation Act, and Executive Order 11990 addressing the protection of wetlands have much broader application.

The NPS Organic Act (16 *United States Code* [USC] section 1) provides the fundamental management direction for all units of the national park system. It states that the purpose of the National Park Service is to

> *Promote and regulate the use of the Federal areas known as national parks, monuments, and reservations . . . by such means and measure as conform to the fundamental purpose of said parks, monuments and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.*

The National Park System General Authorities Act (16 USC section 1a-1 et seq.) affirms that while all national park system units remain "distinct in character," they are "united through their interrelated purposes and resources into one national park system as cumulative expressions of a single national heritage." The act makes it clear that the NPS Organic Act and other protective mandates apply equally to all units of the system.

Further, amendments state that NPS management of park units should not "derogat[e] . . . the purposes and values for which these various areas have been established."

The National Park Service also has established policies for all units under its stewardship. These are identified and explained in the NPS guidance manual entitled *Management Policies 2006*. The preferred alternative (alternative B) considered in this document would better incorporate and comply with the provisions of these mandates and policies.

The servicewide laws and policies governing management at Capulin Volcano are presented in table 1.

TABLE 1: SERVICEWIDE LAWS AND POLICIES PERTAINING TO THE NATIONAL MONUMENT

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at Capulin Volcano National Monument
Relations with Private and Public Organizations, Owners of Adjacent Land, and Governmental Agencies	The national monument is managed as part of a greater ecological, social, economic, and cultural system. Good relations are maintained with adjacent landowners, surrounding communities, and private and public groups that affect, and are affected by, the monument. The monument is managed proactively to resolve applicable external issues and concerns and ensure that monument values are not compromised. Because Capulin Volcano National Monument is an integral part of a larger regional environment, the National Park Service works cooperatively with others to anticipate, avoid, and resolve potential conflicts; protect Capulin Volcano's resources; and address mutual interests in the quality of life for community residents. Regional cooperation involves federal, state, and local agencies, neighboring landowners, and all other concerned parties. **Sources**: NPS *Management Policies 2006;* DO-50B and RM-50B, "Occupational Safety and Health Program"
Natural Resources	
Air Quality	Air quality in the national monument meets national ambient air quality standards for specified pollutants. Capulin Volcano's air quality is maintained or enhanced with no significant deterioration. **Sources**: Clean Air Act; NPS Organic Act, NPS *Management Policies 2006;* NPS-77, "Natural Resources Management Guidelines"
Ecosystem Management	Capulin Volcano National Monument is managed holistically, as part of a greater ecological, social, economic, and cultural system. **Source:** NPS *Management Policies 2006*
Exotic Species	The management of populations of exotic plant and animal species, up to and including eradication, are undertaken wherever such species threaten Capulin Volcano's resources or public health and when control is prudent and feasible. **Sources**: NPS *Management Policies 2006;* EO 13112, "Invasive Species"; NPS-77, "Natural Resources Management Guidelines"
Fire Management	Capulin Volcano National Monument's fire management programs are designed to meet resource management objectives prescribed for the various areas of the national monument and to ensure that the safety of firefighters and the public is not compromised. All wildland fires are effectively managed to reestablish and maintain fire dependent ecosystems, considering resource values to be protected and firefighter and public safety. Prescribed burns would be used to replicate a natural fire regime, sustain habitat diversity, reduce wildfire fuel loading, and prevent catastrophic wildfire from clearing steep slopes and exacerbating erosion. **Sources**: NPS *Management Policies 2006;* DO-18, "Wildland Fire Management"

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at Capulin Volcano National Monument
General Natural Resources / Restoration	Native species populations that have been severely reduced in or extirpated from the national monument are restored where feasible and sustainable. Populations of native plant and animal species function in as natural a condition as possible, except where special considerations are warranted. **Sources:** NPS *Management Policies 2006;* NPS-77, "Natural Resources Management Guidelines"
Geologic Resources	Capulin Volcano National Monument's geologic resources are preserved and protected as integral components of Capulin Volcano's natural systems. **Sources**: NPS *Management Policies 2006;* NPS-77, "Natural Resources Management Guidelines"
Land Protection	Land protection plans are prepared to determine and publicly document what lands or interests in land need to be in public ownership and what means of protection are available to achieve the purposes for which the national monument was created. **Source**: NPS *Management Policies 2006*
Lightscape Management/ Night Sky	Excellent opportunities to see the night sky are available. Artificial light sources, both within and outside the national monument, do not degrade and adversely affect opportunities to see the night sky. **Source:** NPS *Management Policies 2006*
Native Vegetation and Animals	The National Park Service will maintain and restore as parts of the natural ecosystem all native plants and animals in the national monument. **Sources**: NPS *Management Policies 2006;* NPS-77, "Natural Resources Management Guidelines"
Natural Soundscapes	The National Park Service preserves the natural ambient soundscapes, restores degraded soundscapes to the natural ambient condition wherever possible, and protects natural soundscapes from degradation due to human-caused noise. Disruptions from recreational uses are managed to protect wildlife and provide a high quality visitor experience in an effort to preserve or restore the natural quiet and natural sounds. **Sources**: NPS *Management Policies 2006;* DO-47, "Sound Preservation and Noise Management"
Soils	The National Park Service actively seeks to understand and preserve the soil resources of Capulin Volcano and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, and its contamination of other resources. Natural soil resources and processes function in as natural a condition as possible, except where special considerations are allowable under policy. **Sources**: NPS *Management Policies 2006;* NPS-77, "Natural Resources Management Guidelines"

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at Capulin Volcano National Monument
Threatened and Endangered Species	Federally listed and state listed threatened and endangered species and their habitats are protected and sustained. Native threatened and endangered species populations that have been severely reduced in or extirpated from the national monument are restored where feasible and sustainable. **Sources**: Endangered Species Act; equivalent state protective legislation; NPS *Management Policies 2006;* NPS-77, "Natural Resources Management Guidelines"
Water Resources	Surface water and groundwater are protected, and water quality meets or exceeds all applicable water quality standards. NPS and NPS-permitted programs and facilities are maintained and operated to avoid pollution of surface water and groundwater. **Sources**: Clean Water Act; Executive Order (EO) 11514 "Protection and Enhancement of Environmental Quality"; NPS *Management Policies 2006;* NPS-77, "Natural Resources Management Guidelines"
Cultural Resources	
Archeological Resources	Archeological sites are identified and inventoried, and their significance is determined and documented. Archeological sites are protected in an undisturbed condition unless it is determined through formal processes that research efforts are appropriate or disturbance or natural deterioration is unavoidable. When disturbance or deterioration is unavoidable, the site is professionally documented and excavated, and the resulting artifacts, materials, and records are curated and conserved in consultation with the New Mexico state historic preservation office. Some archeological sites that can be adequately protected may be interpreted to the visitor. **Sources:** Antiquities Act, DO-28A: Archeology; Archeological and Historic Preservation Act, Native American Graves Protection and Repatriation Act (NAGPRA), National Historic Preservation Act; Archeological Resources Protection Act; *the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation;* Programmatic Memorandum of Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (2008); NPS-28 "Cultural Resource Management Guideline"
Historic Structures	The historic structures at Capulin Volcano National Monument, including structures, sites, and landscapes, are integral parts of the monument's physical setting. The historic structures at Capulin Volcano National Monument will be inventoried and protected, and their integrity will be evaluated under National Register of Historic Places criteria. Monument visitors will recognize and understand the value of the monument's cultural resources. Capulin Volcano National Monument will be recognized and valued as an example of resource stewardship, conservation, education, and public use. **Sources:** Antiquities Act; National Historic Preservation Act; Archeological and Historic Preservation Act; *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*; NPS *Management Policies 2006;* and NPS-28, "Cultural Resource Management Guideline" (1998); the programmatic

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at Capulin Volcano National Monument
Historic Structures (cont.)	memorandum of agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (2008)
Cultural Landscapes	The cultural landscape at Capulin Volcano National Monument reflects the National Park Service's historic effort to protect and preserve the volcano and provide for visitor use and enjoyment of this distinctive resource. Visitors will recognize the cultural landscape at Capulin Volcano as an example of resource stewardship, conservation, education, and public use. **Sources:** National Historic Preservation Act; *Secretary of the Interior's Standards and Guidelines for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996)*; NPS *Management Policies 2006;* NPS-28, "Cultural Resource Management Guideline" (1998) the programmatic memorandum of agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (2008)
Ethnographic Resources	Continue to recognize the past and present existence of peoples in the region and the traces of their use as an important part of the cultural environment to be preserved and interpreted. Consult with affiliated American Indian tribes and other affiliated groups to develop and accomplish the programs of the monument in a way that respects the beliefs, traditions, and other cultural values of the American Indian tribes who have ancestral ties to the monument lands. American Indians and other individuals and groups linked by ties of kinship or culture to ethnically identifiable human remains, sacred objects, objects of cultural patrimony, and associated funerary objects are consulted when such items might be disturbed or are encountered on national monument lands. The National Park Service will consult with tribal governments before taking actions that affect federally recognized tribal governments. These consultations are to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals. **Sources:** National Historic Preservation Act; EO 13007 on American Indian Sacred Sites; Native American Graves Protection and Repatriation Act (NAGPRA), NPS *Management Policies 2006;* NPS-28, "Cultural Resource Management Guideline" the programmatic memorandum of agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (2008)
Museum Collections	All museum collections (objects, specimens, and manuscript collections) are identified and inventoried, catalogued, documented, preserved, and protected, and provision is made for their access to and use for exhibits, research, and interpretation. The qualities that contribute to the significance of collections are protected in accordance with established standards. **Sources**: Native American Graves and Repatriation Act; NPS *Management Policies 2006;* NPS-28 "Cultural Resource Management Guideline"; Management of Museum Properties Act of 1955 (the "Museum Act"); Historic Sites Act of 1935; NPS *Museum Handbook;* NPS *Museum Collection Facilities Strategy, Intermountain*

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at Capulin Volcano National Monument
Museum Collections (cont.)	*Region, 2005,* the *Park Museum Collection Storage Plan*, *2007,* the programmatic memorandum of agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (2008)
Visitor Use and Experience	
Visitor Use and Experience	Capulin Volcano's resources are conserved "unimpaired" for the enjoyment of future generations. Visitors have opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the national monument. No activities occur that would adversely affect the values and purposes for which the national monument has been established. For all zones in the national monument, the types and levels of visitor use are consistent with the desired resource and visitor experience conditions prescribed for those areas. Visitors to Capulin Volcano will have opportunities to understand and appreciate the significance of the national monument and its resources and to develop a personal stewardship ethic. To the extent feasible, programs, services, and facilities in the national monument are accessible to and usable by all people, including those with disabilities. **Sources:** NPS Organic Act; NPS *Management Policies* 2006
Public Health and Safety	NPS *Management Policies 2006* states that the saving of human life will take precedence over all other management actions as the Park Service strives to protect human life and provide for injury-free visits. **Sources:** NPS *Management Policies 2006;* DO-50B and RM-50B "Occupational Safety and Health Program"; DO-83 and RM-83 "Public Health"; DO-51 and RM-51 "Emergency Medical Services"; DO-30 and RM-30 "Hazard and Solid Waste Management
Other Topics	
Sustainable Design/ Development/ Carbon Footprint	NPS visitor facilities are compatible with Capulin Volcano's resources and natural processes and incorporate the principles of sustainable design and development into all facilities and operations. Sustainable practices minimize the short- and long-term environmental impacts of developments and other activities through resource conservation, recycling, waste minimization, and the use of energy-efficient and ecologically responsible materials and techniques. All decisions regarding Capulin Volcano operations, facilities management, and development — from the initial concept through design and construction — reflect principles of resource conservation. Thus, all national monument developments and operations are sustainable to the maximum degree possible and practical. New developments and existing facilities are located, built, and modified according to the *Guiding Principles of Sustainable Design* (NPS 1993) or other similar guidelines.

TOPIC	Current Laws and Policies Require That the Following Conditions Be Achieved at Capulin Volcano National Monument
Sustainable Design/ Development/ Carbon Footprint (cont.)	Capulin Volcano National Monument would reduce energy costs, eliminate waste, and conserve energy resources by using energy-efficient and cost-effective technology wherever possible. Energy efficiency would be incorporated into any decision-making process during the design or acquisition of facilities, as well as into all decisions affecting NPS operations. Value analysis would be used to examine energy, environmental, and economic implications of a proposed development. The Park Service would also encourage suppliers, permittees, and contractors to follow sustainable practices. **Sources**: NPS *Management Policies 2006;* EO 13123, "Greening the Environment through Efficient Energy Management"; EO 13101, "Greening the Government through Waste Prevention, Recycling, and Federal Acquisition"; NPS *Guiding Principles of Sustainable Design;* DO-13, "Environmental Leadership"; DO-90, "Value Analysis"
Utilities and Communica-tion Facilities	Capulin Volcano's resources and public enjoyment of the national monument are not denigrated by nonconforming uses. No new nonconforming use or rights-of-way are permitted in the national monument without specific statutory authority and approval by the director of the National Park Service or his representative and are permitted only if there is no practicable alternative to such use of NPS lands. **Sources**: Telecommunications Act; 16 USC 79; 23 USC 317; 36 CFR 14; NPS *Management Policies 2006*

Boundary Adjustments

The General Authorities Act of 1978 directs the National Park Service to identify potential boundary adjustments in general management plans. The criteria to evaluate any proposed changes to the boundaries of individual park units include the following:

- an analysis of whether the existing boundary provides for the adequate protection and preservation of the natural, historic, cultural, scenic, and recreational resources integral to the unit
- an evaluation of each parcel proposed for addition or deletion based on this analysis
- an assessment of the impact of potential boundary adjustments taking into consideration the factors listed above, as well as the effect of the adjustments on the local communities and surrounding areas

Boundary adjustments may be recommended in order to

- protect significant resources and values or to enhance opportunities for public enjoyment related to park purposes
- address operational and management issues, such as the need for access or the need for boundaries to correspond to logical boundary delineations such as topographic or other natural features or roads
- otherwise protect park resources that are critical to fulfilling park purposes

The boundaries of Capulin Volcano National Monument encompass 793 acres. A number of significant resources related to Capulin Volcano are on adjacent lands. However, most of these are on private lands.

None of these sites is deemed critical to the purposes of Capulin Volcano National Monument. The management plan does not recommend an adjustment of the monument's boundaries. However, adjacent private lands are within the monument's viewshed. Monument management would work with adjacent landowners and public land managers to develop strategies for protection of critical views from the monument. Approaches could include co-operative agreements, participation in regional consortiums, use of local planning and zoning processes, or other measures that do not involve federal acquisition of or any interest in real property.

Appropriate Use

Section 1.5 of NPS *Management Policies 2006*, "Appropriate Use of the Parks," directs that the National Park Service ensure that uses that are allowed in park system units would not cause impairment of, or unacceptable impacts on, a park unit's resources and values. A new form of park use may be allowed within a park only after a determination has been made in the professional judgment of the park manager that it will not result in unacceptable impacts.

Section 8.1.2 of *Management Policies 2006*, "Process for Determining Appropriate Uses," provides evaluation factors for determining appropriate uses. All proposals for park uses are evaluated for

- consistency with applicable laws, executive orders, regulations, and policies;
- consistency with existing plans for public use and resource management;
- actual and potential effects on park resources and values;
- total costs to the Service; and
- whether the public interest will be served.

Park managers must continually monitor park uses to prevent unanticipated and unacceptable impacts. If unanticipated and unacceptable impacts emerge, the park manager must engage in a thoughtful, deliberate process to further manage or constrain the use, or discontinue it.

From Section 8.2 of *Management Policies*: "To provide for enjoyment of the parks, the National Park Service will encourage visitor use activities that

- are appropriate to the purpose for which the park was established, and
- are inspirational, educational, or healthful, and otherwise appropriate to the park environment; and
- will foster an understanding of and appreciation for park resources and values, or will promote enjoyment through a direct association with, interaction with, or relation to, park resources; and
- can be sustained without causing unacceptable impacts to park resources and values."

This general management plan identifies appropriate use for the national monument in the "Preferred Alternative" section of chapter 2. The analysis of whether such use, and the associated necessary and appropriate impacts, can be sustained without causing unacceptable impacts to national monument resources and values is provided in "Chapter 4: Environmental Consequences" of this document.

RELATIONSHIP OF OTHER PLANNING EFFORTS TO THIS PLAN

ENVIRONMENTAL ASSESSMENT SLOPE STABILIZATION AND ROAD IMPROVEMENTS CRATER ASCENT ROAD, CAPULIN MOUNTAIN NATIONAL MONUMENT (1977)

This *Environmental Assessment* was completed to guide rehabilitation of drainage and severe erosion along the crater ascent road (Volcano Road). This rehabilitation program improved drainage and sediment transport on the road; prevented further side slope damage; improved the visual quality and soil stability; improved visitor use and experience and visitor safety; and reduced the need for routine and emergency road maintenance. This document guides road management and maintenance in this *General Management Plan/Environmental Assessment*.

FIRE MANAGEMENT PLAN

This plan provides guidelines necessary to consistently and professionally direct the management of fire in the national monument, based on a comprehensive understanding of the fire history and fire ecology of the monument's ecosystems. The plan's overall objective is to reestablish and maintain Capulin Volcano's fire-dependent ecosystems while ensuring human safety. Fire management programs must be coordinated with other resource management programs as well as interpretive and educational programs to enhance visitor experience.

FEDERAL HIGHWAYS ADMINISTRATION, CENTRAL FEDERAL LANDS HIGHWAY DIVISION, NATIONAL PARK SCOPING REPORT — CAPULIN VOLCANO NATIONAL MONUMENT

This report assessed existing conditions on the Volcano Road. The scoping report proposed rehabilitation and restoration treatments on 800 meters of road shoulder and mitigation of erosion around 25 drain outlets along the Volcano Road. This document continues to guide mitigative measures, including revegetation of the volcano slopes, along the Volcano Road.

PLANNING ISSUES AND CONCERNS

PROJECT SCOPING

Scoping (information gathering) was conducted with monument staff and the public in the early stages of this planning effort. Public scoping newsletters were published and distributed in 1999, 2002, and 2008.

Public comments indicate an overwhelming desire to keep the volcano rim trail intact. Retention of the crater trail was also strongly supported. There were also a few comments requesting that the rim trail become accessible to those with disabilities (that the trail meets Americans with Disabilities Act standards). Some comments supported the idea of a small, primitive camping area in the national monument. There was support for the development of a trail at the base of the volcano. Most comments supported increased interpretation. Several comments were received that identified the volcano itself, as well as the views from it, as having great scenic value. Concerns were expressed about air quality, visibility, and visual intrusions such as cell towers and billboards. A few commenters identified the need to prevent further damage to the cinder cone from road erosion. The comments collected during this scoping phase assisted the planning team in fleshing out the planning issues facing the national monument. The following topic areas describe the planning issues that are addressed in this management plan.

NATURAL RESOURCES

A number of factors pose potential impacts on the monument's natural resources. Visitor use, climate change, regional development, erosion along the Volcano Road— all could adversely affect the resources that are characteristic of the monument's natural environment. Additional research is required to identify which types of piñon-juniper vegetation are present in various areas of the monument and to determine the management appropriate to that type. The general management plan must identify management strategies to preserve natural resources and processes as well as other environmental conditions, including night skies, soundscapes, and views.

