



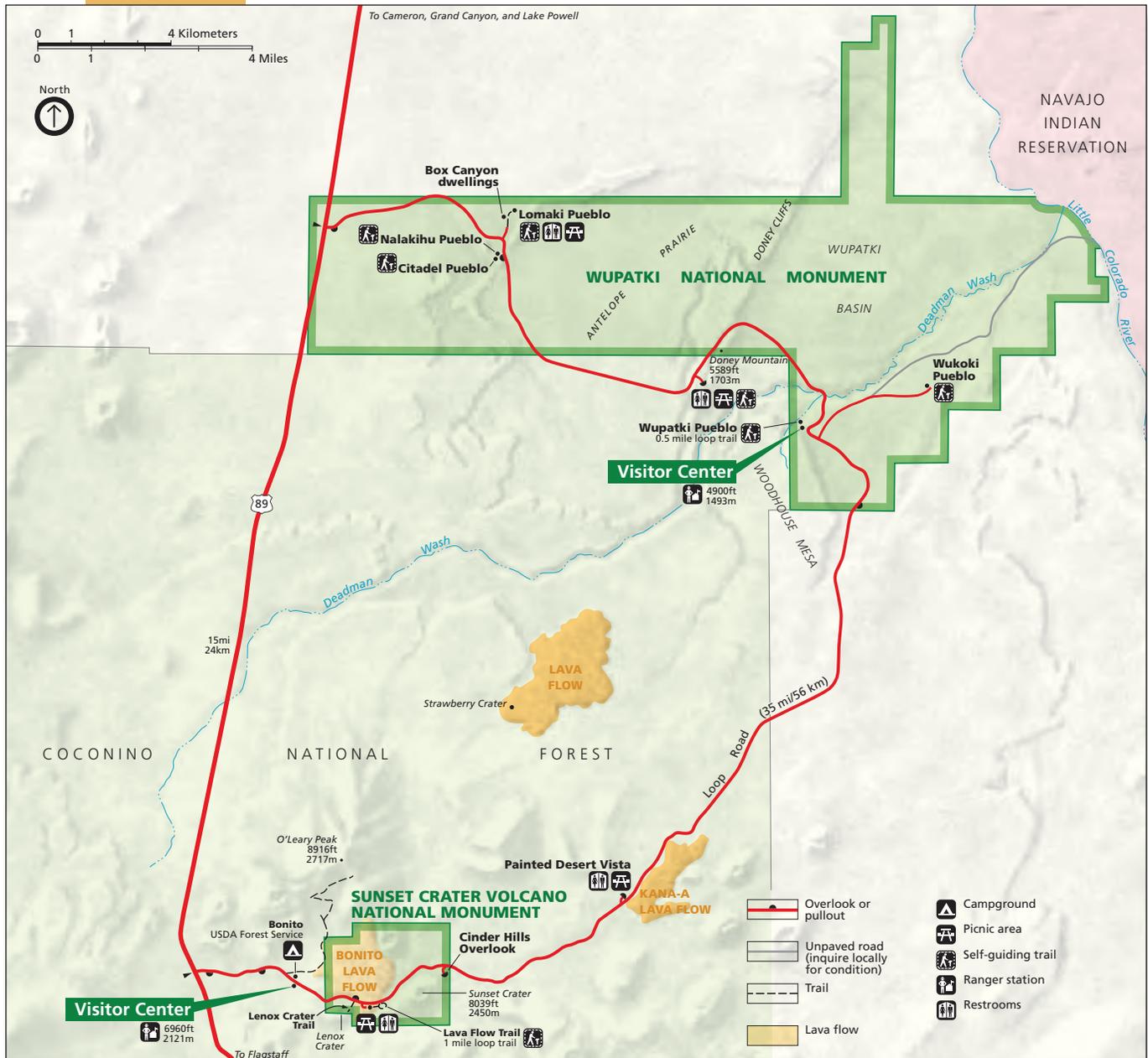
# Foundation Document

## Sunset Crater Volcano National Monument

Arizona

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## 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 more than 400 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 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 will have a foundational document to provide basic guidance for planning and management decisions—a foundation for planning and management. 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 (hard copy) paper product and as geospatial data for use in a web mapping environment. The park atlas for Sunset Crater 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, park purpose, significance statements, fundamental resources and values, other important resources and values, and interpretive themes. These components are core because they typically do not change over time. Core components are expected to be used in future planning and management efforts.

### Brief Description of the Monument

Sunset Crater Volcano National Monument is approximately 20 miles northeast of downtown Flagstaff in northern Arizona. The park is situated east of the tallest peak in Arizona among hundreds of volcanic features. Established by presidential proclamation in 1930, Sunset Crater Volcano National Monument protects 3,040 acres representing the Colorado Plateau's most recent volcanic eruption. It is the youngest, least-eroded cinder cone in the San Francisco Volcanic Field and represents the only series of eruptions in the Southwest indisputably witnessed by local peoples. Much of the ground surface is covered by lava flows or deep volcanic cinder deposits, and at first glance, the landscape still appears stark and inhospitable. Nestled within the dramatic geologic features are small islands of pine and aspen trees, desert shrubs, and wildflowers that provide small but unique habitats for wildlife. Over several hundreds of years, life is slowly beginning to return to the landscape.

The significance of Sunset Crater Volcano National Monument extends beyond the geological events themselves. The powerful geologic processes that formed the volcano profoundly affected the way of life of local inhabitants during the 11th and 12th centuries and forever changed both the landscape and the ecology of the area. This volcano and its relatively undeveloped landscape provide an unparalleled opportunity to study succession and ecological change in an arid volcanic landscape.



## Monument Purpose

The purpose statement identifies the specific reason(s) for establishment of a particular park. The purpose statement for Sunset Crater Volcano National Monument was drafted through a careful analysis of its enabling legislation and the legislative history that influenced its development. The park was established by presidential proclamation on May 26, 1930 (see appendix A for enabling legislation and subsequent amendments). The purpose statement lays the foundation for understanding what is most important about the park.

*The purpose of SUNSET CRATER VOLCANO NATIONAL MONUMENT is to preserve and protect the colorful 1,000-foot-high cinder cone and surrounding features, including the Bonito Lava Flow, ice cave, cinder fields, spatter cones, lava tubes, and squeeze-ups. This stark, black volcanic landscape on the Southern Colorado Plateau provides outstanding opportunities for learning and research.*



## Monument 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 Sunset Crater 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 Sunset Crater Volcano National Monument. (Please note that the sequence of the statements does not reflect the level of significance.)

