

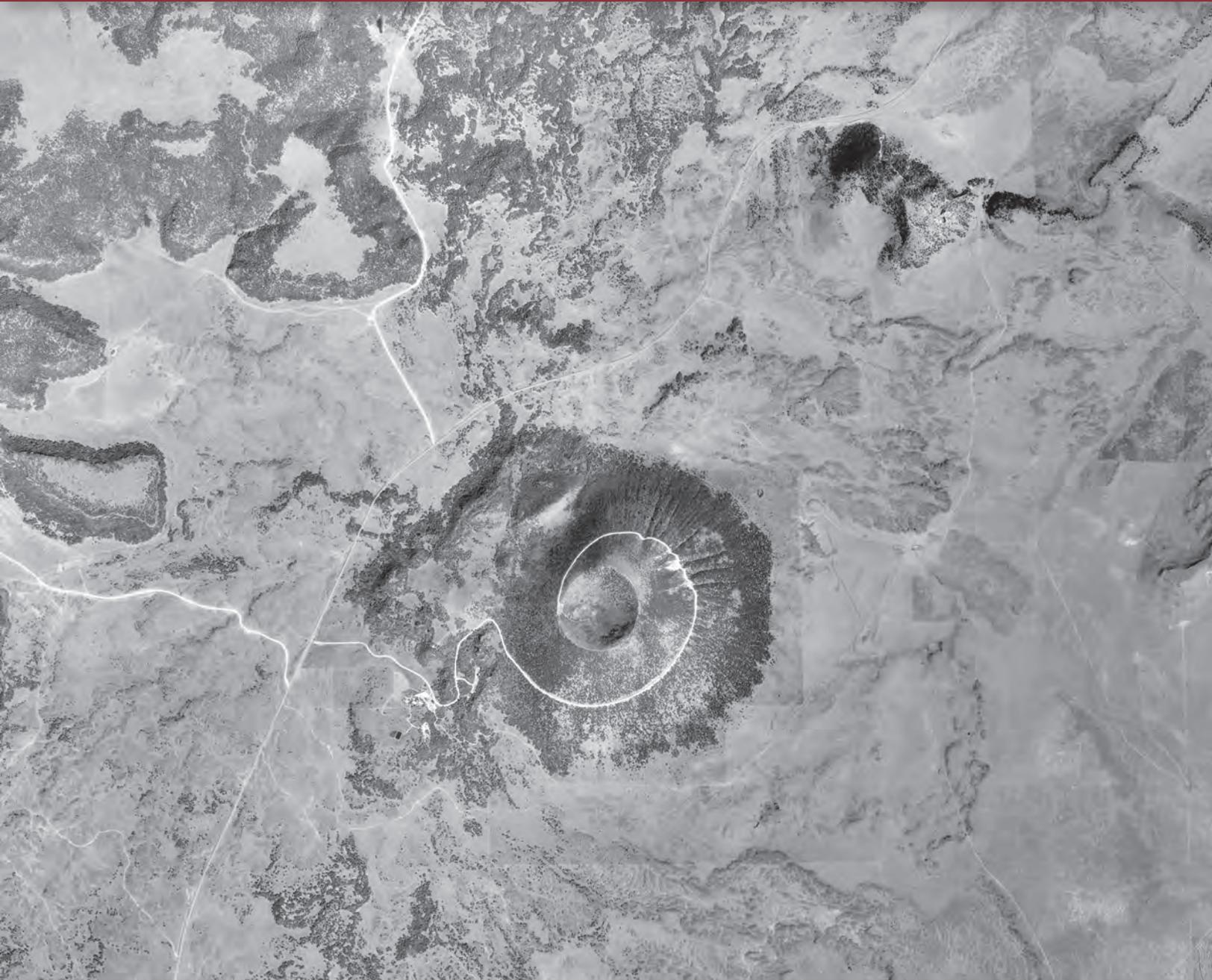


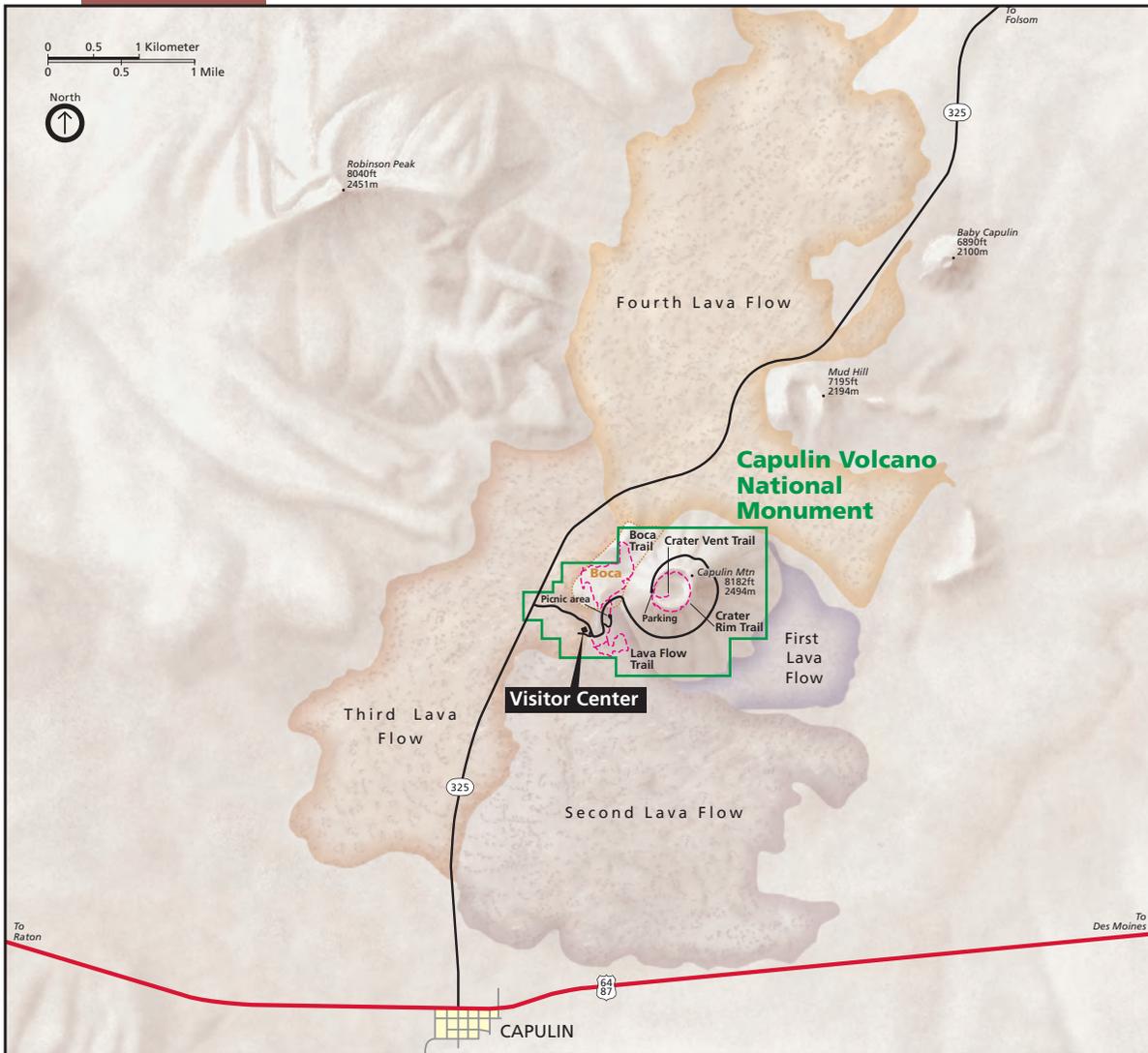
# Foundation Document

## Capulin Volcano National Monument

New Mexico

May 2014





# Contents

**Mission of the National Park Service . . . . . 1**

**Introduction. . . . . 2**

**Part 1: Core Components . . . . . 3**

    Brief Description of Capulin Volcano National Monument . . . . . 3

    Park Purpose . . . . . 4

    Park Significance . . . . . 5

    Fundamental Resources and Values . . . . . 6

    Other Important Resources and Values . . . . . 7

    Interpretive Themes . . . . . 8

**Part 2: Dynamic Components . . . . . 9**

    Assessment of Planning and Data Needs . . . . . 9

        Identification of Key Parkwide Issues . . . . . 10

        Analysis of Fundamental Resources and Values . . . . . 12

        Analysis of Other Important Resources and Values . . . . . 21

        Planning and Data Needs . . . . . 25

    Special Mandates and Administrative Commitments . . . . . 29

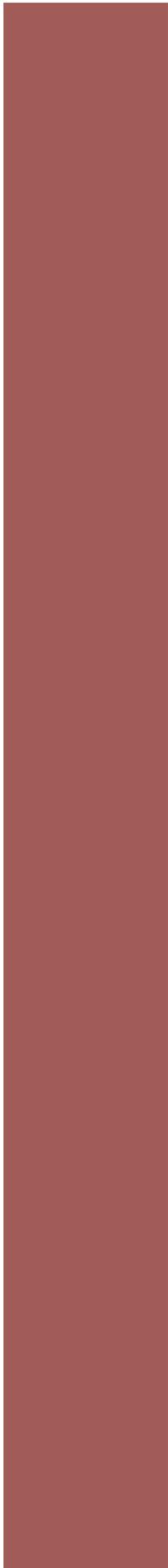
        Special Mandates . . . . . 29

        Administrative Commitments . . . . . 29

**Part 3: Contributors . . . . . 30**

**Appendixes . . . . . 31**

    Appendix A: Presidential Proclamation and Legislative Acts for  
        Capulin Volcano National Monument . . . . . 31





## Mission of the National Park Service

The National Park Service (NPS) preserves unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations. The National Park Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

The NPS core values are a framework in which the National Park Service accomplishes its mission. They express the manner in which, both individually and collectively, the National Park Service pursues its mission. The NPS core values are:

- **Shared stewardship:** We share a commitment to resource stewardship with the global preservation community.
- **Excellence:** We strive continually to learn and improve so that we may achieve the highest ideals of public service.
- **Integrity:** We deal honestly and fairly with the public and one another.
- **Tradition:** We are proud of it; we learn from it; we are not bound by it.
- **Respect:** We embrace each other's differences so that we may enrich the well-being of everyone.

The National Park Service is a bureau within the Department of the Interior. While numerous national park system units were created prior to 1916, it was not until August 25, 1916, that President Woodrow Wilson signed the National Park Service Organic Act formally establishing the National Park Service.

The national park system continues to grow and comprises 401 park units covering more than 84 million acres in every state, the District of Columbia, American Samoa, Guam, Puerto Rico, and the Virgin Islands. These units include, but are not limited to, national parks, monuments, battlefields, military parks, historical parks, historic sites, lakeshores, seashores, recreation areas, scenic rivers and trails, and the White House. The variety and diversity of park units throughout the nation require a strong commitment to resource stewardship and management in order to ensure both the protection and enjoyment of these resources for future generations.



*The arrowhead was authorized as the official National Park Service emblem by the Secretary of the Interior on July 20, 1951. The sequoia tree and bison represent vegetation and wildlife, the mountains and water represent scenic and recreational values, and the arrowhead represents historical and archeological values.*

## Introduction

Every unit of the national park system is to have a foundational document that will provide basic guidance for planning and management decisions—a foundation for planning and management, or foundation document. The core components of a foundation document include a brief description of the park as well as the park’s purpose, significance, fundamental resources and values, other important resources and values, and interpretive themes. The foundation document also includes special mandates and administrative commitments, an assessment of planning and data needs that identifies planning issues, planning products to be developed, and the associated studies and data required for park planning. Along with the core components, the assessment provides a focus for park planning activities and establishes a baseline from which planning documents are developed.