VISITOR EXPERIENCE

The main visitor experience at Capulin Volcano is the 2-mile drive to the rim of the volcanic crater. An understanding of Capulin Volcano in the larger context of the Raton-Clayton Volcanic Field can enhance the visitor experience and appreciation of the volcanic forces that defined the characteristics of this landscape.

There is also a need to enhance the visitor experience at the base of the volcano and in the visitor center. This includes improvements in visitor services and facilities.

INTERPRETATION AND EDUCATION

There is a need for expanded interpretive and educational programs at the national monument. The monument must devise strategies to incorporate the findings from enhanced research partnerships with representatives of the scientific community specializing in geological processes, including natural history museums, regional universities, and federal and state agencies (including the U.S. Geological Survey) in the monument's interpretive and educational programs. Expanded outreach programs are needed to connect the monument to local schools and assist NPS staff in developing programs that support curriculum objectives.

MONUMENT OPERATIONS AND FACILITIES

The general management plan will evaluate the adequacy of monument facilities and identify improvements where needed. For example, the monument's visitor center is in need of upgrades to enhance visitor services. The administrative and maintenance facilities are not in compliance with some safety and environmental policies. Traffic control on the Volcano Road is a major operations issue in the summer. During busy weekends the rim parking area often fills up. The staff must hold back traffic until parking is available. This could take as long as 15–20 minutes. The plan will also address issues relating to the adequacy of visitor sanitary facilities to ensure compliance with state laws and regulations.

IMPACT TOPICS — RESOURCES AND VALUES AT STAKE IN THE PLANNING PROCESS

IMPACT TOPICS TO BE CONSIDERED

Specific impact topics were developed to focus discussion on resources that might be affected and to allow comparison of the environmental consequences of each alternative. These impact topics were identified based on federal laws, regulations, and executive orders; NPS *Management Policies 2006*; NPS knowledge of limited or easily impacted resources; other agency concerns; and public input. The monument's interdisciplinary team conducted a preliminary analysis of resources to determine the effects that the alternatives may have on the resources in the monument. If the magnitude of effects was determined to be at the negligible or minor level, there is no potential for substantial impact and further impact analysis is unnecessary; therefore the resource is dismissed as an impact topic. If however, resource effects are still unknown, or are more at the minor to moderate or major level of intensity, then the analysis of that resource as an impact topic is carried forward. A brief rationale for the selection of each impact topic is provided, as is the rationale for dismissing other topics from further consideration.

Natural Resources

Soils. Three main types of soils dominate the soil composition in the national monument. Some of these soil types are highly susceptible to erosion, particularly on the slopes of the volcano. Soils would be affected by actions proposed for implementation in the alternatives, including repair and rehabilitation of the visitor center complex, stabilization of the cinder cone, and the potential development of new trails. Therefore, this topic is retained for analysis.

Vegetation. Capulin Volcano National Monument is home to a variety of vegetation types that are characteristic of the Raton-Clayton Volcanic Field and the convergence of short-grass prairie and foothills environments. There is a concern about the spread of nonnative plants in the monument and the adverse effects they might have on native plants. Alternatives presented in this plan could affect native and invasive nonnative vegetation, so this topic is retained.

Soundscapes. NPS *Management Policies 2006* (section 4.9) requires NPS managers to strive to preserve the natural soundscape of a park unit, which is defined as the lack of human-related sound and prevalence of natural sounds. As shown in a recent survey, visitors value natural quiet. Although no detailed analysis has been conducted to evaluate ambient noise in the monument and the effects of human-caused noise within the monument and outside the boundary, natural soundscapes generally prevail in the monument. These sounds can be associated with the physical and biological resources such as wind or birds. Implementing the action alternative could alter the soundscape of the monument, so this topic is retained for analysis.

Visitor Use and Experience

The Organic Act of 1916 and NPS *Management Policies 2006* require the National Park Service to provide opportunities for the enjoyment of a park system unit's resources and values. This enjoyment comes from activities that are appropriate for each park unit. Scenic and historic views are considered important contributing factors to positive visitor experiences at Capulin Volcano National Monument. Implementing the action alternative could affect visitor use and

experience in the monument, so this topic is retained for analysis.

Socioeconomic Environment

The National Environmental Policy Act (NEPA) requires an examination of social and economic impacts caused by federal actions. The actions proposed in the *General Management Plan* could impact the socioeconomic conditions of nearby communities in Union and Colfax counties, so this topic is retained for analysis.

Monument Facilities and Operations

The actions in the *General Management Plan* could affect the adequacy of monument facilities and identify improvements where needed. Therefore, this topic is retained for further analysis.

IMPACT TOPICS DISMISSED FROM FURTHER CONSIDERATION

Wildlife

Because its land base is small, Capulin Volcano National Monument does not include a substantial portion of the home ranges for much of its wildlife. Although they could be present any time of the year, the monument's larger wildlife, such as mule deer, wild turkey, and black bear, are generally not year-round residents, but rather move in and out of the monument according to season, food and water availability, cover, and other factors. Nevertheless, wildlife is plentiful and can cause measurable impacts on resources, such as heavy browsing, and can result in human/animal interactions. The monument has an approved "Integrated Pest Management Plan" that is used in making sound pest management decisions.

Other wildlife in the area includes porcupine, cottontail rabbit, rock squirrel, coyote, bobcat, and a variety of reptiles, including rattlesnakes. Although mountain lions are rarely seen by humans inside the monument, their tracks, scat, and scrapes can occasionally be found. There are more than 122 species of birds that can be found in the monument, depending on the season, 54% of which can be considered neotropical. Although there may be potential nesting sites for hawks, falcons, and eagles, none are known to exist in the monument.

The actions described in the alternatives in the *General Management Plan* would be confined to the developed areas of the monument and would not affect browsing or grazing areas, nesting areas, or other resource areas associated with wildlife. During construction there would be a temporary disturbance and displacement of wildlife. The surrounding land, however, would continue to provide abundant nesting, escape, and protective cover. Some small animals may be killed or forced to relocate to areas outside the project area, but this would not be expected to have any long-term adverse effect on local populations. Wildlife would be expected to reoccupy the project area following construction. Overall, the construction-related actions would result in adverse effects, but they would be negligible and short-term. Therefore, this topic is dismissed from further analysis.

Wilderness and Wild and Scenic Rivers

Wilderness areas and wild and scenic rivers are congressional designations. There are no areas or rivers with such designation in the monument, and there are no areas or rivers that would be eligible for possible designation. The land area in the boundary of the national monument totals only 793 acres, far below the 5,000 acres generally considered the minimum for wilderness designation. Therefore, this topic was dismissed from detailed analysis.

Water Resources, Including Floodplains and Wetlands

NPS policies require protection of water quality consistent with the Clean Water Act (1977), a national policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters and to prevent, control, and abate water pollution. Groundwater does not occur near the surface in the monument, and there are no principal streams, lakes or impoundments of water within the monument boundaries. Therefore, the topic of water quality has been dismissed from further analysis.

Executive Order 11990, "Protection of Wetlands," requires federal agencies to avoid, where possible, impacts on wetlands. According to the U.S. Fish and Wildlife *National Wetlands Inventory*, there are no jurisdictional wetlands within or near the monument. Therefore, the topic of wetlands has been dismissed from further analysis.

Executive Order 11988, "Floodplain Management," requires all federal agencies to avoid construction within the 100-year floodplain unless no other practical alternative exists. Monument staff report that there are no 100-year floodplains in the monument. Therefore, floodplains was dismissed as an impact topic.

Scenic Views

Capulin Volcano has the classic cinder-cone shape, a critical factor in the establishment of the monument. Because of this, and because the cone was an important landmark for travelers, views of the cone from roads approaching the monument, and from various locations within the monument, are significant. Excellent views of the surrounding landscape are available from the Volcano Road as it completely encircles the cone on its way to the rim. The views of and from the volcano constitute a fundamental monument resource. Although there are no regulations requiring protection of integral vistas, NPS policy states that the National Park Service will strive to protect these monument-related resources through cooperative means.

The actions proposed in this document pose no direct impacts on scenic views within the monument or of views of the monument from outside the boundary. However, future actions outside the monument, such as energy development, could affect scenic views from the monument, and therefore pose potential impacts on the visitor experience. Therefore, scenic views are dismissed from further analysis but will be addressed in the analysis of visitor experience.

Threatened, Endangered, Candidate Species, and Species of Special Concern

The Endangered Species Act (1973) requires an examination of impacts on all federally listed threatened or endangered species. NPS policy also requires examination of the impacts on federal candidate species, as well as state-listed threatened, endangered, candidate, rare, declining, and sensitive species.

According to the U.S. Fish and Wildlife Service and the New Mexico Department of Game and Fish, the following threatened, endangered, and candidate species, and species of special concern (see table 2) are inhabitants or potential inhabitants of Colfax and Union Counties. (The Colfax County species listing is included because the county's eastern boundary is close to the monument.)

An inventory if listed species was compiled in March 1998. Based on the results of the field research, none of the species of plant, vertebrate, or invertebrate listed in the table was found to reside on the monument property. Since 1998, none of these species have been identified in or near the park. Additional surveys would be performed before any surface disturbance.

TABLE 2: FEDERALLY AND LOCALLY RECOGNIZED THREATENED, ENDANGERED, CANDIDATE SPECIES, AND SPECIES OF SPECIAL CONCERN POTENTIALLY FOUND IN COLFAX AND UNION COUNTIES

COMMON NAME	SCIENTIFIC NAME	STATUS
Southwest willow flycatcher	Empidonax taillii extimus	endangered
Black-footed ferret	Mustela nigripes	endangered
Bald eagle	Haliaeetus leucocephalus	delisted/monitored
Arkansas river shiner	Notropis girardi	Threatened
Black-tailed prairie dog	Cynomys ludovicianus	under review
Lesser prairie chicken	Tympanuchus pallidicinctus	candidate
Townsend's western big-eared bat	Corynorhinus townsendii	species of concern
American peregrine falcon	Falco peregrinus anatum	delisted/monitored
Arctic peregrine falcon	Falco peregrinus tundrius	delisted/monitored
Loggerhead shrike	Lanius ludovicianus	species of concern
Western burrowing owl	Athene cunicularia hypugaea	species of concern
White-faced ibis	Plegadid chihi	species of concern
Western U.S. DPS yellow-billed cuckoo	Coccyzus americanus	Federal candidate
Flathead chub	Platygovio (Hybopsis) gracillis	species of concern
Plains minnow	Hybognathus placitus	species of concern
Texas horned lizard	Phrynosoma cornutum	species of concern
Regal silverspot lizard		species of concern
Wheel milkweed	Asclepias uncialis var. uncialis	species of concern
Fringed myotis	Myotis thysanodes	species of concern
White-tailed ptarmigan	Lagopus leucurus altipetens	state endangered
Boreal owl	Aegolius funereus	state endangered
Southern redbelly dace	Phoxinus erythrogaster	state endangered
Star gyro snail	Gyraulus crista	state threatened
American marten	Martes americana origenes	state threatened
Bell's vireo	Vireo bellii	state threatened
Baird's sparrow	Ammodramus bairdii	state threatened
Mexican spotted owl	Strix occidentalis lucida	state threatened
Piping plover	Charadrius melodus circumcinctus	state threatened
Suckermouth minnow	Phenocobius mirabillis	state threatened
Swamp fingernail clam	Musculium partumeium	state threatened
Long fingernail clam	Musculium transversum	state threatened
Lake fingernail clam	Musculium lacustre	state threatened
Arid land ribbon snake	Thamnophis proximus diabolicus	state threatened

Wide-ranging animal species, such as birds of prey, may occasionally pass through the monument's property during migration or foraging activities. However, none are known to nest within the monument.

The topic of threatened, endangered, and candidate species and species of special concern was dismissed as an impact topic because (1) no federally listed threatened or endangered species or species of special concern are known to inhabit the monument; and (2) none of these species have ever been observed in the monument.

Night Skies

NPS policy requires the National Park Service to preserve, to the extent possible, the natural lightscapes of parks and to seek to minimize the intrusion of artificial light (light pollution) into the night scene (NPS *Management Policies 2006*, section 4.10). The clarity of night skies is important to visitor experience as well as

ecology. Artificial light sources both within and outside a park unit could diminish the clarity of night skies.

The rural setting of the national monument currently provides for relatively dark nights. Although elements of artificial lighting within national monument boundaries could affect the pristine quality of regional night skies, during rehabilitation of the visitor center, maintenance facility, and administrative facility (under alternative B), outside artificial lighting would be upgraded as necessary. Upgrades would meet existing policy guidelines to preserve natural lightscapes and minimize light that emanates from monument facilities. In addition, if any new lighting is identified as necessary, it would be installed in strict adherence to New Mexico's 1999 Night Sky Protection Act. Thus upgrades would have very little adverse effect, if any, on night skies, and impacts would be negligible or minor. Given these considerations, the topic of night sky resources is dismissed from further analysis.

Carbon Footprint

Development under the preferred alternative would be limited to the rehabilitation of the existing visitor center and maintenance facility. Consequently the amount of energy consumption and resulting emissions of carbon dioxide associated with construction would be extremely small, and negligible impacts on climate in the local environment and no measurable impacts in a regional, national, or global context would result. The site's long-term conversion to geothermal energy will reduce its dependence on fossil fuels. In the long term, no appreciable increase in visitation or associated transportation would occur under any of the alternatives; thus there would be negligible increase and possibly a decrease in the carbon footprint of the national monument. Therefore, this topic has been dismissed from further analysis.

Environmental Justice

According to the guidance issued by the Council on Environmental Quality, environmental justice is the fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Executive Order 12898, "General Actions to Address Environmental Justice in Minority Populations and Low Income Populations," requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Although Union and Colfax counties have both minority and low-income populations, the actions proposed in the alternatives would not have disproportionately high health or environmental effects on minorities or low-income populations or communities in Union or Colfax counties as defined in the Environmental Protection Agency's Environmental Justice Guidance (1998). This is because of the following:

- The monument staff and planning team actively solicited public participation as part of the planning process and gave equal consideration to all input from persons regardless of age, race, income status, or other socioeconomic or demographic factors.
- Implementation of the preferred alternative would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect adverse effects on any minority or low-income population.

- The impacts associated with implementation of the preferred alternative would not disproportionately affect any minority or low-income population or community.
- Implementation of the preferred alternative would not result in any identified effects that would be specific to any minority or low-income community.
- The impacts to the socioeconomic environment resulting from implementation of the preferred alternative would be beneficial. In addition, the monument staff and planning team do not anticipate the impacts on the socioeconomic environment to appreciably affect the physical and social structure of Union and Colfax counties.
- All actions described in the alternatives would be confined within monument boundaries and would not involve the disposal of hazardous wastes or other materials that might pose health risks to local communities.

Therefore, environmental justice was dismissed as an impact topic.

Prime and Unique Farmland

In August 1980, the Council on Environmental Quality directed that federal agencies must assess the effects of their actions on farmland soils classified by the U.S. Department of Agriculture's Natural Resource Conservation Service as prime or unique. Prime farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed. Unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to the Natural Resource Conservation Service, there are no prime and/or unique farmlands in the monument. Therefore, prime and unique farmlands have been dismissed as an impact topic in this document.

Archeological Resources

Archeological resources are the physical evidence of past human activity. A comprehensive archeological survey of the monument is currently underway. Previous archeological investigations identified four small archeological sites associated with the Paleoindian and Archaic Indian cultures that inhabited northeastern New Mexico from 12,000 to 5,000 BP. Current investigations have identified additional resources associated with the Folsom culture (12,000-10,000 BP) None of the actions described in the alternatives pose any impacts on these archeological sites. No visitor access would be allowed to these sites. Access would be limited to research by trained professionals. There are no archeological resources in the monument administrative area or at the cinder cone summit.

As appropriate, archeological surveys and/or monitoring would precede any ground disturbance. National register eligible or listed archeological resources would be avoided to the greatest extent possible. If such resources could not be avoided, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and, if appropriate, any associated Indian tribes. If during construction previously unknown archeological resources were discovered, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and, if the resources cannot be preserved *in situ*, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer and, if appropriate, any associated Indian tribes.

Therefore, based on the factors identified above, this topic was dismissed as an impact topic.

Historic Structures

According to NPS-28, historic structures are any historic district, site, building, structure,

or object included in or eligible for inclusion in the National Register of Historic Places."

The Volcano Road and Related Features. Construction on the road began as early as 1925, only nine years after establishment of the monument. During the New Deal, additional infrastructure was added at the crater rim, including a parking area and trails around the crater rim and into the c rater itself. The parking area was enclosed by a stone wall or guard rail, 290 feet long, 18 inches wide, and 24 inches high. Other retaining walls were constructed along the Volcano Road itself to minimize damage to the road resulting from erosion of the cinder cone. Other improvements were made to the road corridor and parking areas in the 1950s. These included a full retaining wall on the Volcano Road and an exhibit building at the crater summit. A substantial amount of the 1950s-era full retaining wall was removed in the 1960s and 1970s. It is not know how much, if any, of the original rock wall remains.

The Volcano Road is eligible for listing in the National Register of Historic Places. The stabilization efforts proposed for the Volcano Road will address erosion on the cinder cone slope and will not affect the character-defining features that make the road eligible for listing in the National Register of Historic Places.

The monument's visitor center complex includes the visitor center, administrative facilities, and three housing units. The visitor center, maintenance garage, and two of the three residences were constructed in 1964 as part of the Mission 66 program. The third residence was added in 1969. The visitor center was expanded in 1978 to accommodate a 40-seat auditorium and room for exhibit cases. At about this same time, the 525-square feet area between the garage (later converted to a conference center) and the visitor center was enclosed to provide additional storage. The visitor center complex includes the visitor center, a 1600 square feet office extension, three housing units, The visitor center and two of the residences were built has been determined eligible for listing in the National Register of Historic Places, in concurrence with the New Mexico state historic preservation officer.

Rehabilitation of the visitor center complex would be undertaken in accordance with the *Secretary of Interior Standards for the Treatment of Historic Structures*. The historic character and integrity of the structures would be maintained. The existing foot print of the original Mission 66 visitor center would be retained. Rehabilitation of the visitor center would be limited to the interior space, with no adverse affect on the character-defining features that make these structures eligible for the national register. Therefore, this topic has been dismissed from further analysis.

Cultural Landscapes

The National Park Service defines a cultural landscape as "a reflection of human adaptation and use of natural resources and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. The character of a cultural landscape is defined both by physical materials, such as roads, buildings, walls, and vegetation, and by uses reflecting cultural values and traditions." There are no identified cultural landscapes in the monument boundary. The visitor center complex and other constructed features in the monument might constitute a cultural landscape, but a cultural landscape study has not been conducted for the monument.