- **Most Recent Eruption.** Erupting roughly 900 years ago, Sunset Crater Volcano is the youngest of 600 volcanoes within northern Arizona's San Francisco Volcanic Field.
- **Geology.** The monument's display of plate tectonics, volcanism, and pristine eruption features provides excellent opportunities for science, education, and interpretation in the context of regional and global geology.
- **Community.** This catastrophic event profoundly affected the life of people in the region and left a unique archeological and ethnographic record of human response, adaptation, and recovery. Sunset Crater Volcano and its impressive features continue to be significant to contemporary American Indian tribes.
- **Ecology.** A 100-square-mile cinder and ash blanket smothered all life nearest the volcano, resulting in ecologic succession and a unique assemblage of plants in a largely barren landscape. The fresh volcanic terrain provides an unparalleled opportunity to study eruption dynamics, change, and recovery in an arid climate.



## 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 Sunset Crater Volcano National Monument:

- **Volcanic Features.** The numerous volcanic features contained within Sunset Crater Volcano National Monument, including the Bonito Lava Flow, spatter cones, squeeze-ups, and cinder cones, represent a microcosm of the volcanic activities that shaped the surrounding landscape for six million years.
- **Volcano-Influenced Ecosystem.** The volcano-influenced ecosystem provides a snapshot of how ecological succession and soil development support critical habitat for endemic plant species, lichen, and trees in the harsh arid landscape.
- **Landscape/Scenery.** Sunset Crater Volcano National Monument offers spectacular views of undisturbed volcanic landscapes, cinder dunes, and lava flows. These views occur within an environment of clean air and pristine night skies.

## Other Important Resources and Values

Sunset Crater 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 planning processes. 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 for Sunset Crater Volcano National Monument:

- **Historic Resources.** The Sunset Crater Volcano administrative complex has historic significance at the national level as an excellent example of Mission 66 development. Designed by architect Cecil J. Doty, the complex was built at a distance from the unique volcanic features, leaving an unobstructed view of the natural landscape. The administrative complex is a national register-eligible district and cultural landscape.

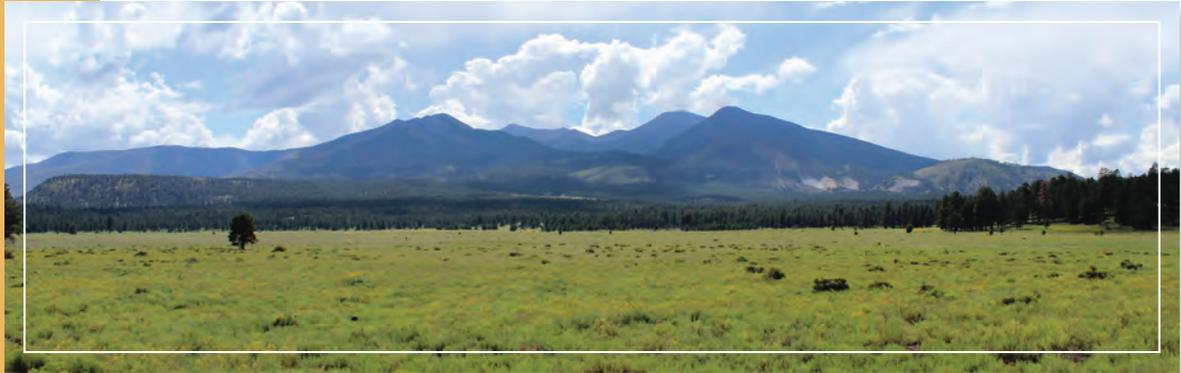
## Interpretive Themes

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 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. Interpretive themes go beyond a mere description of the event or process to foster multiple opportunities to experience and consider the park and its resources. These themes help 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.

Sunset Crater Volcano National Monument is managed with Walnut Canyon National Monument and Wupatki National Monument as part of an administrative entity known as Flagstaff Area National Monuments. Because education and interpretive programming are administered by park staff across all three units and because the sites share a common regional history, the staff has identified both unified (combined) interpretive themes as part of the larger administrative group, as well as themes for the individual units.





The following unified interpretive themes have been identified for Flagstaff Area National Monuments:

- **The Human Experience and the Value of Heritage.** Sunset Crater Volcano, Walnut Canyon, and Wupatki stand as separate monuments, yet are interconnected through the violent geologic past that shaped and transformed the environment. Each monument contains important physical traces of the cultures, communities, and families that made their homes for thousands of years in the landscape surrounding the San Francisco Peaks. Those physical traces on the landscape, and the landscape itself, tell the story of the human experience through time.
- **The Continuum of Cultural Occupation and Ancestral Homelands.** Places such as Wupatki, Walnut Canyon, and Sunset Crater Volcano figure into the regional history and provide evidence of long-time human habitation of the semi-arid Colorado Plateau. For some contemporary American Indian tribes, these sites contain evidence and information that are part of their oral histories and cultural identities. Investigating the past from varying points of view strengthens the collective ability to understand the world and to live in it more harmoniously.
- **Landscape and Life: The Interplay of Human and Environmental History.** From the alcove sites at Walnut Canyon, to the oral histories told about the Sunset Crater Volcano eruption, to the terraced slopes of Citadel Pueblo, the Flagstaff Area National Monuments contain evidence of the complex ways cultures adapt and impact the physical environment.
- **Laboratories and Research Benchmarks.** As a species, the human influence on natural systems is profound, with consequences not entirely understood; therefore, the monuments are valuable research laboratories for learning about these systems and their current condition. The monuments must have a sophisticated knowledge of these resources and their condition, and these findings must be effectively communicated to the public, as they will ultimately decide the fate of these resources.
- **Geology within the San Francisco Volcanic Field.** The violent, dramatic history of the San Francisco Volcanic Field transformed the landscape in and around the Flagstaff Area National Monuments. Through this explosive history, each of the monuments tells its own story of adaptation and change.
- **Climate Change.** Climate change is evolving and will continue to impact not only the natural and cultural resources of the Flagstaff Area National Monuments but the world as a whole. Reducing the carbon footprint of the Flagstaff Area National Monuments, providing awareness of climate change through education, maintaining ongoing research and monitoring of these changes, and initiating climate change adaptation are ways the monuments are dedicated to understanding, documenting, and responding to climate change.

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

- **Geologic Processes and Volcanic Features.** Approximately 900 years old, Sunset Crater Volcano is the most recent eruption event in an ongoing process of change. This naturally evolving landscape helps to understand the forces and processes that continually affect lives, shape the planet, and form patterns of life on earth today.
- **Human Response to the Eruption.** After the eruption of Sunset Crater Volcano, people who were displaced or otherwise affected by the devastating natural disaster had to find new ways to rebuild their homes, adapt their way of life, and restore their communities.
- **Cultural Traditions.** The landscape in and around Sunset Crater Volcano is part of an interconnected sacred landscape associated with history, migrations, cultural identity, and continuing traditional practices for many modern tribes.
- **Ecosystem Processes.** The environment of Sunset Crater Volcano supports a surprisingly diverse yet fragile biotic community and offers unparalleled opportunities to study soil formation, plant adaptation, and ecological change in an arid volcanic landscape.
- **Natural Landscape and Scenery.** Sunset Crater Volcano offers opportunities for inspiration and enjoyment through spectacular views of striking volcanic formations, dramatic cinder dunes, and chaotic lava flows.