A primary benefit of developing a foundation document is the opportunity to integrate and coordinate all kinds and levels of planning from a single, shared understanding of what is most important about the park. The process of developing a foundation document begins with gathering and integrating information about the park. Next, this information is refined and focused to determine what the most important attributes of the park are. The process of preparing a foundation document aids park managers, staff, and the public in identifying and clearly stating in one document the essential information that is necessary for park management to consider when determining future planning efforts, outlining key planning issues, and protecting resources and values that are integral to park purpose and identity.

While not included in this document, a park atlas is also part of a foundation project. The atlas is a series of maps compiled from available geographic information system (GIS) data on natural and cultural resources, visitor use patterns, facilities, and other topics. It serves as a GIS-based support tool for planning and park operations. The atlas is published as a paper product and as geospatial data for use in a web mapping environment. The park atlas for Capulin Volcano National Monument can be accessed online at: <http://insideparkatlas.nps.gov/>.



## Part 1: Core Components

The core components of a foundation document include a brief description of the park, its purpose, significance statements, fundamental and other important resources and values, and interpretive themes. These components are considered core as they typically do not change over time. Core components are expected to be used as the foundation for future planning and management efforts.

### Brief Description of Capulin Volcano National Monument

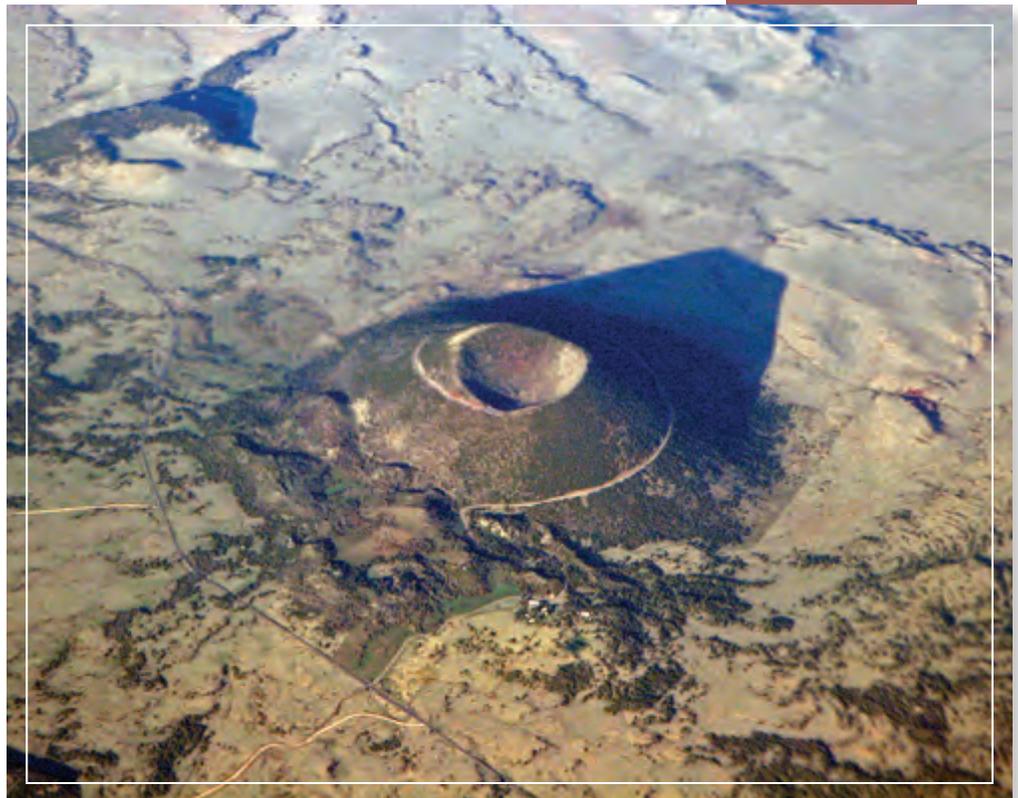
The national monument was established by presidential proclamation on August 9, 1916. The intent of President Woodrow Wilson's executive order was to preserve the nearly perfectly shaped volcanic cinder cone, which stands more than 1,200 feet above the surrounding high plains of northeastern New Mexico.

Capulin Volcano is just one of about 100 volcanic features in the Raton-Clayton Volcanic Field, which covers about 8,000 square miles in northeastern New Mexico and southeastern Colorado. This collection of volcanoes is the easternmost Cenozoic volcanic field in North America and has been active during the past 9 million years. The field is considered dormant as no activity has occurred within the last 30,000 to 40,000 years. The eruption of Capulin Volcano is one of the most recent eruptions (approximately 60,000 years ago). More than 15 square miles of associated lava flows extend beyond the monument's boundary.

A two-mile paved road spirals up to the volcano rim making Capulin Volcano one of the most accessible volcanoes in the world. The unobstructed, panoramic views of the volcanic field, distant Sangre de Cristo Mountains, and portions of four states (Colorado, New Mexico, Oklahoma, and Texas) provide outstanding opportunities for visitors to understand and appreciate the geologic history of northern New Mexico. Trails leading around the one-mile rim and to the bottom of the 415 feet deep crater allow a rare opportunity for visitors to easily and safely explore what was once an active volcano.

Capulín is a Mexican-Spanish word for chokecherry, a shrub or small tree commonly found on the slopes of the volcano.

Encompassing almost 800 acres, Capulin Volcano National Monument is located in Union County, New Mexico, approximately 20 miles east of Raton and received 48,710 visitors in 2012.



## Park Purpose

The purpose statement identifies the specific reason for establishment of a particular park. The purpose statement for Capulin Volcano National Monument was drafted after a careful analysis of the intent described in the presidential proclamation, subsequent legislation and the legislative history (see appendix A). The purpose statement lays the foundation for understanding what is most important about the park.

*The purpose of CAPULIN VOLCANO NATIONAL MONUMENT is to preserve, protect, and interpret the scientific values, geologic integrity, and scenic viewshed of the striking volcanic features resulting from the creation and eruption of Capulin Volcano.*

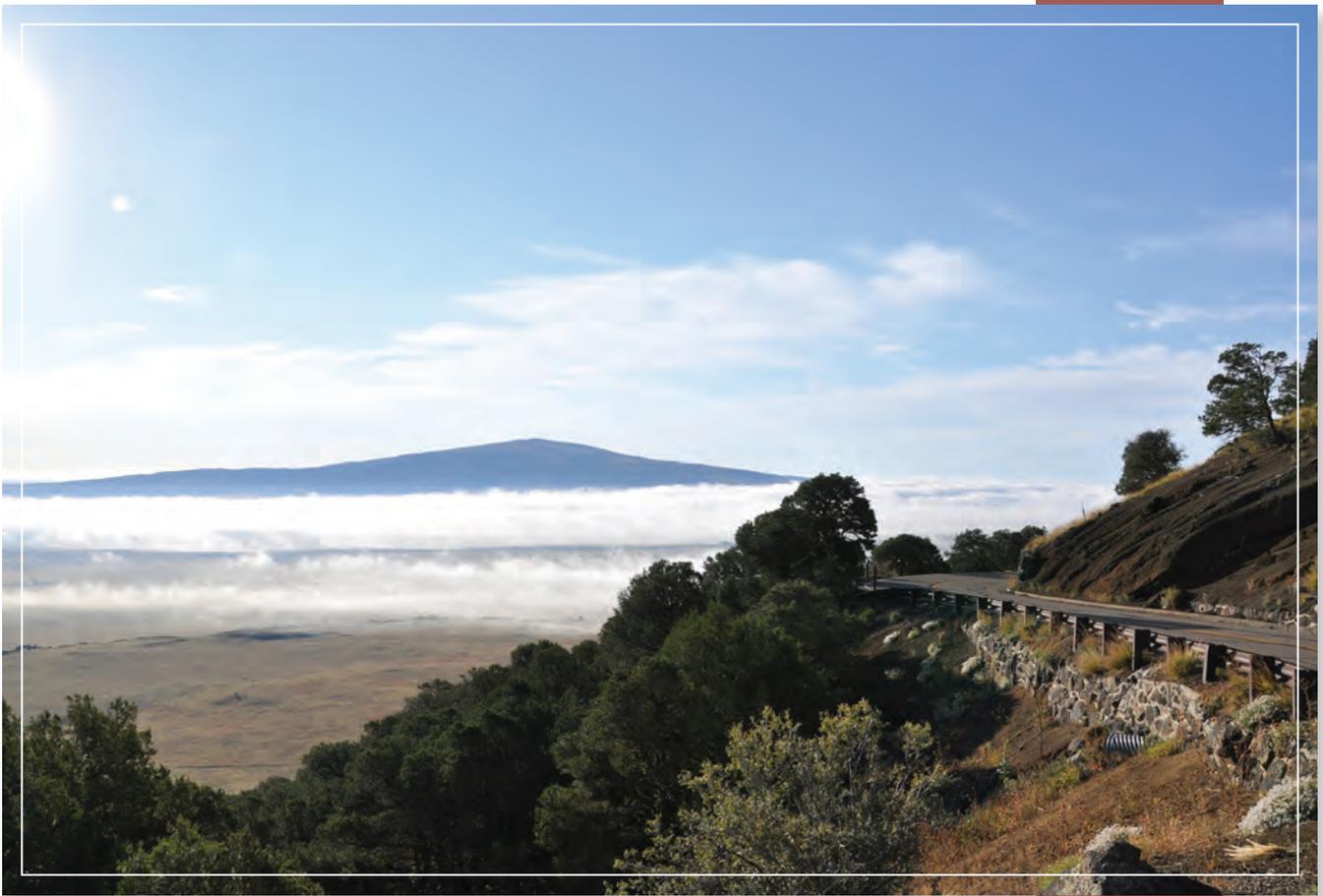


## Park Significance

Significance statements express why a park's resources and values are important enough to merit designation as a unit of the national park system. These statements are linked to the purpose of Capulin Volcano National Monument, and are supported by data, research, and consensus. Statements of significance describe the distinctive nature of the park and why an area is important within a global, national, regional, and systemwide context. They focus on the most important resources and values that will assist in park planning and management.

The following significance statements have been identified for Capulin Volcano National Monument.

1. Capulin Volcano's classic cinder cone and associated volcanic features provide a striking example of a recently extinct volcano for observation and study at local to global levels.
2. Capulin Volcano is part of the geologically and morphologically diverse Raton-Clayton Volcanic Field, the easternmost Cenozoic volcanic field in North America.
3. The breathtaking panoramic view from the crater rim provides opportunities for education and scientific investigation of natural and cultural landscapes, including how the features were formed and how the volcanic landforms helped shape the human history of northeastern New Mexico.



## Fundamental Resources and Values

Fundamental resources and values (FRVs) are those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management processes because they are essential to achieving the purpose of the park and maintaining its significance. Fundamental resources and values are closely related to a park's legislative purpose and are more specific than significance statements.

Fundamental resources and values help focus planning and management efforts on what is truly significant about the park. One of the most important responsibilities of NPS managers is to ensure the conservation and public enjoyment of those qualities that are essential (fundamental) to achieving the purpose of the park and maintaining its significance. If fundamental resources and values are allowed to deteriorate, the park purpose and/or significance could be jeopardized.

The following fundamental resources and values have been identified for Capulin Volcano National Monument:

- **Volcanic Features and Geologic Processes.** This includes the cinder cone, crater, lava flows, and other volcanic features found within the monument, Capulin Volcano's role in the formation of the Raton-Clayton Volcanic Field, and the geological processes of erosion, rifting, and extensional tectonics.
- **Scenic/Historic Viewshed.** This includes the unobstructed panoramic views of the Raton-Clayton Volcanic Field and traces of overland trails of historic importance that are possible along Volcano Road and the Crater Rim Trail, the natural setting of pinyon-juniper woodlands surrounded by shortgrass prairie, the air quality of northern New Mexico that make these views possible, and the dark night skies that allow for spectacular celestial observation.
- **Opportunities for Scientific Study.** This includes opportunities to study climate change, process geomorphology, soils development, mammal and avian migration patterns, archeology and ethnography, and astronomy.