A cultural landscape inventory (CLI) was prepared for the monument in 2003. The following were identified as contributing features of Capulin's cultural landscape:

- prehistoric rock shelters
- prehistoric artifact scatters
- prehistoric rock wall
- remains of rock fireplace at old campground
- rock shelter/exhibit building

- rim and crater trail
- Volcano Road
- cluster arrangement of administrative facilities and visitor trails
- ranching tradition
- wildlife and plant habitat
- recreation as a land use
- cinder cone and volcanic soils
- native trees, shrubs, and grasses
- open views of the surrounding countryside
- views of the Old Santa Fe Trail and historic towns

The supporting features identified in the inventory include the following:

- the Mission 66 Visitor Center Complex
- the retaining walls along the Volcano Road and surrounding parking lot at top
- the nature trail and squeeze-up trail
- education as a land use
- trees and shrubs around the visitor center and housing

Many of the contributing or supporting features of Capulin's cultural landscape are within the monument's administrative area. These include the following:

- remains of rock fireplace at old campground
- rock shelter/exhibit building
- rim and crater trail
- Volcano Road
- cluster arrangement of administrative facilities and visitor trails
- recreation as a land use
- the Mission 66 Visitor Center Complex
- the retaining walls along the Volcano Road and surrounding parking lot at top
- the nature trail and squeeze-up trail
- education as a land use

None of the actions proposed in this general management plan would have an effect on contributing or supporting features of the cultural landscape. No actions are proposed in the vicinity of sensitive prehistoric resources. Actions in the visitor center complex would have no effect on the contributing features of the complex. Action at the picnic area (old campground) would be limited to routine maintenance and would have no effect on the rock fireplace. Actions on the Volcano Road would be limited to erosion control and would have no affect on the retraining wall or the parking lot at the base of the crater. Actions proposed for the trails would be limited to routine maintenance and would not affect their character-defining features. Therefore, this topic has been dismissed from further analysis.

Ethnographic Resources

Ethnographic resources are any "site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it." During consultation with culturally affiliated tribes and other traditionally associated groups, no ethnographic resources were identified in the monument boundary. Additional ethnographic assessments would be conducted to ensure that any culturally affiliated resources are identified. Therefore, this topic has been dismissed from further analysis.

Museum Collections

A museum collection is an assemblage of objects, works of art, historic documents, and/or natural history specimens collected and maintained so they can be preserved, studied, and interpreted for public benefit.

The monument's museum collections conserve more than 50,000 items, including a herbarium and associated field records, geological and zoological specimens, an insect collection, and a lepidoptera collection. The collection is stored in the monument's administrative area. The approved regional museum storage collection plan recommends that Capulin's collection would be stored at another NPS unit. The monument's museum

collections would continue to be acquired, accessioned and catalogued, preserved, protected, and made available for access and use according to NPS standards and guidelines. The space would be restored to administrative uses. None of the actions described in the alternatives would pose adverse impacts on the collections, so this topic has been dismissed from further analysis.

Chapter 2:
Alternatives, Including the Preferred Alternative

INTRODUCTION

Many aspects of the desired future conditions at Capulin Volcano National Monument are defined in the establishing legislation, the national monument's purpose and significance statements, and the servicewide laws and policies (described earlier). Within these parameters, the National Park Service solicited input from the public, NPS staff, government agencies, and other organizations regarding issues and desired conditions for the national monument. The planning team used information collected in a 2003 visitor use study to get a better understanding of visitor use and experience at the monument. They also considered which areas attract visitors and which areas have sensitive resources. Finally, the team assessed the condition of the national monument's facilities and resources.

Using that information, the team developed two alternatives, including the National Park Service's preferred alternative, for future management of Capulin Volcano National Monument for the next 15 to 20 years. This chapter presents the two alternative concepts and the management zones that would be applied as part of the preferred alternative. This chapter also includes user capacity indicators and standards, mitigative measures that would be used to reduce or avoid impacts, the future studies that would be needed, the environmentally preferable alternative, alternatives and actions considered but dismissed from further consideration and tables summarizing the key differences between the alternatives and the key differences in the impacts that would be expected from implementing either alternative. (The summary of impacts table is based on the analysis in "Chapter 4: Environmental Consequences.")

Alternative A, the no-action alternative, which would involve continuing the existing management direction, describes a baseline for comparing the consequences of implementing the preferred alternative.

Alternative B, the NPS preferred alternative, presents a different way to manage resources and visitor use and experience and to improve facilities and infrastructure at the national monument. This alternative, including management zoning (see below), embodies what the public and the National Park Service want to see accomplished at Capulin Volcano National Monument with regard to natural resource conditions, cultural resource conditions, and visitor use and experience.

The National Park Service would continue to follow existing agreements and servicewide, laws, and policies, described in chapter 1, regardless of the alternative that is ultimately selected. These mandates and policies are not repeated in this chapter.

ALTERNATIVE A: NO ACTION — CONTINUE CURRENT MANAGEMENT

This alternative would continue the current management of the national monument, guided by the enabling legislation, existing planning documents, and other management data, including the *Statement for Management* (1992), the *Strategic Plan* (1998–2002), the *Visitor Center Interpretive Plan* (2000), and the *Long-Range Interpretive Plan* (2005).

HOW VISITORS WOULD EXPERIENCE THE MONUMENT

The monument's management and staff would continue to provide opportunities for visitors to understand and appreciate the geological record that remains from the volcanic eruption that created the Capulin cinder cone. Visitors would continue to have opportunities to make the 2-mile drive to the top of the volcano to enjoy the panoramic views from the rim.

The rim is the primary destination for most visitors to the national monument. The rim is the best place to see and interpret the regional volcanic geography, geology, and natural history. It is also the best place to see and describe the human impacts on the landscape, as evidenced by trail ruts from historic travel routes. Occasional community events, including sunrise services that are staged on the rim, would continue.

Visitors would continue to have opportunities to hike into the crater to appreciate the magnitude of the forces that created the volcano.

The visitor center would remain as it is. Visitors would park in the existing parking lot and enter the building, where they would receive orientation to the monument from NPS staff at the counter, watch the film in the theater, and have opportunities to browse through the materials in the book sales area. They could also walk the short interpretive nature trail north of the visitor center.

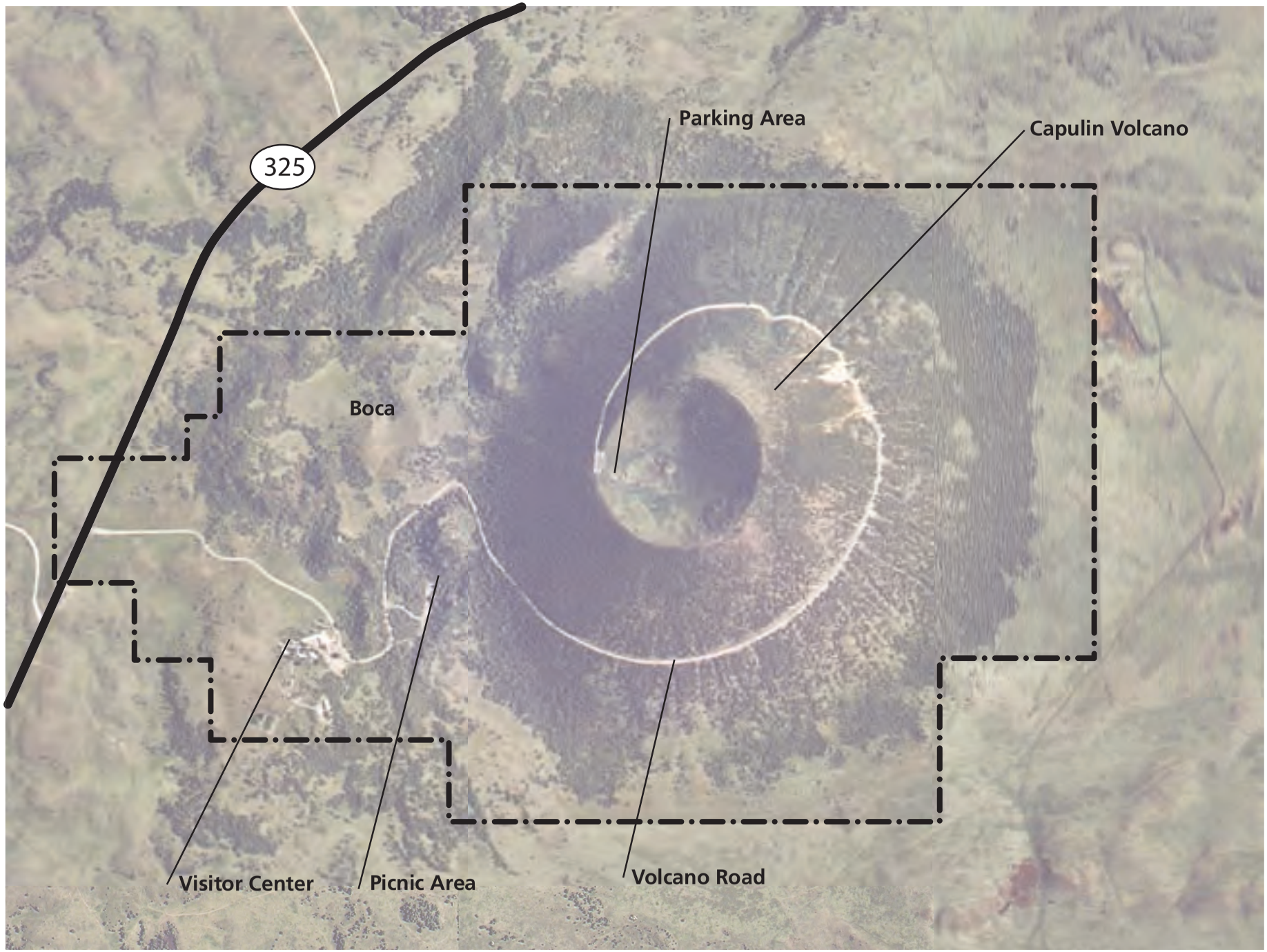
HOW THE MONUMENT WOULD BE MANAGED

Improvements to the administrative and maintenance facilities would be limited to emergency stabilization and rehabilitation. Existing plans to improve the infrastructure would be implemented. This would include continuation of projects to alleviate erosion along the Volcano road. These projects would be guided by existing Federal Lands Highway Division reports and studies of conditions on the Volcano Road. Maintenance and mitigation of erosion on the volcano slope along the Volcano Road are fundamental operational activities for the monument. However, these improvements would employ the same type of road drainage systems that are currently in place. No newer technologies would be incorporated.

Current strategies would remain in place for managing traffic flow at the visitor center parking lot, on the Volcano Road, and at the crater parking area.

Monument staff would continue to provide interpretation and outreach programs at current levels. Interpretive media at the visitor center would remain as it is. Formalized accessibility (for visitors with disabilities) at the top of the volcano would continue to be limited to the restroom and adjacent parking area.

Monument management would continue preserving and protecting the key geologic resources, including the Capulin cinder cone, other natural and cultural resources, the extraordinary views, and other fundamental resources that led to the creation of the national monument. Invasive and exotic species would be eradicated via methods outlined in the *Pest Management Plan*.



North

0 10 Km

0 10 Miles

Alternative A - No Action

Capulin Volcano National Monument

United States Department of the Interior / National Park Service

NPS • 125 • 100667 • June 2010

MANAGEMENT ZONES

There are currently no management zones for the national monument.

ESTIMATED COSTS

Estimated costs for alternative A are as follows.

TABLE 3: ESTIMATED COSTS, ALTERNATIVE A

Estimated Costs	
Annual Operating Costs (ONPS)[a]	$737,000
Staffing (FTE)[b]	9[c]
Facility Costs[d]	364,000
Nonfacility Costs[e]	146,000
Total one-time costs	510,000

a. The annual operating costs (ONPS) are the total annual costs for maintenance and operations associated with this alternative.
b. Total full-time equivalent (FTE) positions are the number of staff required to maintain national monument assets at a good level and provide acceptable visitor services, protection of resources, and other operational support. For example, one FTE position might be two seasonal employees that each work six months a year or three seasonal employees that each work four months a year.
c. This includes the conversion of 1 full-time-equivalent employee to a natural resource program manager.
d. Facility costs include monument facility projects already funded.
e. Nonfacility costs include the costs of actions for cultural and natural resource management, visitor service, materials, and other NPS management activities that are not related to a facility but would require substantial funding above the annual operating costs.

MANAGEMENT ZONES — BUILDING BLOCKS FOR THE PREFERRED ALTERNATIVE

The building blocks for reaching an approved plan for managing a national park system unit are the alternatives and the management zones. These key elements have been developed within the scope of the national monument's purpose, significance, mandates, and legislation.

Management zones prescribe desired conditions for resources and visitor experiences in different parts of the national monument. Management zones are determined for each unit of the national park system; however, the management zones for one unit are not likely to be the same as those of any other national park system unit, although some might be similar. The management zones identify the range of potential appropriate resource conditions, visitor experiences, and facilities for the national monument that fall within the scope of Capulin Volcano National Monument's purpose, significance, and NPS laws and policies.

MANAGEMENT ZONE DESCRIPTIONS FOR THE PREFERRED ALTERNATIVE

The management zones for Capulin Volcano describe visitor experiences, resource conditions, and appropriate activities and facilities that would be appropriate in each zone.

In formulating the preferred alternative, the management zones were placed in locations on maps of the national monument according to the overall intent (concept) of the alternative.

Table 4 contains the descriptions of the management zones developed for Capulin Volcano National Monument.

TABLE 4: MANAGEMENT ZONES

Zone	Park Development	Resource Access	Natural Conservation
Concept	Visitors would receive their initial orientation to the monument, including information about monument resources, programs, and services.	Visitors would experience close contact with cultural and natural resources and opportunities to learn about the monument through self-discovery and exploration.	Visitors in this area would have opportunities to experience the distinct natural features and solitude of the monument landscape.
Resource Condition	Natural resources in this zone would be maintained in a natural condition but managed as necessary to accommodate visitor needs and access and to preserve important views. Resource impacts would be minimized to the greatest extent possible Resources impacted by factors such as inappropriate visitor-created trails, storm damage along the road corridor, or invasive species would be actively restored. Historic structures and cultural landscape features meeting national register criteria would be identified and protected.	Resources would be retained in a predominantly natural condition, Only limited modification of resources for trails, interpretive media, and essential operational needs would be allowed. Cultural resources would be identified and protected. Natural sounds would predominate in this zone.	There would be a low tolerance for resource impacts in this zone. Resources would be maintained to ensure high integrity of biodiversity, wildlife habitat, and native plant and animal communities. Any resource impacts resulting from human disturbance (such as accelerated erosion, exotic species invasions, and alteration of hydrologic patterns) would be restored. Sacred sites, archeological sites, and cultural landscape features meeting national register criteria would be maintained in good condition. Natural sounds would predominate in this zone.
Visitor use and experience	Visitors, as individuals or groups, would experience a modified natural environment designed to accommodate moderate to high levels of use. There would be numerous opportunities for extensive, engaging, and varied interpretive, educational, and resource-based recreational experiences — ranging from highly structured to self-initiated.	Visitors, as individuals or groups, would have opportunities to hike, contemplate, enjoy the scenery in and around the monument, and learn about the volcanic resource through interpretive media and direct sensory experience.	Visitors would experience an undisturbed scenic environment, a natural setting, including natural sounds, and opportunities for solitude.

Zone	Park Development	Resource Access	Natural Conservation
Management Activities and Facilities	Areas in this zone would support moderate to high levels of development and visitor services to accommodate concentrated visitor use. Facilities in this zone would include the monument's administrative and maintenance buildings, picnic areas, comfort stations, parking areas, employee housing, utilities, the Volcano Road, and the parking area at the top of the cinder cone. This zone would extend for 100 feet on either side of the centerline of the road.	A low-to-moderate level of management activity would serve to maintain trails and confine resource impacts. Facilities could include hiking trails and interpretive media.	No facilities would be present other than minimal trail development to ensure appropriate visitor access; moderate-to-intensive management activities might be needed for resource protection, especially to restore disturbed areas and control erosion along the road corridor.

ALTERNATIVE B: PREFERRED ALTERNATIVE — RESEARCH AND EDUCATION OUTREACH

Under this alternative, the monument's management and staff would place increased emphasis on interpretation and educational and outreach programs. Uses would include hiking the Boca and Lava Flow trails at the base of the volcano, driving the road to the cinder cone summit, hiking the crater rim and crater vent trails, and enjoying interpretive and educational programs. These programs would be available at the visitor center, on the trails, and at the crater rim summit.

HOW VISITORS WOULD EXPERIENCE THE MONUMENT

Visitors to Capulin National Monument would have opportunities to enjoy a wide array of interpretive and educational programs. These programs would provide visitors with a comprehensive understanding of the geologic forces that created the Raton-Clayton Volcanic Field and the specific dynamic event that resulted in the creation of Capulin Volcano and the surrounding lava fields. The increased focus on partnerships with the scientific community would support research on the monument's natural history, which in turn would be used to enhance the monument's educational and interpretive programs.

Access to the cinder cone rim provides visitors with an extraordinary opportunity to observe the surrounding landscape of the Raton-Clayton Volcanic Field and many of the volcanic and geological features that define the area's distinct natural setting. Visitors would continue to have opportunities to experience natural quiet and solitude, clear air, and extensive vistas. Interpretive programs would explain Capulin's significance in natural and cultural history.

Interpretive and educational programs would also interpret the natural history of the monument's location in the physiographic zone between the short-grass prairie of the southern Great Plains and the foothills of the Sangre de Cristo Range of the Rocky Mountains. Visitors would have opportunities to learn about the distinctive flora and fauna of this zone and how they have evolved in the volcano field of northern New Mexico.

Archeological evidence establishes that the monument has been the site of human activity since the earliest known human habitation of the American West. Folsom culture peoples lived in and around the monument as early as 10,000 years ago. Native American cultures lived in the area well into the historic era.

The volcano was an important landmark for travelers, trade caravans, and military expeditions from 1821 until 1870. Historic trails that were important in the exploration and development of the United States in the early and mid-19th century are still visible from Capulin Volcano. Expanded interpretive programs would help visitors understand and appreciate the long cultural history of the monument and the region that Capulin Volcano helped to define.

Visitors could begin their experience in the rehabilitated visitor center. Here they could visit the book sales area, watch the film in the expanded auditorium, meet with NPS staff, receive an orientation to the monument, and join ranger-guided programs. They also could choose a self-guided experience on the monument's Boca, Lava, and Crater Rim trails. Interpretive brochures would be updated to include new information from ongoing research efforts. This would give visitors on the trails a better understanding of the volcanic forces that shaped the landscape as well as the surrounding natural environment. Additional trails could also be developed in the natural conservation zone to facilitate expanded interpretive programs on the

monument's natural history. Visitors interested in a longer visit could enjoy all of these experiences. Interpretive programs at the crater rim would include ranger-guided programs.

Nighttime interpretive tours of the monument could be developed to enhance visitor appreciation and enjoyment of night skies, an important monument resource.

Regional patterns of development during the past decade indicate that there is a probability that future land use will introduce modern elements into the views surrounding the monument. These modern elements could have a detrimental effect on the visitor experience at the monument. The National Park Service would work with state and local agencies to devise strategies to protect scenic views. These strategies could serve as the framework for cooperative agreements between the National Park Service and other agencies. Protection of soundscapes and scenic views would enhance the visitor appreciation of this environment by providing opportunities in most areas of the monument to experience natural sounds and dark night skies. These are critical components of the remote qualities of the Raton-Clayton Volcanic Field. NPS staff could also work with private landowners and provide information about ways to identify and protect scenic views.

NPS staff would also initiate the development of implementation plans to enhance visitor experience and resource protection. Regional visitor use and education plans would have appreciable value in interpreting Capulin Volcano National Monument in a broader regional context.

Resource protection plans to inform visitors of the important role they can play in resource protection and preservation. The resource protection plans would be developed in partnership with the state of New Mexico, Colfax and Union Counties, and other state, local and private agencies and organizations.

Curriculum for education programs would be developed to address monument features and resources, including the surrounding volcanic field. This comprehensive curriculum would include the promotion of regional heritage education. Education plans and opportunities would be developed in partnership with other volcanic parks in the West, and with resources in northeast New Mexico, including local school districts, other parks and protected areas, the United States Geological Survey (USGS), state agencies, and other interested organizations. An interactive distance learning capability would be established to reach out to remote learning centers.