## Part 2: Dynamic Components

The dynamic components of a foundation document include special mandates and administrative commitments and an assessment of planning and data needs. These components are dynamic because they will change over time. New special mandates can be established and new administrative commitments made. As conditions and trends of fundamental and other important resources and values change over time, 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.

### Special Mandates and Administrative Commitments

Many 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 memorandums 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 Sunset Crater Volcano National Monument.

For more information about the existing administrative commitments for Sunset Crater Volcano National Monument, please see appendix B.

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

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

### Analysis of Fundamental Resources and Values

The fundamental resource or value analysis table includes current conditions, 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	Volcanic Features
<p><b>Related Significance Statements</b></p>	<ul style="list-style-type: none"> <li>• <b>Most Recent Eruption.</b> Erupting roughly 900 years ago, Sunset Crater Volcano is the youngest of 600 volcanoes within northern Arizona’s San Francisco Volcanic Field.</li> <li>• <b>Geology.</b> The monument’s display of plate tectonics, volcanism, and pristine eruption features provides excellent opportunities for science, education, and interpretation in the context of regional and global geology.</li> <li>• <b>Ecology.</b> A 100-square-mile cinder and ash blanket smothered all life nearest the volcano, resulting in ecologic succession and a unique assemblage of plants in a largely barren landscape. The fresh volcanic terrain provides an unparalleled opportunity to study eruption dynamics, change, and recovery in an arid climate.</li> </ul>
<p><b>Current Conditions and Trends</b></p>	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• A few lava spatter and agglutinate (a mass formed by the union of separate elements) features and the ice cave of the Bonito Lava Flow have measurable visitor use impacts resulting from trampling, climbing, and removing pieces. The rest of the flow is in good to pristine condition.</li> <li>• Sunset Crater Volcano has some measurable impacts from off-trail trampling on steep cinder slopes and crushing fumarole deposits around the rim of the crater. The old trail up Sunset Crater Volcano was closed during the 1980s due to excessive erosion. Although the route was rehabilitated it remains visible.</li> <li>• Lenox Crater Trail is causing erosion issues because of the steep incline up the cinder cone slope.</li> <li>• The deep cinder barrens are in good condition overall, with some evidence of walking and off-highway vehicles trampling.</li> <li>• Lava Flow Trail is heavily used by school groups.</li> <li>• The ice cave of the Bonito Lava Flow has been closed and will remain in its current condition.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>• Trail access and use are increasing as a result of new trails open to visitors. New trail routes were carefully planned to avoid the most fragile volcanic features and steep cinder slopes. New discovery hikes would provide managed visitor access to outstanding examples of unique volcanic features not already accessible along the Lava Flow Trail.</li> <li>• Severe erosion exists on Lenox Crater Trail, which will be alleviated when a new route is built with switchbacks.</li> <li>• Average annual temperature has shown a statistically significant increase over the past century due to climate change, with historical precipitation trends not statistically significant.</li> <li>• Annual visitation has declined from a visitation peak in the early 1990s but has remained relatively stable for the past 15 years.</li> <li>• Through traffic on the main access road is expected to decrease as a result of road closures in the surrounding Coconino National Forest.</li> <li>• Loosely welded spatter features and unconsolidated cinder slopes in visitor access areas would continue to be impacted by intensive foot traffic and trampling.</li> </ul>
<p><b>Threats and Opportunities</b></p>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Some off-highway vehicle recreational users from adjacent US Forest Service (USFS) lands trespass on NPS lands, which can be damaging to volcanic features.</li> <li>• The projected increase in mean annual temperature (+4°F to 5°F by 2050) and increase in drought events, storm intensity, and storm frequency due to a changing climate could impact volcanic features.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• The park could increase visitor and research access through new trails, continued discovery hikes, increased educational programs, and additional research permits.</li> </ul>

Fundamental Resource or Value	Volcanic Features
<p><b>Threats and Opportunities</b></p>	<p><b>Opportunities (continued)</b></p> <ul style="list-style-type: none"> <li>• By providing a gathering area for large groups, the park could increase school group access and enhance interpretive/educational activities.</li> <li>• The park could increase access to a wider range of abilities by providing additional Architectural Barriers Act (ABA)-accessible trails.</li> </ul>
<p><b>Data and/or GIS Needs</b></p>	<ul style="list-style-type: none"> <li>• Tribal/ethnographic studies.</li> <li>• Research on the ecological succession processes of soil formation and vegetation establishment in the recent volcanic terrain.</li> <li>• Visitor use data.</li> <li>• Aerial imagery to study ecology. Unique volcanic feature and cinder slope condition monitoring.</li> </ul>
<p><b>Planning Needs</b></p>	<ul style="list-style-type: none"> <li>• Comprehensive interpretive plan and long-range interpretive plan (update).</li> <li>• Visitor use management plan.</li> <li>• Fire management plan amendment.</li> <li>• Exhibits plan for new/updated exhibits.</li> <li>• Park asset management plan.</li> <li>• Collections management plan.</li> <li>• Climate change adaptation planning (e.g., climate change scenario planning), including integrated vulnerability assessments for natural resources.</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>• Paleontological Resources Preservation Act of 2009 (16 USC 470aaa et seq.)</li> <li>• National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.)</li> <li>• National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.)</li> <li>• Architectural Barriers Act of 1968 (42 USC 4151 et seq.)</li> <li>• American Indian Religious Freedom Act of 1978 (PL 95-341) (42 USC 1996)</li> <li>• Executive Order 11644, "Use of Off-Road Vehicles on the Public Lands"</li> <li>• Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments"</li> <li>• Executive Order 13007, "Indian Sacred Sites"</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 (NPS Management Policies 2006 and Director's Orders)</b></p> <ul style="list-style-type: none"> <li>• Director's Order 6: <i>Interpretation and Education</i></li> <li>• Director's Order 12: <i>Conservation Planning, Environmental Impact Analysis, and Decision-making and DO-12 Handbook</i></li> <li>• Director's Order 18: <i>Wildland Fire Management</i></li> <li>• Director's Order 25: <i>Land Protection</i></li> <li>• Director's Order 28: <i>Cultural Resource Management</i></li> <li>• <i>NPS-75 Natural Resources Inventory and Monitoring Guideline</i></li> <li>• Director's Order 75A: <i>Civic Engagement and Public Involvement</i></li> <li>• <i>NPS Management Policies 2006 (1.6) "Cooperative Conservation Beyond Park Boundaries"</i></li> <li>• <i>NPS Management Policies 2006 (2.3.1.4) "Science and Scholarship"</i></li> <li>• <i>NPS Management Policies 2006 (4.7.2) "Weather and Climate"</i></li> <li>• <i>NPS Management Policies 2006 (8.10) "Natural and Cultural Studies, Research, and Collection Activities"</i></li> <li>• Director's Order 13A: <i>Environmental Management Systems</i></li> <li>• Director's Order 77: <i>Natural Resource Protection</i></li> </ul>

