



# Foundation Document

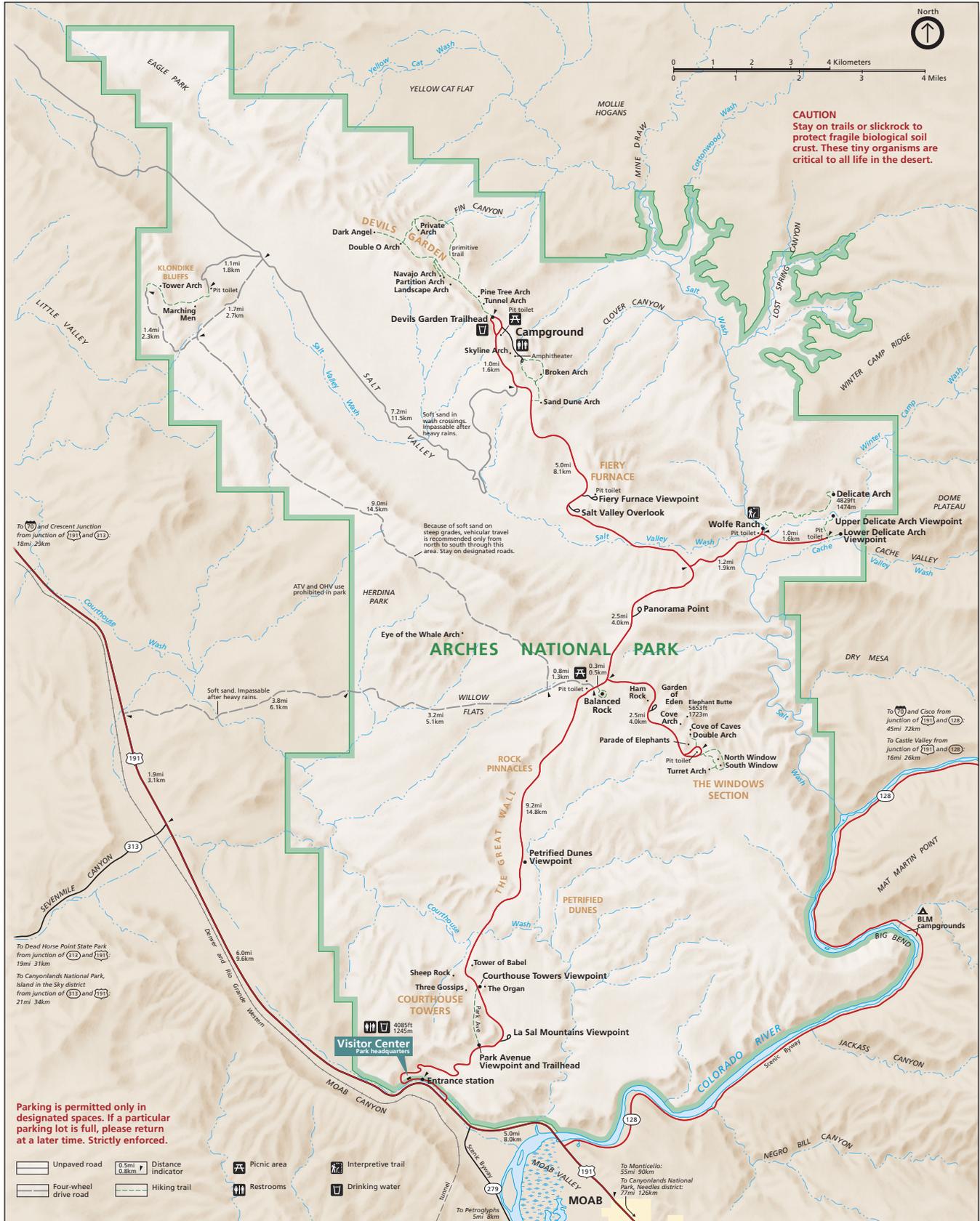
## Arches National Park

Utah

August 2013



# Arches National Park



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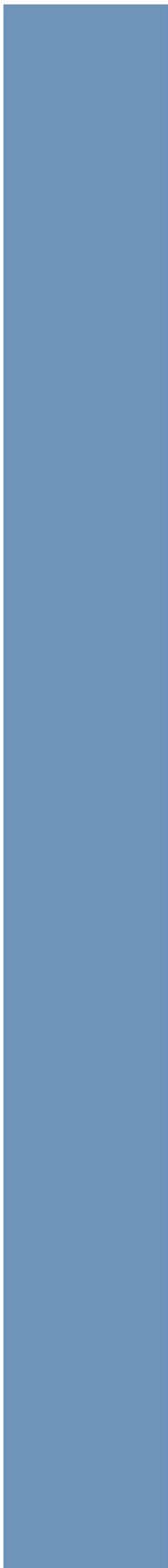
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## Mission of the National Park Service

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:

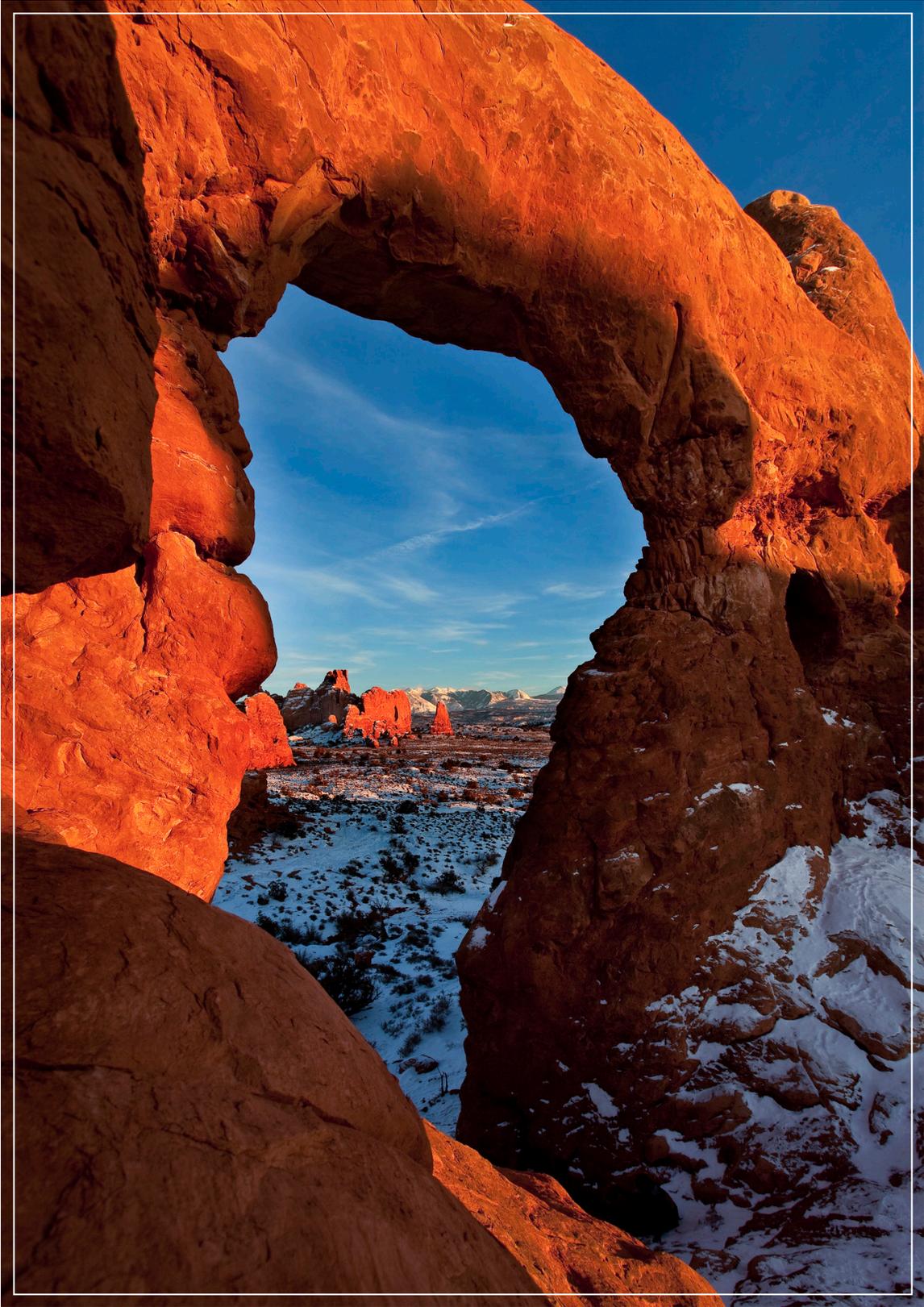
- **Shared stewardship:** We share a commitment to resource stewardship with the global preservation community.
- **Excellence:** We strive continually to learn and improve so that we may achieve the highest ideals of public service.
- **Integrity:** We deal honestly and fairly with the public and one 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 units were created prior to 1916, it was not until August 25, 1916, that President Woodrow Wilson signed the act formally establishing the National Park Service.