## Other Important Resources and Values

Capulin Volcano National Monument contains other resources and values that are not fundamental to the purpose of the park, and may be unrelated to its significance, but are important to consider in management planning. These are referred to as “other important resources and values” (OIRV). These resources and values have been selected because they are important in the operation and management of the park, and warrant special consideration in park planning. The following other important resources and values have been identified Capulin Volcano National Monument:

- **Cultural Resources.** This includes a number of interrelated cultural features found at the monument: historic designed cultural landscape (Volcano Road, the Crater and Rim trails, the Mission 66 visitor center and residences, and other features), ethnographic resources, archeological resources, and the monument’s museum collection.
- **Rare Species.** This includes two rare species that have been recorded at the monument: the Capulin Goldenrod (*Solidago capulinensis*) and the Capulin Alberta arctic butterfly (*Oeneis alberta capulinensis*).



## Interpretive Themes

Interpretive themes are often described as the key stories or concepts that visitors should understand after visiting a park—they define the most important ideas or concepts communicated to visitors about a park unit. Themes are derived from, and should reflect, park purpose, significance, resources, and values. The set of interpretive themes is complete when it provides the structure necessary for park staff to develop opportunities for visitors to explore and relate to all of the park significance statements and fundamental and other important resources and values.

Interpretive themes are an organizational tool that reveal and clarify meaning, concepts, contexts, and values represented by park resources. Sound themes are accurate and reflect current scholarship and science. They encourage exploration of the context in which events or natural processes occurred and the effects of those events and processes. They go beyond a mere description of the event or process to foster multiple opportunities to experience and consider the park and its resources. Themes help to explain why a park story is relevant to people who may otherwise be unaware of connections they have to an event, time, or place associated with the park.

The following interpretive themes have been identified for Capulin Volcano National Monument:

1. Dramatic yet accessible, Capulin Volcano invites people to explore an exceptional cinder cone volcano and offers opportunities for educational study and personal inspiration.
2. The geologically diverse Raton-Clayton Volcanic Field creates an evocative and evolving landscape that opens the door to an understanding of how geological forces shape our world.
3. At the meeting place between the shortgrass prairie and the Rocky Mountains, Capulin Volcano protects a natural and cultural environment that is rich in opportunities to explore and study a dramatic volcanic landscape.
4. 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.
5. Clean air and natural darkness enhance opportunities for visitors to experience the scenic landscape.



## Part 2: Dynamic Components

The dynamic components of a foundation document include an assessment of planning and data needs and identification of any special mandates and administrative commitments. These components are dynamic because they may change over time. As conditions and trends of fundamental and other important resources and values change, the analysis of planning and data needs will need to be revisited and revised, along with key issues. Therefore, this part of the foundation document will be updated accordingly.

### Assessment of Planning and Data Needs

Once the core components of part 1 of the foundation document have been identified, it is important to gather and evaluate existing information about the park's fundamental and other important resources and values, and develop a full assessment of the park's planning and data needs. The assessment of planning and data needs section presents planning issues, the planning projects that will address these issues, and the associated information requirements for planning, such as resource inventories and data collection, including GIS data.

There are three sections in the assessment of planning and data needs:

1. identification of key parkwide issues
2. analysis of fundamental and other important resources and values
3. identification of planning and data needs (including spatial mapping activities or GIS maps)

The identification of key issues and the analysis of fundamental and other important resources and values leads up to and supports the identification of planning and data collection needs.



## Identification of Key Parkwide Issues

This section considers key issues to be addressed in planning and management, and therefore takes a broader view over the primary focus of part 1. A key issue focuses on a question that is important for a park. Key issues often raise questions regarding park purpose and significance, and fundamental and other important resources and values. For example, a key issue may pertain to the potential for a fundamental or other important resource or value in a park to be detrimentally affected by discretionary management decisions. A key issue may also address crucial questions not directly related to purpose and significance, but still indirectly affects them. Usually a key issue is one that a future planning effort or data collection needs to address and requires a decision by NPS managers.

The following are key issues for Capulin Volcano National Monument and the associated planning and data needs to address them:

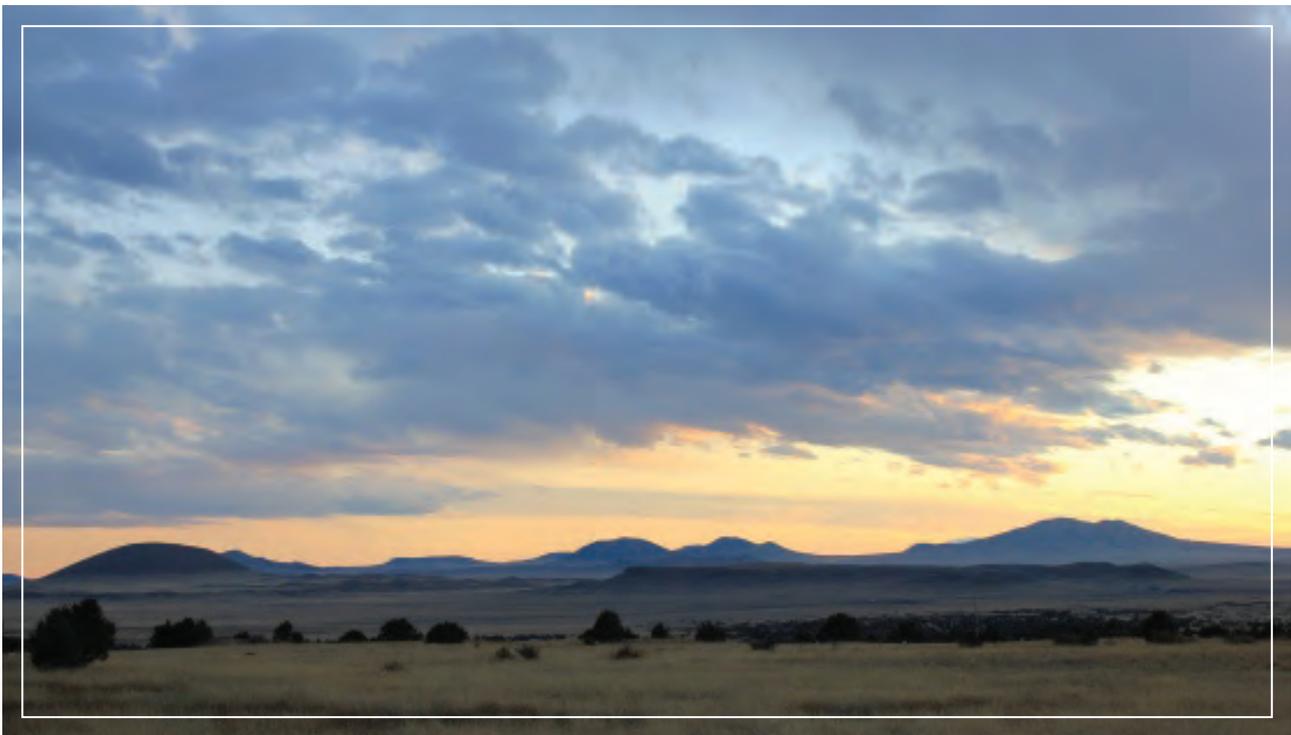
- **Monument Infrastructure.**
  - Most of the monument’s infrastructure was developed during the Mission 66 initiative and is in need of major rehabilitation. A structural/seismic safety evaluation of the visitor center identified more than 20 structural deficiencies that require repair. The condition and location of the monument’s existing utility systems are unknown. There is no water / wastewater service or fire suppression system in place for the maintenance facility. Monument operations during power outages are limited without the ability to generate power off the grid. A development concept plan is needed to evaluate alternatives that efficiently address these needs without compromising the key components and characteristics of a potentially eligible national historic district.
  - Visitor center exhibits convey very limited content on the monument’s interpretive themes. An updated comprehensive interpretive plan is needed to integrate new information on monument resources, climate change, and dark night skies. An exhibit plan is needed to complement the anticipated visitor center rehabilitation.
  - A condition assessment and rehabilitation plan is needed to identify remedies for restoring/maintaining the structural integrity of approximately two miles of masonry retaining wall protecting Volcano Road.
- **Resource Management.**
  - The monument staff is working toward building its capacity for science-based resource decision making by reaching out to universities and other NPS units that share similar resource management concerns. They are also working toward building their GIS expertise and networking with the region’s GIS program.
  - A rangeland management plan is currently being prepared by Oklahoma State University and is expected to be completed in 2013. One of the options under consideration includes reintroducing grazing as a management tool for restoring historic landscape values and controlling invasive plants.
  - The monument’s existing boundary fence is nearly 60 years old and in various states of repair. A boundary survey and installation of a wildlife friendly fence is needed for managing rangeland conditions and to limit hunter trespass.

- As the planet’s climate changes over time, mobile resources may shift location, and there may be other impacts on underlying geology, hydrology, and other systems. Scientists are projecting a warmer and drier landscape for the region. This will mean a decrease in water resources, both surface and groundwater. Water is important for sustaining the existing ecological systems at the monument. Water is also important for sustaining park operations, including visitor services. A warmer and drier climate may accelerate weathering of park structures. A dryer landscape may increase the potential for wildland fire that could threaten park facilities, historic structures, and/or cultural sites. A warming climate could change visitation patterns and interests and invite the need for innovations to accommodate these changes (e.g., installation of shade structures, education on the changing climate and sustainability, and alternative water supplies). Monument staff can record these changes and interpret them for visitors and scientists. Resource managers must also consider what actions may be taken to deal with the impacts that climate change brings to the monument and what strategies for adaptation should be considered. Developing a climate change vulnerability assessment and adaptation strategy for both natural and cultural resources would provide guidance for monument managers to proactively respond to this evolving challenge. It is important for Capulin Volcano National Monument to continue to collect site-specific weather data from a nearby remote automatic weather station to validate local changes in climate, which will complement the proposed climate change vulnerability assessment and associated work on ecological responses to a changing climate.
- In order for the monument to achieve the goals outlined in the servicewide Green Parks Plan (2012), there are a number of data gaps that need to be filled. These include documenting the current level of water and energy consumption, identifying and evaluating green procurement opportunities, assessing fleet operations, and understanding how climate change could potentially affect monument resources. As a first step towards this goal, monument staff has identified the need to conduct a water use survey and prepare a water use plan for the monument.
- **Operational Capacity.**
  - There currently is no law enforcement presence stationed at the monument. The lack of operational funding has resulted in low staffing levels making it difficult to maintain high standards for visitor services and respond to an increasing number of unfunded mandates, reports, and information/data requests. This also limits opportunities for proactive management as the primary focus is on maintaining current operations.
  - The relatively small size of the monument limits opportunities for career advancement and consequently the monument has experienced a pattern of continual staff turnover. Documenting standard operating procedures along with a contact list for each division would help ensure management continuity under this condition of constant change.
- **Partnership Opportunities.**
  - Monument staff recognizes the value of pursuing partnership opportunities. They have established a successful track record in securing grant funding and assistance for a range of activities benefiting the monument. They are currently working toward enhancing community relationships to expand their base of support. A plan is needed for establishing a friends group that would help leverage additional partnership support. The monument would also like to develop a series of agreements with universities and county, state, and federal agencies to identify opportunities for collaborating on issues of mutual interest.