Monument staff would work with neighbors to develop opportunities for people to visit sites of interest outside the monument, and to enhance understanding of the natural and cultural landscape. Such opportunities might include NPS guided tours and scientific research work.

Productive relationships and partnerships would include information sharing about resources, the science of volcanism, and socioeconomic conditions. Expanded information about Capulin Volcano would be available at regional welcome centers. Networking and information sharing with other volcanic parks and institutions would be established and maintained.

HOW THE MONUMENT WOULD BE MANAGED

Natural Resource Management

Monument staff would expand programs to restore native vegetation and eradicate exotic and invasive plant and animal species. Following the completion of the general management plan, NPS staff would develop a plant management plan. Controlled burns, consistent with the monument's fire management plan, would be used as an important tool in eradicating exotic and invasive species. A resource stewardship

strategy would be developed to guide strategies to restore native plant communities.

Resource management would also focus on maintaining healthy ecosystems, including restoration of the historic piñon-juniper forest and short-grass prairie system. Restoring the piñon-juniper forest would reduce erosion by allowing the establishment of understory vegetation and minimizing the scouring effect of winds in the monument. Working with specialists from the Natural Resource Conservation Service (U.S. Department of Agriculture), resource managers at the national monument would monitor conditions in a section of prairie to establish benchmark standards for the integrity of this important resource. These benchmark conditions would establish thresholds for accommodating visitor access to ensure that visitor use is consistent with protection of the monument's fundamental resources and values.

NPS Facilities and Operations

The visitor center would be rehabilitated to improve visitor services and interpretive programs. The interior space, including the book sales area, would be expanded to enhance visitor flow and accommodate indoor interpretive programs. The auditorium would also be expanded to accommodate large tour and school groups. Accessibility for mobility and visually impaired visitors would be improved. Interpretive media and exhibits would be developed to accommodate hearing and visually impaired visitors. All reasonable and appropriate measures would be taken to improve accessibility on the cinder cone and crater trails.

The maintenance and administrative facilities would be rehabilitated to improve efficiency and comply with health and safety regulations and codes. Improvements would also focus on increasing the energy efficiency and sustainability of all facilities.

The staff housing units and restroom at the picnic area would be upgraded. Water/sewer facilities throughout the monument would be upgraded as well. Security for all monument facilities would be improved.

The Volcano Road and parking area would be upgraded to prevent erosion of the road edge to improve safety on the road and facilitate visitor access at the rim. Using the existing plan for erosion management, efforts would be focused at key locations on the road to stabilize slopes and prevent erosion.

Other actions to prevent erosion of the cinder cone and the Volcano Road would include clearing brush on the cinder cone slopes. An overabundance of standing brush on the cinder cone increases the potential for a catastrophic fire on the slopes that would accelerate erosion and risk the destruction of the piñon-juniper forest. Restoration of the historic balance of piñon-juniper forest and shrub vegetation is an essential management action to stabilize the slope.

Traffic congestion at the main parking area, on the Volcano Road, and at the crater rim parking area would be managed. Current traffic management tools would continue. Staff would manage recreational vehicles and buses on the cinder cone to ensure that only one recreational vehicle or bus would be on the road at one time. Two staff members, one stationed at the base of the cinder cone and one stationed at cinder cone summit parking area would monitor and coordinate large vehicle traffic on the road.

No additional trails would be built on the cinder cone. The road would remain the sole visitor access to the summit. Hardened surfaces on the crater rim and crater trails would be maintained.

There would be no additional permanent staffing under the preferred alternative beyond what is described under alternative A. Two seasonal staff positions would be added.

Commercial Use Authorizations

The national monument could utilize private guide services to escort visitors and provide interpretation of geologic resources in the Resource Access zone. This could help NPS staff in managing visitor use during periods of peak visitation.

The operations of guide services to supplement ranger guided tours would be governed through a commercial use authorization. This permit authorizes suitable commercial services to park areas under limited circumstances. These circumstances include services that (1) are determined to be an appropriate use of the park; (2) will have minimal impact on park resources and values; and (3) are consistent with the purpose for which the unit was established. Such services would not require the construction of any structure, fixture, or improvements within the boundaries of the monument or on any federal land.

There would be no need for commercial facilities or other large-scale commercial services for public enjoyment of the national monument. Therefore, a commercial visitor services plan would not be required for the monument. Any commercial uses would be addressed through the commercial use authorization.

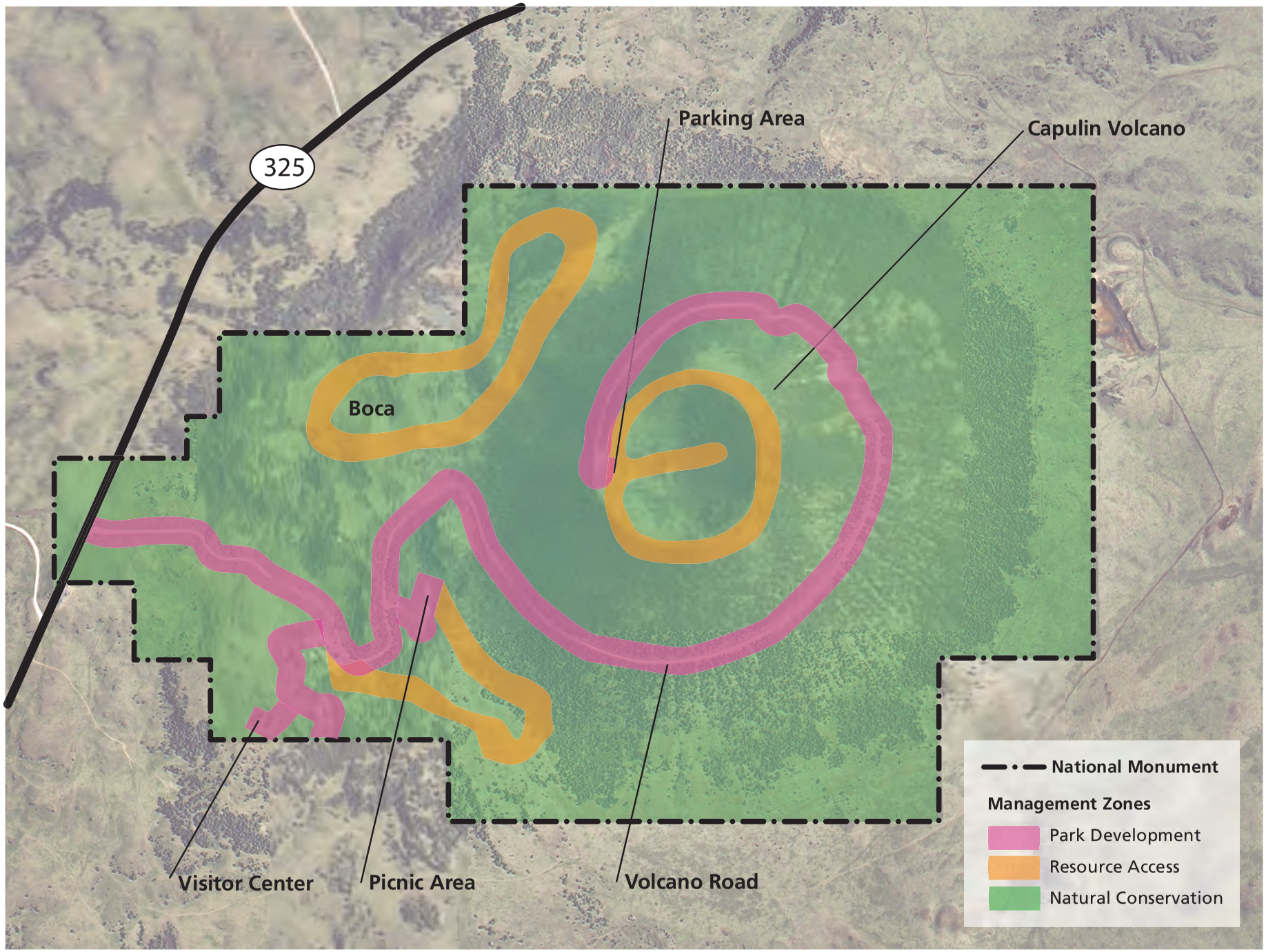
Climate Change

The National Park Service is required to address the issue of climate change in a general management plan because it is likely to affect the park unit and its visitors. Climate change is a long-term phenomenon, and the likelihood that substantial effects will be seen during the life of this general management plan (15-20 years) is unknown at this time; however, acceleration of climate change impacts could have a more immediate effect on monument resources and values. Monument staff would work with other federal, state, and local agencies and regional and local businesses and organizations to monitor potential impacts on resources and values and develop partnership strategies to reduce negative effects related to climate change. The monument staff would also communicate to the public the overall resource protection benefits from the efficient use of energy, and actively educate and motivate monument personnel and visitors to use sustainable practices in conserving energy.

Monument staff would also take all reasonable steps to demonstrate environmental leadership and improve conditions in resource and energy consumption, and to reduce the monument's overall carbon footprint. Rehabilitation of the visitor center and other monument facilities would incorporate sustainable energy design, including improvements in energy efficiency and reduction in greenhouse gas emissions for both the building envelope and the mechanical systems that support the facility. Also, facilities must incorporate LEED (Leadership in Energy and Environmental Design) standards to achieve a silver rating.

MANAGEMENT ZONES

The following Preferred Alternative map describes how the management zones would be applied under this alternative.



North

0 10 Km

0 10 Miles

Alternative B - Preferred

Capulin Volcano National Monument

United States Department of the Interior / National Park Service

NPS • 125 • 100668A • June 2010

IDENTIFICATION AND IMPLEMENTATION OF THE PREFERRED ALTERNATIVE

The preferred alternative focuses on *what* resource conditions and visitor, experiences and opportunities should be at the national monument, rather than on the details of *how* these conditions and uses or experiences should be achieved.

This alternative better meets the monument's purpose, need, and objectives compared with the no-action alternative by providing additional protection for the cultural and natural resources of the monument, expanding the range of visitor experiences, and enhancing the monument's outreach and partnership programs.

More detailed plans or studies will be required before most conditions proposed in the preferred alternative can be achieved (see "Future Plans and Studies Needed" section later in this chapter). Implementing the alternative also depends on future funding and environmental compliance. This plan does not guarantee that any money will be forthcoming. The plan establishes a vision for the future that will guide the day-to-day and year-to-year management of the national monument, but full implementation could take many years.

ESTIMATED COSTS

Estimated costs for alternative B are as follows.

TABLE 5: ESTIMATED COSTS, ALTERNATIVE B

Estimated Costs	
Annual Operating Costs (ONPS)[a]	$770,,000
Staffing (FTE)[b]	10
Facility Costs[c]	$530,000
Nonfacility Costs[d]	270,000
Total One-Time Costs	$800,000

a. The annual operating costs (ONPS) are the total annual costs for maintenance and operations associated with this alternative. This figure is based on FY ONPS budget for the monument plus one GS-05 full-time-equivalent employee.
b. Total full-time-equivalent (FTE) positions are the number of staff required to maintain national monument assets at a good level and provide acceptable visitor services, protection of resources, and other operational support. For example, one FTE position might be two seasonal employees that each work six months a year or three seasonal employees that each work four months a year.
c. Facility costs include monument facility projects already funded and proposed under the preferred alternative.
d. Nonfacility costs include the costs of actions already funded and proposed under the preferred alternative for cultural and natural resource management, visitor service, materials, and other NPS management activities that are not related to a facility but would require substantial funding.

USER CAPACITY

INTRODUCTION

User capacity, once referred to as visitor carrying capacity, is the type and level of visitor use and experience that can be accommodated while sustaining the quality of a park system unit's resources and visitor opportunities consistent with the purposes of the park unit. Although many people think of capacity as a number of people in a given area, the concept is more complex. Research has shown that user capacity often cannot be measured simply as a number of people, because impacts on desired resource conditions and visitor experiences are often related to a variety of factors. These other factors can include the number of people, the activities in which people engage, where they go, what type of resources are in the area, and the level of management presence.

General management plans are required to include identification of and implementation commitments for user capacities. The National Park Service uses a framework called Visitor Experience and Resource Protection (VERP) to address user capacities. The VERP process was developed to derive meaningful, qualitative, user capacities — and quantitative capacities (i.e., use limits) where they are necessary.

In the VERP framework, user capacity is defined as "The types and levels of visitor use and experiences that can be accommodated while sustaining the desired resource and social conditions that complement the purpose of the park units and their management objectives." The VERP process is an iterative, ongoing process that is implemented by (1) prescribing the desired conditions of resources and visitor experiences for a given area based on the park unit's purpose, significance, and outstanding resource values; (2) selecting measurable indicators — characteristics or conditions that reflect the status of the park unit's resources and visitor conditions; (3) setting quantifiable standards against which the indicator is measured; (4) assessing existing conditions, thereby establishing a baseline for future measurements; (5) assessing the need for management action based on whether existing conditions are determined to be close to violating standards, and then taking the action; (6) monitoring conditions to determine effectiveness of ongoing or new management actions; and (7) adapting by revising management strategies when indicated. These components provide a defensible process for taking informed action to manage all of the elements of visitor use and experience that might influence desired conditions in a park unit.

INDICATORS AND STANDARDS

Indicators are measurable effects on the condition of resources or values that might change as a result of human use. *Standards* are the maximum acceptable level of adverse effect on the indicators.

The following indicators and standards have been developed for use in a VERP plan to be prepared after completion of this general management plan. Monitoring of resources and visitor experiences would occur, and if new knowledge is gained or visitor use patterns change drastically from projected patterns, these indicators would be modified. Table 6 summarizes the identified indicators and standards and some actions that could be taken when the conditions being monitored are found to be approaching or exceeding the standard. The indicators and standards for the monument have been placed in the following three categories.

Resource Impacts on Unsurfaced Trails

Using the conditions existing at the time this management plan is approved as a baseline, trails would be monitored to determine if

TABLE 6: INDICATORS AND STANDARDS

Resource	Indicator (Measurable Effects)	Standard (Maximum Acceptable Level of Adverse Effect on Indicator)	Possible Mitigation (to Reduce/Avoid Adverse Effects)
Unsurfaced Trails Impacts	average width of tread	not to exceed 100% of baseline	Harden trails (e.g., install trailside "curbs").
	average depth of tread below surrounding terrain	not to exceed average depth of 4"	Increase maintenance or harden trail.
	erosion or other impacts on adjacent soil caused by human presence or use of trail	no new impacts	Rebuild trail to NPS standards to prevent erosion. Eliminate or minimize establishment of visitor-created trails.
	number of unauthorized trails	None	Revegetate unauthorized trails.
Crowding Impacts			
At the Visitor Center	the number of times that the number of visitors (not counting school groups) exceeds established capacity of 40 people for more than 5 minutes at a time.	The stated capacity is not exceeded more often than twice per day during the summer season and once per day during the rest of year. Noise levels would not exceed 35 dBA more than 20% of the time.	Expansion of the visitor center will increase capacity and visitor circulation. Some ranger-led programs could be conducted outside during peak visitation periods.
On Unsurfaced Trails	number of visitor groups at one time (encounters)	Three parties would be allowed at one time, not counting school groups.	Disperse groups on trail to reduce overlap and crowding
At the Rim (surfaced trails)	number of visitor groups at one time (encounters)	Two parties would be allowed on the crater trail at one time; four parties on the rim trail.	Disperse groups on trail to reduce overlap and crowding.
Roads / Traffic Impacts	capacity of parking areas at visitor center, picnic area, and crater rim	Parking areas do not reach capacity for more than two hours on peak visitation days.	Regulate traffic flow on Volcano Road. Limit number of buses to one on the Volcano Road and one at the crater parking lot.

visitor use impacts are occurring. Indicators would be average trail width and depth (rutting) and erosion caused by the trail. Unauthorized trails are those created by visitors. Possible mitigation might include trail "hardening," where the trail is surfaced or otherwise improved to handle more use with fewer impacts on adjacent resources.

Crowding

This is a measure of social capacity expressed as the number of encounters with other visitors. An encounter can be the sight or sound of other visitors in addition to direct encounters along trails, so this is really a measure of the total number of people in an area at one time. Large numbers of visitors at the visitor center could adversely affect all visitors' ability to watch the film in the auditorium, see

the exhibits, or circulate in the book sales area.

Visitors have opportunities for solitude at the monument, and that experience could be affected by other visitors on the trails. Noise often increases with the size of the group. For example, one group of 20 to 40 schoolchildren can have more of an impact on solitude and natural quiet than 100 visitors in small groups (2–6 persons). Currently, there is no evidence to indicate that visitor experience has been adversely affected by overcrowding on trails. Monitoring of conditions would continue, and a standard could be set if a future increase in visitation warrants such action.

Roads/Traffic

Parking at the visitor center can reach capacity during the peak visitation month of July. When capacity is reached, additional busses and other vehicles could be directed to temporary overflow parking at the picnic area.

Parking at the crater, which is the primary attraction for visitors, is more limited than parking at the visitor center, and therefore rim area parking is more likely crowded during peak visitation. Large tour buses impact circulation at the crater rim parking lot and on the Volcano Road. To maintain the desired opportunities for quality visitor experiences, it is recommended that no more than two buses be allowed on the volcano at a time: one bus at one time on the Volcano Road and one at the crater rim parking area.

MITIGATIVE MEASURES FOR THE ALTERNATIVES

NATURAL RESOURCES

Dust Abatement

Implement a dust abatement program. Standard dust abatement measures during construction activities could include the following: apply water or otherwise stabilize soils, cover haul trucks, employ speed limits on unpaved roads, minimize vegetation clearing, and revegetate after construction.

Exotic Plant Species

Implement an exotic species and noxious weed monitoring and abatement program. Standard measures could include the following:

- ensure construction-related equipment arrives on-site free of mud or seed-bearing material
- certify all seeds and straw material as weed-free
- identify areas of noxious weeds before construction
- treat noxious weeds or noxious weed topsoil before construction (e.g., topsoil segregation, storage, herbicide treatment)
- revegetate with appropriate native species

Soils

Build new facilities on soils suitable for development using best management practices. Minimize soil erosion by limiting the time that soil is left exposed and by applying erosion control measures, such as erosion matting, silt fencing, and sedimentation basins in construction areas to reduce erosion, surface scouring, and discharge to water bodies. Once work is complete, plant construction areas with native plants in a timely manner.

Vegetation

Develop revegetation plans for disturbed areas and require the use of native species. Revegetation plans should specify seed/plant source, seed/plant mixes, and soil preparation. Salvage vegetation should be used to the extent possible.

Monitor areas used by visitors (e.g., trails) for signs of native vegetation disturbance. Use such methods as public education, revegetation of disturbed areas with native plants, erosion control measures, and barriers to control potential impacts on plants from trail erosion or visitor-created trails.

CULTURAL RESOURCES

The National Park Service would preserve and protect, to the greatest extent possible, the cultural resources of Capulin Volcano National Monument. Specific mitigating measures would include the following:

- Continue to develop inventories for and oversee research about archeological and historical resources to better understand and manage the resources. Continue to manage cultural resources and collections following federal regulations and NPS policies and guidelines. Maintain the national historic site's collection in a manner that would meet NPS curatorial standards.
- Subject projects to site-specific planning and compliance. Make efforts to avoid adverse impacts through the use of the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* and by using screening and/or context-sensitive design that would be compatible with historic resources. If adverse impacts could not be avoided, mitigate these impacts through a

consultation process with all interested parties.