The national park system continues to grow, and currently 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 required to have a formal statement of its core mission that will provide basic guidance for all planning and management decisions—a foundation for planning and management. Increasing emphasis on government accountability and restrained federal spending demand that all stakeholders are aware of the purpose, significance, interpretive themes, fundamental resources and values, and special mandates and administrative commitments of a park unit, as well as the legal and policy requirements for administration and resource protection that factor into management decisions.

The process of developing a foundation document provides the opportunity to gather together and integrate all varieties and hierarchies of information about a park unit. Next, this information is refined and focused to determine what are the most important attributes of the park unit. The process of preparing a foundation document aids park managers, staff, and stakeholders in identifying information that is necessary for future planning efforts. This foundation document was developed as a collaborative effort. A workshop to facilitate this process was held June 19–21, 2012, in Moab, Utah. A complete list of attendees and preparers is included in part 3 of this document.

A foundation document serves as the underlying guidance for planning decisions for a national park unit. It describes the core mission of the park unit by identifying the purpose, significance, fundamental and important resources and values, interpretive themes, assessment of planning and data needs, special mandates and administrative commitments, and the unit's setting in the regional context.

The foundation document can be useful in all aspects of park management to ensure that primary management objectives are accomplished before addressing other factors that are also important, but not directly essential to achieving the park purpose and maintaining its significance. Thus, the development of a foundation document for Arches National Park is necessary to effectively manage the park over the long term and protect park resources and values that are integral to the purpose and identity of the park unit and to address key issues affecting management.

The park atlas is also a part of the foundation project. It is a geographic information system (GIS) product that can be published as a hard copy paper atlas and as electronic geospatial data in a Web-mapping environment. The purpose of the park atlas is to support park operations and to facilitate planning decisions as a GIS-based planning support tool. The atlas covers various geographic elements that are important for park management such as natural and cultural resources, visitor use patterns, and facilities. The park atlas establishes the available baseline GIS information for a park that can be used to support future planning activities. The park atlas is available at <http://insideparkatlas.nps.gov/>.

## Part 1: Core Components

Foundation documents include the following core elements:

The **park purpose** is the specific reason(s) for establishing a particular park. A park purpose statement is grounded in a thorough analysis of the legislation (or executive order) and legislative history of the park, and may include information from studies generated prior to the park's establishment. The purpose statement goes beyond a restatement of the law to clarify assumptions about what the law means in terms specific to the park.

The **significance statements** express why the resources and values of the park are important enough to justify national park designation. Statements of park significance describe why an area is important within a global, national, regional, and systemwide context. Significance statements are directly linked to the purpose of the park and are verified by data or consensus that reflect the most current scientific or scholarly inquiry and cultural perceptions because the resources and values may have changed since the park was established.

**Interpretive themes** connect park resources to relevant ideas, meanings, concepts, contexts, beliefs, and values. They support the desired interpretive objective of increasing visitor understanding and appreciation of the significance of park resources. In other words, interpretive themes are the most important messages to be conveyed to the public about the park. Interpretive themes are based on park purpose and significance.

**Fundamental resources and values** are features, systems, organisms, processes, visitor experiences, stories, scenes, sounds, smells, or other attributes of the park that merit primary consideration during planning and management because they are essential to achieving park purpose and maintaining park significance.

**Other important resources and values** are resources and values that are determined to be important and integral to park planning and management, although they are not related to park purpose and significance.



## Brief Description of the Park

Arches National Park is in the heart of canyon country in southeastern Utah and is considered one of America's scenic wonders. The park preserves 76,679 acres of high desert on the Colorado Plateau, punctuated by rocky ridges, canyons, fins, towers, monoliths, pinnacles, and more than 2,000 arches. Delicate Arch has become an icon; it is the adopted symbol for the Utah license plate and was one of the images for the 2002 Winter Olympics in Salt Lake City, Utah. The nearby town of Moab is a major tourist destination that serves as a hub for a wide range of recreational activities in the surrounding region. The prominent La Sal Mountains to the southeast rise to more than 12,600 feet above sea level and provide a scenic background for the park. Elevations in the park range from 4,085 to 5,653 feet above sea level.

The park's distinctive landscapes are products of multiple geologic processes including salt tectonics, sedimentation, folding and faulting, erosion, and salt dissolution operating over hundreds of millions of years. Diverse geologic formations, landforms, and soils shape patterns in the distribution and abundance of plants and animals through effects on the availability of scarce water resources in this arid environment where annual precipitation averages less than 9 inches.

Plants and animals of the park are able to deal with extreme variations in temperature and moisture, as well as intense sunlight. Vegetation is sparse overall and interspaces among plants often are dominated by biological crust communities composed of cyanobacteria, mosses, and lichens. These soil-surface communities are important for stabilizing soils, preventing erosion, and retaining water and nutrients needed by other plants and animals. Visitors also may notice pinyon pine, juniper, and many species of grasses, cacti, and shrubs. Moisture-dependent plants like cottonwoods, willows, and ferns are found along the rare perennial streams, in washes, or in alcoves with dripping springs. Wildflowers appear after spring rains. Notable wildlife includes mule deer, coyotes, raptors such as golden eagles and peregrine falcons, desert bighorn sheep, and the seldom seen bobcat and mountain lion. Rattlesnakes, scorpions, and black widow spiders are present but encountered less frequently than squirrels, packrats, chipmunks, and rabbits. Common birds include ravens, pinyon jays, and red-tailed hawks.

Cultural resources in the park span at least 12,000 years of human occupation and activity. There are Paleoindian, Archaic, Fremont, ancestral Pueblo, and Ute archeological sites in the park, including lithic scatters, middens, pictographs, and petroglyphs. Historic resources include those left by explorers, miners, ranchers, and the Civilian Conservation Corps. There are six sites in Arches National Park that have been listed in the National Register of Historic Places, including a segment of the Old Spanish National Historic Trail.

Many of the park's dramatic features are visible from the main road, which enters at the southern extremity and runs to Devils Garden in the northern part of the park, with two side roads along the way. A visitor center is just inside the entrance. More than a dozen hiking trails provide access to arches and other features and to the backcountry. The park offers a variety of recreational experiences including sightseeing, viewpoints/photo stops, hiking, interpretation, picnicking, special tours to the Fiery Furnace, backcountry and developed camping, rock climbing, canyoneering, bicycling (on established park roads), and nature study. Arches National Park is a great family park, with several trails and trail loops that offer moderate and easy day-hiking experiences.

Developed areas at Arches National Park can become extremely crowded during the busy seasons. Since 2010 the park has received more than 1 million visitors each year. The park's season for visitation is from March through September. Recreation visits peak in the months of May, June, and September and daily counts at the park's visitor center have recorded up to 3,000–4,000 visitors.

Arches National Park was first established as a national monument in 1929, and later became a national park in 1971. The park is within the "Grand Circle," a broad geographic region in the southwestern United States that encompasses more than 60 recreation sites in 5 states. The Grand Circle includes some of the Southwest's most unique landscapes, attractions, scenic byways, and national park lands.

## Park Purpose

Purpose statements identify the specific reason for the establishment of a particular park. Purpose statements are crafted through a careful analysis of the enabling legislation and legislative history that influenced the development of Arches National Park. The park was first designated as Arches National Monument when the initial enabling legislation was passed and signed into law on April 12, 1929 (see appendix A for enabling legislation and subsequent amendments). The purpose statement reinforces the foundation for future park management administration and use decisions. The following is the purpose statement for Arches National Park:

*The purpose of Arches National Park is to protect extraordinary examples of geologic features including arches, natural bridges, windows, spires, balanced rocks, as well as other features of geologic, historic, and scientific interest, and to provide opportunities to experience these resources and their associated values in their majestic natural settings.*



## Park Significance

Significance statements express why Arches National Park resources and values are important enough to merit national park unit designation. Statements of significance describe why an area is important within a global, national, regional, and systemwide context. These statements are linked to the purpose of the park unit, and are supported by data, research, and consensus. Significance statements describe the distinctive nature of the park and inform management decisions, focusing efforts on preserving and protecting the most important resources and values of the park unit.