## Analysis of Fundamental Resources and Values

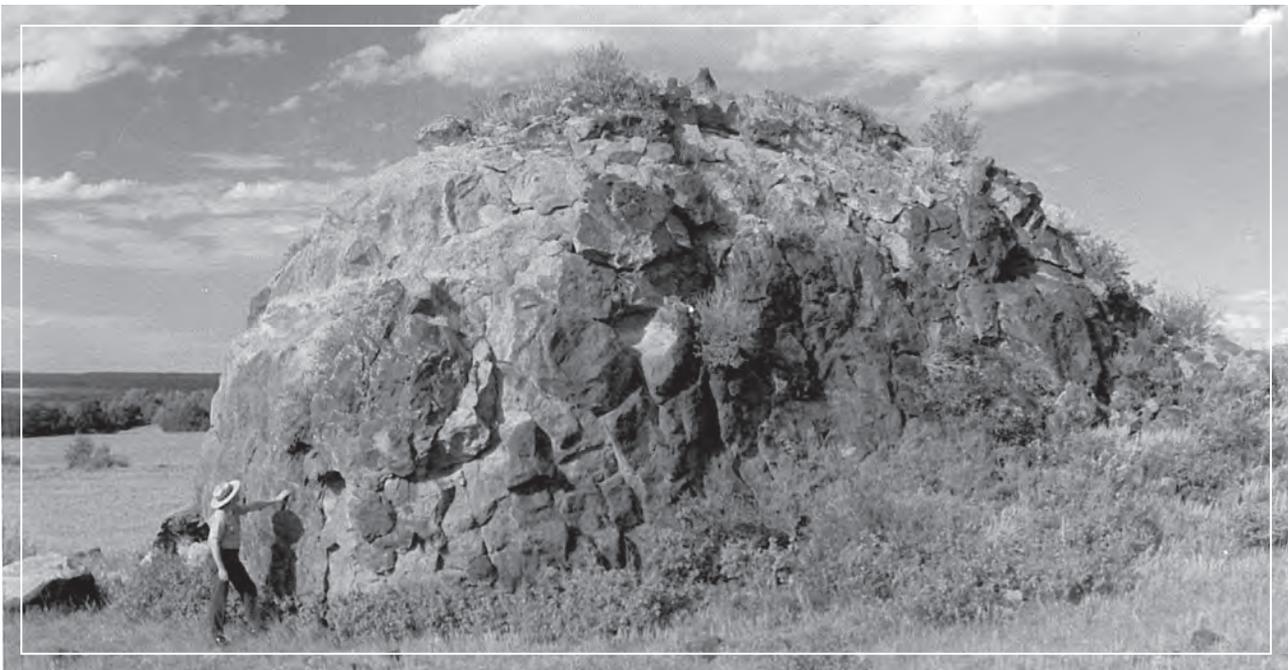
The fundamental resource and value analysis table includes current condition, potential threats and opportunities, planning and data needs, and selected laws and NPS policies related to management of the identified resource or value.

Fundamental Resource or Value	<b>Volcanic Features and Geologic Processes</b> (Cinder cone, crater, lava flows, other volcanic features, and portions of the Raton-Clayton Volcanic Field)
<b>Related Significance Statements</b>	1. Capulin Volcano’s classic cinder cone and associated volcanic features provide a striking example of a recently extinct volcano that provides opportunities for observation and study at local to global levels.  2. Capulin Volcano National Monument is part of the geologically and morphologically diverse Raton-Clayton Volcanic Field, the easternmost Cenozoic volcanic field in North America.
<b>Current Conditions and Trends</b>	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>Hydrology and erosion of the cinder cone have been altered by the paved road that spirals up to the volcano’s rim and the paved trail that encircles the rim (Volcano Road and Crater Rim Trail).</li> <li>Indian Cave, which is one of three known lava tubes found within the monument, was previously disturbed during a Boy Scout “housekeeping” project; the other two known caves (lava tubes) are still intact. All lava flow areas inside the monument are intact except for minor damage from previous mining exploration along the east and southeast side of the monument.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>A \$2 million effort to remediate hill slope erosion caused by Volcano Road was completed by the Federal Highway Administration in 2012. The project included incorporating erosion control measures and repairing road shoulders, drainage structures, and eroded hill slope areas.</li> <li>Continued natural sloughing of hill slope material.</li> </ul>

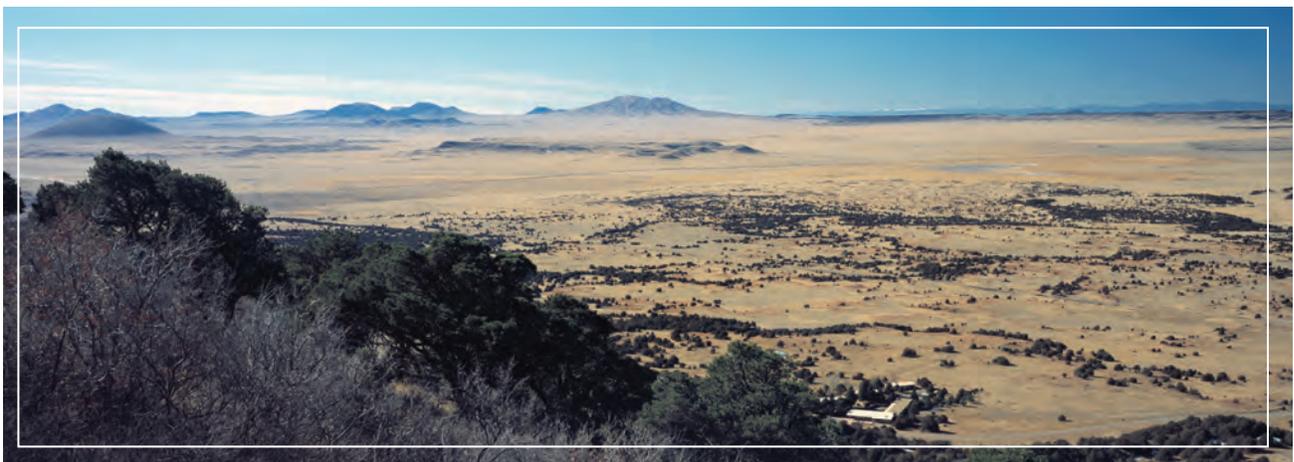


<p><b>Fundamental Resource or Value</b></p>	<p><b>Volcanic Features and Geologic Processes</b> (Cinder cone, crater, lava flows, other volcanic features, and portions of the Raton-Clayton Volcanic Field)</p>
<p><b>Threats and Opportunities</b></p>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• The most significant threat is erosion of the cinder cone. This includes natural erosional processes such as mass wasting, rilling, and sloughing along the volcano’s hill slope. However, the greatest risk is the altered hydrology and accelerated erosional processes resulting from Volcano Road and its drainage culverts.</li> <li>• Previous fire management activities included tree removal and unintended tree mortality; loss of tree canopy has affected rain distribution over volcanic soils resulting in increased erosion and altered distribution of plant species.</li> <li>• Potential geohazards threatening visitor and staff safety.</li> <li>• The monument boundary does not include the entire footprint of the cinder cone or lava flows. Land management practices by others could impact these features.</li> <li>• There has been unauthorized visitor access into the caves (lava tubes), although it appears that no damage has occurred.</li> <li>• Climate change and associated influences may impact resources.</li> <li>• As White-nose syndrome moves west there will be a potential impact on bats from unauthorized access into lava tubes.</li> <li>• The lack of funding, low staffing levels, and staff turnover do not allow for proactive management as the primary focus is maintaining current operations.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Continue working with existing partners and stakeholders (classroom study, research, and management plans).</li> <li>• Continue working with associated tribes and communities to understand traditional associations.</li> <li>• Establish new relationships to expand partnership opportunities.</li> <li>• Network with other NPS units that have trail expertise.</li> </ul>
<p><b>Existing Data and Plans Related to the FRV</b></p>	<ul style="list-style-type: none"> <li>• Geologic resources foundation summary.</li> <li>• Geologic resources inventory map data are available in GIS and Google Earth formats: <ul style="list-style-type: none"> <li>• Volcanic map: <a href="https://irma.nps.gov/App/Reference/Profile?Code=2164823">https://irma.nps.gov/App/Reference/Profile?Code=2164823</a>.</li> <li>• Lava flow map: <a href="https://irma.nps.gov/App/Reference/Profile?Code=2164825">https://irma.nps.gov/App/Reference/Profile?Code=2164825</a>.</li> </ul> </li> <li>• Geologic resources inventory scoping meeting held in 2011 and summarized by KellerLynn (geologic resources inventory report underway).</li> <li>• Natural resource condition assessment (Southern Plains Network Inventory and Monitoring Program).</li> <li>• Vital signs monitoring plan (Southern Plains Network Inventory and Monitoring Program).</li> </ul>
<p><b>Data and/or GIS Needs</b></p>	<ul style="list-style-type: none"> <li>• Need current research on volcano and volcanic field (extinct volcanoes do not draw much interest).</li> <li>• Determine current level of erosion and identify methods for erosion prevention.</li> <li>• Investigate soil development.</li> <li>• Prepare research compendium.</li> <li>• Conduct climate change vulnerability assessment.</li> </ul>
<p><b>Planning Needs</b></p>	<ul style="list-style-type: none"> <li>• Prepare hill slope monitoring and erosion control plan.</li> <li>• Prepare trail management plan.</li> <li>• Prepare climate change adaptation strategy.</li> </ul>

<p><b>Fundamental Resource or Value</b></p>	<p><b>Volcanic Features and Geologic Processes</b> (Cinder cone, crater, lava flows, other volcanic features, and portions of the Raton-Clayton Volcanic Field)</p>
<p><b>Management Actions</b></p>	<ul style="list-style-type: none"> <li>• Monitor natural erosion patterns.</li> <li>• Monitor road and trail conditions and their continued effect on erosion patterns.</li> <li>• Reevaluate Crater Rim trail design (surfacing, drainage, color).</li> <li>• The monument is currently rerouting the Boca Trail away from the lava tube to help reduce unauthorized visitor access.</li> </ul>
<p><b>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</b></p>	<p><b>Laws, Executive Orders, and Regulations That Apply to the FRV</b></p> <ul style="list-style-type: none"> <li>• NPS Organic Act of 1916 (16 USC 1)</li> <li>• Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources"</li> </ul> <p><b>NPS Policy-level Guidance</b> (NPS <i>Management Policies 2006</i> and Director's Orders)</p> <ul style="list-style-type: none"> <li>• Climate Change Adaptation Policy (523 DM1)</li> <li>• NPS <i>Management Policies 2006</i></li> <li>• NPS Director's Order 77: <i>Natural Resource Protection</i></li> </ul>
<p><b>Stakeholders and American Indian Tribes</b></p>	<ul style="list-style-type: none"> <li>• Traditionally associated American Indian tribes</li> <li>• Southern Plains Inventory and Monitoring Network</li> <li>• Federal Highway Administration</li> <li>• Natural Resource Conservation Service</li> <li>• Oklahoma State University and Southwest Oklahoma State University</li> <li>• New Mexico State Land Office</li> <li>• Socorro geologists</li> <li>• Ranching and gateway communities</li> <li>• Schools in the neighboring five states</li> <li>• Rocky Mountain Youth Corps</li> </ul>



<b>Fundamental Resource or Value</b>	<b>Scenic/Historic Viewshed</b> (unobstructed views, natural setting, air quality, and dark night sky)
<b>Related Significance Statements</b>	3. The breathtaking panoramic view from the crater rim provides opportunities for education and scientific investigation of natural and cultural landscapes, including how the features were formed and how the volcanic landforms helped shape the human history of northeastern New Mexico.
<b>Current Conditions and Trends</b>	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• <b>Foreground views</b> (monument landscape setting) – The scenic quality is in fair condition as previous management practices have resulted in tree stumps, fire scars, invasive plants, and discontinuity in rangeland conditions between monument and surrounding lands.</li> <li>• <b>Middle ground views</b> (surrounding landscape setting) – Land use and development patterns surrounding the monument have remained fairly stable and in good condition. The area still retains its rural character and low density of manmade features although some incremental changes have been observed: over-grazing, loss of three cinder cones to cinder mining, and placement of communication towers on Sierra Grande.</li> <li>• <b>Background views</b> (distant mountain ranges) – Fairly stable and in good condition as this area includes mostly protected lands.</li> <li>• <b>Air Quality</b> – Visibility, ozone, and deposition are currently not meeting NPS Air Resources Division recommended desired conditions and warrant moderate concern.</li> <li>• <b>Night Sky</b> – The monument’s night sky is in good condition and is considered to be a “truly dark site” when assessed using the Bortle Dark-Sky scale (lower end of Class 2). It was ranked in the top 20 dark night skies out of 90+ measured national park skies.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>• <b>Viewshed</b> – While the monument is working toward improving conditions of foreground views within monument boundaries, future conditions are primarily dependent on local and regional planning because most of the viewshed is located outside the monument’s boundary. Surrounding land use and development patterns have remained relatively stable with the exception of recent proposals for wind turbines, cell towers, and utility corridor development (north/south and east/west).</li> <li>• <b>Air Quality</b> – No trend information is available due to lack of on-site or nearby visibility monitors.</li> <li>• <b>Night Sky</b> – The monument and surrounding communities are working toward enhancing dark night sky conditions by retrofitting their exterior light fixtures to reduce light pollution.</li> </ul>