Fundamental Resource or Value	Volcano-Influenced Ecosystem
<b>Related Significance Statement</b>	<ul style="list-style-type: none"> <li>• <b>Ecology.</b> A 100-square-mile cinder and ash blanket smothered all life nearest the volcano, resulting in ecologic succession and a unique assemblage of plants in a largely barren landscape. The fresh volcanic terrain provides an unparalleled opportunity to study eruption dynamics, change, and recovery in an arid climate.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• Overall ecology is fragile but in good condition.</li> <li>• Tree growth is stunted but naturally occurring.</li> <li>• The Sunset Crater beardtongue (<i>Penstemon clutei</i>) is an attractive wildflower that only grows on recent volcanic cinder deposits within the San Francisco Volcanic Field.</li> <li>• Nascent (newly developed) soils in deep cinder deposits are locally disturbed in areas of concentrated visitor and vehicle use.</li> <li>• The natural processes of soil formation from cinder weathering and breakdown from water, air, and lichen growth; Aeolian deposition; and accumulation of organic matter are overall fully functional.</li> <li>• The acoustic environment has a preponderance of natural sounds and has relatively low natural ambient sound levels.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>• Some prescribed thinning has been implemented as directed in the fire management plan.</li> <li>• The Sunset Crater beardtongue population within the monument is periodically surveyed and has remained stable.</li> <li>• Soil formation processes have resumed in some impacted areas following visitor access restrictions on Sunset Crater Volcano and the area north of Lava Flow Trail.</li> <li>• There has been an increase in school group visitors focused on meeting curriculum standards.</li> <li>• Average annual temperature has shown a statistically significant increase over the past century due to climate change, with historical precipitation trends not statistically significant.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Wildfires are increasing in severity following 140 years of logging and fire suppression. An unnaturally severe fire could greatly impact the scenic stands of ponderosa pine trees growing on the volcanic slopes and cinder barrens.</li> <li>• The projected increase in mean annual temperature (+4°F to 5°F by 2050) and increase in drought events, storm intensity, and storm frequency due to a changing climate could have serious impact on the delicate ecosystem.</li> <li>• Nonpermitted recreational activities could result in trampling of the delicate soils and vegetation.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Trail expansion could concentrate visitor use in areas that could tolerate higher capacities and reduce resource threats.</li> <li>• Because the volcano is the area's youngest in a series, long-duration research studies would be extremely valuable in understanding post-eruption ecology.</li> <li>• Increased ecological education along self-guided trails.</li> <li>• Expanded educational programs to meet science curriculum standards.</li> </ul>

Fundamental Resource or Value	Volcano-Influenced Ecosystem
<p><b>Threats and Opportunities</b></p>	<p><b>Opportunities (continued)</b></p> <ul style="list-style-type: none"> <li>• Closure of Forest Service Road 776 (FS776) would reduce through traffic on the main access road, potentially reduce illegal off-highway vehicle use within the monument, and potentially reduce off-highway vehicle traffic immediately adjacent to the monument boundary.</li> <li>• Interpretation/education of the influences from climate change on the volcano-influenced ecosystem of the national monument.</li> </ul>
<p><b>Data and/or GIS Needs</b></p>	<ul style="list-style-type: none"> <li>• Visitor use data.</li> <li>• Ponderosa vegetation fire history and stand age/size class distribution data.</li> <li>• Research on the ecological succession processes of soil formation and vegetation establishment in the recent volcanic terrain.</li> <li>• Aerial imagery to study ecology. Unique volcanic feature and cinder slope condition monitoring.</li> <li>• Tribal/ethnographic studies.</li> <li>• Cyclic rare plant surveys (near facilities and visitor use areas).</li> <li>• Continuous collection of (or access to) credible meteorological data to validate local climate change and to better understand ecological responses to this change.</li> </ul>
<p><b>Planning Needs</b></p>	<ul style="list-style-type: none"> <li>• Comprehensive interpretive plan and long-range interpretive plan (update).</li> <li>• Visitor use management plan.</li> <li>• Fire management plan amendment.</li> <li>• Exhibits plan for new/updated exhibits.</li> <li>• Park asset management plan.</li> <li>• Collections management plan.</li> <li>• Climate change adaptation planning (e.g., climate change scenario planning), including integrated vulnerability assessments for natural resources.</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>• Clean Air Act of 1977 (42 USC 7401 et seq.)</li> <li>• National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.)</li> <li>• Clean Water Act of 1972, as amended (33 USC 1251–1387)</li> <li>• Executive Order 11644, “Use of Off-Road Vehicles on the Public Lands”</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 (NPS Management Policies 2006 and Director’s Orders)</b></p> <ul style="list-style-type: none"> <li>• Director’s Order 6: <i>Interpretation and Education</i></li> <li>• Director’s Order 18: <i>Wildland Fire Management</i></li> <li>• Director’s Order 25: <i>Land Protection</i></li> <li>• Director’s Order 77: <i>Natural Resource Protection</i></li> <li>• NPS Management Policies 2006 (1.6) “Cooperative Conservation Beyond Park Boundaries”</li> <li>• NPS Management Policies 2006 (4.6.1) “Protection of Surface Waters and Groundwaters”</li> </ul>