- As required, archeological surveys and/or monitoring would precede any ground disturbance. Known archeological resources would be avoided to the greatest extent possible during construction. If archeological resources that are listed in or are eligible for listing in the national register could not be avoided, an appropriate data recovery plan would be developed in consultation with the New Mexico state historic preservation officer and other stakeholders as appropriate. In the rare event that previously unknown archeological resources were discovered during construction, all work in the immediate vicinity of the discovery would be halted until the resources could be identified and documented and, if the resources cannot be preserved *in situ*, an appropriate mitigation strategy would be developed in consultation with the state historic preservation officer.
- Before implementing any action that would adversely impact a national register eligible or listed structure, or any contributing element or feature of a national register eligible or listed landscape, an appropriate mitigative strategy would be developed in consultation with the New Mexico state historic preservation officer. All mitigative documentation would be prepared in accordance with Section 106 and Section 110 (b) of the National Historic Preservation Act, 36 CFR 800, and the *Secretary's Standards for Documentation*. The documentation would be submitted to the NPS Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscape Survey program.

VISITOR SAFETY AND EXPERIENCES

Implement measures to reduce adverse effects of construction on visitor safety and experience. These could include visitor information signs on construction projects and information on construction schedules on the park website and at the visitor center,

Implement an interpretation and education program. Develop directional signs and educational programs to promote understanding among national monument visitors.

Conduct an accessibility study to understand and evaluate any potential barriers to programs, facilities, and activities. Based on this study, implement a strategy to provide the maximum level of accessibility.

HAZARDOUS MATERIALS

Rehabilitation of the visitor center complex could expose workers to asbestos and other hazardous materials. Implement a pollution control program for hazardous materials. Standard measures could include hazardous materials storage and handling procedures and asbestos containment and cleanup.

SOUNDSCAPES

Mitigation measures would be applied to protect the natural sounds in the national monument. Specific mitigation measures include the following:

- Implement standard noise abatement measures during operations. Standard noise abatement measures could include a schedule that minimizes impacts on adjacent noise-sensitive uses, use of the best available noise control techniques wherever feasible, the use of hydraulically or electrically powered impact tools when feasible, and location of stationary noise sources as far from visitor use areas as possible.
- Design facilities to minimize objectionable noise.

- Work with other agencies, organizations, and individuals outside monument boundaries to cooperatively mitigate outside impacts (e.g., drilling and pumping operations).

SCENIC VIEWS/NIGHT SKIES

Mitigation measures are designed to minimize visual intrusions. These include the following:

- Design, site, and construct facilities to avoid or minimize adverse effects on natural and visual intrusion into the natural and/or cultural landscape.
- Design all exterior lighting to minimize light pollution.
- Provide vegetative screening, where appropriate.

FUTURE PLANS AND STUDIES NEEDED

After completion and approval of this *General Management Plan* for the national monument, other more detailed studies and plans would be needed before specific actions could be implemented.

Additional environmental compliance (National Environmental Policy Act, National Historic Preservation Act, and other relevant laws and policies) and public involvement, as required, also would be conducted. These additional studies include the following:

- a historic resource study that would assess the integrity of the monument's structures
- a cultural landscape report that would evaluate the visitor center complex as a designed cultural landscape associated the history of the National Park Service and Mission 66
- an administrative history that would analyze the evolution of the monument and document the decisions that have guided management and development since the monument's establishment
- a comprehensive archeological survey that would identify, evaluate, and document the monument's archeological resources
- an ethnographic study that would identify the ethnographic and cultural affiliations with the monument
- a resource stewardship strategy that would provide comprehensive, long-range direction for natural and cultural resource management
- plans to develop partnerships with individuals or organizations outside the monument boundary to protect scenic views
- a plan to study potential user capacity issues and possible resolutions
- a viewshed analysis to identify critical views from the monument.
- A plan for the native grass restoration project.

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The environmentally preferable alternative is defined as "the alternative that will promote the national environmental policy as expressed in section 101 of the National Environmental Policy Act." Section 101 of that act states the following:

> It is the continuing responsibility of the Federal Government to. . .
>
> (1) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
> (2) assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
> (3) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
> (4) preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choices;
> (5) achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
> (6) enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The environmentally preferable alternative is alternative B, the alternative preferred by the National Park Service for Capulin Volcano National Monument. This alternative would satisfy the national environmental policy goals better than alternative A. It would provide a high level of protection of natural resources while also providing for a wide range of neutral and beneficial uses of the environment; the preferred alternative would also maintain an environment that supports a diversity and variety of individual choices and would integrate resource protection with an appropriate range of visitor uses.

The preferred alternative surpasses the no-action alternative in realizing the full range of goals identified in Section 101 of the National Environmental Policy Act. The no-action alternative would not protect resources as well as the preferred alternative. More resource impacts would result in the no-action alternative — thus, goals 1, 4, and 5 would not be met as well under alternative A. Adverse impacts on visitor experience also would be likely to increase under the no-action alternative because visitor facilities and interpretive ad educational programs would not be improved and expanded — thus, goals, 3, 4, and 5 would not be met to the same level as they would be in alternative B. Therefore, the no-action alternative would not meet the national environmental policy goals as well as the preferred alternative.

ALTERNATIVES AND ACTIONS CONSIDERED BUT DISMISSED FROM FURTHER CONSIDERATION

During the planning process for Capulin Volcano National Monument, one additional alternative concept for management was proposed. That concept was to remove the Volcano Road and restore the natural condition of the cinder cone.

The views from the rim of Capulin Volcano are indispensable to visitor appreciation of the monument's significance. Most of the visitors to the monument take advantage of the opportunity to drive to the rim as their primary visitor experience. If the road were removed, and perhaps replaced by a trail, only a small percentage of Capulin's visitors would be able or willing to hike to the rim. Thus, the most important educational experience in the monument would be lost to most visitors.

Cultural resource specialists from the New Mexico state historic preservation office and the National Park Service have determined that the Volcano Road is a good candidate for nomination to the National Register of Historic Places and an important feature of the monument's cultural history.

The process of removing the road would be extremely costly and could itself damage the cinder cone.

Engineering and hydrologic studies indicate that it will be possible to control the erosion in the road corridor through modifications to the road, redesign of culverts, revegetation, and other reclamation techniques.

For all the above reasons, this concept was dismissed from further consideration.

During the planning process, it was proposed that the Park Service build a new visitor center and administrative facility rather than rehabilitate the existing facilities. This concept was dismissed because of the excessive costs — given that the existing facility can be rehabilitated in an effective and sustainable manner.

A proposal for a monument shuttle system was considered during the planning process. This concept was eliminated because of the high cost of purchasing and maintaining the system combined with its likely minimal impact on traffic congestion.

There was a proposal to develop a primitive camping area in the monument. This proposal was considered but dismissed from further consideration because of the substantial impacts on monument operations, including requirements for greater staff presence to provide visitor assistance and monitor impacts relating to visitor use and an increased need for fire protection.

SUMMARY TABLES

The following tables summarize the alternatives and the impacts of implementing the alternatives.

TABLE 7: SUMMARY OF ALTERNATIVES

	Alternative A — No Action	Alternative B — Preferred
Concept	The existing management strategy would be maintained.	The focus would be on expanded educational, interpretive, and outreach programs.
Visitor Experience	Current interpretive, educational, and outdoor experiences on the natural and cultural history of the monument would continue.	Visitors would have opportunities to enjoy a wide array of expanded educational and interpretive programs. Partnerships with the scientific community would enhance the monument's educational and interpretive programs. These programs would also interpret the natural history of the area, including the distinct flora and fauna, and the historic and cultural context that surrounds the volcano. Visitors would start their experience in a rehabilitated visitor center and still have access to the Boca, Lava, and Crater Rim trails. New trails and tours could also be added.
How the Monument Would be Managed		
Resources	Native vegetation would be maintained, and geologic, natural, and cultural resources and scenic views would continue to be preserved and protected.	NPS staff would expand programs to restore native vegetation and eradicate exotic and invasive plant and animal species and maintain healthy ecosystems, including the restoration of the historic proportion of piñon-juniper forest and a functioning short-grass prairie system. Viewsheds, night sky, and soundscapes would be protected. Monument staff would work with other federal, state, and local agencies and regional entities to monitor potential impacts on resources and values and develop partnership strategies to mitigate impacts related to climate change. All reasonable steps would be taken to demonstrate environmental leadership and improve conditions in resource and energy consumption and to reduce the monument's carbon footprint. Visitor center rehabilitation and other facilities would incorporate sustainable energy design and improve energy efficiency.

	Alternative A — No Action	Alternative B — Preferred
NPS Facilities and Operations	There would be no improvements to the visitor center. Improvements to the administrative and maintenance facilities would be limited to emergency stabilization and rehabilitation.	The monument visitor center would be rehabilitated to improve visitor services and interpretive programs. Accessibility for mobility impaired visitors would be improved. The administrative and maintenance facilities would improve efficiency and meet life and safety codes. Staff housing and the restroom at the picnic area would be upgraded. The Volcano Road and parking area would be upgraded to prevent erosion of the road edge. Erosion of the cinder cone would include clearing brush on the slopes. Traffic would continue to be managed at the main parking area, on the cinder cone, and at the crater rim parking area. Private guide services might be used to escort visitors and provide interpretation of geologic resources in the resource access zone (through commercial use authorizations).
Scenic Views and Soundscapes	Management would observe existing policy and guidelines to maintain the integrity of these resources.	NPS management would work with state, county, and local agencies to develop protection strategies to protect air quality, scenic views, including night skies, and soundscapes.
Management Zones	No management zoning is currently in use.	The three zones (park development, resource access, and natural conservation) would be applied as shown on the alternative B map in support of the concept of this alternative (see table 4).
Staffing	9 full-time-equivalent employees	10 full-time-equivalent employees
Costs	Annual Operating Costs $737,000 Facility Costs $364,000 Nonfacility Costs $146,000 Total One-Time Costs $510,000	Annual Operating Costs $770,000 Facility Costs $530,000 Nonfacility Costs $270,000 Total One-Time Costs $800,000

TABLE 8: SUMMARY OF KEY ENVIRONMENTAL CONSEQUENCES FROM ALTERNATIVES

Impact Topic	Alternative A – No Action	Alternative B – Preferred
Soils	Impacts on soils would be short term, minor, and adverse and long term, minor, and beneficial. Cumulative impacts would be long term, minor to moderate, and adverse. This alternative's contribution to these cumulative effects would be slight.	Impacts on soils would be short term, minor, and adverse and long term, minor to moderate, and beneficial. Cumulative impacts would be long-term, negligible, and adverse. This alternative would contribute a measureable component to these cumulative effects.
Vegetation	Impacts on vegetation would be long-term, negligible to minor, and beneficial. Cumulative impacts would be long term, minor to moderate, and adverse. This alternative would contribute a very small component to the long-term, minor to moderate, adverse cumulative impacts.	Impacts on vegetation would short-term, minor, adverse, and long-term, minor to moderate, and beneficial. Cumulative impacts would be long term, minor, and adverse. This alternative would contribute a very small component to the long-term, minor, adverse cumulative impacts.
Soundscapes	Impacts on soundscapes would be long term, negligible to minor, and adverse. Cumulative impacts would be long term, minor to moderate, and adverse. The alternative would contribute a small component to the long-term, minor to moderate, adverse cumulative impacts on soundscapes.	The impact on soundscapes would be short term, minor to moderate, and adverse, and long term, negligible to minor, and adverse. Cumulative impacts would be long term, minor to moderate, and adverse. The preferred alternative would contribute a slight increment to these cumulative impacts.
Visitor use and experience	Impacts on visitor use and experience would continue to be long-term, minor, and beneficial. There would be no project-related cumulative impacts.	Impacts on visitor use and experience would long term, moderate, and beneficial. There would be no project-related cumulative impacts.
Socioeconomic Environment	Impacts on the socioeconomic environment would be long term negligible, and beneficial. There would be no project-related cumulative effects.	Impacts on the socioeconomic environment would be short and long term, minor to moderate, and beneficial. Cumulative impacts would be long term, minor, and beneficial. The preferred alternative would contribute a modest component to these beneficial impacts.
Monument Facilities and Operations	Impacts on monument facilities and operations would be long term, minor, and adverse. Cumulative impacts would be long-term, moderate, and beneficial. The no-action alternative would contribute a small adverse component to these beneficial impacts.	Impacts on monument facilities and operations would be short term and long term, moderate, and beneficial. Cumulative impacts would be long term, moderate, and beneficial. This alternative would contribute a substantial increment to these cumulative impacts.

Chapter 3: Affected Environment

THE MONUMENT ENVIRONMENT

This chapter describes the existing environment at Capulin Volcano National Monument. It provides background information for analyzing the potential environmental effects that would be anticipated from implementation of the alternatives. It is focused only on the monument resources, visitor experiences, uses, socioeconomic characteristics, and monument facilities and operations that could be affected by one or more of the alternatives.

GENERAL DESCRIPTION

The volcano is the primary attraction of the monument, consisting of a cinder cone, a circular rim on top, and a crater within. The volcano is in the center of the national monument, and encompasses about 360 acres, nearly half of the monument. Capulin erupted between 56,000 and 62,000 years ago, and at 8,182 feet about sea level is more than 1,300 feet above the surrounding plains.

Capulin Volcano National Monument includes three primary areas: volcano, Boca Flow, and Lava Flow. The volcano is the vegetated cinder cone, which can be seen from many miles away as one approaches the monument. The Boca Flow, immediately west of the volcano, contains numerous volcanic features, including the vent source for lava flows north and south of the volcano. The Lava Flow is a relatively flat, mixed-grass, prairie area at the base of the volcano.

Volcanic resources at the national monument extend beyond its boundary onto adjacent land. For example, part of the volcano proper extends outside the boundary to the north. The Boca Flow extends outside the boundary to the northwest. And the Lava Flow extends outside the boundary on all sides of the monument. In fact, the lava flow from Capulin Volcano covers 15.7 square miles of land.

Capulin Volcano consists mostly of loose sloping layers of cinders and ash that were deposited during the eruption. The slope of the cone is approximately 30 degrees, nearly the angle of repose or, the steepest angle at which loose debris can rest without slumping downhill. The layering of the cinders and ash and the presence of volcanic bombs provide insight into the Strombolian eruption processes that built the cinder cone. Strombolian eruptions are moderately explosive eruptions of basaltic magma that consist of intermittent, discrete explosive bursts that eject firework-like incandescent rooster tails of lava into the air.

The rim of the volcano ranges from 7,877 feet to 8,182 feet in elevation, a difference of 305 feet. The eastern rim is higher than the western rim because of increased deposition of cinders during the eruption caused by prevailing winds from the west. Spatter deposits form resistant rock outcrops in places, especially at the southern high point of the rim.

The crater in the volcano contains the vent for the eruption that built the cinder cone. It has a bowl shape, with a diameter of about 1,450 feet, and a depth of 415 feet. The vent area, at the bottom of the crater, is now plugged and covered by blocks produced during the erosion of the crater. Spatter deposited in the waning stages of the eruption coated much of the crater walls in addition to coating the rim. This resistant coating of spatter helps preserve the crater from erosional forces. Areas of the crater not coated with spatter are made up of cinders and are more susceptible to erosion, particularly during heavy summer storms.

Concentrated water and sediment runoff along the Volcano Road corridor have caused severe scouring and erosion below the corridor.

VEGETATION

It is estimated that only 18% of the monument was covered by vegetation in 1908. Today approximately 98% is covered by piñon/ juniper savannah, piñon/ juniper woodland, gambel oak/shrub mix, and short-grass prairie. Much of the cone is covered by piñon-juniper woodland. The woodland has expanded its range, and the volcano has become more forested since the turn of the century. Other much older volcanic cones in the Raton-Clayton Volcanic Field have remained grasslands. In the absence of disturbances such as a major fire, a climax piñon-juniper forest will occur in this environment in about 300 years. Capulin's forests, therefore, are still quite young.

Previous assessments of the piñon-juniper vegetation in Capulin Volcano National Monument have assumed that this is a former savanna that has become unnaturally dense because of fire exclusion. However, recent investigations have evaluated the historical conditions and dynamics of the monument's piñon-juniper woodlands, management history, and other issues related to the likely ecological effects of fire exclusion during the past century.

These investigations have determined that two different types of piñon-juniper vegetation are present on the monument. A piñon-juniper savanna is found on the relatively flat or gently-sloping terrain surrounding the cinder cone, and persistent piñon-juniper woodland covers the cone itself. Persistent piñon-juniper woodlands are those in which historical fires were infrequent and naturally high-severity.

Within the crater, mixed woodland with oak brush, mountain mahogany, and chokecherry is the predominant plant community. There are also remnant mixed-grass areas that should be evaluated to determine if they are critical or sensitive habitat. Chokecherries are found in greater abundance in the crater than elsewhere in the monument. This presence of chokecherries is significant, because Capulin is the Spanish name for chokecherry. However, chokecherries are being replaced within the crater by higher-level successional species.

A small grassy area on the northeastern side of the rim provides habitat for larvae of the Capulin Alberta Arctic butterfly, a subspecies of the Alberta Arctic butterfly endemic to Capulin Volcano. Piñon-juniper vegetation is encroaching on this area.

To date, 29 nonnative plants have been identified in the monument. According to a ranking and mapping exotic plants study conducted in 2003, the brome species (*Bromus inermis, Bromus japonicus,* and *Bromus tectorum*) posed the most substantial threat to Capulin's native ecosystem. In 2008 the Southern Plains Network biologist sampled an area along the monument's entrance road for nonnatives. Common mullein (*Verbascum thapsus*) was the most widespread nonnative plant found in the sampling blocks. Even though common mullein was not considered highly invasive, the fact that it is so widespread throughout the monument increases the priority for managing this species.

SOUNDSCAPES

Natural sounds generally prevail in the monument and are dominated by wind. Occasional wildlife sounds, predominantly birds, are heard around the visitor areas. These sounds are more commonly heard along the trails and at the canyon rim. Human-caused noise commonly will be heard around the visitor center, the picnic area, the parking areas, and at the canyon rim. Vehicle noise is most common, but also noise from other visitors and monument operations can be detected. Noises from outside the boundary caused by vehicles and aircraft can be heard from various places within the monument.

SOILS

Soil development has occurred in the 60,000 years since the eruption. The rock fragments that make up the soils of the cinder cone are called cinders or scoria. Scoria is a vesicular, glassy lava rock of basaltic composition. Scoria is typically high in iron content, and oxidation has led to a reddish-brown coloration of the soil. Near the crater, some of the scoria, or cinders, have fused, forming a welded rock, but elsewhere they lie loose on the slopes.

Three major types of soils dominate the soil composition in the monument. The first of these, Bandera soils, make up 65% of the soils that cover the central and eastern portions of the monument, including the slopes of the volcano and the surrounding lands. These soils have a gravelly or sandy composition and low lime content and they are moderately susceptible to erosion. They are not wetland soils. The runoff class for this soil is high, due to a combination of steep slopes and the relatively low rate of water conductivity.

Fallsam soils dominate the western and northwestern corner of the monument, making up 55% of the soils in this area. Like Bandera soils, they have a gravelly composition and low lime content, and they are moderately susceptible to erosion. Fallsam soils are not wetland soils. The runoff class for these soils is low, due to the more level profile of the lands in this map unit.