The following significance statements have been identified for Arches National Park (please note that the statements are in no particular order):

- Arches National Park contains the largest concentration of natural arches on earth.
- The geographic location of Arches National Park provides visitors with the opportunity to enjoy iconic Colorado Plateau landscapes in a majestic natural setting, with striking geologic features in the foreground and the towering La Sal Mountains in the distance creating expansive views of contrasting colors and textures.
- Arches National Park protects representative examples of Colorado Plateau ecosystems, providing opportunities for scientific studies of natural and human systems in diverse landscape settings over long periods of time.
- Arches National Park protects a notable array of cultural sites and features that reflect the many different ways people have occupied and used Colorado Plateau landscapes over the last 12,000 years.



## 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 park significances and fundamental 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 are unconnected to an event, time, or place.

While themes are important as an organizational tool to guide management decisions, they are not intended for public use. The themes offer park staff guidance on focusing on relevant visitor experiences, and what matters to the public is how these themes are represented through park services, media, programming, and facilities.

The following interpretive themes have been identified under individual topics for Arches National Park:

- **Geology.** Geologic features found in Arches National Park are a result of powerful and dynamic geologic forces operating over great lengths of time.
- **Desert Ecology.** The geology, climate, and life forms of Arches National Park result in a rich, interconnected desert ecosystem.
- **Natural Environments.** The expansive views, dark night skies, and natural sounds of Arches National Park provide opportunities for visitors to experience nature and solitude.
- **Majestic Scenery.** The beautiful landscapes and vistas enjoyed from within Arches National Park are dependent on the health and vitality of surrounding lands, water, and air.
- **Cultural Landscapes.** Past human activities have influenced and shaped what we see and experience in Arches National Park today.

## Fundamental Resources and Values

Fundamental resources and values are those features, systems, processes, experiences, stories, scenes, sounds, smells, or other attributes determined to warrant primary consideration during planning and management because they are critical to achieving the park's purpose and maintaining its significance.

The preeminent responsibility of park managers is to ensure the conservation and public enjoyment of those qualities that are critical (fundamental) to achieving the park's purpose and maintaining its significance. These qualities are called the park's fundamental resources and values (FRVs). Fundamental resources and values are closely related to legislative purpose, and are more specific than significance statements. Fundamental resources and values help focus planning and management on what is truly important about the park. If they are allowed to deteriorate, the park purpose and/or significance could be jeopardized.

This distinction is made to ensure fundamental resources and values receive specific consideration in park planning processes because of their relationship to the park's purpose and significance.

The following fundamental resources and values have been identified for Arches National Park:

- **Geologic Resources.** This includes arches, fins, windows, balanced rocks, spires, natural bridges, and other geologic features such as faults and anticlines. Geologic processes formed and continue to change the landscape.
- **Clean Air and Scenic Vistas.** Clean air and undeveloped natural viewsheds allow for incredible vistas of the nearby La Sal Mountains and other scenic landscapes in and around the park. Clean air enhances the color and contrast of landscape features, allows visitors to see great distances, and safeguards ecosystem, visitor, and staff health.
- **Colorado Plateau Ecosystems.** Clean water, native biotic communities, and the natural hydrologic, geomorphic, and biotic processes necessary for sustaining them are fundamental to the integrity of natural ecosystems protected in Arches National Park.
- **Cultural Features.** Arches National Park includes rare Barrier Canyon style rock art panels, lithic quarries, Civilian Conservation Corps-era structures, one of only 12 known Denis Julien inscriptions, and national register-listed Wolfe Ranch Historical District.
- **Collaborative Conservation, Science, and Scholarship.** Collaboration with external partners and engagement in scientific and scholarly activities are values and processes that are fundamental for achieving the park's purpose and maintaining its significance in the context of shared landscape values, rapidly changing social and environmental conditions, and uncertainty in outcomes of management decision making.

## Other Important Resources and Values

Arches National Park contains other resources and values that may not be fundamental to the purpose and significance of the park, but are important to consider in management and planning decisions. These are referred to as other important resources and values.

The following are other important resources and values for Arches National Park:

- **Natural Soundscapes.** Parts of Arches National Park are free from human-caused sounds and natural sounds of the desert predominate in these areas.
- **Paleontological Resources.** Hundreds of paleontological features have been found in and around the park including fossil evidence of prehistoric vertebrates, invertebrates, and plants.
- **Opportunities for Primitive and Remote Experiences.** The backcountry areas of Arches National Park provide opportunities to experience quiet and solitude in a remote natural setting as experienced at Lost Spring Canyon, Eagle Park, and Salt Wash.
- **Dark Night Skies.** The dark night skies in Arches National Park are generally quite dark, except for the glow coming from the cities of Moab and Grand Junction.
- **Rare and Iconic Wildlife Species.** Desert bighorn sheep, peregrine falcons, and other raptors are viewed and enjoyed by visitors to Arches National Park.
- **Museum Collections.** The park's museum collections contain three-dimensional objects and natural history specimens and artifacts that are representative of the resources within the park's boundaries. Archives also are a component of museum collections and document park and resource management history.



## Part 2: Dynamic Components

Part 2 consists of two components:

- special mandates and administrative commitments
- assessment of planning and data needs

These components may change after this foundation document is published and may need to be updated periodically.

### 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, most often legislative or judicial, that must be fulfilled along with the park purpose. Mandates can be expressed in enabling legislation or in separate legislation following the establishment of the park. 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. In this category are such agreements as easements, rights-of-way, arrangements for emergency service response, etc. Special mandates and administrative commitments, in many cases, support 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 Arches National Park.

- The Clean Air Act, as amended, requires all park units to meet federal, state, and local pollution standards. Additionally, Arches National Park is a mandatory Class I area under the Prevention of Significant Deterioration provisions of the act. This gives the National Park Service an “affirmative responsibility” to protect the air quality and air quality related values (AQRVs) within the park from the adverse effects of air pollution. Air quality related values are resources that are sensitive to air pollution, such as visibility, plants, animals, soils, water and certain cultural resources. State and federal permitting authorities must consult with the National Park Service regarding new sources of air pollution, and impacts to park air quality related values must be considered in the permitting process. Further, the act requires NPS involvement in national regulatory efforts aimed eliminating human-caused visibility impairment in all Class I areas.
- Memorandum of understanding (MOU) between the U.S. Bureau of Land Management and the National Park Service. This agreement ensures that the Bureau of Land Management and National Park Service continue to enhance efficiencies in each other’s management activities, to coordinate information and outreach efforts, and to foster communications on activities that have the potential to affect the other agency’s management responsibilities.

- Memorandum of understanding among the U.S. Department of Agriculture, the U.S. Department of the Interior, and the U.S. Environmental Protection Agency regarding air quality analyses and mitigations for federal oil and gas decisions analyzed under the National Environmental Policy Act (NEPA) process. This memorandum of understanding provides that air quality will be considered, analyzed, and mitigated through an interagency collaborative process. The MOU seeks to safeguard air quality and resources sensitive to air pollution—termed air quality related values—while recognizing the various missions and mandates of the signatory agencies.
- General agreement among Glen Canyon National Recreation Area and Arches and Canyonlands national parks. This agreement supports shared employee safety, interagency operational communications, emergency medical service, law enforcement, and the public safety effort by making 24-hour dispatch available for after-hours and emergency services from Glen Canyon Interagency Communications Center.
- Cooperative agreement among the National Park Service, Southeast Utah Group, and Grand County, Utah. This agreement is to provide cooperative management activities and emergency operations in Grand County, Arches National Park, and Canyonlands National Park.
- Arches National Park has the authority to administer 133.03 acres of a Grand County patent 43-63-0036, which is located inside park boundaries. As long as the use in the parcel complies with stipulations of the original permit and is “for recreation site purposes only” such as boat launching and docking, parking, and picnicking, the National Park Service does not have any present authority to restrict or specify the manner in which the county or its concessioners manage those uses granted in the patent. Although the park has the authority to administer the parcel, the park does not have the authority to amend the patent.

For more information about the existing commitments for the park, please see the inventory of concessions and permits in appendix C.



## Assessment of Planning and Data Needs

Once park purpose and significance statements and fundamental resources and values have been identified, it is important to consider what additional information and planning tasks may be necessary to aid the National Park Service in its mission. The assessment of planning and data needs identifies any inherent conditions or threats contained in the gathered information and determines whether any additional planning steps, data needs, and management efforts may be necessary to maintain or protect existing fundamental resources and values and other important resources and values.