Fundamental Resource or Value	Landscape/Scenery
<p><b>Related Significance Statements</b></p>	<ul style="list-style-type: none"> <li>• <b>Most Recent Eruption.</b> Erupting roughly 900 years ago, Sunset Crater Volcano is the youngest of 600 volcanoes within northern Arizona's San Francisco Volcanic Field.</li> <li>• <b>Geology.</b> The monument's display of plate tectonics, volcanism, and pristine eruption features provides excellent opportunities for science, education, and interpretation in the context of regional and global geology.</li> <li>• <b>Ecology.</b> A 100-square-mile cinder and ash blanket smothered all life nearest the volcano, resulting in ecologic succession and a unique assemblage of plants in a largely barren landscape. The fresh volcanic terrain provides an unparalleled opportunity to study eruption dynamics, change, and recovery in an arid climate.</li> </ul>
<p><b>Current Conditions and Trends</b></p>	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• The natural viewscape, soundscape, and acoustic environment are negatively impacted by off-highway vehicle use on neighboring USFS land at the Cinder Hills overlook.</li> <li>• Views to the San Francisco Peaks are in good condition. Views to O'Leary Peak are in excellent condition.</li> <li>• Lenox Crater Trail and A'a' Trail viewscales are in good condition.</li> <li>• Fragile, steep cinder slopes in some areas show long-term wear from foot traffic—trampling patterns and surface scars are visible on Sunset Crater Volcano.</li> <li>• Tracking of air tours over national parks began in 2013. Based on this reporting, three tours were reported in 2013 and no tours were reported in 2014. This does not account for general aviation flights over the park or high-elevation commercial flights over the park.</li> <li>• An acoustical monitoring system deployed at Sunset Crater Volcano in the summer of 2010 revealed "fixed-wing aircraft and helicopters" were audible 9.9% of the time and "other aircraft sounds" were audible 17.5% of the time.</li> <li>• Visibility, which impacts both day and night views, is of moderate concern due to air pollution.</li> <li>• The combination of high-elevation, excellent air quality; low population density; and frequent cloud-free weather at the Flagstaff area monument contributes to very good night sky quality.</li> <li>• Park managers are pursuing an International Dark Sky Park Designation from the International Dark-Sky Association.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>• Visibly trampled cinder terrain is showing signs of recovery in many areas, but it may be several years before the former trail areas seamlessly blend into the natural setting. Seasonally strong winds and sheetwash from thunderstorms would decrease the visibility of the trail over time.</li> <li>• Increasing through-traffic on the main access road is impacting soundscape and acoustic environment.</li> <li>• Average annual temperature has shown a statistically significant increase over the past century due to climate change, with historical precipitation trends not statistically significant.</li> <li>• Major congestion in the off-road vehicle area on holiday weekends is decreasing.</li> <li>• Road rally weekends are decreasing.</li> <li>• Unauthorized vehicle use has decreased as a result of the USFS boundary fence.</li> <li>• There has been a slight decline in take-offs and landings at the Flagstaff Pulliam Airport from 2000–2014.</li> </ul>

Fundamental Resource or Value	Landscape/Scenery
<p><b>Threats and Opportunities</b></p>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>Residential and other development within Flagstaff may impact night sky character and acoustic environment.</li> <li>Uses on adjacent USFS lands, such as off-highway vehicles, can impact the viewscape, soundscape, and acoustic environment.</li> <li>The projected increase in mean annual temperature (+4°F to 5°F by 2050) and increase in drought events, storm intensity, and storm frequency due to a changing climate would impact the physical, biological, and chemical processes within the natural landscape (e.g., increase in wildfire intensity/frequency, increase in erosion and blowing dust [soil], changes in vegetation, increase in invasives, etc.).</li> <li>Commercial airline flights over the monument may increase, impacting soundscape and acoustic environment.</li> <li>Existing air pollution impacts visibility of scenic views.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>Expand interpretive opportunities with partners, including park friends group.</li> <li>Continue collaborative management with the US Forest Service to better protect the monument.</li> <li>Friends group can broaden community awareness and support.</li> <li>Continue development of new trails to improve visitor access to scenic views and solitude.</li> <li>Develop increased ABA trail accessibility.</li> <li>Establish relationships with recreational user (e.g., off-highway vehicles) area groups to expand education of regulations and appropriate resource protection.</li> <li>Improve parking at Lenox Crater Trail to reduce pedestrian/vehicle conflicts.</li> <li>Interpretation/education of the influences from climate change on the national monument’s natural landscape and scenery.</li> <li>Retrofit, replace, and maintain park infrastructure to use night sky friendly lighting and quieter machinery and equipment.</li> <li>The monument could participate in the Colorado Plateau Dark Sky Cooperative “Starry Starry Night,” a voluntary effort to promote the preservation, enjoyment, and tourism potential for stargazing in the vast region.</li> </ul>
<p><b>Data and/or GIS Needs</b></p>	<ul style="list-style-type: none"> <li>Visitor use data.</li> <li>Tribal/ethnographic studies.</li> <li>Cyclic rare plant surveys (near facilities and visitor use areas).</li> <li>Cyclic monitoring of ambient noise and potential aircraft noise.</li> </ul>
<p><b>Planning Needs</b></p>	<ul style="list-style-type: none"> <li>Comprehensive interpretive plan and long-range interpretive plan (update).</li> <li>Visitor use management plan.</li> <li>Fire management plan amendment.</li> <li>Exhibits plan for new/updated exhibits.</li> <li>Park asset management plan (update).</li> <li>Climate change adaptation planning (e.g., climate change scenario planning), including integrated vulnerability assessments for natural resources.</li> </ul>

Fundamental Resource or Value	Landscape/Scenery
<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>• National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.)</li> <li>• Clean Air Act of 1977 (42 USC 7401 et seq.)</li> <li>• National Parks Air Tour Management Act (49 USC 40128)</li> <li>• National Parks Overflight Act of 1987 (Public Law 100-91)</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 (NPS Management Policies 2006 and Director's Orders)</b></p> <ul style="list-style-type: none"> <li>• NPS Management Policies 2006 (1.4) "Park Management"</li> <li>• NPS Management Policies 2006 (1.6) "Cooperative Conservation Beyond Park Boundaries"</li> <li>• NPS Management Policies 2006 (3.1) "General"</li> <li>• NPS Management Policies 2006 (4.7) "Air Resource Management"</li> <li>• NPS Natural Resource Management Reference Manual 77</li> <li>• NPS Management Policies 2006 (4.10) "Lightscape Management"</li> <li>• Director's Order 13A: <i>Environmental Management Systems</i>, for park building operational emissions reduction, and NPS Management Policies 2006 (4.9) "Soundscape Management"</li> <li>• Director's Order 47: <i>Soundscape Preservation and Noise Management</i></li> </ul>



## Analysis of Other Important Resources and Values

Other Important Resource or Value	Historic Resources
<p><b>Current Conditions and Trends</b></p>	<p><b>Conditions</b></p> <ul style="list-style-type: none"> <li>• The exterior of the visitor center is in excellent condition, and fair condition on the interior. Restrooms are in good condition.</li> <li>• Apartments are in good condition on the exterior.</li> <li>• The water tower and pump house are in good condition.</li> <li>• Six archeological sites, most of which are historic, are in good condition.</li> <li>• The cultural landscape inventory for the administrative complex has been completed; the condition needs to be monitored.</li> <li>• Visitor center repairs to walkways have expanded ABA access.</li> <li>• Visitor center parking is inadequate.</li> <li>• All historic structures are currently on USFS land.</li> </ul> <p><b>Trends</b></p> <ul style="list-style-type: none"> <li>• Annual visitation has declined from a visitation peak in the early 1990s, but has remained relatively stable for the past 15 years.</li> <li>• As the structures age, maintenance updates and repairs are required more often.</li> </ul>
<p><b>Threats and Opportunities</b></p>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Water supply leaks threaten the integrity of the fire suppression system.</li> <li>• The projected increase in mean annual temperature (+4°F to 5°F by 2050) and increase in drought events, storm intensity, and storm frequency due to a changing climate could increase structural impacts to historic resources (e.g., damage from storm events, wildfire, etc.) and accelerate weathering of historic structures.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Rehabilitate visitor center offices and exhibits.</li> <li>• Acquire USFS parcel (93 acres) to improve management of NPS administration area facilities and entrance road segment.</li> <li>• Install fire suppression system to better protect historic structures.</li> <li>• Add an orientation area outside the visitor center for school and other large groups.</li> </ul>
<p><b>Data and/or GIS Needs</b></p>	<ul style="list-style-type: none"> <li>• Energy use data for buildings.</li> <li>• Cyclic rare plant surveys (near facilities and visitor use areas).</li> </ul>
<p><b>Planning Needs</b></p>	<ul style="list-style-type: none"> <li>• Exhibits plan for new/updated exhibits.</li> <li>• Park asset management plan.</li> <li>• Climate change adaptation planning (e.g., climate change scenario planning), including integrated vulnerability assessments for historic resources.</li> <li>• Cultural landscape report for the administrative complex historic district / cultural landscape.</li> </ul>