<b>Fundamental Resource or Value</b>	<b>Scenic/Historic Viewshed</b> (unobstructed views, natural setting, air quality, and dark night sky)
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• <b>Viewshed</b> – Increases in mining, turnover in ranch ownership, relationships with surrounding land owners, changes in land use patterns, introduction of man-made structures (wind turbines, cell towers, housing, utility lines), dust, temporary blue haze (natural phenomena from the desert plants), insect infestation, invasive plants, fire, and pollution from increased traffic along U.S. Highway 64/87 (one of the busiest in the state).</li> <li>• <b>Air quality</b> – Potential for air pollution from regional and local sources and resulting ecosystem effects.</li> <li>• <b>Night Sky</b> – Light pollution, dust, and temporary blue haze.</li> <li>• <b>General</b> – Climate change and associated influences may impact resources. The lack of funding, low staffing levels, and staff turnover do not allow for proactive management as the primary focus is maintaining current operations.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• <b>Viewshed</b> – Pursue and enhance partnerships with other agencies (U.S. Forest Service, Natural Resources Conservation Service, U.S. Fish and Wildlife Service, New Mexico Department of Game and Fish) and NPS units (Bent’s Old Fort National Historic Site, Washita Battlefield National Historic Site, Lake Meredith National Recreation Area) that have expertise in managing rangelands.</li> <li>• <b>Night Sky</b> – Continue to pursue and enhance partnerships with International Dark Sky Association, area colleges, local astronomy clubs, and others.</li> <li>• <b>Enhance Interpretive Opportunities</b> – Collaborate with area museums to collect information on historical geography. Pursue inclusion of the monument in the Santa Fe National Historic Trail corridor. Also consider incorporating themes on the importance of clean air in the national parks, for clear views as well as visitor and ecosystem health.</li> </ul>



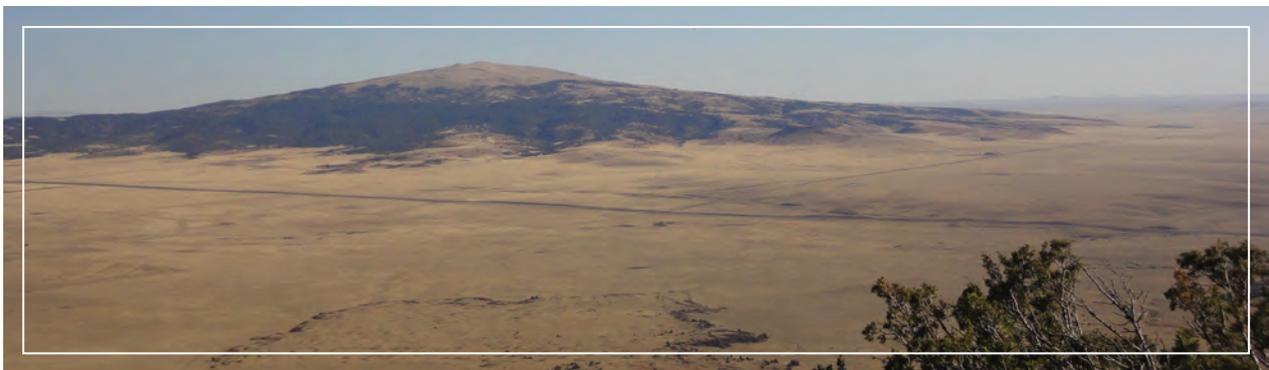
<b>Fundamental Resource or Value</b>	<b>Scenic/Historic Viewshed</b> (unobstructed views, natural setting, air quality, and dark night sky)
<b>Existing Data and Plans Related to the FRV</b>	<ul style="list-style-type: none"> <li>• Natural resource condition assessment (2012 – this includes a viewshed assessment).</li> <li>• Air quality briefing paper (NRSS Air Resources Division).</li> <li>• Night sky report (NPS Fort Collins).</li> <li>• Grasslands and fire affects monitoring report.</li> <li>• General management plan (2010).</li> <li>• Administrative history (2003).</li> <li>• Cultural landscape inventory (2004).</li> </ul>
<b>Data and/or GIS Needs</b>	<ul style="list-style-type: none"> <li>• Initiate rangeland monitoring including nonnative plant monitoring by Southern Plains Network Inventory and Monitoring Program and monument staff.</li> <li>• Conduct climate change vulnerability assessment.</li> <li>• Monitoring of air quality and air quality resource values.</li> <li>• Special studies to examine pollution dose-response relationships in sensitive park ecosystems.</li> <li>• Develop scenery conservation strategies in collaboration with area ranchers and surrounding communities using the methodology of the scenery conservation process that is being developed by the NPS Air Resources Division.</li> </ul>
<b>Planning Needs</b>	<ul style="list-style-type: none"> <li>• Complete rangeland management plan (currently underway by Oklahoma State University).</li> <li>• Update fire management plan.</li> <li>• Prepare climate change adaptation strategy.</li> <li>• Cultural landscape report.</li> </ul>
<b>Management Actions</b>	<ul style="list-style-type: none"> <li>• Pursue night sky classification for the monument once retrofit of exterior lighting is complete.</li> <li>• Continue collaboration with towns of Capulin, Des Moines, and Folsom to retrofit their exterior/security lighting and pursue regional night sky classification.</li> <li>• Coordinate with region on potential power line proposals.</li> <li>• Continue working with Canon Air Force Base to prevent overflights of the monument.</li> <li>• Continue improving rangeland management practices.</li> </ul>
<b>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</b>	<p><b>Laws, Executive Orders, and Regulations That Apply to the FRV</b></p> <ul style="list-style-type: none"> <li>• NPS Organic Act of 1916 (16 USC 1)</li> <li>• National Historic Preservation Act of 1966, as amended</li> <li>• Clean Air Act of 1977, as amended (42 USC 7401 et seq.)</li> <li>• Executive Order 13112: “Invasive Species”</li> <li>• Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources”</li> </ul> <p><b>NPS Policy-level Guidance</b> (NPS <i>Management Policies 2006</i> and Director’s Orders)</p> <ul style="list-style-type: none"> <li>• Climate Change Adaptation Policy (523 DM1)</li> <li>• NPS <i>Management Policies 2006</i></li> <li>• Director’s Order 77: <i>Natural Resource Protection</i></li> </ul>

<b>Fundamental Resource or Value</b>	<b>Scenic/Historic Viewshed</b> (unobstructed views, natural setting, air quality, and dark night sky)
<b>Stakeholders</b>	<p><b>Rangelands</b></p> <ul style="list-style-type: none"> <li>• Oklahoma State University</li> <li>• Southern Plains Network Inventory and Monitory Program</li> <li>• Southwest Exotic Plant Management Team</li> <li>• New Mexico Department of Game and Fish</li> <li>• U.S. Fish and Wildlife Service and U.S. Forest Service</li> <li>• National Resource Conservation Service</li> <li>• Washita Battlefield National Historic Site (has similar issues with cheatgrass)</li> <li>• Bents Old Fort National Historic Site (management guidance)</li> <li>• Lake Meredith National Recreation Area (fire management officer)</li> </ul> <p><b>Night Sky</b></p> <ul style="list-style-type: none"> <li>• International Dark Sky Association (night sky partnerships)</li> <li>• Rocky Mountain Youth Corps</li> <li>• City of Raton and City of Clayton</li> <li>• Raton City Schools</li> <li>• Clayton Astronomy Club and Amarillo Astronomy Club</li> <li>• Amarillo College</li> <li>• Northeast New Mexico Detention Facility in Clayton (fabricating light shields for night sky initiative)</li> <li>• Virgin Galactic (education)</li> </ul> <p><b>Historical Geography</b></p> <ul style="list-style-type: none"> <li>• Folsom Museum (source materials, private collections)</li> <li>• Herzstein Museum in Clayton (source materials, references for research, and participate in activities together)</li> <li>• Santa Fe Trails Office of the National Park Service and the Santa Fe Trail Association</li> </ul>



Fundamental Resource or Value	Opportunities for Scientific Study
<p><b>Related Significance Statements</b></p>	<p>1. Capulin Volcano’s classic cinder cone and associated volcanic features provide a striking example of recently extinct volcanoes for observation and study at local to global levels.</p> <p>3. The breathtaking panoramic view from the crater rim provides opportunities for education and scientific investigation of natural and cultural landscapes, including how the features were formed and how the volcanic landforms helped shape the human history of northeastern New Mexico.</p>
<p><b>Current Conditions and Trends</b></p>	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• No known scientific studies of the monument’s geologic features are currently underway.</li> <li>• Scientific study of the monument’s rangeland is underway.</li> <li>• Scientific study of climate change is underway.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>• Scientific study of the monument’s geologic features is fairly static as extinct volcanoes do not draw much interest.</li> <li>• Scientific study of the monument is expanding in the field of rangeland science and climate change.</li> </ul>
<p><b>Threats and Opportunities</b></p>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Lack of resources (funding, collaborators, and staff).</li> <li>• The lack of funding, low staffing levels, and staff turnover do not allow for proactive management as the primary focus is maintaining current operations.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Continue working with existing partners and stakeholders.</li> <li>• Establish new relationships to expand partnership opportunities.</li> </ul>
<p><b>Existing Data and Plans Related to the FRV</b></p>	<ul style="list-style-type: none"> <li>• Natural resource condition assessment (National Park Service, 2012).</li> <li>• Southern Plains Network Vital Signs Monitoring Plan (National Park Service, 2008).</li> <li>• Biological survey (Natural Heritage New Mexico, 2002).</li> </ul>
<p><b>Data and/or GIS Needs</b></p>	<ul style="list-style-type: none"> <li>• Study natural and manmade erosion patterns of volcano.</li> <li>• Complete inventory of monument’s flora and fauna.</li> <li>• Encourage research of phenology (study of how plant and animal life cycle events are influenced by climate variations) and palynology (study of pollen) of monument and surrounding area to help inform our understanding of climate change.</li> <li>• Encourage research of aquifer conditions (understand depth and breadth of the Capulin Aquifer and western expanse of the Ogallala Aquifer).</li> <li>• Prepare research compendium.</li> <li>• Conduct climate change vulnerability assessment.</li> <li>• Status and diversity of bat population, particularly in regard to lava tubes and potential hibernacula.</li> </ul>
<p><b>Planning Needs</b></p>	<ul style="list-style-type: none"> <li>• Complete rangeland management plan (currently underway by Oklahoma State University, expect completion by May 2013).</li> <li>• Prepare climate change adaptation strategy.</li> <li>• Prepare resource stewardship strategy.</li> </ul>