There are three parts that make up the planning and data needs assessment:

1. analysis of fundamental and other important resources and values
2. identification of key or major parkwide issues that need to be addressed by future planning
3. prioritization of data and planning needs

The analysis of fundamental resources and values and identification of major issues leads up to and supports the identification and prioritization of needed plans and studies.

## Analysis of Fundamental Resources and Values

The analysis of fundamental resources and values articulates the importance of each fundamental resource or value, current condition, potential threats, and the related issues that require consideration in planning and management. Included in the analysis is the identification of relevant laws and NPS policies specific to the preservation and management of park resources. This section of the foundation document will require periodic reviews and updates as monitoring and research improves our understanding of each fundamental resource and value.



<b>Fundamental Resource or Value: Geologic Resources</b>	
<b>Short Description of Importance</b>	This includes arches, fins, windows, balanced rocks, spires, natural bridges, and other geologic features such as faults and anticlines. Geologic processes formed and continue to change the landscape.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• Arches National Park contains the largest concentration of natural arches on earth.</li> <li>• The geographic location of Arches National Park provides visitors with the opportunity to enjoy iconic Colorado Plateau landscapes in a majestic natural setting, with striking geologic features in the foreground and the towering La Sal Mountains in the distance creating expansive views of contrasting colors and textures.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• All are eroding (natural process).</li> <li>• Certain features were lost (Wall Arch).</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Visitor impacts including graffiti, vandalism, rope grooving (climbing and canyoneering).</li> <li>• Potential for landslides and rock falls may threaten visitor safety.</li> <li>• Potential changes in erosion / weathering rates due to warming, drought, and greater frequency and magnitude of extreme weather events attributable to anthropogenic climate change.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Development of a climbing and canyoneering management plan.</li> <li>• Continue to learn from research conducted on geologic features and processes.</li> <li>• Establish monitoring program based on repeat photography in conjunction with current U.S. Geological Survey (USGS)–NPS repeat photography research project.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• State and local governments</li> <li>• Commercial guides</li> <li>• Natural Arch and Bridge Society</li> <li>• Traditionally associated tribes</li> <li>• National Parks Conservation Association</li> <li>• Scientific researchers and educators</li> <li>• Grand County, Utah</li> <li>• City of Moab</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>
<b>Laws and Policies that Apply to this FRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this FRV</b></p> <ul style="list-style-type: none"> <li>• NPS <i>Management Policies 2006</i> (4.8) provides general direction on the protection of geologic and soil resources</li> <li>• NPS <i>Natural Resource Management Reference Manual 77</i></li> <li>• 1988 Federal Cave Resources Protection Act</li> <li>• 1976 Mining in the Parks Act</li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>• Superintendent’s Compendium</li> <li>• 1996 resource management plan</li> <li>• 1988 backcountry management plan</li> </ul>

Fundamental Resource or Value: Geologic Resources	
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• Up-to-date photo monitoring and inventory for features of special interest.</li> <li>• GPS coordinates for geologic features of special interest.</li> <li>• Larger scale geology map (1:24,000).</li> <li>• Map (spatial data) that identifies known geologic hazards.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Resource stewardship strategy.</li> <li>• Completed climbing and canyoneering plan.</li> </ul>

Fundamental Resource or Value: Clean Air and Scenic Vistas	
<b>Short Description of Importance</b>	Clean air and undeveloped natural viewsheds allow for incredible vistas of the nearby La Sal Mountains and other scenic landscapes in and around the park. Clean air enhances the color and contrast of landscape features, allows visitors to see great distances, and safeguards ecosystem, visitor, and staff health.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• The geographic location of Arches National Park provides visitors with the opportunity to enjoy iconic Colorado Plateau landscapes in a majestic natural setting, with striking geologic features in the foreground and the towering La Sal Mountains in the distance creating expansive views of contrasting colors and textures.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• Arches National Park is a designated Class I area under the Clean Air Act, providing additional protection for air quality and park resources sensitive to air pollution (termed air quality related values).</li> <li>• Generalized development is impacting night skies, views, and vistas (trend).</li> <li>• During a portion of the year, visibility in Arches is degraded relative to estimated natural conditions (the national goal under the Clean Air Act); based on monitoring data from Canyonlands, 10-year trends for these “hazy” visibility days remain unchanged. However, on “clear” visibility days, the air is still exceptionally clean when compared to other regions of the country, and visitors can experience expansive, clear views that extend well over 100 miles.</li> <li>• Current ozone levels are approaching the human health-based National Ambient Air Quality Standard. Average estimated ozone levels from 2005–2009 suggest that ozone sensitive plant species, such as black locust, could be at risk.</li> <li>• Current estimates of total (wet plus dry) nitrogen (N) deposition at the park suggest that sensitive plant communities could be at risk if regional N emissions increase. Potential effects of increased N deposition include disruption of nutrient cycling, changes in species composition, and loss of biodiversity.</li> <li>• Current sulfur deposition levels and trends suggest that ecosystem effects from acidification are not a widespread concern in this park.</li> </ul>

<b>Fundamental Resource or Value: Clean Air and Scenic Vistas</b>	
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Night sky is generally dark with potential impacts from nearby cities.</li> <li>• Oil and gas development.</li> <li>• Other development (i.e., utility-scale renewables, potash).</li> <li>• State land and recreational development.</li> <li>• Increasing visitor use.</li> <li>• Potential new point sources.</li> <li>• Wind-blown dust impacts.</li> <li>• Regional air pollution impacts, including ozone and regional haze.</li> <li>• Aridification due to climate change could lead to increased fire frequency, increased dust emissions, ozone formation, increased pollutant exposures, and decreased ecosystem resilience due to the effects of air pollution, impacting plant and animal communities and viewsheds.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Continue work to achieve visibility improvement through the regional haze program.</li> <li>• Continue collaboration and coordination with adjacent land managers, to mitigate the air quality and AQRV impacts of oil and gas development through the air quality oil and gas memorandum of understanding.</li> <li>• Opportunities for implementing park sustainability measures that reduce in-park pollution.</li> <li>• Continue technical review of air pollution permits exercising the authority of the federal land manager under the Clean Air Act to prevent significant deterioration of park air quality-related values.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• Commercial guides</li> <li>• Bureau of Land Management</li> <li>• U.S. Forest Service</li> <li>• State/local governments</li> <li>• Nongovernment organizations</li> <li>• Public/industry</li> <li>• Environmental Protection Agency</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>
<b>Laws and Policies that Apply to this FRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this FRV</b></p> <ul style="list-style-type: none"> <li>• NPS Organic Act</li> <li>• The Clean Air Act (42 USC 7401 et seq.) gives federal land managers the responsibility for protecting air quality and related values, including visibility, plants, animals, soils, water quality, cultural resources, and public health, from adverse air pollution impacts</li> <li>• NPS <i>Management Policies 2006</i> (4.7) and NPS <i>Natural Resource Management Reference Manual 77</i> provide further direction on the protection of air quality and related values for park units</li> <li>• NPS <i>Management Policies 2006</i> (1.4, 1.6, 3.1) require the National Park Service to conserve and protect scenery and scenic vistas</li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>• 1996 resource management plan</li> </ul>

Fundamental Resource or Value: Clean Air and Scenic Vistas	
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• Continue monitoring of air quality and air quality related values. The Canyonlands visibility monitor is representative of conditions at Arches, and provides information on long-term trends and conditions. Although ozone and atmospheric deposition are not monitored at the park, interpolated data from monitors at Canyonlands and other regional sites provide good estimates of ozone conditions and atmospheric wet deposition at Arches.</li> <li>• Evaluate adequacy of key observation points that provide basis for current viewshed modeling and analysis.</li> <li>• Establish viewshed monitoring on basis of repeat photography at key observation points.</li> <li>• Special studies to examine pollution dose-response relationships in sensitive park ecosystems.</li> <li>• Special studies, including source attribution studies, to evaluate the impacts and of windblown dust and climate change interactions on visibility in Arches.</li> <li>• Evaluate any air quality benefits associated with the new transportation plans (volunteer shuttles).</li> <li>• Continued collection of weather data.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Resource stewardship strategy.</li> <li>• Climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources.</li> </ul>