LaBrier soils make up 40% of the map unit in the extreme northeast corner of the monument. These soils differ from the Bandera and Fallsam soils found throughout the rest of the monument. The La Brier soils are a heavier (silty clay loam). They are more erodible than the other soils. Like Bandera and Fallsam soils, LaBrier soils t have a low lime content and they are not wetland soils. This soil is farmland of statewide importance. Fallsam soils are also found in this area of the monument, making up about 30%.

None of the soils in the monument has a high potential for agriculture without irrigation. Soils on the slopes of the cinder cone are highly susceptible to erosion.

VISITOR USE AND EXPERIENCE

Capulin Volcano had nearly 49,000 visitors in 2007. Although visitation has fluctuated during the last decade, there has been a general trend of declining visitation since a peak year in 1998, when nearly 70,000 people visited the monument. Visitation in 2007 was a slight increase over 2006. Most visitors come to the monument while en route to other locations in Texas or Colorado. One third of Capulin Volcano's annual visitation occurs in July.

The visitor enters the park from New Mexico Highway 325, driving along a 0.5-mile road to the visitor center. Fees are collected at the visitor center, where visitors are provided with informal interpretation. They also spend time in the bookstore and watch the 10-minute video, which details the story of Capulin's eruption and the surrounding Raton-Clayton Volcanic Field. The visitor center also contains exhibits about geology, natural history, and human history of Capulin Volcano. Adjacent to the visitor center is a short (10-minute) nature trail, which provides an opportunity for visitors to learn about the native vegetation growing around a volcanic bubble-up.

A 2-mile road allows visitors to drive to a parking area on the low point of the rim. A single pullout about half-way up the cone allows for views and interpretation. Constructed as a dirt roadway in the 1920s, and paved in 1986, the road is of historic value. The rim is approximately 1 mile in circumference with an interpretive trail. Another trail, .2 mile long, leads from the rim parking area down to the vent area at the bottom of the crater.

Entrance fees are collected only if visitors intend to take the drive up to the top of the volcano. As they drive up they can see a magnificent view of the surrounding landscape. Once at the rim parking area, about

25% of the visitors will take advantage of hiking the rim trail. From Capulin's rim, visitors have a 360-degree view of the large volcanic field surrounding the monument. There are at least 100 recognizable volcanic features in the Raton-Clayton Volcanic Field, and they provide visitors with insights into 10 million years of the geological history of northern New Mexico. The views stretch to the high plains of Texas and Oklahoma, and the Rocky Mountains of New Mexico and Colorado. Another trail at the rim parking area provides access to the heart of the resource, the crater vent. About 50% of the visitors take advantage of this unique experience.

Other visitor opportunities include hiking on two trails from the visitor center and the picnic area. The Boca Trail is a 2.5-mile loop trail that enables visitors to see remnants of lava flows from the Capulin eruption. The Lava Trail is a 1.5-mile trail that connects the visitor center and picnic area.

SOCIOECONOMIC ENVIRONMENT

The National Monument is in Union County, and Colfax County is approximately 1 mile west of the monument. Capulin Volcano is in the northern New Mexico high mesa country that is used primarily for cattle ranching. The combination of prairie and mesa is ideal for the summer cattle grazing. Local ranches employ varying numbers of people, depending on the size of the ranch. Most ranches use day help during busy seasons.

In Union County, the population was 4,174 in 2000 and 3,792 in 2007. The median income for a household in the county was $28,080 in 2000 and $34,101 in 2007. The per-capita income was approximately $14,700 in 2000. About 14.2 % of families in 2007 and 18% in 2000 and 2007 of the population fall below the poverty line, compared to a statewide rate of 18.4%.

The commercial establishment nearest to the monument is in the town of Capulin. A store offers limited groceries, alcohol, and a gift shop. It houses a restaurant that is open during the summer. The nearest overnight accommodations are in Raton (NM), 29 miles to the west, where 23 motels provide lodging capacity for 743 people. Clayton (NM), which is 56 miles east of Capulin, has 6 motels that provide lodging capacity for about 167 people. Both Clayton and Raton have various eating establishments. The nearest campground is in Capulin, and it contains 30 sites.

Tourists are attracted to the area by Capulin Volcano National Monument, the rich history of early man and the settling of the West, the National Rifle Association's Whittington Center, the largest find of dinosaur tracks in North America (located in Clayton Lake State Park), the Santa Fe Trail, and the Philmont Boy Scout Ranch. Popular outdoor activities are hunting, fishing, and skiing. There is a large hunting industry because of the abundance of mule deer, wild turkey, elk, bear, coyote, and mountain lion.

About 185 people live within a 10-mile radius of the monument. The land around the national monument is owned by two individuals and the state of New Mexico. This surrounding land is primarily ranch land and is used for grazing cattle.

The nearest towns to the monument include

- Capulin, 2 miles south, in Union County, with a population of 77
- Folsom, 8 miles north, in Union County, with a population of 75
- Des Moines, 11 miles east, in Union County, with a population of 177
- Raton, 29 miles west, in Colfax County, with a population of 7,282
- Grenville, 29 miles east, in Union County, with a population of 25
- Clayton, 56 miles east, in Union County, with a population of 2,539

The regional economies are based primarily upon various industries (see table 9).

TABLE 9: INDUSTRY SECTORS OF THE REGIONAL ECONOMY

INDUSTRY	Union County (Population 4,174)	Colfax County (Population 14,189)
Agriculture, forestry, fishing, hunting and mining	25.7%	8.5%
Education, health and social services	20.0%	20.1%
Retail trade	12.1%	10.5%
Arts, entertainment, recreation, accommodations and food services	8.6%	14.7%
Transportation, warehousing and utilities	7.8%	4.6%
Construction	6.7%	9.1%
Public administration	6.1%	8.7%
Manufacturing	2.3%	5.8%
Wholesale trade	1.9%	1.6%
Finance, insurance, real estate and rental and leasing	1.8%	4.9%
Information	1.8%	1.5%
Professional, scientific, administrative and waste management services	1.8%	4.4%
Other services	3.4%	5.6%

In Colfax County, the median per-capita income was approximately $16,418 in 2000.

The population of Colfax County was 14,189. The unemployment rate in the county was approximately 5.1 % in December 2002. About 12 % of families fall below the poverty level in income, and 23.1 % of the population is retired.

There are three active cinder surface mines in the vicinity of the monument: one is south of Capulin, one is north of Des Moines, and one is on the eastern boundary of the monument, partly on state land, and partly on private land. A small cinder pit south of the monument is currently inactive.

"Ports-to Plains" is an international transportation system being developed to enhance the transport of goods between Mexico and the United States on highways such as: U.S. 287/ 385 that connects Colorado and Texas through the Oklahoma panhandle, 80 miles east of the national monument; and U.S. 64/ 87 that connects Colorado and Texas through northeast New Mexico, 2 miles south of the monument. This system is expected to provide some economic benefits to the region, and contribute to a modest increase in visitation to the monument.

MONUMENT FACILITIES AND OPERATIONS

Monument facilities include the visitor center complex; a picnic area; and parking areas at the visitor center, picnic area, and the crater rim.

The monument's visitor center complex includes the visitor center, administrative and maintenance facilities, and three housing units. The visitor center, maintenance garage, and two of the three residences were constructed in 1964 as part of the Mission 66 program. The third residence was added in 1969. The visitor center was expanded in 1978 to accommodate a 40-seat auditorium and room for exhibit cases. At about this same time, the 525-square feet area between the garage (later converted to a conference center) and the visitor center was enclosed to provide additional storage.

The monument employs 10 full-time-equivalent employees. There are three housing units for NPS staff.

Traffic control on the Volcano Road is a major operations issue in the summer. During busy weekends the rim parking area often fills up. The staff must hold back traffic until parking is available. This could take as long as 15 or 20 minutes.

Chapter 4: Environmental Consequences

INTRODUCTION

The National Environmental Policy Act (NEPA) requires that environmental documents discuss the environmental impacts of a proposed federal action, feasible alternatives to that action, and any adverse environmental effects that cannot be avoided if a proposed action is implemented. In this case, the proposed federal action would be the adoption of a general management plan for Capulin Volcano National Monument. The following portion of this document analyzes the environmental impacts of implementing the alternatives on, natural resources, the visitor experience, monument operations, and the socioeconomic environment. The analysis is the basis for comparing the beneficial and adverse effects of implementing the alternatives.

Because of the general, conceptual nature of the actions described in the alternatives, the impacts of these actions are analyzed in general qualitative terms. Thus, this environmental assessment should be considered a programmatic analysis. If and when site-specific developments or other actions are proposed for implementation subsequent to this general management plan, appropriate detailed environmental and cultural compliance documentation will be prepared in accordance with National Environmental Policy Act requirements.

This chapter begins with a description of the methods and assumptions used for each topic. Impact analysis discussions are organized by alternative and then by impact topic under each alternative. Each alternative discussion also describes cumulative impacts and presents a conclusion.

CUMULATIVE IMPACTS

INTRODUCTION

A cumulative impact is described in the Council on Environmental Quality's regulation 1508.7 as follows:

> *Cumulative impacts are incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or nonfederal) or person undertakes such other action. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time.*

To determine potential cumulative impacts, other projects within and surrounding Capulin Volcano National Monument were identified. Projects were identified by discussions with monument staff, federal land managers, and representatives of county and town governments. Potential projects identified as cumulative actions included any planning or development activity that was currently being implemented or would be implemented in the reasonably foreseeable future. Impacts of past actions were also considered in the analysis.

These actions are evaluated in conjunction with the impacts of each alternative to determine if they have any cumulative effects on a particular natural resource, visitor use and experience, socioeconomic factors, or monument facilities and operations. Because most of these cumulative actions are in the early planning stages, the qualitative evaluation of cumulative impacts was based on a general description of the project.

PAST ACTIONS

Setting aside Capulin Mountain as a national monument in 1916 was the first step in preserving the remarkably symmetrical volcanic cone and surrounding lavas flows for public appreciation and enjoyment, and for long-term protection of geologic and other natural resources.

Development in the form of roads, trails, structures, a visitor center, and other infrastructure has occurred in the monument. This development has benefited visitors and monument operations but has disrupted some natural resources, such as soils, vegetation, and wildlife habitat.

Development outside the monument, including communities, roads, homesteads, and power lines, has impacted the views and vistas from the crater rim.

PRESENT ACTIONS

The monument has received funding for projects to be implemented in the immediate future. These projects include the following:

- stabilization of the Volcano Road and selected areas of the cinder cone slope that are particularly susceptible to erosion
- improvement of accessibility on the crater and the Crater Rim Trail

FUTURE ACTIONS

Energy development on private lands, including wind turbines, could pose substantial impacts on views and vistas from the crater rim. This development could impact visitor experiences and the two-county economy; however there are no known current or future plans for this development. Other future actions could include increased truck traffic on U.S. Highway 64/87 — a port to plains highway serving the Southwest.

IMPACT ANALYSIS METHODOLOGY

The planning team based the impact analysis and the conclusions in this chapter largely on the review of existing literature and studies, information provided by experts in the National Park Service and other agencies, and monument staff insights and professional judgment. The team's method of analyzing impacts is further explained below. It is important to remember that all the impacts have been assessed under the assumption that mitigating measures have been implemented to minimize or avoid impacts. If mitigating measures described in "Chapter 2: Alternatives, Including the Preferred Alternative" were not applied, the potential for resource impacts and the magnitude of those impacts would increase.

Director's Order 12: *Conservation Planning, Environmental Impact Analysis, and Decision Making* presents an approach to identifying the duration (short or long term), type (adverse or beneficial), context (site-specific, local, regional), and intensity or magnitude (e.g., negligible, minor, moderate, or major) of the impact(s). That approach has been used in this document. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later in time or farther removed from the place, but are still reasonably foreseeable. Direct and indirect effects caused by an action were considered and have been included in the analysis.

The impact analyses of the action alternative describe the *difference between* implementing the no-action alternative and implementing the action (preferred) alternative. To understand a complete "picture" of the impacts of implementing the action alternative, the reader must also take into consideration the impacts that would occur under the no-action alternative.

Additional information on methodology that is specific to individual topics is presented with the discussion of those topics.

DURATION OF IMPACTS

For the purposes of comparative analysis in this document, the following definitions of duration will be used for all resource topics except soundscapes:

Short term — Impacts that are expected to last less than two years. This length of time was selected because it takes into account disturbance caused during construction plus a reasonable amount of time to allow for revegetation to occur.

Long term — Impacts that are expected to last two years or more.

IMPAIRMENT OF NATIONAL MONUMENT RESOURCES

In addition to determining the environmental consequences of implementing the preferred and other alternatives, NPS *Management Policies 2006,* section1.4, requires analysis of potential effects to determine whether or not proposed actions would impair key resources or values.

The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts on park resources and values when necessary and appropriate to fulfill the

purposes of the park, as long as the impact does not constitute impairment of the affected resources or values. That discretion, however, is limited by the statutory requirement that the National Park Service must leave resources and values unimpaired unless a particular law directly and specifically provides otherwise.

The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources and values, including the opportunities that otherwise would be present for the enjoyment of those resources or values (NPS *Management Policies 2006,* section1.4.5). An impact on any park resource or value could constitute impairment. An impact would be more likely to constitute impairment to the extent that it affects a resource or value whose conservation is necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park; is key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park; or is identified as a goal in the park's *General Management Plan* or other relevant NPS planning documents.

Impairment can result from NPS activities in managing the park; visitor activities; or activities undertaken by concessioners, contractors, and others operating in the park. A determination regarding impairment is made in the conclusion section of the natural resource topic discussions. An evaluation of impairment is not required for topics related to visitor use and experience (unless the impact is resource based), the socioeconomic environment, or monument facilities and operations.

When it is anticipated that an action would have a moderate to major adverse effect, a determination is made as to whether impairment would result. Impacts of only negligible or minor intensity would, by definition, not result in impairment.

UNACCEPTABLE IMPACTS ON NATIONAL MONUMENT RESOURCES

The impact threshold at which impairment occurs is not always readily apparent. Therefore, the National Park Service applies a standard that offers greater assurance that impairment will not occur. The Park Service does this by avoiding impacts that it determines to be unacceptable. These are impacts that fall short of impairment but are still not acceptable within a particular park's environment. Park managers must not allow uses that would cause unacceptable impacts; they must evaluate existing or proposed uses and determine whether the associated impacts on park resources and values are acceptable.

Virtually every form of human activity that takes place in a park has some degree of effect on park resources or values, but that does not mean the impact is unacceptable or that a particular use must be disallowed. Therefore, in NPS documents, unacceptable impacts are impacts that, individually or cumulatively, would

- be inconsistent with a park's purposes or values, or
- impede the attainment of a park's desired future conditions for natural and cultural resources as identified through the park's planning process, or
- create an unsafe or unhealthful environment for visitors or employees, or
- diminish opportunities for current or future generations to enjoy, learn about, or be inspired by park resources or values, or
- unreasonably interfere with any of the following:
    - park programs or activities
    - an appropriate use
    - the atmosphere of peace and tranquility, or the natural soundscape maintained in wilderness and natural, historic, or commemorative locations within the park

- NPS concessioner or contractor operations or services.

In accordance with management policies, park managers must not allow uses that would cause unacceptable impacts to park resources. To determine if unacceptable impacts could occur to the resources and values of Capulin Volcano National Monument, the impacts of proposed actions in this environmental assessment were evaluated based on the above criteria. A determination regarding unacceptable impacts is made in the conclusion section for each of the natural resource topics carried forward for analysis in this chapter.

NATURAL RESOURCES IMPACT ANALYSIS

Analysis of potential impacts on natural resources was based on research; knowledge of monument resources; and the best professional judgment of planners, biologists, and other resource specialists who have experience with similar types of projects. Information on the monument's natural resources was gathered from several sources, including the Natural Resources Conservation Service (U.S. Department of Agriculture), and the New Mexico Energy, Minerals and Natural Resources Department.

Predictions about short-term and long-term impacts were based on previous studies of visitor activities and facilities development impacts on natural resources.

SOILS

Methodology

Impacts on the soil resource were determined using knowledge of local soils, data compiled by the Natural Resource Conservation Service (USDA), and the effects of similar actions in the region.

Definitions of Intensity Levels

The following categories were used to evaluate the potential impacts on soils:

Negligible: The impact on soils would not be measurable. Any effects on productivity or erosion potential would be slight.

Minor: An action would change a soil's profile in a relatively small area, but it would not appreciably increase the potential for erosion of soil.

Moderate: An action would result in a change in quantity or alteration of the topsoil, overall biological productivity, or the potential for erosion to remove small quantities of soil. Changes to localized ecological processes would be of limited extent.

Major: An action would result in the removal of large quantities of soil or in alterations to topsoil and overall biological productivity in a relatively large area. Ecological processes would be altered, and landscape-level changes would be expected.

Impacts of Implementing the No-Action Alternative

This alternative would not call for construction of new facilities. Impacts on soils in the monument resulting from the no-action alternative would result from efforts to stabilize the bed of the Volcano Road and the volcano slope above and below the road prism. Potential impacts include loss of soils and associated biological productivity from erosion during road construction. Use of best management practices for controlling erosion would minimize short-term impacts. Once the roadbed and adjacent slopes are stabilized, reduction in rates of erosion would have a beneficial impact on soils. Overall, the impacts on soils from implementing the no-action alternative would be short term, minor, and adverse and long-term, minor, and beneficial.

Cumulative Effects. Past, present or reasonable foreseeable actions that have affected or would affect monument soils include monument development, such as utility lines, facility construction, road construction, and overall monument maintenance. These actions disturbed soils in such ways as compaction, alteration of natural runoff patterns and soil layers, and decreased percolation of precipitation. For short durations, they also increased the potential of soil loss from wind and water erosion. Other past actions, such as grazing and fire suppression, interrupted normal ecological processes, leading to increased impacts on soils. Fire suppression also resulted in heavier growths of piñon-juniper

forest than are found in the surrounding region, which also had an impact on soil stability in the monument.

Development and maintenance of monument operations and visitor service facilities (visitor center/ headquarter building, residences, picnic area, trails, and maintenance areas) have taken place over the years. Long-term, negligible, adverse impacts on the monument's soils from existing roads and developments would continue, and there would be localized, minor, beneficial impacts on the cinder cone soils from actions to mitigate erosion.

The surrounding lands have been used for livestock grazing for more than 100 years. These activities have caused adverse impacts on soils, including compaction and increased erosion, to varying degrees.

Overall, the effects of these past, present, and reasonably foreseeable actions are long term, minor, and adverse.

When impacts of these past, present, and reasonably foreseeable actions are combined with the impacts of actions of the no-action alternative, there would be minor to moderate, adverse cumulative impacts. The no-action alternative would contribute a slight component to these effects.

Conclusion. This alternative would have a short-term, minor, adverse effect and long-term, minor, beneficial effect on soils. Cumulative effects would be long term, minor to moderate, and adverse. This alternative's contribution to these cumulative effects would be slight.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation; (2) that are key to the natural or cultural integrity of the national monument, or (3) that are identified as a goal in the monument's general management plan or other relevant NPS planning documents, there would be no impairment of the monument's resources or values. Also, there would be no unacceptable impacts on monument resources.