Fundamental Resource or Value	Opportunities for Scientific Study
<p><b>Management Actions</b></p>	<ul style="list-style-type: none"> <li>• Continue and expand outreach efforts to universities and others to encourage scientific research at the monument.</li> <li>• Maintain and strengthen rapport with ranching neighbors for future study of their playa lake features (these are groundwater recharge areas that could provide information about climate change and aquifer conditions).</li> <li>• Continue to respond to requests for grant proposals.</li> </ul>
<p><b>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</b></p>	<p><b>Laws, Executive Orders, and Regulations That Apply to the FRV</b></p> <ul style="list-style-type: none"> <li>• NPS Organic Act of 1916 (16 USC 1)</li> <li>• National Parks Omnibus Management Act of 1998, Title II-National Park System, Resource Inventory and Management</li> <li>• Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources"</li> </ul> <p><b>NPS Policy-level Guidance</b> (NPS <i>Management Policies 2006</i> and Director's Orders)</p> <ul style="list-style-type: none"> <li>• Climate Change Adaptation Plan (523 DM1)</li> <li>• NPS <i>Management Policies 2006</i></li> <li>• NPS Director's Order 79: <i>Integrity of Scientific and Scholarly Activities</i></li> <li>• "NPS-75, Natural Resources Inventory and Monitoring"</li> <li>• NPS <i>Natural Resource Management Reference Manual 77</i></li> </ul>
<p><b>Stakeholders</b></p>	<ul style="list-style-type: none"> <li>• Ranching neighbors</li> <li>• National Park Foundation (soft funding to support research)</li> <li>• Southern Plains Network</li> <li>• Southwest Exotic Plant Management Team</li> <li>• Natural Resource Conservation Service Native Plant Materials Program</li> <li>• U.S. Geological Survey – Civil Applications Committee (climate change, rangeland science, and controlled release of Department of Defense and civilian satellite imagery)</li> <li>• U.S. Fish and Wildlife Service (habitat and hummingbirds)</li> <li>• New Mexico Department of Game and Fish (habitat and hummingbirds)</li> <li>• Hummingbird Monitoring Network</li> <li>• Regional school districts (climate change education)</li> <li>• Oklahoma State University (rangeland science)</li> <li>• Southwest Oklahoma State University (rangeland science and climate change)</li> <li>• University of North Texas (potential partner for aquifer study)</li> </ul>



## Analysis of Other Important Resources and Values

Other Important Resource or Value	Cultural Resources (cultural landscape, ethnographic resources, archeological resources, and museum collection)
Current Conditions and Trends	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• <b>Cultural Landscape</b> – Fair to good after completion of the Volcano road culvert project in 2012; however constant maintenance will be required. A chip seal project for the road was completed in summer 2013. The Mission 66 visitor center has some structural deficiencies that pose a low to moderate risk overall.</li> <li>• <b>Ethnographic</b> – Current condition is unknown, although an ethnographic overview and assessment study is currently underway.</li> <li>• <b>Archeological</b> – Damage to Indian Cave, unauthorized entry of lava tube on Boca Trail, other lava tubes in good condition, existing condition assessment was not complete.</li> <li>• <b>Museum Collection</b> – Currently in good condition.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>• <b>Cultural Landscape</b> – Hill slope and Volcano Road have been stabilized for now. The Mission 66 visitor center and monument headquarters facility is approaching the end of its life cycle and will need major rehabilitation.</li> <li>• <b>Ethnographic</b> – Understanding improved with current study.</li> <li>• <b>Archeological</b> – Archeological resources are in a stable condition, the monument is working to remove threats.</li> <li>• <b>Museum Collection</b> – Stable.</li> </ul>
Threats and Opportunities	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• <b>Cultural Landscape</b> – Continued erosion along Volcano Road (accelerated due to prior management activities), sloughing, weather, and climate. Lack of funding to properly maintain Mission 66 development.</li> <li>• <b>Ethnographic</b> – The monument boundary does not include the entire footprint of Capulin’s cinder cone or lava flows. Land management practices by the National Park Service or other landowners (state trust lands and ranchers) that desecrate any of these features would be unacceptable to traditionally associated American Indian tribes.</li> <li>• <b>Archeological</b> – Rangeland management practices (impacts from animals and equipment), visitors illegally collecting artifacts, and social trailing.</li> <li>• <b>Museum Collection</b> – The park’s collection is currently stored at Bent’s Old Fort National Historic Site curatorial facility, a temporary Bally building. Funding is not currently available to develop a permanent structure. The fire suppression system of the curatorial facility at Bent’s Old Fort is dependent on the park’s well house, which has no fire suppression system.</li> <li>• <b>General</b> – Climate change and associated influences may impact resources. The lack of funding, low staffing levels, and staff turnover do not allow for proactive management as the primary focus is maintaining current operations.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• <b>Cultural Landscape</b> – Continue partnership with the Federal Highway Administration (FHWA) for maintaining Volcano Road; conduct oral history with members of local communities who assisted in building and maintaining the road.</li> <li>• <b>Ethnographic</b> – Expand tribal partnerships.</li> <li>• <b>Archeological</b> – Continue and expand partnerships with NPS, state, and other archeologists.</li> <li>• <b>Museum Collection</b> – Exhibit potential: The monument’s museum collection includes 2 of the 13 known Folsom Man points currently held in New Mexico public collections.</li> </ul>

<p><b>Other Important Resource or Value</b></p>	<p><b>Cultural Resources</b> (cultural landscape, ethnographic resources, archeological resources, and museum collection)</p>
<p><b>Existing Data and Plans Related to the OIRV</b></p>	<ul style="list-style-type: none"> <li>• <b>Cultural Landscape</b> – Cultural landscape inventory (2004), Culvert report, FHWA road rehabilitation plan, administrative history. Seismic safety report of Mission 66 visitor center (2012), <i>Mission 66 Visitor Center District Determination of Eligibility</i> (2011).</li> <li>• <b>Archeological</b> – <i>The Boca and Beyond: A 418 Acre Cultural Resources Inventory Of Capulin Volcano National Monument</i> (2011).</li> <li>• <b>Museum Collection</b> – <i>Capulin Volcano National Monument Museum Management Plan</i> (2011), <i>Intermountain Region Museum Collection Facilities Strategy</i> (2005).</li> </ul>
<p><b>Data and/or GIS Needs</b></p>	<ul style="list-style-type: none"> <li>• Complete ethnographic overview and assessment study (currently underway).</li> <li>• Prepare traditional use study (based on ethnographic overview and assessment findings).</li> <li>• Potential Jicarilla traditional cultural property.</li> <li>• Complete archeological investigations of monument resources.</li> <li>• Conduct research on Volcano Road construction to document roles played by the Civil Works Administration and local community members to enhance interpretive opportunities.</li> <li>• Conduct additional study of area folklore to enhance interpretive opportunities.</li> <li>• Conduct climate change vulnerability assessment.</li> </ul>
<p><b>Planning Needs</b></p>	<ul style="list-style-type: none"> <li>• Prepare hill slope monitoring and erosion control plan (especially around culvert outflow areas, include photo documentation to establish baseline conditions and to reference / record conditions over time).</li> <li>• Prepare a cultural landscape report.</li> <li>• Prepare climate change adaptation strategy.</li> </ul>
<p><b>Management Actions</b></p>	<ul style="list-style-type: none"> <li>• Continue partnerships with Federal Highway Administration on Volcano Road.</li> <li>• Pursue funding to conduct additional archeological investigations.</li> <li>• Pursue funding to support additional study of local folklore.</li> <li>• Collaborate with region on pursuing traditional cultural property designation of the Jicarilla’s sacred grove site.</li> </ul>
<p><b>Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance</b></p>	<p><b>Laws, Executive Orders, and Regulations That Apply to the OIRV</b></p> <ul style="list-style-type: none"> <li>• NPS Organic Act of 1916 (16 USC 1)</li> <li>• National Historic Preservation Act of 1966, as amended (16 USC 470)</li> <li>• Archeological and Historic Preservation Act of 1974</li> <li>• Archaeological Resources Protection Act of 1979</li> <li>• Executive Order 11593, “Protection and Enhancement of the Cultural Environment”</li> <li>• Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources”</li> </ul> <p><b>NPS Policy-level Guidance</b> (NPS <i>Management Policies 2006</i> and Director’s Orders)</p> <ul style="list-style-type: none"> <li>• Climate Change Adaptation Policy (523 DM1)</li> <li>• <i>The Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the treatment of Cultural Landscapes</i></li> <li>• <i>The Secretary of the Interior’s Standards for Archeological Documentation</i></li> <li>• <i>The Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation</i></li> <li>• NPS <i>Management Policies 2006</i></li> <li>• Director’s Order 28: <i>Cultural Resource Management</i></li> <li>• Director’s Order 28A: <i>Archeology</i></li> <li>• NPS <i>Museum Handbook</i></li> <li>• NPS <i>Intermountain Region Museum Collection Facilities Strategy (2005)</i></li> </ul>

<p><b>Other Important Resource or Value</b></p>	<p><b>Cultural Resources</b> (cultural landscape, ethnographic resources, archeological resources, and museum collection)</p>
<p><b>Stakeholders and American Indian Tribes</b></p>	<ul style="list-style-type: none"> <li>• State historic preservation officer</li> <li>• Local historical societies</li> <li>• Federal Highway Administration</li> <li>• Local community members who assisted in building and maintaining Volcano Road</li> <li>• Traditionally associated American Indian tribes</li> <li>• NPS archeologists (Pei Lin, Jim Bradford)</li> <li>• Other archeologists (David Eaks: state archeologist, David Meltzer: Folsom Man site)</li> <li>• Bents Old Fort National Historic Site (keeper of Capulin Volcano National Monument's museum collection)</li> <li>• State Land Office</li> <li>• Folsom Museum</li> <li>• Clayton Museum</li> <li>• Ranchers</li> </ul>



Other Important Resource or Value	<b>Rare Species</b> (Capulin Goldenrod ( <i>Solidago capulinensis</i> ) and Capulin Alberta Arctic Butterfly ( <i>Oeneis alberta capulinensis</i> )
<b>Current Conditions and Trends</b>	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Little is known about the either the Capulin goldenrod or Capulin Alberta arctic butterfly. The former was recently “rediscovered” after being first described in 1936. The plant seems to be growing in abundance, but studies are needed to determine distribution and abundance. The Capulin Alberta arctic butterfly was last sighted at the monument in 1996. Inventories were conducted in 2003 and 2004, but no butterflies were observed.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>• Unknown.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• The modeled climate change projections for Capulin Volcano National Monument suggest a warming climate (increase four to eight times the historical 20th century warming) and decrease in annual precipitation. This projected dryer landscape will probably influence the two rare species at the monument.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Opportunities for conducting scientific studies through interested university programs.</li> </ul>
<b>Existing Data and Plans Related to the OIRV</b>	<ul style="list-style-type: none"> <li>• Capulin Alberta arctic butterfly survey (Johnson, Cary, and Pierce 2004).</li> </ul>
<b>Data and/or GIS Needs</b>	<ul style="list-style-type: none"> <li>• Presence or absence of the Capulin Alberta arctic butterfly needs to be established.</li> <li>• The distribution and abundance of the Capulin goldenrod needs to be determined.</li> </ul>
<b>Planning Needs</b>	<ul style="list-style-type: none"> <li>• None at this time.</li> </ul>
<b>Management Actions</b>	<ul style="list-style-type: none"> <li>• Pursue funding opportunities to support research needs.</li> </ul>
<b>Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance</b>	<p><b>Laws, Executive Orders, and Regulations That Apply to the OIRV</b></p> <ul style="list-style-type: none"> <li>• NPS Organic Act of 1916 (16 USC 1)</li> <li>• Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources”</li> </ul> <p><b>NPS Policy-level Guidance</b> (NPS <i>Management Policies 2006</i> and Director’s Orders)</p> <ul style="list-style-type: none"> <li>• Climate Change Adaptation Policy (523 DM1)</li> <li>• NPS <i>Management Policies 2006</i></li> </ul>
<b>Stakeholders</b>	<ul style="list-style-type: none"> <li>• Scientists and researchers</li> </ul>

## Planning and Data Needs

To maintain connection to the core elements of the foundation, and due to the importance of these core foundation elements, the planning and data needs listed here are directly related to protecting fundamental and other important resources and values, park significance, and park purpose, as well as addressing key issues. To successfully undertake a planning effort, information from sources such as inventories, studies, research activities, and analyses may be required to provide adequate knowledge of park resources and visitor information. Such information sources have been identified as data needs. Geospatial mapping tasks and products are included in data needs.