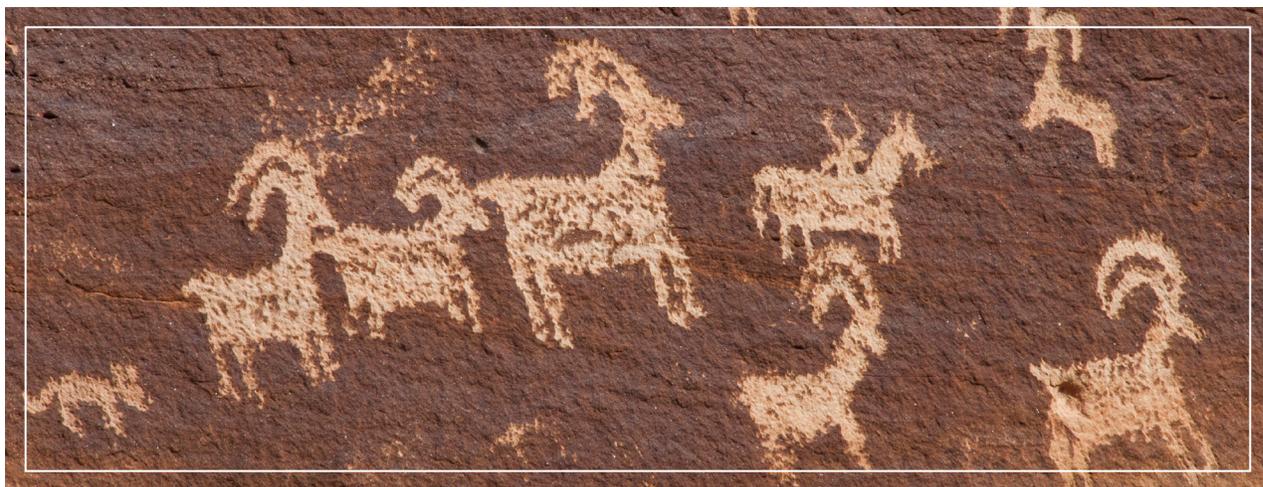


Fundamental Resource or Value: Colorado Plateau Ecosystems	
<b>Short Description of Importance</b>	Clean water, native biotic communities, and the natural hydrologic, geomorphic, and biotic processes necessary for sustaining them are fundamental to the integrity of natural ecosystems protected in Arches National Park.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• Arches National Park protects representative examples of Colorado Plateau ecosystems, providing opportunities for scientific studies of natural and human systems in diverse landscape settings over long periods of time.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• Extensive areas in Salt Valley are dominated by invasive exotic annuals.</li> <li>• Many riparian areas are infested with populations of exotic tamarisk (declining due to leaf beetle), Russian olive (expanding), and herbaceous exotics (uncertain trend).</li> <li>• Many park wetlands are infested by invasive exotic bullfrogs and exotic fish.</li> <li>• Many high-visitation areas are characterized by proliferating networks of social trails.</li> <li>• Trampling and soil destabilization continue to facilitate soil erosion.</li> <li>• Existing monitoring data are inadequate for determining trends in resource conditions and visitor impacts.</li> <li>• Average temperature in the Southwest has increased approximately 1.5°F compared to 1960–79 baseline.</li> <li>• Recent extensive dieback in woody plants possibly attributable to combination of drought and warming.</li> <li>• Resource staffing issues complicate data collection and management actions at this time.</li> </ul>



<b>Fundamental Resource or Value: Colorado Plateau Ecosystems</b>	
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Groundwater development external to the park.</li> <li>• Invasive plants and animals.</li> <li>• Persistent impacts of past livestock grazing on plant communities and soils.</li> <li>• Soil and vegetation impacts attributable to permitted livestock trailing.</li> <li>• Trespass livestock.</li> <li>• Visitor-use impacts including trampling, creation of social trails, and disturbance of sensitive wildlife species.</li> <li>• Changes in natural hydrologic regimes, geomorphic processes, and biotic processes due to warming, drought, and greater frequency and magnitude of extreme weather events attributable to anthropogenic climate change.</li> <li>• Effects of climate change on resilience of natural systems to other stressors.</li> <li>• Increasing rates of nitrogen deposition have the potential to disrupt nutrient cycles, facilitate the spread of invasive exotic plants, and adversely impact native biotic communities.</li> <li>• Inadequate staff capacity for designing and implementing necessary monitoring (including data analysis and reporting) or other management actions.</li> <li>• Inadequate protocols and systems for ensuring proper management of resource-related data and information necessary to support management decision making.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Funded grassland restoration project (Salt Valley).</li> <li>• Funded riparian area project (Courthouse Wash).</li> <li>• Continued transportation planning.</li> <li>• Funded project to enhance capacity for treating frontcountry exotics.</li> <li>• USGS-NPS repeat photography research provides opportunities for understanding long-term environmental changes and establishing photo-monitoring sites.</li> <li>• Continued monitoring by Southeast Utah Group (SEUG) and NPS inventory and monitoring (I&amp;M) program will improve understanding of conditions and trends for some park resources.</li> <li>• USGS-NPS nitrogen-deposition research will improve understanding of link between atmospheric deposition and invasive plant dynamics.</li> <li>• Continued pursuit of opportunities to develop new partnerships and to expand staff science / technical capacity.</li> <li>• Climbing and canyoneering management plan.</li> <li>• Update the commercial services plan.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• Commercial guides</li> <li>• Researchers and educators</li> <li>• Water development interest</li> <li>• State and local governments (primarily water interest)</li> <li>• Traditionally associated tribes</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>

<b>Fundamental Resource or Value: Colorado Plateau Ecosystems</b>	
<b>Laws and Policies that Apply to this FRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this FRV</b></p> <ul style="list-style-type: none"> <li>• NPS <i>Management Policies 2006</i> (1.6, 4.1, 4.1.4, 4.4.1, 4.7.2) provides general direction for managing park units from an ecosystem perspective</li> <li>• NPS <i>Natural Resource Management Reference Manual 77</i></li> <li>• Endangered Species Act of 1973, as amended</li> <li>• National Invasive Species Act</li> <li>• Lacey Act, as amended</li> <li>• Federal Noxious Weed Act of 1974, as amended</li> <li>• Executive Order 13112, "Invasive Species"</li> <li>• The Clean Water Act</li> <li>• The Clean Air Act (42 USC 7401 et seq.) gives federal land managers the responsibility for protecting air quality and related values, including visibility, plants, animals, soils, water quality, cultural resources, and public health, from adverse air pollution impacts</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>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>• 2009 SEUG exotic plant management plan</li> <li>• 2006 transportation implementation plan</li> <li>• 2005 SEUG fire management plan</li> <li>• 1996 resource management plan</li> <li>• 1993 commercial visitor services management plan</li> <li>• 1989 general management plan</li> <li>• 1988 backcountry management plan</li> </ul>
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• Water resource inventory that produces a map (digital spatial data), a condition assessment, and a risk assessment for streams, wetlands, hanging gardens, and riparian areas.</li> <li>• Data and analyses that quantify water needs of water-dependent resources.</li> <li>• Data on trends and extent of social trails and other surface disturbances in high use areas, including climbing and canyoneering routes.</li> <li>• Data on the extent and trends in invasive exotic plants.</li> <li>• Continued collection of weather data.</li> <li>• Continued collection of water quality data.</li> <li>• Continued collection of spring flow data.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Resource stewardship strategy.</li> <li>• Climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources.</li> <li>• Visitor use management plan.</li> </ul>



Fundamental Resource or Value: Cultural Features	
<b>Short Description of Importance</b>	Arches National Park includes rare Barrier Canyon style rock art panels, lithic quarries, Civilian Conservation Corps–era structures, one of only 12 known Denis Julien inscriptions, and the national register-listed Wolfe Ranch Historical District.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• Arches National Park protects a notable array of cultural sites and features that reflect the many different ways people have occupied and used Colorado Plateau landscapes over the last 12,000 years.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• 1% of the park has been surveyed for cultural resources; 226 cultural resource sites have been located to date.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• High visitation to specific archeological sites.</li> <li>• Vandalism.</li> <li>• Graffiti.</li> <li>• Intentional and inadvertent impacts from visitors.</li> <li>• Pot hunting.</li> <li>• Artifact theft.</li> <li>• Potential changes in erosion / weathering rates due to warming, drought, and greater frequency and magnitude of extreme weather events attributable to anthropogenic climate change.</li> <li>• Inadequate staff capacity for implementing necessary monitoring (including analyzing and reporting on monitoring results).</li> <li>• Inadequate protocols and systems for ensuring proper management of resource-related data and information necessary to support management decision making.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Site stewardship program underway.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• Commercial guides</li> <li>• Utah State Historic Preservation Office</li> <li>• Traditionally associated tribes</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>