Other Important Resource or Value	Historic Resources
<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>• Antiquities Act of 1906 (16 USC 431–433)</li> <li>• Historic Sites Act of 1935, as amended (16 USC 461–467)</li> <li>• National Historic Preservation Act of 1966, as amended (16 USC 470 et seq.)</li> <li>• National Environmental Policy Act of 1969, as amended (42 USC 4321 et seq.)</li> <li>• Management of Museum Properties Act of 1955 (16 USC 18f through 18f-3)</li> <li>• “Curation of Federally-Owned and Administered Archaeological Collections” (36 CFR 79)</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 (NPS <i>Management Policies 2006</i> and Director’s Orders)</b></p> <ul style="list-style-type: none"> <li>• NPS <i>Management Policies 2006</i>, “(chapter 5) “Cultural Resource Management”</li> <li>• Director’s Order 24: <i>NPS Museum Collections Management</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>, parts I, II, and III</li> <li>• <i>The Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation</i></li> </ul>



## Identification of Key Issues and Associated Planning and Data Needs

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 that are not directly related to purpose and significance, but which still affect them indirectly. 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 Sunset Crater Volcano National Monument and the associated planning and data needs to address them:

- **Visitor Access:** Visitor use and access need to be evaluated against the current set of closures. Except for developed visitor use areas, most of the monument is closed to unguided visitor entry. “Discovery Hikes” led by staff are offered periodically to provide additional opportunities for visitors to explore and experience the monument. There is both staff and public interest in evaluating the current closures to determine if additional areas may be opened to unescorted visitor use without harming monument resources. A visitor use management plan would involve the public and, probably, the development of special regulations.
- **Existing and Proposed Tribal Uses:** Traditionally associated tribes request the ability to collect a variety of plants for traditional uses. Currently, the National Park Service is developing an agency-wide policy to guide how parks authorize collection of plants in parks.
- **Boundary Adjustment:** The general management plan for Sunset Crater Volcano National Monument was completed in 2002 and approved in 2004. One of the key actions in the final plan noted that the park boundary should be adjusted to include approximately 695 acres of land managed by the US Forest Service. The current proposal is approximately 93 acres due to recent changes in national forest management direction. This proposal includes only the administrative area and a section of the road that connects the entrance kiosk and the administrative area to the actual monument. The National Park Service is currently pursuing this boundary request.
- **Climate Change:** Mean annual temperature in the region has increased over the last century, with models projecting a continued warming trend up to triple the historic rate. Mean annual precipitation trends for the region are less certain, with models projecting both increases and decreases. Increases in storm frequency and intensity are projected across the United States, with more intense droughts projected for the southwestern United States. There are many unknowns about the potential impacts of climate change on the national monument’s resources, future visitor experiences, and operations. Climate change data and information, along with resource responses, are needed to make management decisions in a timely manner. Water resources could be altered by climate change and from other stressors, such as groundwater pumping for the local water supply. A change in water resources could impact the national monument’s operations, possibly influencing changes in potable water supplies. Climate change could impact historic resources in ways that are not yet well-known. Wildfires and erosion from wind and water could damage historic resources. Climate change may influence the visitor experience, including changes in seasonal visitation patterns and experiences, which the national monument will need to react to. Climate change adaptation planning is needed to address these potential impacts.

## Planning and Data Needs

To maintain connection to the core elements of the foundation and the importance of these core foundation elements, the planning and data needs listed here are directly related to protecting fundamental 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 high priority, and other items identified, but not rising to the level of high priority, were listed as either medium- or low-priority needs. These priorities inform park management efforts to secure funding and support for planning projects.



Summary of Data and GIS Needs			
Related to a FRV or OIRV?	Data and GIS Needs	Priority (H, M, L)	Notes
Volcanic Features, Volcano-Influenced Ecosystem, and Landscape/Scenery	Visitor use data	H	There is a need for visitor use data, including but not limited to cinder slope compaction, off-trail use, and visitor expectations, in order to address multiple, complex, interrelated issues and prevent resource degradation. These data would guide a visitor use plan and allow staff to enhance opportunities for visitor understanding of the park purpose, significance, and FRVs.
Volcano-Influenced Ecosystem	Ponderosa vegetation fire history and stand age/size class distribution data	H	The ponderosa-cinder barren vegetation within Sunset Crater Volcano National Monument is unique compared to other southwestern ponderosa-dominated forest. Fire history data and ponderosa pine stand data are needed to update the park's fire management plan, including completing an accurate fire regime condition-class assessment and predicting potential wildland or prescribed fire severity.
Volcanic Features and Volcano-Influenced Ecosystem	Research on the ecological succession processes of soil formation and vegetation establishment in the recent volcanic terrain	H	Research is needed to understand the processes of soil formation and forest regeneration in the volcanic cinder and lava terrain. The results of research are crucial to understanding long-term change and ecological resiliency to visitor and management activities. These processes are also of great scientific interest, and studies may be accomplished via partnerships with academic institutions and science agencies.
Volcanic Features and Volcano-Influenced Ecosystem	Unique volcanic feature and cinder slope condition monitoring	M	These volcanic resources are identified as particularly rare, fragile, and/or vulnerable to impacts from intensive visitor and management activities. An inventory of these features and monitoring framework has been developed over the last decade. Cyclic monitoring is needed every 10 years to document long-term changes and to ensure impacts remain within acceptable thresholds.
Volcanic Features, Volcano-Influenced Ecosystem, and Landscape/Scenery	Tribal/ethnographic studies	M	Ethnographic research is essential to preserve, manage, and interpret cultural and natural resources in an effective, culturally informed manner.
Historic Resources	Energy use data for buildings	L	Energy use data for buildings would help with analysis of energy use, calculation of carbon footprint, and achievement of sustainability goals.
Volcano-Influenced Ecosystem, Landscape/Scenery, and Historic Resources	Cyclic rare plant surveys (near facilities and visitor use areas)	L	Sunset Crater beardtongue (protected under the Arizona Native Plant Law) is known to occur near to facilities, roads, and trails.
Landscape/Scenery	Cyclic monitoring of ambient noise and potential aircraft noise	L	The monument is near the approach route for air traffic to Flagstaff Pulliam Airport. Scenic air-tour flights may also increase in the future. The area surrounding the monument is becoming increasingly developed. Monitoring using the NPS Natural Sounds Program protocol would inform long-term changes in aircraft and other human-caused noise.
Volcanic Features and Volcano-Influenced Ecosystem	Aerial imagery to study ecology	L	This imagery would help staff monitor unique volcanic features and cinder slope condition.
Volcano-Influenced Ecosystem	Meteorological data	L	These data would allow staff to validate local climate change and better understand ecological responses to this change.