Impacts of Implementing the Preferred Alternative

Implementing the preferred alternative would include rehabilitation of the existing visitor center, rehabilitation of the administrative and maintenance facilities, rehabilitation of the housing units, maintaining and restoring native vegetation patterns, and stabilization of the Volcano Road. Following NPS policies, mitigating measures reducing the potential for soil loss or erosion would be applied to any construction project. This construction is anticipated to result in short-term, minor, adverse impacts in the form of increased potential for erosion and removal of topsoil during construction. As with the no-action alternative, stabilization of the Volcano Road would have a minor beneficial impact on soils on the cinder cone. Stabilization of existing native vegetation, reestablishment of the historic proportion of piñon-juniper forest, and restoration of native plant populations would contribute to stabilization throughout the monument, a long-term, minor to moderate, beneficial impact. Reduction of brush on the cinder cone slopes would reduce the potential of catastrophic fire that would pose substantial impacts on the slope's stability and resultant erosion of the cinder cone. Development of new trails could be developed in the natural conservation zone, which could result in short-term, minor to moderate, adverse impacts on soils. Long-term impacts from trail development would be negligible and adverse.

The result of implementing the actions included in this alternative would be short-term, minor, adverse impacts and a long-term, minor to moderate, beneficial impact on the soil resources.

Cumulative Effects. Other past, present, or reasonably foreseeable actions that affect resources in the region include grazing,

residential development, utility line construction both within and outside the monument, road construction on the cinder cone in the 1920s, Civilian Conservation Corps improvements to the road in the 1930s, development of other monument facilities, and recent utility line development outside the monument boundary. These actions disturbed soils through compaction, alteration of natural runoff patterns and soil layers, and decreased percolation of precipitation. For short durations, they also increased the potential of soil loss from wind and water erosion.

Development and maintenance of monument operations and visitor service facilities (visitor center/ headquarters building, residences, picnic area, trails, and maintenance areas) have taken place over the years. Long-term, negligible adverse impacts from existing roads and developments in the park would continue.

The surrounding lands have been used for livestock grazing for more than 100 years. These activities have caused adverse impacts on soils to varying degrees, including compaction and increased erosion.

Overall, the effects of these past, present, and reasonably foreseeable actions resulting in erosion, soil loss, and soil compaction are long-term, minor, and adverse.

When impacts of these past, present, and reasonably foreseeable actions are combined with the impacts of actions of the preferred alternative, there would be long term, negligible, adverse, cumulative impacts. This alternative would contribute a measureable component to these cumulative effects.

Conclusion. This alternative would have short-term, minor, adverse impacts and long-term minor to moderate beneficial impact on soils. Cumulative effects would be negligible and adverse. This alternative would contribute a measureable component to these cumulative effects.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation; (2) that are key to the natural or cultural integrity of the national monument, or (3) that are identified as a goal in the monument's general management plan or other relevant NPS planning documents, there would be no impairment of the monument's resources or values. Also, there would be no unacceptable impacts on monument resources.

VEGETATION

Methodology

Information on site-specific areas was gleaned from other documents and results of biological surveys. Anticipated impacts were determined from similar actions taken in the area along with site-specific information.

Definitions of Intensity Levels

Negligible: The impact on vegetation (individuals and/or communities) would not be measurable. The abundance or distribution of individuals would be slightly affected. Ecological processes and biological productivity would not be affected.

Minor: An action would not necessarily decrease or increase the area's overall biological diversity and continued growth. The impact would affect the abundance or distribution of individuals in a localized area but would not affect the viability of local or regional populations or communities.

Moderate: The action would result in a change in overall biological diversity and continued growth in a small area. This impact would affect a local population sufficiently to cause a change in abundance or distribution, but it would not affect the viability of the regional population or communities. Changes to ecological processes would be of limited extent.

Major: The action would result in a change in overall biological diversity and continued growth in a relatively large area. The action would affect a regional or local population of a species sufficiently to cause a change in abundance or in distribution to the extent that the population or communities would not be likely to return to its/ their former level (adverse), or would return to a sustainable level (beneficial). Important ecological processes would be altered.

Impacts of Implementing the No-Action Alternative

There would be no new ground disturbance or other major changes resulting from implementing this alternative, so there would be no new effects on vegetation. There would be no changes in the current status of vegetative species composition other than those brought about by ongoing natural processes. Impacts from maintenance operations in the monument, such as stabilization of the Volcano Road, clearing of growth from trails, and maintenance of parking areas, would continue, including vegetation trampling and loss. However, these impacts would pose only short-term negligible adverse impacts on native plant communities.

Reduction of brush on the cinder cone slopes would reduce the potential of catastrophic fire that would pose substantial impacts on the vegetation communities on the cinder cone.

Visitor use could result vegetation trampling and loss in areas adjacent to the monument trails. These actions would result in long-term, negligible to minor adverse impacts on vegetation.

Management programs for exotic species would continue according to other monument planning efforts. Reduction of exotic species would result in a long-term, minor to moderate, beneficial impact on native plant communities.

Combined, these activities would result in a long-term, negligible to minor, beneficial impact on native plant communities and other vegetation as a result of exotic species removal.

Cumulative Effects. Native plant species and communities in the monument have been disrupted since before the monument was set aside in 1916. Ranching and homesteading in the 19th century introduced exotic species to the environment, and cattle grazing, road construction, and other activities impacted native plant communities. With the establishment of the monument, fire suppression interrupted normal ecological processes, leading to heavier growths of piñon-juniper forest than are found in the surrounding region. Seeds of nonnative plants carried by wind and humans have introduced noxious weeds and other invasive species in disturbed areas, which continue to cause long-term, adverse effects on native vegetation.

The development of the visitor center, administrative and maintenance facilities, staff housing, the picnic area, and trails resulted in impacts on native plant species and communities including loss of vegetation, soil compaction and erosion, and introduction of exotic species. The establishment of the monument has also resulted in efforts to protect native communities and eradicate exotic species. Controlled burns would continue to benefit efforts to restore the short-grass prairie in the monument.

Overall, the past, present, and reasonably foreseeable future impacts of actions described above would be long term, moderate, and adverse.

The long-term, negligible to minor, beneficial impacts of the no-action alternative, combined with the impacts of past, present, and reasonably foreseeable future actions described above, would result in long-term, minor to moderate, adverse cumulative impacts on vegetation. The actions proposed under the no-action alternative would

comprise a very small component of that adverse cumulative impact.

Conclusion. Implementing the no-action alternative would have a long-term, negligible to minor, beneficial impact on vegetation in the monument. Cumulative impacts on vegetation would be long term, minor to moderate, and adverse. This alternative would contribute a very small component to the long-term, minor to moderate, adverse cumulative impacts.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation; (2) that are key to the natural or cultural integrity of the national monument, or (3) that are identified as a goal in the monument's general management plan or other relevant NPS planning documents, there would be no impairment of the national monument's resources or values. Also, there would be no unacceptable impacts on monument resources.

Impacts of Implementing the Preferred Alternative

Some short-term adverse impacts on vegetation would be expected as a result of implementing the preferred alternative. As with the no-action alternative, stabilization and erosion control measures along the Volcano Road could have short-term, minor, adverse impacts on vegetation on the cinder cone slope in limited areas. These stabilization and erosion control measures would have long-term, minor, beneficial impacts on vegetation.

Controlled burns to eradicate invasive plant species and noxious weeds and restoration of short-grass prairie would have a long-term, minor to moderate, beneficial impact on native plant communities.

Trail development in the natural conservation zone, if implemented, would have short-term, negligible to minor, adverse impacts on vegetation.

Renovation of the visitor center, maintenance and administrative facilities, and monument staff housing would have short-term, minor, adverse impacts on vegetation in that area as a result of clearing for construction activities, construction vehicle parking, and trampling by construction crews. The result would be long-term, negligible, adverse impacts on vegetation in these areas.

Visitor use could result in short-term and long-term, negligible to minor, adverse impacts as a result of trampling along established trails and the creation of social trails.

Overall, the impacts of implementing the preferred alternative would be short term, minor, and adverse, and long term, minor to moderate, and beneficial.

Cumulative Effects. Native plant species and communities in the monument have been disrupted since before the monument was set aside in 1916. Ranching and homesteading in the 19th century introduced exotic species to the environment, and cattle grazing, road construction, and other activities impacted native plant communities. With the establishment of the monument, fire suppression interrupted normal ecological processes, leading to heavier growths of piñon-juniper forest than are found in the surrounding region. Seeds of nonnative plants carried by wind and humans have introduced noxious weeds and other invasive species in disturbed areas, which continue to cause long-term, adverse effects on native vegetation.

The development of the visitor center, administrative and maintenance facilities, staff housing, the picnic area, and trails also resulted in impacts on native plant species and communities, including loss of vegetation, soil compaction, and introduction of exotic species. The establishment of the monument has resulted in efforts to protect native communities and eradicate exotic species. Controlled burns would continue to benefit efforts to restore the short-grass prairie in the monument.

Overall, the past, present, and reasonably foreseeable future impacts of actions described above would be long term, moderate, and adverse.

The long-term, minor to moderate, beneficial impacts of the preferred alternative, in conjunction with the impacts of past, present, and reasonably foreseeable future actions described above, would result in long-term, minor, adverse cumulative impacts on vegetation. The actions under the alternative would comprise a very small component of that adverse cumulative impact.

Conclusion. Implementing the preferred alternative would have short-term, minor, adverse, and long-term, minor to moderate, beneficial impacts on vegetation in the monument. Cumulative impacts on vegetation would be long term, minor, and adverse. This alternative would contribute a very small component to the long-term, minor, adverse cumulative impacts.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation; (2) that are key to the natural or cultural integrity of the national monument, or (3) that are identified as a goal in the monument's general management plan or other relevant NPS planning documents, there would be no impairment of the national monument's resources or values. Also, there would be no unacceptable impacts on monument resources.

SOUNDSCAPES

Methodology

Context, time (frequency and duration), and intensity together determine the level of impact of an action on soundscapes. For example, noise for a certain period and intensity would be a greater impact in a highly sensitive context, and a given intensity would be a greater impact if it occurred more often, or for longer duration. It is usually necessary to evaluate all three factors together to determine the level of noise impact. In some cases an analysis of one or more factors might indicate one impact level, while an analysis of another factor might indicate a different impact level according to the criteria identified below. In such cases, best professional judgment based on a documented rationale must be used to determine which impact level best applies to the situation being evaluated.

Definitions of Intensity Levels

Assessments of potential impacts on soundscapes for the preferred alternative were based on comparisons between the no-action alternative and the action alternative. The following intensity definitions were used.

Negligible: Natural sounds would prevail; human-caused noise would be absent or very infrequent and mostly immeasurable.

Minor: Natural sounds would predominate in zones where management objectives call for natural processes to predominate, with human-caused noise infrequent and at low levels. In zones where human-caused noise is consistent with monument purpose and objectives, natural sounds could be heard occasionally.

Moderate: In zones where management objectives call for natural processes to predominate, natural sounds would predominate, but human-caused noise could occasionally be present at low to appreciable levels. In areas where human-caused noise is consistent with monument purpose and objectives, these sounds would occur frequently during daylight hours but would not be overly disruptive to noise-sensitive visitor activities in the area; in such areas, natural sounds could still be heard occasionally.

Major: In zones where management objectives call for natural processes to predominate, natural sounds would be impacted by human-caused noise frequently or for extended periods of time. In zones where human-caused noise is consistent with monument purpose and

objectives, the natural soundscape would be impacted most of the day; noise would disrupt conversation for long periods of time and/or make enjoyment of other activities in the area difficult. Natural sounds would rarely be heard during the day.

Impacts of Implementing the No-Action Alternative

Implementing this alternative would not result in any new changes to soundscapes in the monument. Human-related noise would continue during high visitation periods around the visitor center and parking lot; the picnic area; the crater parking area; and the Boca, Lava, and Crater Rim trails. There would be some intermittent, short-term, negligible to minor, adverse impacts resulting from road stabilization efforts. It is anticipated that the current pattern and level of visitation would not change appreciably and that human-related noise in all areas of the monument would not change from existing levels as a result of implementing the no-action alternative. The impact on soundscapes would continue to be long term, negligible to minor, and adverse.

Cumulative Effects. Human-caused sounds in the monument would continue to be primarily confined to developed areas. Actions outside the monument that have impacted or continue to impact the natural soundscape are limited and include development along nearby highways, traffic on local highways and roads, and noise from aircraft. Future actions could include increased truck traffic on U.S. Highway 64/87. These impacts would continue to have long-term, minor to moderate, adverse impacts on soundscapes. However, for the most part, natural soundscapes would continue to prevail in the monument.

The intermittent adverse impacts described above, in combination with the impact of the no-action alternative, would result in long-term, minor to moderate, adverse cumulative impacts. Noise within the monument resulting from this alternative would contribute a small component to these adverse cumulative impacts.

Conclusion. The no-action alternative would have a long-term, negligible to minor, adverse impact on natural soundscapes in the national monument. Cumulative impacts would be long term, minor to moderate, and adverse. The alternative would contribute a small component to the long-term, minor to moderate, adverse cumulative impacts on soundscapes.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation; (2) that are key to the natural or cultural integrity of the national monument, or (3) that are identified as a goal in the monument's general management plan or other relevant NPS planning documents, there would be no impairment of the national monument's resources or values. Also, there would be no unacceptable impacts on monument resources.

Impacts of Implementing the Preferred Alternative

Implementation of the preferred alternative would introduce some short-term changes to soundscapes within the monument. At the main visitor area, rehabilitation of the visitor center, maintenance and administrative facilities, and park housing would result in increased truck and heavy equipment traffic, demolition, excavation, and other short-term construction-related noise. As with the no-action alternative, measures to mitigate erosion along the Volcano Road would also result in intermittent short-term impacts on the soundscape.

Human-related noise would continue over the long term during high visitation periods around the visitor center and parking lot; the picnic area; the crater parking area; and the Boca, Lava, and Crater Rim trails. It is anticipated that the current pattern and level

of visitation could change, and that human-related noise in all areas of the monument could increase from existing levels at peak visitation times. The impact on soundscapes resulting from implementation of the preferred alternative would be short term, minor to moderate, and adverse, and long term, negligible to minor, and adverse.

Cumulative Effects. Human-caused sounds in the monument would continue to be primarily confined to developed areas. Actions outside the monument that contribute to impacts on the natural soundscape are limited and include the development of nearby highways, traffic on local highways and roads, and noise from aircraft. Future actions could include increased truck traffic on U.S. Highway 64/87. The above actions could result in long-term, intermittent, minor to moderate, adverse impacts on soundscapes. For the most part, natural soundscapes would continue to prevail in the monument.

The intermittent adverse impacts just described, in combination with the impacts of the actions proposed in the preferred alternative, would result in long-term, minor to moderate, cumulative adverse impacts on natural soundscapes. The preferred alternative would contribute a slight increment to these cumulative impacts.

Conclusion. The no-action alternative would have short-term, minor to moderate, adverse impacts and long-term, negligible to minor, adverse impacts on natural soundscapes in the monument. Cumulative impacts would be long term, minor to moderate, and adverse. The preferred alternative would contribute a slight increment to these cumulative impacts.

Because there would be no major adverse impacts on a resource or value whose conservation is (1) necessary to fulfill specific purposes identified in the establishing legislation; (2) that are key to the natural or cultural integrity of the national monument, or (3) that are identified as a goal in the monument's general management plan or other relevant NPS planning documents, there would be no impairment of the national monument's resources or values. Also, there would be no unacceptable impacts on monument resources.

VISITOR USE AND EXPERIENCE IMPACT ANALYSIS

METHODOLOGY

This impact analysis considers various aspects of visitor use and experience at Capulin Volcano National Monument, including the effects on visitors' abilities to experience the monument's primary geologic and other natural resources (including views, natural sounds and smells, and wildlife); overall visitor access to the monument; freedom to experience the resources at one's own pace; and opportunities for people with disabilities. The analysis is based on how visitor experiences and understanding would change in each alternative. The analysis is primarily qualitative rather than quantitative, owing to the conceptual nature of the alternatives.

Impacts on visitor use and experience were determined by considering information collected by NPS staff on visitor activities at the monument. This information was supplemented by data gathered during this planning process, including opinions from visitors and neighbors.

For analysis purposes, impact duration, type, and intensity of visitor experience have been defined as follows:

DEFINITIONS OF INTENSITY LEVELS

Duration of Impact. A short-term impact would last no more than one hour. A long-term impact would last two or more hours.

Type of Impact. Adverse impacts are those that most visitors would perceive as undesirable. Beneficial impacts are those that most visitors would perceive as desirable.

Intensity of Impact. Impacts were evaluated comparatively between alternatives, using the no-action alternative as a baseline for comparison with the action alternative. Levels of intensity are defined below.

Negligible: Visitors would likely be unaware of any effects associated with implementation of the alternative.

Minor: Changes in visitor experience or understanding would be slight but detectable, would affect few visitors, and would not appreciably limit or enhance experiences identified as fundamental to the monument's purpose and significance.

Moderate: Some characteristics of visitor experience or understanding would change, and many visitors would likely be aware of the effects. Some changes to experiences identified as fundamental to the monument's purpose and significance would be apparent.

Major: Multiple characteristics of visitor use and experience would change, including experiences identified as fundamental to monument purpose and significance; most visitors would be aware of the effects.

IMPACTS OF IMPLEMENTING THE NO-ACTION ALTERNATIVE

The level and pattern of visitor use and experience would not change as a result of implementing the no-action alternative. Existing visitor service programs and facilities at the visitor center, picnic area, restrooms, trails, and the crater rim would remain.

Visitors would continue to gain understanding and appreciation of the monument's primary resources through site bulletins and brochures, visitor center exhibits, the film in the theater, and wayside interpretive signs.

Opportunities for self-guided exploration would continue on the Boca, Lava, and Crater Rim trails. Occasional ranger-led activities would continue to be available at the visitor center and the crater rim during certain times of the year. NPS staff would continue to offer opportunities for high-quality visitor

experiences to the best of their ability and funding.

Overall, this alternative would continue to have a long-term, minor, beneficial impact on visitor use and experience.

Cumulative Effects

There would be no cumulative effects associated with visitor use and experience at the monument.

Conclusion

The no-action alternative would continue to have a long-term, minor, beneficial impact on visitor use and experience. There would be no cumulative effects on visitor use and experience.

IMPACTS OF IMPLEMENTING THE PREFERRED ALTERNATIVE

The level and patterns of visitor use and experience could change as a result of implementing the preferred alternative. The development of expanded comprehensive interpretation and educational programs on the geological, natural, and cultural history of Capulin Volcano, the Clayton-Raton Field, and northeast New Mexico, including nighttime tours of the monument, would enhance the visitor experience. The increased focus on partnerships with the scientific community for additional research at the monument would also enhance the visitor experience. Information gleaned from research projects would be incorporated in interpretive and educational programs, and visitors would also have opportunities to observe ongoing studies in the field. Expanded outreach programs, regional visitor use, education and curriculum plans, and preservation programs, including external partnership programs, would enhance understanding and appreciation of the monument's role in the region's natural and cultural history — resulting in a long-term, minor to moderate, beneficial impact.

Improvements to the monument's infrastructure would also contribute to an enhanced visitor experience. Expansion of the visitor center would allow for better circulation, thereby improving visitor orientation, particularly during peak season when the monument is visited by many school groups. Expansion would also provide more room for book sales, and increase the size of the auditorium, enhancing the experience of large groups watching the film. More comprehensive interpretive guides would enhance the self-guided experience on the Boca, Lava, and Crater Rim trails. Additional trails in the natural conservation zone could enhance visitor appreciation of the natural environment, a long-term, negligible to minor, beneficial impact.