<b>Fundamental Resource or Value: Cultural Features</b>	
<b>Laws and Policies that Apply to this FRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this FRV</b></p> <ul style="list-style-type: none"> <li>• The Antiquities Act of 1906</li> <li>• National Historic Preservation Act of 1966, as amended (16 USC 470)</li> <li>• Executive Order 11593, "Protection and Enhancement of the Cultural Environment"</li> <li>• Archeological Resources Protection Act</li> <li>• Native American Graves Protection and Repatriation Act of 1990</li> <li>• 36 CFR 79 – Curation of Archeological Collections</li> <li>• The Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation</li> <li>• 2008 Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers</li> <li>• NPS <i>Management Policies 2006</i> (5.3.5.2) requires the preservation of the physical attributes, biotic systems, and uses of cultural landscapes that contribute to historical significance.</li> <li>• NPS <i>Management Policies 2006</i> (5.3.5.5) states that the National Park Service "will collect, protect, preserve, provide access to, and use objects, specimens, and archival and manuscript collections...in the disciplines of archeology, ethnography, history, biology, geology, and paleontology to aid understanding among park visitors, and to advance knowledge in the humanities and sciences"</li> <li>• Director’s Order 28: <i>Cultural Resource Management</i> (1998)</li> <li>• Director’s Order 28A: <i>Archeology</i> (2004)</li> <li>• 36 CFR 800 "Protection of Historic Properties"</li> <li>• Executive Order 13007, "Indian Sacred Sites"</li> <li>• American Indian Religious Freedom Act of 1978</li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>• Superintendent’s Compendium</li> <li>• 1996 resource management plan</li> <li>• 1989 general management plan</li> <li>• 1988 backcountry management plan</li> <li>• Site disclosure policy</li> </ul>
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• Archeological surveys.</li> <li>• Conditions assessments.</li> <li>• Archeological overview and assessment.</li> <li>• Ethnographic overview and assessment.</li> <li>• Cultural landscape inventory(s) and cultural landscape report(s).</li> <li>• Administrative history.</li> <li>• Historic structure report(s).</li> <li>• Historic structure plan for Rock House.</li> <li>• National register nominations.</li> <li>• Oral histories.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Resource stewardship strategy.</li> <li>• Climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources.</li> </ul>



<b>Fundamental Resource or Value:                      Collaborative Conservation, Science, and Scholarship</b>	
<b>Short Description of Importance</b>	Collaboration with external partners and engagement in scientific and scholarly activities are values and processes that are fundamental for achieving the park’s purpose and maintaining its significance in the context of shared landscape values, rapidly changing social and environmental conditions, and uncertainty in outcomes of management decision making.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• Arches National Park contains the largest concentration of natural arches on earth.</li> <li>• The geographic location of Arches National Park provides visitors with the opportunity to enjoy iconic Colorado Plateau landscapes in a majestic natural setting, with striking geologic features in the foreground and the towering La Sal Mountains in the distance creating expansive views of contrasting colors and textures.</li> <li>• Arches National Park protects representative examples of Colorado Plateau ecosystems, providing opportunities for scientific studies of natural and human systems in diverse landscape settings over long periods of time.</li> <li>• Arches National Park protects a notable array of cultural sites and features that reflect the many different ways people have occupied and used Colorado Plateau landscapes over the last 12,000 years.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• The park maintains strong partnerships with local governments, other federal agencies, other NPS units and technical support staff, academic institutions, and multiple nongovernmental organizations that contribute to the achievement of park management goals.</li> <li>• Some partnerships are new and have considerable potential for growth.</li> <li>• Internal scientific and technical capacity are limited but growing.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Continued limited staffing and inadequate science / technical capacity.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Continued engagement with and fostering of existing partnerships.</li> <li>• Continued pursuit of opportunities to develop new partnerships and to expand staff science / technical capacity.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• State and local governments / institutions</li> <li>• Commercial guides</li> <li>• Other federal agencies, including Bureau of Land Management, U.S. Forest Service, and U.S. Geological Survey</li> <li>• Nongovernmental organizations including The Nature Conservancy, National Parks Conservation Association, others</li> <li>• Traditionally associated tribes</li> <li>• Academic institutions</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>

<b>Fundamental Resource or Value: Collaborative Conservation, Science, and Scholarship</b>	
<b>Laws and Policies that Apply to this FRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this FRV:</b></p> <ul style="list-style-type: none"> <li>• NPS <i>Management Policies 2006</i> (1.6, 4.1, 4.1.4, 4.4.1) provides general direction for managing park units from an ecosystem perspective</li> <li>• NPS Organic Act and NPS <i>Management Policies 2006</i> (1.4, 1.6, 3.1) require the National Park Service to conserve and protect scenery and scenic vistas</li> <li>• NPS <i>Natural Resource Management Reference Manual 77</i></li> <li>• The Clean Air Act (42 USC 7401 et seq.) gives federal land managers the responsibility for protecting air quality and related values, including visibility, plants, animals, soils, water quality, cultural resources, and public health, from adverse air pollution impacts</li> <li>• The Clean Water Act</li> <li>• Endangered Species Act of 1973, as amended</li> <li>• National Invasive Species Act</li> <li>• Lacey Act, as amended</li> <li>• Federal Noxious Weed Act of 1974, as amended</li> <li>• Executive Order 13112, "Invasive Species"</li> </ul> <p><b>Existing park guidance:</b></p> <ul style="list-style-type: none"> <li>• 1996 resource management plan</li> <li>• 1993 SEUG research plan</li> <li>• 1989 general management plan</li> </ul>
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• None identified.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Resource stewardship strategy.</li> <li>• Climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources.</li> </ul>



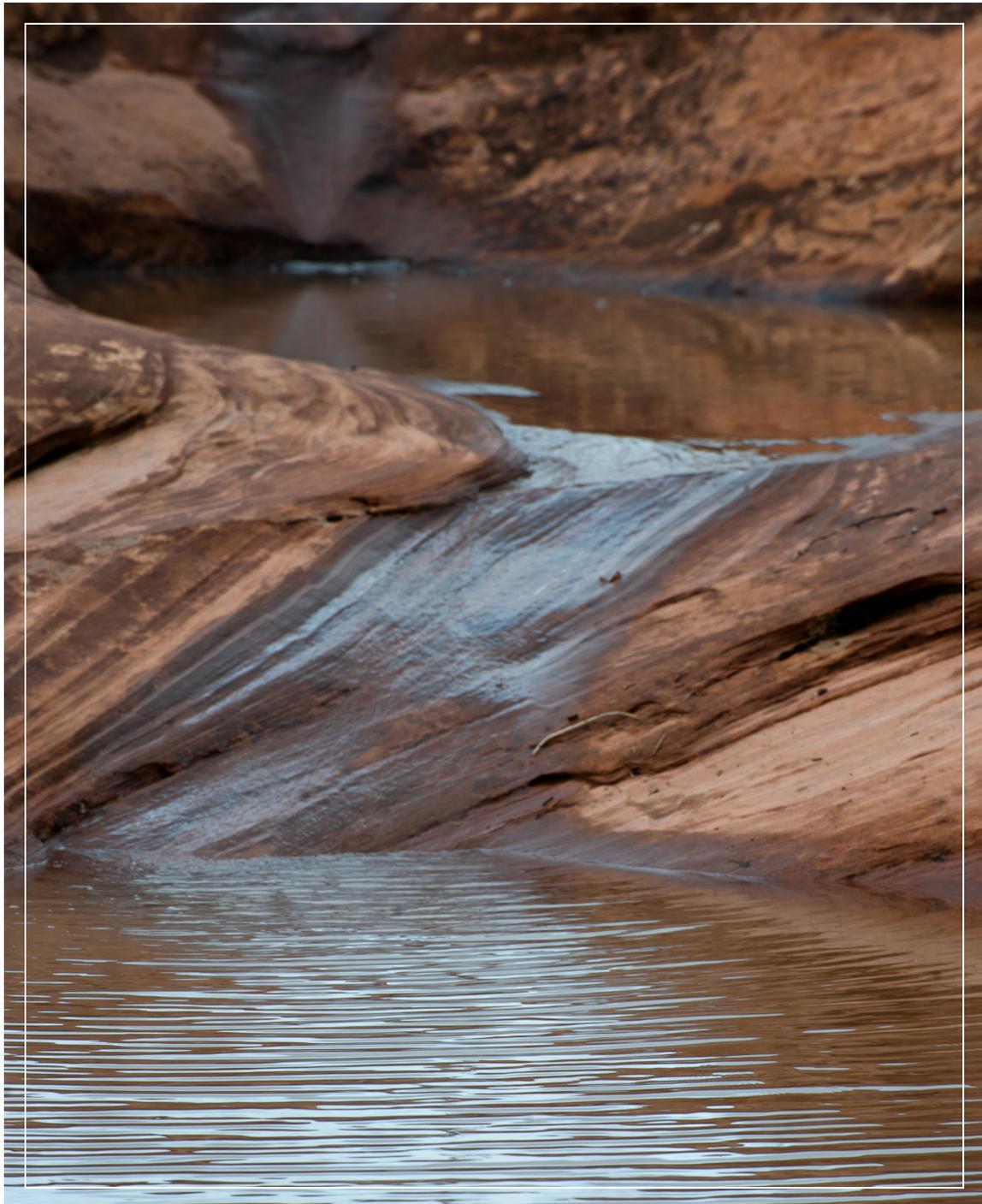
## Analysis of Other Important Resources and Values