Summary of Planning Needs			
Related to a FRV or OIRV?	Planning Needs	Priority (H, M, L)	Notes
Volcanic Features, Volcano-Influenced Ecosystem, and Landscape/Scenery	Comprehensive interpretive plan and long-range interpretive plan (update)	H	An updated comprehensive interpretive plan / long-range interpretive plan is required to address new technology, improve relevancy to audiences, meet A <i>Call to Action</i> goals, enhance opportunities for youth engagement, and tie interpretive goals and programming to foundation outcomes for the three Flagstaff Area National Monuments. Partnership opportunities with the public, tribes, Flagstaff schools, Northern Arizona University, and other agencies would be a key component planning effort.
Volcanic Features, Volcano-Influenced Ecosystem, and Landscape/Scenery	Visitor use management plan	H	A plan is needed to address visitor use and patterns and resource protection goals related to visitor impacts. The plan would also address who is visiting the park, what their expectations are, what other types of visitors could be attracted to the park, and relevancy for the next generation. Other specific goals include addressing safety concerns for bicycles and vehicles on the monument road and providing opportunities and sites for large group interpretive programming.
Volcanic Features, Volcano-Influenced Ecosystem, and Landscape/Scenery	Fire management plan amendment	H	An amendment to the fire management plan is needed to add the strategy of wildland fire for resource benefit.
Volcanic Features, Volcano-Influenced Ecosystem, Landscape/Scenery, and Historic Resources	Climate change adaptation planning	M	Outcomes from this effort can be integrated in park planning and management to bring appropriate climate change adaptation into those documents (fire management plan, resource stewardship strategy, visitor use management plan, etc.). This planning process allows the national monument to explore the range of climate futures that are plausible based on the latest model projection and to identify the associated impacts and management implications.
Historic Resources	Complete cultural landscape report for administrative complex	M	Complete cultural landscape report for administrative complex, per "NPS-28: Cultural Resource Management Guideline" and National Historic Preservation Act section 110. The cultural landscape inventory has already been completed.
Volcanic Features, Volcano-Influenced Ecosystem, Landscape/Scenery, and Historic Resources	Exhibits plan for new/updated exhibits	L	Current exhibits were installed in 2004. Most of the multimedia exhibits require constant repair. An exhibit plan would ensure interpretive media remain relevant to the varied audiences of the park.
Volcanic Features, Volcano-Influenced Ecosystem, Landscape/Scenery, and Historic Resources	Park asset management plan	L	The current park asset management plan was last updated in 2009. A revised plan would assure an updated strategy and roadmap to efficiently allocate limited resources to the highest priority assets.
Volcanic Features, Volcano-Influenced Ecosystem, and Historic Resources	Collections management plan	L	Since the last plan (1994), the collections have quadrupled in size, made numerous moves, and, since 2011, resided primarily in a private institution (Museum of Northern Arizona). This planning document is required under the Checklist for the Protection and Preservation of Museum Collections, which records the current state of a museum program and recommends actions needed for programmatic growth and improvement in all areas including security, fire protection, and environmental conditions.

## Part 3: Contributors

### Sunset Crater Volcano National Monument

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Mike Haubert, Law Enforcement Ranger  
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Janet Phillips, Administrative Officer  
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Holly Richards, Interpretive Ranger  
Angela Saner, Facility Management Systems Specialist  
Don Sharlow, Facility Manager  
Cecilia Shields, Chief of Interpretation  
Matt Snider, Trails Maintenance Worker  
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### Friends of Flagstaff Monuments Representatives

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### NPS Intermountain Region

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# Appendixes

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

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA May 26, 1930.

### A PROCLAMATION

WHEREAS certain geologic formations on lands of the United States, within the Coconino National Forest, in the State of Arizona, are of scientific and public interest, and Sunset Crater National Monument, Ariz. Preamble.

WHEREAS the proper protection of such formations appears to be desirable;

3024

### PROCLAMATIONS, 1930.

National monument, Arizons. Vol. 34, p. 225. U. S. C., p. 416.

NOW, THEREFORE, I, HERBERT HOOVER, President of the United States of America, by virtue of the power in me vested by section 2 of the act of Congress approved June 8, 1906 (U. S. Code, title 16, sec. 431), do proclaim that there are hereby reserved from all forms of appropriation under the public land laws, subject to all prior valid adverse claims, and set apart as a national monument, the following described lands, in the State of Arizona, which shall hereafter be known as the Sunset Crater National Monument:

Description.

T. 23 N., R. 8 E., Gila and Salt River meridian, Arizona, secs. 13, 14, 23, 24, SE.  $\frac{1}{4}$  and S.  $\frac{1}{2}$  NE.  $\frac{1}{4}$  sec. 15, NE.  $\frac{1}{4}$  and N.  $\frac{1}{2}$  SE.  $\frac{1}{4}$  sec. 22.

Use of Coconino National Forest not impaired. Vol. 35, p. 2196.

The reservation made by this proclamation is not intended to prevent the use of the lands for national forest purposes under the proclamation establishing the Coconino National Forest, and the two reservations shall both be effective on the land withdrawn, but the national monument hereby established shall be the dominant reservation, and any use of the land which interferes with its preservation or protection as a national monument is hereby forbidden.

Reserved from settlement, etc.

Warning is hereby given to all unauthorized persons not to appropriate, injure, deface, remove, or destroy any features of this national monument, or to locate or settle on 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 26<sup>th</sup> day of May, in the year of our Lord nineteen hundred and thirty, and of the Independence of the United States of America the one hundred and fifty-fourth.