Items considered of the utmost importance were identified as immediate priority needs while other items were identified as either mid-range or long-term needs. These priorities inform park management's efforts to secure funding and support for planning projects.

FRV, OIRV, or other	Planning and Data Needs	Priority (I, M, L)	Notes
OIRV	Development concept plan	I	The plan would develop and evaluate alternatives that efficiently address the rehabilitation needs of the visitor center and area utilities while protecting the key components and characteristics of a potentially eligible national historic district.
other	Water use survey and water use plan	I	One of the goals outlined in the 2012 servicewide Green Parks Plan includes enhancing water conservation. Conducting a water use survey and then developing a water use plan would work toward achieving this goal.
FRV	Rangeland management plan	I	The plan is currently being completed by Oklahoma State University, with an anticipated completion date in 2013.  Monitoring protocols for the monument's rangeland conditions are needed so that proactive measures can be implemented to maintain the health and vitality of this resource, eradicate nonnative plants, and protect the scenic viewshed.
OIRV	Condition assessment (Volcano Road retaining walls)	I-M	The assessment would examine the condition of approximately two miles of masonry retaining wall along Volcano Road and identify remedies for restoring/maintaining its structural integrity (consult with the NPS Historic Preservation Training Center and the Federal Highway Administration).
FRV	Boundary survey	I-M	A boundary survey and installation of a wildlife-friendly fence is needed for managing rangeland conditions and to limit hunter trespass.

FRV, OIRV, or other	Planning and Data Needs	Priority (I, M, L)	Notes
FRV	Erosion control plan	M	The plan would outline protocols for monitoring natural and manmade erosion patterns on the volcano hill slope (especially around culvert outflow areas, include photo documentation to establish baseline conditions and to reference / record conditions over time) so that proactive measures can be taken to manage/control erosion.
other	Utility plan	M	See development concept plan above. The plan would record existing utility line locations, assess conditions and capacities, and extend water and wastewater lines to provide for fire protection, potable water, and sanitary facilities at the maintenance facility.
other	Visitor use survey	M	A visitor use survey would provide current information on visitor demographics and an understanding of visitor preferences (last survey conducted in 2004).
FRV	Comprehensive interpretive plan update	M	Visitor center exhibits convey very limited content on the monument's interpretive themes. An updated plan is needed to integrate new information on monument resources, climate change, and dark night skies. An exhibit plan is needed to complement the anticipated visitor center rehabilitation.
OIRV	Area folklore research	M	Additional study of area folklore is needed to enhance interpretive opportunities of the scenic viewshed.
FRV	Scenery conservation strategy	M	Network with NPS ARD-Visual Resource Program specialists and initiate collaborative efforts with adjacent landowners and local communities to develop scenery conservation strategies for protecting the monument's viewshed.
FRV	Air quality studies	M	Monitor air quality and air quality resource values. Conduct special studies to examine pollution dose-response relationships in sensitive park ecosystems.
FRV	Collect climate data	M	It is important for Capulin Volcano National Monument to continue to collect site-specific weather data from a nearby remote automatic weather station to validate local changes in climate, which will complement the proposed climate change vulnerability assessment and associated work on ecological responses to a changing climate.

FRV, OIRV, or other	Planning and Data Needs	Priority (I, M, L)	Notes
FRV	Climate change vulnerability assessment and adaptation strategy	M	With the current trends of warmer and drier climate conditions, coupled with an increase in extreme weather events, Capulin Volcano National Monument resources could be at risk. Anticipating these influences on monument resources along with preparing an adaptation strategy would position monument managers to proactively mitigate and adapt to the potential effects of climate change.
FRV	Groundwater study	M	Encourage research of aquifer conditions (understand depth and breadth of the Capulin Aquifer and western expanse of the Ogallala Aquifer) to help inform our understanding of climate change and its potential effects on monument resources. This would need to be in coordination with area ranchers as the playa lakes (groundwater recharge areas) are found on their lands.
FRV	Phenology and palynology research	M	Encourage research of phenology (study of how plant and animal life cycle events are influenced by climate variations) and palynology (study of pollen) of monument and surrounding area to help inform our understanding of climate change and its potential effects on monument resources.
FRV	Fire management plan update	M	The plan would be updated with current information and management strategies.
OIRV	Archeological inventory	M	Additional study is needed to complete the archeological inventory of monument resources.
other	Accessibility condition assessment	M	An accessibility condition assessment is needed to identify deficiencies that need to be corrected to ensure universal access as appropriate to park features.
FRV	Scientific research strategy	L	This would include preparing a research compendium and developing a strategy to identify important scientific research needed to better understand and manage the monument's fundamental resources and values. Encourage research on the volcano and volcanic field (extinct volcanoes do not draw much interest).

FRV, OIRV, or other	Planning and Data Needs	Priority (I, M, L)	Notes
OIRV	Traditional use study	L	This would be conducted based on the findings of the ethnographic overview and assessment currently underway. It would also help inform the proposal to pursue a traditional cultural property designation for the Jicarilla Apache's sacred grove site.
OIRV	Oral histories	L	The data would include interviews with local community members who have a connection with the construction of Volcano Road. Additional research may be needed to better understand the role played by the Civil Works Administration.
OIRV	Cultural landscape report	L	A cultural landscape report is needed to provide guidance for treatment and management of the cultural landscape.
OIRV	Rare species	L	The presence or absence of the rare species Capulin Alberta arctic butterfly needs to be established. The distribution and abundance of the rare species Capulin goldenrod needs to be determined.
FRV	Flora and fauna inventory	L	Complete inventory of monument's flora and fauna. Status and diversity of bat population, particularly in regard to lava tubes and potential hibernacula.
FRV / OIRV	Resource stewardship strategy	L	The plan would identify all known cultural and natural resources in the monument, identify current conditions and trends if possible, and outline management strategies to protect resources.
FRV	Trail management plan	L	The plan would include a trail inventory; an evaluation of the existing trail surfacing, color, and drainage patterns; rehabilitation needs; new trail needs and locations; maintenance protocols; and strategies to accomplish maintenance.
other	Partnership plan	L	A plan is needed for establishing a friends group and engaging other entities to help leverage additional partnership support.
other	Green Parks Plan	L	Develop strategies for implementing the goals of the 2012 servicewide Green Parks Plan.

## Special Mandates and Administrative Commitments

Many of the management decisions for a park unit are directed or influenced by special mandates and administrative commitments with other federal agencies, state and local governments, utility companies, partnering organizations, and other entities. Special mandates are requirements specific to a park that must be fulfilled. Mandates can be expressed in enabling legislation, in separate legislation following the establishment of the park, or through a judicial process. They may expand on park purpose or introduce elements unrelated to the purpose of the park. Administrative commitments are, in general, agreements that have been reached through formal, documented processes, often through memoranda of agreement. Examples include easements, rights-of-way, arrangements for emergency service responses, etc. Special mandates and administrative commitments can support, in many cases, a network of partnerships that help fulfill the objectives of the park and facilitate working relationships with other organizations. They are an essential component of managing and planning for Capulin Volcano National Monument.

### Special Mandates

There currently are no known special mandates for Capulin Volcano National Monument.

### Administrative Commitments

- Cooperative agreement with Western National Parks Association to support monument operations and operate a bookstore inside the visitor center.
- Updates are needed for the expired cooperative agreements with local fire departments (Capulin, Des Moines, and Folsom Volunteer Fire departments) and law enforcement agency (Union County Sheriff Department) to provide for mutual support.



## Part 3: Contributors

### Capulin Volcano National Monument

Peter Armato, Superintendent  
Lynn Cartmell, Chief of Interpretation  
Ty Labeth, Park Guide  
Amy Jewell, Visitor Use Assistant  
Cat Walker, Visitor Use Assistant  
Zach Cartmell, Chief of Resource Management  
Kara Blodgett, Biological Technician  
Virginia Tavarez, Chief of Maintenance  
Phillip Patchen, Maintenance Worker

### Intermountain Region

Art Hutchinson, Chief of Planning  
Michele D'Arcy, Project Manager  
Erica Cole, Program Assistant  
Karen Wurzburger, Cultural Anthropologist  
Christine Landrum, Director Office of Indian Affairs and American Culture  
Darcee Killpack, GIS Program Manager  
Jeff Orlowski, GIS specialist  
Vicky Jacobson, Historical Architect  
Jill Cowley, Historical Landscape Architect  
Richard Kohen, Interpretive Planner

### Denver Service Center

Nancy Shock, Foundation Program Coordinator  
Jim Corbett, Chief of Publications Branch  
John Paul Jones, Visual Information Specialist  
Ken Bingenheimer, Editor  
Melody Bentfield, Research Librarian

### WASO

Pam Holtman, Park Planning and Special Studies  
Don Weeks, Climate Change Response Program  
Lisa Norby, Geologist, Geologic Resources Division  
Patrick Gonzalez, Climate Change Response Program  
Andrea Stacy, Environmental Protection Specialist, Air Resource Division  
Dave Trevino, Environmental Protection Specialist, Biological Resource Management Division  
Lochen Wood, Environmental Protection Specialist, Natural Sounds and Night Skies Division

## Appendixes

### Appendix A: Presidential Proclamation and Legislative Acts for Capulin Volcano National Monument

The Commissioner of the

January 16, 1891

General Land Office,

Sir:

I am in receipt of your letter of the 19th ultime, transmitting a copy of a letter from Inspector W.D. Harlan to you, dated December 14, 1890, in relation to the Capulin Mountain in New Mexico.

Mr. Harlan in said letter suggests the reservation of certain lands, which he particularly describes as including said Mountain and immediately surrounding it, because said mountain is a great natural curiosity.

I have carefully considered the matter, and in the light of all the facts and circumstances as they are made to appear by Mr. Harlan's letter and the inclosed photographic views, deem it proper that the property described should be withdrawn from settlement, entry or other disposition under any of the public land laws, until such time as Congress may see fit to take action touching the same or until otherwise ordered by competent authority.

You are accordingly directed to withdraw from settlement, entry, or other disposition under the public land laws, the lands described in Inspector Harlan's letter and cause the same to be noted upon the proper records of the local office and your office.

Herewith are returned the papers transmitted with your letter.

Very respectfully,

23

/S/

Secretary.

1792

PROCLAMATIONS, 1916.

August 9, 1916.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA.

A PROCLAMATION

Capulin Mountain National Monument, N. Mex. Preamble.

WHEREAS, Capulin Mountain, located in Townships twenty-nine and thirty North, Range twenty-eight East of the New Mexico Principal Meridian, New Mexico, is a striking example of recent extinct volcanoes and is of great scientific and especially geologic interest,

National Monument, New Mexico. Vol. 34, p. 225.

Now, therefore, I, Woodrow Wilson, President of the United States of America, by virtue of the power in me vested by Section 2 of the Act of Congress entitled, "An Act for the Preservation of American Antiquities", approved June 8, 1906 (34 Stat., 225), do proclaim that, subject to prior, valid, adverse claims, there are hereby reserved from all forms of appropriation under the public land laws, and set apart as the Capulin Mountain National Monument, all the tracts of land shown upon the diagram hereto attached and made a part hereof, and more particularly described as follows, to wit: Lots two, three and four, the southwest quarter of the northeast quarter, the south half of the northwest quarter, the north half of the southwest quarter of section four; lots one and two, the south half of the northeast quarter and the northeast quarter of the southeast quarter of Section five, township twenty-nine north, range twenty-eight; the southeast quarter of the southeast quarter of section thirty-two; the southwest quarter of the southeast quarter, and the south half of the southwest quarter of section thirty-three, township thirty north, range twenty-eight, all east of the New Mexico Principal Meridian, New Mexico.