Other Important Resource and Value: Natural Soundscapes	
<b>Short Description of Importance</b>	Parts of Arches National Park are free from human-caused sounds and natural sounds of the desert predominate in these areas.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• Natural sounds occur in the park; however, the noise free interval lasts for only short durations.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Scenic air tours and commercial high flying airplanes.</li> <li>• Oil and gas development.</li> <li>• Vehicles in the park and on U.S. Highway 191.</li> <li>• Use of maintenance equipment.</li> <li>• Large visitor groups in the backcountry.</li> <li>• Continued limited staffing and inadequate science / technical capacity.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Southeast Utah Group soundscape management plan.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• Commercial guides</li> <li>• Bureau of Land Management</li> <li>• U.S. Forest Service</li> <li>• State/local governments</li> <li>• Traditionally associated tribes</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>
<b>Laws and Policies that Apply to this OIRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this OIRV</b></p> <ul style="list-style-type: none"> <li>• NPS <i>Management Policies 2006</i> (4.9): Soundscape management policies require park managers to strive to preserve the soundscape</li> <li>• NPS <i>Management Policies 2006</i> (5.3.1.7) “Cultural Soundscape Management”</li> <li>• Director’s Order 47: <i>Soundscape Preservation and Noise Management</i></li> <li>• National Parks Air Tour Management Act of 2000</li> <li>• National Parks Overflight Act of 1987 (Public Law. 100-91)</li> <li>• NPS <i>Management Policies 2006</i> (8.4) “Overflights and Aviation Uses”</li> <li>• 36 CFR Section 2.12 Audio Disturbance</li> <li>• 36 CFR Section 3.15 Maximum Noise Level for Operation of Boats</li> <li>• NPS <i>Management Policies 2006</i> (8.2.3) “Use of Motorized Equipment”</li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>• 1996 resource management plan</li> </ul>
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• Establishment of soundscape monitoring coincident with implementation of soundscape management plan.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Resource stewardship strategy.</li> <li>• Climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources.</li> </ul>

<b>Other Important Resource and Value: Paleontological Resources</b>	
<b>Short Description of Importance</b>	Hundreds of paleontological features have been found in and around the park including fossil evidence of prehistoric vertebrates, invertebrates, and plants.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• The park has conducted limited paleontological surveys.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Vandalism and theft of fossil resources.</li> <li>• Erosion of fossil material.</li> <li>• Potential changes in erosion / weathering rates due to warming, drought, and greater frequency and magnitude of extreme weather events attributable to anthropogenic climate change.</li> <li>• Continued limited staffing and inadequate science / technical capacity.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• None identified.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• Commercial guides</li> <li>• Bureau of Land Management</li> <li>• U.S. Forest Service</li> <li>• State/local governments (especially Utah Geological Survey)</li> <li>• Traditionally associated tribes</li> <li>• Nongovernment organizations</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>
<b>Laws and Policies that Apply to this OIRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this OIRV</b></p> <ul style="list-style-type: none"> <li>• 1979 Archeological Resources Protection Act</li> <li>• Paleontological Resources Preservation Act (Pending, Senate Bill S.263), USC Title 9, Chapter 79, 5937.</li> <li>• NPS <i>Management Policies 2006</i> (5.3.5.5) states that the National Park Service “will collect, protect, preserve, provide access to, and use objects, specimens, and archival and manuscript collections...in the disciplines of archeology, ethnography, history, biology, geology, and paleontology to aid understanding among park visitors, and to advance knowledge in the humanities and sciences”</li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>• 1996 resource management plan</li> </ul>
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• Complete paleontological survey of the entire park.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Resource stewardship strategy.</li> <li>• Climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources.</li> </ul>

Other Important Resource and Value: Opportunities for Primitive and Remote Experiences	
<b>Short Description of Importance</b>	The backcountry areas of Arches National Park provide opportunities to experience quiet and solitude in a remote natural setting as experienced at Lost Spring Canyon, Eagle Park, and Salt Wash.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• None.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• Not much information is available on the social conditions of the backcountry.</li> <li>• Park generally lacks information on the condition of the wilderness resource, specific aspects of wilderness character, and how conditions vary across the park.</li> <li>• Fiery Furnace is in the backcountry and within wilderness boundaries, but does not feel like a remote or primitive experience during the peak season.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Air tours and commercial high flying airplanes.</li> <li>• Oil and gas development.</li> <li>• Trespass livestock.</li> <li>• Graffiti.</li> <li>• Social trails.</li> <li>• Increased visitation including large groups in the backcountry.</li> <li>• Continued limited staffing and inadequate science / technical capacity.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Voluntary agreement with air tour operators.</li> <li>• Fiery Furnace site strategy.</li> <li>• SEUG soundscape management plan.</li> <li>• Climbing and canyoneering management plan.</li> <li>• Wilderness character assessment, inventory, and monitoring (proposed wilderness).</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• Commercial guides</li> <li>• Bureau of Land Management</li> <li>• U.S. Forest Service</li> <li>• State/local governments</li> <li>• Traditionally associated tribes</li> <li>• Nongovernment organizations</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>
<b>Laws and Policies that Apply to this OIRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this OIRV</b></p> <ul style="list-style-type: none"> <li>• Wilderness Act of 1964</li> <li>• NPS Management Policies 2006 (6.3, 6.4)</li> <li>• Director’s Order 41: <i>Wilderness Preservation and Management</i></li> <li>• NPS <i>Management Policies 2006</i> (4.9) “Soundscape Management”</li> <li>• Director’s Order 47: <i>Soundscape Preservation and Noise Management</i></li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>• 1989 general management plan</li> <li>• 1988 backcountry management plan</li> <li>• 1974 wilderness recommendation</li> </ul>

Other Important Resource and Value: Opportunities for Primitive and Remote Experiences	
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• Collection of visitor use data in the backcountry.</li> <li>• Assessment of wilderness character.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Visitor use management plan.</li> <li>• Resource stewardship strategy.</li> <li>• Climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources.</li> </ul>



Other Important Resource and Value: Dark Night Skies	
<b>Short Description of Importance</b>	The dark night skies in Arches National Park are generally quite dark, except for the glow coming from the cities of Moab and Grand Junction.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>The geographic location of Arches National Park provides visitors with the opportunity to enjoy iconic Colorado Plateau landscapes in a majestic natural setting, with striking geologic features in the foreground and the towering La Sal Mountains in the distance creating expansive views of contrasting colors and textures.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>Nearby light sources (Moab) degrade night sky quality.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>Oil and gas development.</li> <li>Urban sprawl.</li> <li>Aridification attributable to anthropogenic climate change could lead to an increase in fire frequency, and an increase in windblown dust due to drying soils, thereby diminishing the quality of dark night skies.</li> <li>Continued limited staffing and inadequate science / technical capacity.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>Continue to work with city, county, and industry to reduce light pollution.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>Park visitors and staff</li> <li>Commercial guides</li> <li>Bureau of Land Management</li> <li>U.S. Forest Service</li> <li>State/local governments</li> <li>Traditionally associated tribes</li> <li>Nongovernment organizations</li> <li>Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>Canyonlands Natural History Association</li> </ul>
<b>Laws and Policies that Apply to this OIRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this OIRV:</b></p> <ul style="list-style-type: none"> <li>NPS <i>Management Policies 2006</i> (4.10) recognizes that natural lightscapes are natural resources and values that contribute to visitor experience. The policy further states that NPS staff will seek to minimize the intrusion of artificial light into the night scene. In natural areas, artificial outdoor lighting will be limited to meet basic safety requirements and will be shielded when possible.</li> <li>The Clean Air Act (42 USC 7401 et seq.) gives federal land managers the responsibility for protecting air quality and related values, including visibility, plants, animals, soils, water quality, cultural resources, and public health, from adverse air pollution impacts.</li> <li>NPS <i>Management Policies 2006</i> (4.7) and NPS Natural Resource Management Reference Manual 77 provide further direction on the protection of air quality and related values for park units.</li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>1996 resource management plan</li> </ul>
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>Need monitoring data that indicate status and trends in the condition of dark night skies.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>Resource stewardship strategy.</li> </ul>