HERBERT HOOVER

By the President:  
HENRY L STIMSON  
*Secretary of State.*

PUBLIC LAW 101-612—NOV. 16, 1990

104 STAT. 3223

16 USC 431 note. Arizona. SEC. 15. REDESIGNATION.

The Sunset Crater National Monument, Arizona, shall, on and after the date of enactment of this Act, be known and designated as the "Sunset Crater Volcano National Monument". Any reference to the Sunset Crater National Monument in any law, regulation, map, document, record, or other paper of the United States shall be considered to be a reference to the Sunset Crater Volcano National Monument.

Approved November 16, 1990.

## Appendix B: Inventory of Special Mandates and Administrative Commitments

Name	Agreement Type	Start Date / Expiration Date	Stakeholders	Purpose	Notes
<b>Agreements Below Apply to All Flagstaff Area National Monuments</b>					
Law Enforcement Agreements between US Forest Service and National Park Service	Memorandum of understanding (MOU)	11/22/2011 – 10/31/2016	US Forest Service and National Park Service	National, regional, and local agreements exist that allow law enforcement operations on each other's lands.	MOU for NPS sites within AZ, TX, NM, OK, and in the southwestern region of US Forest Service—law enforcement and investigations.
Memorandum of Understanding with Coconino County Sheriff's Department	Memorandum of understanding	5/12/2011 – 5/12/2016	Coconino County Sheriff's Department	Outlines areas of responsibility within the national monument and provides for deputizing NPS park rangers through the Coconino County Sheriff's Department. This MOU authorizes park protection staff to enforce state laws and use state criminal justice system.	MOU is renewable every five years.
Interpretive Partnership	Forest Service interagency agreement	5/15/2014 – 9/30/2014	US Forest Service and National Park Service	This partnership, which has been in operation for several years, coordinates interpretive activities on NPS and USFS lands and encourages consistent messages through shared staffing.	—
Memorandum of Understanding with Museum of Northern Arizona	MOU	6/2011 – 6/2021 (renewable upon expiration)	—	Provides storage space for collections and office space for the Flagstaff area monument's curator in exchange for 15% of the curator's time.	Allows the museum to store and care for various artifacts from the three Flagstaff Area Monuments, while retaining NPS ownership of the collection.

Name	Agreement Type	Start Date / Expiration Date	Stakeholders	Purpose	Notes
Cooperative Agreement Western National Parks Association (WNPA)	Cooperative agreement	3/2005 – National agreement renews every five years	—	Allows WNPA to operate a bookstore in each of the Flagstaff Area Monuments and headquarters, with support provided to the National Park Service from those sales.	Agreement is regionwide for all parks that have WNPA as their cooperating association. Regional director is signatory to the agreement.
Friends of Flagstaff Area National Monuments (FOM)	Friends group agreement	1/6/2011 – 1/6/2016	FOM board members	FOM is a primary nonprofit support organization—to raise community awareness, to raise funds for approved projects, and to support events and activities.	—
Fire Agreements with Grand Canyon National Park / Coconino National Forest and Summit Fire Department	Intra-agency: annual work plan / Grand Canyon National Park	4/4/2014 – Five years	USFS, Summit Fire Department, Grand Canyon National Park, park neighbors	Agreements provide for structural (Summit) and wildland fire suppression (Grand Canyon National Park, USFS) and emergency medical response (Summit).	*National master interagency agreement on general terms and conditions for implementing service first interagency agreements.
	Interagency-USFS annual operating plan	4/4/2014 – Annual			
	Interagency for wildland firefighting	5/6/2010 – Five years			
	Service 1st*	2/22/2012 – Five years			
Cooperative Law Enforcement Agreement between NPS / Flagstaff Area National Monuments and City of Flagstaff	Cooperative agreement number P12AC10702	10/1/2012 – 8/31/2017	NPS, City of Flagstaff Police Department	Provides dispatch services for enforcing of laws and officer safety.	Five-year cooperative agreement with City of Flagstaff.
Information Technology Agreement with Grand Canyon National Park	Shared services agreement	Annual, per fiscal year	Park employees	Agreement provides funding to Grand Canyon National Park for information technology support and services to the Flagstaff area monuments.	Agreement is renewed annually; costs are based on number of computers.

Name	Agreement Type	Start Date / Expiration Date	Stakeholders	Purpose	Notes
<b>Agreements Listed Below Apply Only to Sunset Crater Volcano National Monument</b>					
Interagency Agreement between USFS and NPS	Interagency agreement	Five years from signature date	USFS and NPS	Outlines the responsibilities and uses of the administrative area at Sunset Crater Volcano National Monument, where there are NPS facilities on USFS lands, as well as the maintenance and law enforcement jurisdiction on FS545.	Reviewed during annual meeting with any necessary updates. Little or no change has been made since 2010. No NPS law enforcement jurisdiction on USFS land—interagency agreement defines this.
Doney Park Water Company Agreement	Customer account	Indefinite date of service	NPS / Recreation Resource Management / Doney Park Water Co. / Arizona Department of Environmental Quality	Provides water for the Sunset Crater Volcano developed area (including Bonito Campground) and establishes limits for water consumption/use.	One annual direct billing through cost of collection to recreation resource management for campground metered water use.

## Appendix C: Tribes Traditionally Associated with Sunset Crater Volcano National Monument

**Fort McDowell Yavapai Nation**

PO Box 17779  
Fountain Hills, AZ 85268

**Havasupai Tribe**

PO Box 10  
Supai, AZ 86435

**Hopi Tribe of Arizona**

PO Box 123  
Kykotsmovi, AZ 86039

**Hualapai Indian Tribe**

PO Box 179  
Peach Springs, AZ 86434

**Kaibab Band of Paiute Indians**

HC 65, Box 2  
Fredonia, AZ 86022

**Navajo Nation**

PO Box 7440  
Window Rock, AZ 86515

**San Carlos Apache Tribe of Arizona**

PO Box 0  
San Carlos, AZ 85550

**San Juan Southern Paiute Tribe of Arizona**

PO Box 1989  
Tuba City, AZ 86045

**Tonto Apache Tribe of Arizona**

Tonto Reservation #30  
Payson, AZ 85541

**White Mountain Apache Tribe**

PO Box 700  
Whiteriver, AZ 85941

**Yavapai-Apache Nation**

2400 West Datsi Street  
Camp Verde, AZ 86322

**Yavapai-Prescott Indian Tribe**

530 East Merritt  
Prescott, AZ 86301-2038

**Zuni Tribe of the Zuni Reservation**

PO Box 339  
Zuni, NM 87327-0339



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## Intermountain Region Foundation Document Recommendation Sunset Crater Volcano National Monument

May 2015

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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.

*Kayci Cook Collins*

*11 May 2015*

RECOMMENDED

Kayci Cook Collins, Superintendent, Sunset Crater Volcano National Monument

Date

*Sue E. Masica*

*May 15, 2015*

APPROVED

Sue E. Masica, Regional Director, Intermountain Region

Date



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.

SUCR 039/128168

May 2015

# Foundation Document • Sunset Crater Volcano National Monument