Description.

Reserved from settlement, etc.

Warning is hereby given to all unauthorized persons not to appropriate, injure, remove or destroy any features of this Monument, or to locate or settle upon any of the lands reserved by this proclamation.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington, this ninth day of August in the year of our Lord one thousand nine hundred and [SEAL.] sixteen, and of the Independence of the United States the one hundred and forty first.

WOODROW WILSON.

By the President:  
ROBERT LANSING  
Secretary of State.

87TH CONGRESS } HOUSE OF REPRESENTATIVES { REPORT  
 2d Session } No. 2178

REVISING THE BOUNDARIES OF CAPULIN MOUNTAIN  
 NATIONAL MONUMENT, N. MEX., AND AUTHORIZING  
 ACQUISITION OF LANDS THEREIN

AUGUST 13, 1962.—Committed to the Committee of the Whole House on the  
 State of the Union and ordered to be printed

Mr. RUTHERFORD, from the Committee on Interior and Insular  
 Affairs, submitted the following

R E P O R T

[To accompany S. 2973]

The Committee on Interior and Insular Affairs, to whom was referred the bill (S. 2973) to revise the boundaries of Capulin Mountain National Monument, N. Mex., to authorize acquisition of lands therein, and for other purposes, having considered the same, report favorably thereon with amendments and recommend that the bill do pass.

The amendments are as follows:

Page 2, line 10, change the period to a colon and add the following proviso:

*Provided*, That the Secretary of the Interior is not authorized hereby to pay any amount in excess of the fair market value of the lands acquired pursuant to the provisions of this Act.

Page 2, line 17, strike out the word "and" and insert "to be".

PURPOSE

The purpose of S. 2973 is to authorize the Secretary of the Interior to acquire and to add to the Capulin Mountain National Monument about 95 acres of land at a cost of not more than \$2,500.

NEED

Capulin Mountain National Monument was established by Executive order in 1916. It is in the northeastern corner of New Mexico, includes 680 acres, more or less, and attracts about 40,000 visitors

## 2 CAPULIN MOUNTAIN NATIONAL MONUMENT, N. MEX.

annually who come to view the fine example of an extinct volcano which it contains and to enjoy a view which extends as far as Pikes Peak, 175 miles away.

The additional lands, partly in State ownership, partly in private ownership, are needed for visitors' facilities and for protection of the entrance to the monument from unsightly intrusions along State Route 325.

### COMMITTEE AMENDMENTS

Two amendments were adopted by the committee. One explicitly limits the purchase price of the lands to not more than fair market value. The other corrects an inadvertent error in the text of the bill.

### COST

As hereinbefore stated, it is estimated that the lands to be acquired will cost not more than \$2,500. The bill so limits the amount authorized to be appropriated.

### DEPARTMENTAL REPORT

The executive communication from the Department of the Interior is as follows:

U.S. DEPARTMENT OF THE INTERIOR,  
OFFICE OF THE SECRETARY,  
*Washington, D.C., February 12, 1962.*

HON. JOHN W. McCORMACK,  
*Speaker, House of Representatives,*  
*Washington, D.C.*

DEAR MR. SPEAKER: Enclosed is a draft of a bill to revise the boundaries of Capulin Mountain National Monument, N. Mex., to authorize acquisition of lands therein, and for other purposes.

We recommend that this bill be referred to the appropriate committee for consideration, and we recommend that it be enacted.

This proposed legislation, if enacted, would revise the boundary of Capulin Mountain National Monument to include approximately 40 acres of private and 55 acres of State lands. Its enactment would also empower the Secretary of the Interior to acquire these lands, required for protection of the monument's features and for developments in conjunction therewith, with appropriated funds.

Capulin Mountain, which was established as a national monument on August 9, 1916, by Proclamation No. 1340, is one of the largest and most symmetrical of the geologically recent cinder cones in the United States. It consists chiefly of loose cinders, ash, and other volcanic debris that accumulated in a series of relatively recent eruptions. The cone has the steep-sided slopes and coarse fragmental material characteristics of a period of volcanic activity that took place about 7,000 years ago in this region. From the rim of the crater, at elevation 8,215 feet above sea level, visitors to the monument are accorded a view of parts of five States—New Mexico, Texas, Oklahoma, Kansas, and Colorado—as well as Pikes Peak, the Sangre de Cristo Mountains, and evidence of older, more widespread volcanic activity. Thus, the monument is of great interest to the visiting public as well as to the geologist.

## Public Law 87-635

### AN ACT

To revise the boundaries of Capulin Mountain National Monument, New Mexico, to authorize acquisition of lands therein, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That in order to preserve the scenic and scientific integrity of the Capulin Mountain National Monument in the State of New Mexico, and to provide for the enjoyment thereof by the public, the boundaries of the monument are hereby revised to include the following additional lands:

#### NEW MEXICO PRINCIPAL MERIDIAN

Township 29 north, range 28 east: section 5, north half northwest quarter southeast quarter, northeast quarter northeast quarter southwest quarter, southeast quarter northwest quarter, northeast quarter southwest quarter northwest quarter, south half southeast quarter northwest quarter northwest quarter, south half south half northeast quarter northwest quarter, containing approximately 95 acres.

SEC. 2. The Secretary of the Interior, in furtherance of the purposes of this Act, may acquire, in such manner and subject to such terms and conditions as he may deem to be in the public interest, lands and interests in lands within the area described in section 1 of this Act: *Provided*, That the Secretary of the Interior is not authorized hereby to pay any amount in excess of the fair market value of the lands acquired pursuant to the provisions of this Act. When acquired, such lands and interests in land shall be administered as a part of the Capulin Mountain National Monument in accordance with the Act entitled "An Act to establish a National Park Service, and for other purposes," approved August 25, 1916 (39 Stat. 535), as amended and supplemented (16 U.S.C. 1 et seq.).

SEC. 3. There are authorized to be appropriated such sums as necessary to carry out the acquisition of this land, provided that the cost of the acquisition of private land shall not exceed \$2,500.

Approved September 5, 1962.

ADDING CERTAIN PUBLIC LANDS TO THE CAPULIN  
MOUNTAIN NATIONAL MONUMENT, NM

JUNE 1, 1987.—Committed to the Committee of the Whole House on the State of the  
Union and ordered to be printed

Mr. UDALL, from the Committee on Interior and Insular Affairs,  
submitted the following

R E P O R T

[To accompany H.R. 401]

[Including the cost estimate of the Congressional Budget Office]

The Committee on Interior and Insular Affairs, to whom was referred the bill (H.R. 401) to add certain public lands to the Capulin Mountain National Monument, NM, having considered the same, report favorably thereon with amendments and recommend that the bill as amended do pass.

The amendments are as follows:

Page 1, line 3, strike all after the enacting clause and insert the following:

**SECTION 1. REDESIGNATION AS CAPULIN VOLCANO NATIONAL MONUMENT.**

(a) **REDESIGNATION.**—Capulin Mountain National Monument is hereby redesignated as Capulin Volcano National Monument.

(b) **REFERENCE.**—Any reference in any record, map, or other document of the United States of America to Capulin Mountain National Monument shall hereafter be deemed to be a reference to Capulin Volcano National Monument.

**SEC. 2. ADDITION TO CAPULIN VOLCANO NATIONAL MONUMENT.**

(a) **IN GENERAL.**—Section 1 of the Act of September 5, 1962 (76 Stat. 436), is hereby amended by striking the remaining portion of section 1 after "boundaries of the monument" and inserting "shall include the lands and interests in lands as generally depicted on the map entitled 'Capulin Volcano National Monument Boundary Map' which is numbered 125-80,014 and dated January 1987."

(b) **ADMINISTRATION.**—Jurisdiction over federally owned lands within the revised boundaries of the monument is hereby transferred to the National Park Service, without monetary consideration, for administration as part of the monument.

Amend the title so as to read:

A bill to redesignate Capulin Mountain National Monument as Capulin Volcano National Monument and to add certain public lands in the State of New Mexico to Capulin Volcano National Monument.

### PURPOSE

As reported, H.R. 401<sup>1</sup> would designate the Capulin Mountain National Monument, in New Mexico, as the Capulin Volcano National Monument, and would add to this National Park System unit about 17.5 acres of Federal land now managed by the Bureau of Land Management.

### BACKGROUND

President Woodrow Wilson established Capulin Mountain National Monument by Presidential Proclamation No. 1340 on August 9, 1916, because it is a "striking example of recent extinct volcanoes" and because of its "great scientific and especially geologic interest." The authorized boundary of 680.37 acres was subsequently increased by 95 acres to 775.37 acres under the act of September 5, 1962 (76 Stat. 436), to permit the acquisition of 55 acres owned by the State of New Mexico and 40 acres owned by the Southwest Monuments Museum Association. The purpose of the 1962 legislation was to provide further protection of the volcanic resources.

However, acquisition of all lands within the authorized boundary was not completed until 1972, when 55 acres were acquired from the State of New Mexico. The land was transferred to the National Park Service following a land exchange between the State and the Bureau of Land Management. As a part of the exchange, however, the State relinquished title to about 17.5 acres of land that lie outside and adjacent to the western boundary of the monument and north of the entrance road. This land, currently under the jurisdiction of the Bureau of Land Management, is the land that would be included within the monument under H.R. 401.

Capulin Mountain, a dormant volcano, erupted three times over an estimated 2,000-year period, with the last eruption occurring approximately 10,000 years ago. The existing monument boundary contains an approximately 0.5 square mile of lava flows.

One lava flow moved southwest from the mountain and formed an outstanding lava dike, or collapsed lava tube. The tract of about 17.5 acres which the bill would incorporate into the national monument contains the outstanding part of this formation.

Addition of this tract to the monument would further the protection of a remnant of a volcanic lava flow, which is in plain view from the entrance road, the visitor center, and the main viewing points of the present monument. It would also provide an opportunity for on-site interpretation of this specific geologic formation, and would assist in the prevention of vandalism (including removal of lava rock).

### SECTION-BY-SECTION ANALYSIS

Section 1 would redesignate the Capulin Mountain National Monument as the "Capulin Volcano National Monument," in order to more accurately reflect the primary feature for which it was established.

<sup>1</sup> H.R. 401 was introduced by Representative Richardson.

## Public Law 100-225

(g)(1) Capulin Mountain National Monument is hereby redesignated as Capulin Volcano National Monument. 16 USC 431 note.

(2) Any reference in any record, map, or other document of the United States of America to Capulin Mountain National Monument shall hereafter be deemed to be a reference to Capulin Volcano National Monument.

(3) Section 1 of the Act of September 5, 1962 (76 Stat. 436) is hereby amended by striking the remaining portion of section 1 after "boundaries of the monument" and inserting "shall include the lands and interests in lands as generally depicted on the map entitled 'Capulin Volcano National Monument Boundary Map' which is numbered 125-80,014 and dated January 1987."

(4) Jurisdiction over federally-owned lands within the revised boundaries of the monument is hereby transferred to the National Park Service, without monetary consideration, for administration as part of the monument.



---

## Intermountain Region Foundation Document Recommendation Capulin Volcano National Monument

April 2014

---

This Foundation Document has been prepared as a collaborative effort between park and regional staff and is recommended for approval by the Intermountain Regional Director.

*Peter Armato*

*4/8/2014*

---

**RECOMMENDED**

Peter Armato, Superintendent, Capulin Volcano National Monument

Date

*Sue E. Masica*

*5/14/2014*

---

**APPROVED**

Sue E. Masica, Regional Director, Intermountain Region

Date

*SEM*



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 historic 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.

CAVO 125/122940

May 2014

# Foundation Document • Capulin Volcano National Monument