Improved accessibility at the cinder cone summit and enhanced interpretive media to serve hearing and visually impaired visitors would have a long-term, minor, beneficial impact on visitor experience. Enhancement of existing programs, services, and facilities in this alternative would lead to an increased level of visitor satisfaction, enjoyment and appreciation of the monument.

The above actions would result in a long-term, moderate, beneficial impact on visitor use and experience.

Cumulative Effects

There would be no cumulative effect on visitor use and experience at the monument.

Conclusion

The preferred alternative would have a long-term, moderate, beneficial impact on visitor use and experience. There would be no cumulative effects under this alternative.

SOCIOECONOMIC ENVIRONMENT IMPACT ANALYSIS

METHODOLOGY

The National Park Service applied logic, experience, professional expertise, and professional judgment to analyze the impacts on the socioeconomic environment resulting from the implementation of each alternative. Economic data, historic visitor use data, expected future visitor use, and future developments of the national monument were all considered in identifying, discussing, and evaluating expected impacts. The study area used for the socioeconomic impact analysis is the two-county (Colfax and Union counties) area.

DEFINITIONS OF INTENSITY LEVELS

Assessments of potential socioeconomic impacts on the preferred alternative were based on comparisons between the no-action alternative and the action alternative. The following intensity definitions were used:

Negligible: Effects on socioeconomic conditions would be at or below the level of detection. There would be no noticeable change in any defined socioeconomic indicators.

Minor: Effects on socioeconomic conditions would be slight but detectable.

Moderate: Effects on socioeconomic conditions would be readily apparent and result in changes to socioeconomic conditions on a two-county scale.

Major: Effects on socioeconomic conditions would be readily apparent, resulting in demonstrable changes to socioeconomic conditions throughout the two-county region.

IMPACTS OF IMPLEMENTING THE NO-ACTION ALTERNATIVE

Implementing the no-action alternative would not affect the two-county economy or social conditions. Current direct and indirect support of the two-county economy by operation and visitation of the monument would continue. There would be no appreciable changes to NPS employment or expenditures. The average time of visit or length of stay in the two-county area would not likely change. Opportunities for public enjoyment of the monument would continue in the current manner. This would result in a long-term negligible, beneficial impact on the two-county socioeconomic environment resulting from sales tax revenue from purchases and revenue from lodging and food service establishments.

Cumulative Effects

The socioeconomic environment in the two-county area is affected by a combination of many factors. Education, recreation, and service industries are among the top economic factors for both Colfax and Union counties. Public participation in these activities results in a substantial beneficial contribution to local service-related businesses. The presence of Capulin Volcano National Monument contributes to the attractions in the region, which serve the livelihood of tourist-related businesses. Many businesses in Raton and Clayton, the two largest towns in the counties, rely to some degree on the inflow of tourist dollars, especially motels, restaurants, stores, and other similar businesses.

Implementation of this alternative would not result in any change to these socioeconomic conditions and so would have no contribution to other effects. Thus, there would be no project-related cumulative effects.

Conclusion

Implementation of the no-action alternative would have a long-term, negligible, beneficial impact on socioeconomic conditions in the two-county area, and there would be no project-related cumulative effects.

IMPACTS OF IMPLEMENTING THE PREFERRED ALTERNATIVE

Implementing the preferred alternative would have an effect on the two-county economy. The National Park Service would most likely hire local firms and labor for construction on the visitor center, maintenance facility, administrative facilities, and park housing. Stabilization of the slopes on the Volcano Road would also provide an opportunity for local construction firms and workers, thereby increasing employment slightly. The increased focus on research under this alternative would have a secondary effect on the two-county economy. Although research professional s would most likely come from outside the region, research teams would use local services, such as motels, restaurants, and local retail outlets for accommodations, meals, and supplies.

The number of visitors and length of season could increase when interpretive programming is enhanced. Businesses that rely on the tourist trade would receive a long-term, minor benefit.

All these actions combined would have short- and long-term, minor to moderate, beneficial impacts on the two-county socioeconomic environment.

Cumulative Effects

The socioeconomic environment in the two-county area is affected by a combination of many factors. Education, recreation, and service industries are among the top economic factors for both Colfax and Union counties. Public participation in these activities results in a substantial beneficial contribution to local service-related businesses. The presence of Capulin Volcano National Monument contributes to the attractions in the region, which serve the livelihood of tourist-related businesses. Many businesses in Raton and Clayton, the two largest towns in the counties, rely to some degree on the inflow of tourist dollars, especially motels, restaurants, stores, and other similar businesses. Overall, these impacts would be long term, minor, and beneficial.

This alternative, in combination with the actions described above, would result in a long-term, minor, beneficial, cumulative impact on socioeconomic conditions. The preferred alternative would contribute a modest component to these beneficial impacts.

Conclusion

Implementing the preferred alternative would result in short-term and long-term, minor to moderate, beneficial impacts on socioeconomic conditions in the two-county area. The cumulative effects would be long-term, minor, and beneficial. The preferred alternative would contribute a modest component to these beneficial impacts.

MONUMENT FACILITIES AND OPERATIONS IMPACT ANALYSIS

METHODOLOGY

The National Park Service applied logic, experience, professional expertise, and professional judgment to analyze the impacts on the monument's operations resulting from the implementation of each alternative. Administrative history, historic visitor use data, expected future visitor use, and future developments of the national monument were all considered in identifying, discussing, and evaluating expected impacts.

DEFINITIONS OF INTENSITY LEVELS

Assessments of potential socioeconomic impacts were based on comparisons between the no-action alternative and the action alternative. The following intensity definitions were used:

Negligible: Effects on monument facilities and operations would be at or below the level of detection. There would be no noticeable change in any operational efficiencies.

Minor: Effects on monument facilities and operations would be slight but detectable.

Moderate: Effects on monument facilities and operations would be readily apparent.

Major: Effects on monument facilities and operations would be readily apparent, resulting in demonstrable changes to operational efficiencies.

IMPACTS OF IMPLEMENTING THE NO-ACTION ALTERNATIVE

Under the no-action alternative, current management objectives and operational priorities would continue. There would be no appreciable changes to NPS employment or monument facilities and operations. Occasional crowding in the visitor center would continue. Deficiencies in the maintenance and administrative facilities and employee housing, include obsolete electrical, water, and ventilation systems; insufficient storage areas; and deteriorating housing units. These conditions would continue to impede operational and staff efficiency. Ongoing erosion control on the Volcano Road requires a substantial commitment of monument staff time and funding. These factors would result in a continuing, long-term, minor, adverse impact on monument facilities and operations.

Cumulative Effects

Past actions that have affected monument operations include the construction of the visitor center and employee housing; the construction and modification of the administrative and maintenance facilities; the development of the picnic area; development and maintenance of the Boca, Lava, and, Crater Rim trails; and the development, improvement, and maintenance of the Volcano Road. These past actions resulted in a long-term, moderate, beneficial impact on monument operations. There are no external factors that have other effects on monument operations.

The impacts of this alternative, in combination with the impacts of the actions described above, would result in a long-term, moderate, beneficial cumulative impact on monument facilities and operations. The no-action alternative would contribute a small adverse component to these beneficial impacts.

Conclusion

Implementation of the no-action alternative would have a long-term, minor, adverse impact on monument facilities and operations. The cumulative effects would be long term, moderate, and beneficial. The no-action

alternative would contribute a small component to these beneficial impacts.

IMPACTS OF IMPLEMENTING THE PREFERRED ALTERNATIVE

Implementing the preferred alternative would have an effect on monument operations. Improvements to the visitor center, administrative and maintenance facilities, and employee housing would all contribute to increased operational efficiency. As with the no-action alternative, efforts to control erosion along the Volcano Road would enhance operational efficiency by reducing the need for ongoing maintenance along the road. Increases in seasonal staffing would also contribute to operational efficiency. Efforts to incorporate sustainable energy design and other improvements in energy efficiency would enhance overall operational efficiency, a long-term, minor to moderate, beneficial impact.

Implementing this alternative would result in short- and long-term, moderate, beneficial impacts on monument facilities and operations.

Cumulative Effects

Past actions that have affected monument operations include the construction of the visitor center and employee housing; the construction and modification of the administrative and maintenance facilities; the development of the picnic area; development and maintenance of the Boca, Lava, and, Crater Rim trails; and the development, improvement, and maintenance of the Volcano Road. These actions had a long-term, moderate, beneficial impact on monument operations. There are no external factors that have an appreciable effect on monument operations.

The impacts of this alternative, in combination with the impacts of the actions described above, would result in a long-term, moderate, beneficial cumulative impact on monument facilities and operations. The preferred alternative would contribute a substantial component to these beneficial cumulative impacts.

Conclusion

Implementing the preferred alternative would result in short-term and long-term, moderate, beneficial impacts on monument facilities and operations. The cumulative effects would be long term, moderate, and beneficial. This alternative would contribute a substantial increment to these cumulative impacts.

Chapter 5: Consultation and Coordination

PUBLIC AND AGENCY INVOLVEMENT

This *General Management Plan / Environmental Assessment* for Capulin Volcano National Monument represents the thoughts and ideas of the National Park Service, the national monument staff, visitors, and the public. Consultation and coordination among the agencies and the public were vitally important throughout the planning process. There were three primary avenues by which the public participated during the development of the plan — participating in public meetings, responding to newsletters, and providing comments on the national monument's website.

PUBLIC MEETINGS AND NEWSLETTERS

Public meetings and newsletters were used to keep the public informed and involved in the planning process for Capulin Volcano National Monument. A mailing list was compiled that consisted of members of government agencies, organizations, businesses, legislators, local governments, and interested citizens.

The general management planning process for the national monument began in 1998. The National Park Service held public open houses on the planning process on February 6 and 7, 1998. Following the public meetings, the monument issued a newsletter to invite the public to participate in the planning process. The newsletter summarized the planning process and solicited public comment on the plan. The monument held a second planning open house on April 18, 1998, and issued a second newsletter in November 1998.

In July 1998, the planning team presented an overview of the planning process to the Raton/Colfax County Hispano Chamber of Commerce. The monument distributed a third newsletter to present preliminary management alternatives in July 1999. An open house for the preliminary draft alternatives was held at the monument on July 25, 1999. The draft alternatives were revised in response to public comments received during this stage of the planning process.

Work stopped on the planning process in 2000 because of personnel changes on the planning team. The monument and new planning team issued a fourth newsletter in April 2001 to introduce the new team members and restart the planning process. The monument held a public open house for the plan on April 28, 2001.

Personnel changes at the monument led to another delay in the planning process until 2007. The monument and planning team issued a newsletter on the revised management alternatives in spring 2008. The *General Management Plan / Environmental Assessment* is scheduled to be published for public review and comment in August 2009.

CONSULTATION AND COORDINATION

SECTION 7 CONSULTATION (ENDANGERED SPECIES ACT)

To comply with section 7 of the Endangered Species Act, the National Park Service coordinated informally with the U.S. Fish and Wildlife Service, U.S. Department of the Interior. The list of threatened and endangered species (see table 2) was compiled with the use of lists and information received from the U.S. Fish and Wildlife Service.

In accordance with the Endangered Species Act and relevant regulations in 50 CFR 402, the National Park Service determined that this general management plan would not be likely to cause adverse effects on any federally listed threatened or endangered species. The National Park Service sent a copy of this draft plan to the U.S. Fish and Wildlife Service with a request for written concurrence with that determination.

In addition, the National Park Service has committed to consult about future actions conducted under the framework described in this plan to ensure that such actions will not be likely to adversely affect threatened or endangered species.

NATIVE AMERICAN CONSULTATION

As part of the general management planning process, the monument staff sent letters to 11 American Indian tribes and two inter-Pueblo Councils encouraging their participation in the plan. These tribes included the Taos Pueblo; Jicarilla Apache; Wichita and affiliated tribes; Apache Tribe of Oklahoma; Kiowa; Comanche; Cheyenne-Arapaho; Ute Mountain Ute; Southern Ute; Picuris Pueblo; the Mescalero Apache; the Eight Northern Indian Pueblos Council; and the All-Indian Pueblo Council. Members of the Jicarilla Apache took part in a monument planning meeting in October 1998.

CONSULTATION WITH THE STATE HISTORIC PRESERVATION OFFICE

Agencies that have direct or indirect jurisdiction over historic properties are required by section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 270, et seq.), to take into account the effect of any undertaking on properties eligible for listing in the National Register of Historic Places. To meet the requirements of 36 CFR 800, the National Park Service sent letters to the New Mexico state historic preservation office and the Advisory Council on Historic Preservation, inviting their participation in the planning process. Copies of all the newsletters were sent to these offices with a request for comments.

Appendix, References, Preparers and Consultants

APPENDIX: CONSULTATION LETTERS

United States Department of the Interior

NATIONAL PARK SERVICE

Capulin Volcano National Monument

Capulin, New Mexico 88414

(505) 278-2201

IN REPLY REFER TO

STATE OF NEW MEXICO
DEPARTMENT OF CULTURAL AFFAIRS
HISTORIC PRESERVATION DIVISION

228 EAST PALACE AVENUE
SANTA FE, NEW MEXICO 87501
(505) 827-6320

BILL RICHARDSON
Governor

May 6, 2004

James K. Bellamy
Chief, Division of Cultural Resources
National Park Service
P.O. Box 728
Santa Fe, NM 87504

Re: Concurrence of determinations for eligibility for Aztec Ruins National Monument, El Morro National Monument and Capulin Volcano National Monument - Cultural Landscape Inventory reports (HPD 67363, 67364, 67365)

Dear Mr. Bellamy:

I am writing in response to a request for our concurrence with determinations of eligibility proposed in the above referenced cultural landscape inventories. Our National Register Coordinator has reviewed the determinations and concurs with the eligibility for built environment resources. Given the complicated nature of the archaeological resources, a separate review of determinations of eligibility for archaeological features will be coordinated separately between this office and the NPS.

We look forward to further consultation with your office on the Cultural Landscape Inventory project. If you have any questions concerning these comments, please contact John Murphey at (505) 827-3990.

Sincerely,

Katherine Slick

Katherine Slick
State Historic Preservation Officer

United States Department of the Interior

NATIONAL PARK SERVICE
INTERMOUNTAIN REGION
Intermountain Support Office - Denver
12795 West Alameda Parkway
Post Office Box 25287
Denver, Colorado 80225-0287

IN REPLY REFER TO
DIS (WRS-1)

October 17, 2000

Memorandum

To: Field Supervisor, U.S. Fish and Wildlife Service, Albuquerque NM

From: Laurie Dossler, Environmental Protection Specialist, Resource Planning

Subject: Request for Species List, Capulin Volcano National Monument

The National Park Service is initiating a general management planning effort to prescribe resource conditions and visitor experiences to be achieved and maintained at Capulin Volcano National Monument over time. Once issues are identified, a range of alternatives will be developed and analyzed. Alternatives are expected to be presented to the public in an environmental impact statement during the summer of 2001. We have enclosed a copy of the issues for your information. A map showing the study area is also enclosed.

This memorandum is to inform you of the initiation of the study and to request a current list of Federal candidate, proposed, or listed threatened and endangered species, any other special status species that might occur in the locality mentioned above, as well as designated critical habitats for these species.

Laurie Dossler

Enclosures

cc:
Superintendent, Capulin Volcano NM

bcc
ISO/PP/PE, Ms. Dossler
L.Dossler/d 10/17/00 303-969-2036
N:\PLANNING\CAVO\GMP\WSMEMO.DOC
Mailer
New Mexico Ecological Services Field Office
2105 Osuna Ne, Albuquerque, New Mexico 87113-1001
Telephone 505-346-2525

United States Department of the Interior

NATIONAL PARK SERVICE
DENVER SERVICE CENTER, PLANNING DIVISION
P.O. BOX 25287
DENVER, COLORADO 80225-0287

In reply refer to:
D18 (DSC-P)
CAVO (108775)

June 8, 2009

RECEIVED
JUN 11 2009
USFWS-NMESFO

Memorandum

TO: U.S. Fish and Wildlife Service
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, NM 87113

FROM: Tom Thomas, Planning Project Manager *Tom Thomas*

SUBJECT: Request for Species List, Capulin Volcano National Monument

The National Park Service is continuing development of a General Management Plan for Capulin Volcano National Monument in Union County, New Mexico. This long-term, comprehensive plan will define overall management goals and objectives, identify resources that need protection, and prescribe general management direction for the entire monument.

As the Project Manager for this project, I am requesting a current list of federally listed plant and animal species that might occur in the vicinity of the national monument and designated critical habitat, if any, for such species.

This memorandum will serve as a record that the National Park Service is continuing consultation with your agency pursuant to the requirements of the Endangered Species Act and National Park Service management policies.

I appreciate your attention to this inquiry and look forward to working with your office throughout this planning effort. Please direct any responses to me at the above address or via email at tom_thomas@nps.gov.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

JUN 11 2009

Thank you for your recent request for information on threatened or endangered species or important wildlife habitats that may occur in your project area. The New Mexico Ecological Services Field Office has posted lists of the endangered, threatened, proposed, candidate and species of concern occurring in all New Mexico Counties on the Internet. Please refer to the following web page for species information in the county where your project occurs: http://www.fws.gov/southwest/es/NewMexico/SBC_intro.cfm. If you do not have access to the Internet or have difficulty obtaining a list, please contact our office and we will mail or fax you a list as soon as possible.

After opening the web page, find New Mexico Listed and Sensitive Species Lists on the main page and click on the county of interest. Your project area may not necessarily include all or any of these species. This information should assist you in determining which species may or may not occur within your project area.

Under the Endangered Species Act of 1973, as amended (Act), it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with us further. Similarly, it is their responsibility to determine if a proposed action has no effect to endangered, threatened, or proposed species, or designated critical habitat. On December 16, 2008, we published a final rule concerning clarifications to section 7 consultations under the Act (73 FR 76272). One of the clarifications is that section 7 consultation is not required in those instances when the direct and indirect effects of an action pose no effect to listed species or critical habitat. As a result, we do not provide concurrence with project proponent's "no effect" determinations.

If your action area has suitable habitat for any of these species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts. Please keep in mind that the scope of federally listed species compliance also includes any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects.

Candidates and species of concern have no legal protection under the Act and are included on the web site for planning purposes only. We monitor the status of these species. If significant declines are detected, these species could potentially be listed as endangered or threatened. Therefore, actions that may contribute to their decline should be avoided. We recommend that candidates and species of concern be included in your surveys.

Also on the web site, you have included additional wildlife resources information that should be considered in your project as appropriate. These include communication towers, power line safety requirements, road and highway improvements and construction, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

Under Executive Orders 11988 and 11990, federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. We recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands. These habitats should be conserved through avoidance, or mitigated to ensure no net loss of wetlands functions and value.

The Migratory Bird Treaty Act (MBTA) prohibits the taking of migratory birds, nests, and eggs, except as permitted by the U.S. Fish and Wildlife Service. To minimize the likelihood of adverse impacts to all birds protected under the MBTA, we recommend construction activities occur outside the general migratory bird nesting season of March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until nesting is complete.

We suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals and Natural Resources Department, Forestry Division for information regarding bats, wildlife, and plants of State concern.

Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area.

Sincerely,

Willie Murphy
Field Supervisor

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As the nation's principal conservation agency, the Department of the Interior has responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our national parks and historical places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS 125/100665 August 2010 • Printed on recycled paper.