Other Important Resource and Value: Rare and Iconic Wildlife Species	
<b>Short Description of Importance</b>	Desert bighorn sheep, peregrine falcons, and other raptors are viewed and enjoyed by visitors to Arches National Park.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• Arches National Park protects representative examples of Colorado Plateau ecosystems, providing opportunities for scientific studies of natural and human systems in diverse landscape settings over long periods of time.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• Existing data have not been analyzed to determine the condition and/or trends in park populations, but observations suggest that there have been recent declines in the sheep population, and that falcon and other raptor populations generally are in good condition.</li> <li>• Some raptors are listed as species of concern.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• For bighorn sheep, disease transmission from nearby domestic sheep populations.</li> <li>• Habitat fragmentation within and beyond park boundaries.</li> <li>• Increased frequency of human disturbance due to continued increases in park visitation, and especially in park uses with high potential for wildlife conflicts such as climbing and canyoneering.</li> <li>• Potential disturbance by park management activities.</li> <li>• Potential effects of climate change on water and/or prey availability.</li> <li>• Inadequate staff capacity for designing and implementing necessary monitoring (including data analysis and reporting).</li> <li>• Inadequate protocols and systems for ensuring proper management of resource-related data and information necessary to support management decision making.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Continued pursuit of opportunities to develop new partnerships and to expand staff science / technical capacity.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• Commercial guides</li> <li>• Bureau of Land Management</li> <li>• U.S. Forest Service</li> <li>• U.S. Fish and Wildlife Service</li> <li>• State/local governments, especially Utah Division of Wildlife Resources</li> <li>• Nongovernment organizations</li> <li>• Traditionally associated tribes</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>

Other Important Resource and Value: Rare and Iconic Wildlife Species	
<b>Laws and Policies that Apply to this OIRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this OIRV</b></p> <ul style="list-style-type: none"> <li>• NPS <i>Management Policies 2006</i> (4.4.2.3) also requires the agency to survey, protect, and strive to recover all species native to park units that are listed under the Endangered Species Act. In addition, the National Park Service is directed to inventory, monitor, and manage state listed species in a manner similar to the treatment of federally listed species, to the greatest extent possible.</li> <li>• Migratory Bird Treaty Act (MBTA); 16 U.S.C. 703-712</li> <li>• Eagle Protection Act; 16 U.S.C. 668</li> <li>• The National Environmental Policy Act of 1970 (NEPA); 42 U.S.C. 4321</li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>• 1996 resource management plan</li> <li>• 1989 general management plan</li> <li>• 1988 backcountry management plan</li> </ul>
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>• Data, analyses, and reports that enable assessments of condition, trends, and risks to sensitive populations.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>• Resource stewardship strategy.</li> <li>• Climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources.</li> <li>• Climbing and canyoneering management plan.</li> </ul>



Other Important Resource or Value: Museum Collections	
<b>Short Description of Importance</b>	The park's museum collections contain three-dimensional objects and natural history specimens and artifacts that are representative of the resources within the park's boundaries. Archives also are a component of museum collections and document park and resource management history.
<b>Related Significance Statements</b>	<ul style="list-style-type: none"> <li>• Arches National Park protects representative examples of Colorado Plateau ecosystems, providing opportunities for scientific studies of natural and human systems in diverse landscape settings over long periods of time.</li> <li>• Arches National Park protects a notable array of cultural sites and features that reflect the many different ways people have occupied and used Colorado Plateau landscapes over the last 12,000 years.</li> </ul>
<b>Current Conditions and Trends</b>	<p><b>Conditions and trends</b></p> <ul style="list-style-type: none"> <li>• The collection is 99% documented.</li> <li>• The collection is appropriately stored.</li> <li>• Storage space is extremely limited and nearly filled to capacity.</li> <li>• Anticipate a significant growth of collections due to research activity in both natural and cultural disciplines.</li> <li>• The digitization of magnetic media is almost complete.</li> <li>• The historic photo collection is in the process of being digitized.</li> </ul>
<b>Threats and Opportunities</b>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>• Inadequate storage space restricts ability to store future collections.</li> <li>• Inadequate storage furniture.</li> <li>• Radioactive fossilized material stored in an enclosed space.</li> <li>• Climate control system is incapable of maintaining specified performance characteristics.</li> </ul> <p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>• Improved access due to the hierarchal cataloguing of the archives.</li> <li>• Place catalog database on the servers.</li> <li>• Train park staff to use the database.</li> <li>• Make digitized collections available to the public.</li> </ul>
<b>Stakeholders Interested in this Resource or Value</b>	<ul style="list-style-type: none"> <li>• Park visitors and staff</li> <li>• Bureau of Land Management</li> <li>• U.S. Forest Service</li> <li>• U.S. Fish and Wildlife Service</li> <li>• State/local governments, especially Utah Division of Wildlife Resources</li> <li>• Nongovernment organizations</li> <li>• Traditionally associated tribes</li> <li>• Friends of Arches and Canyonlands Parks, The Bates Wilson Legacy Fund</li> <li>• Canyonlands Natural History Association</li> </ul>

Other Important Resource or Value: Museum Collections	
<b>Laws and Policies that Apply to this OIRV, and Existing Park Guidance</b>	<p><b>Laws and policies that apply to this OIRV</b></p> <ul style="list-style-type: none"> <li>NPS <i>Management Policies 2006</i> (5.3.5.5), the service will collect, protect, preserve, provide access to and use objects, specimens, and archival and manuscript collections . . . in the disciplines of archeology, ethnography, history, biology, geology, and paleontology, to aid understanding among park visitors, and to advance knowledge in the humanities and sciences.</li> <li>Director's Order 24: NPS Museum Collections</li> <li>Museum Act (16 USC 18f through 18f-3)</li> <li>NPS Museum Handbook</li> </ul> <p><b>Existing park guidance</b></p> <ul style="list-style-type: none"> <li>2010 scope of collections statement</li> <li>2003 SEUG museum management plan</li> <li>2003 collections storage plan</li> <li>1996 resource management plan</li> </ul>
<b>Identified Data Needs</b>	<ul style="list-style-type: none"> <li>Administrative history.</li> </ul>
<b>Identified Planning Needs</b>	<ul style="list-style-type: none"> <li>Complete core management documents: collection condition survey, fire and security plan, housekeeping and integrated pest management plan.</li> </ul>



## Identification of Key Parkwide or Major Issues and Associated Planning and Data Needs

All parks face a variety of issues that must be addressed now or through future planning. An issue is a point or matter that must be decided. A key parkwide or major issue may raise questions regarding park purpose and significance. Or there may be other questions of importance that, in the judgment of NPS staff, need to be addressed in future planning.

The following are key or major issues and associated planning and data needs for Arches National Park:

Key Parkwide Issues	Planning and Data Needs	Notes
Commercial services happening without limits on number and type of uses allowed	Commercial services plan	Currently there is a hodgepodge approach to providing visitor services. A comprehensive strategy is needed for uses and limitations on services.
Backcountry use impacting natural and cultural resources due to the lack of limits on the number of permits being issued	Backcountry management plan	Fiery Furnace is a special use area, and you must enter with a permit; numbers not empirical.
Visitor use at Fiery Furnace impacting natural and cultural resources	Fiery Furnace site strategy	The Fiery Furnace area is managed differently than the rest of the park and may need additional attention to assure adequate resource protection.
Visitor use throughout park impacting natural and cultural resources, but to an unknown degree	Updated visitor use information; review previous visitor experience and resource protection (VERP) program and associated data and decide how to proceed	Take another look at park indicators and standards. Current resource staffing is inadequate for designing, implementing, and managing necessary monitoring or other resource-stewardship activities.
Water and wastewater systems at park do not meet demands and need to be replaced		Park needs to improve systems or connect with municipal system. It has to be a municipal system within reach or else the park will need its own treatment plant. Park needs to decide on a solution.
Climate change	Weather data; climate change adaptation planning, including integrated vulnerability assessments for natural and cultural resources	Overall drying of the landscape due to the changes in climate projected for the Southwest region (average temperature projected to increase 4°F –10°F and the overall spring precipitation projected to a decrease by 2100) will have significant influences on natural and cultural resources, visitor use patterns, and park operations.

## Prioritization of Planning and Data Needs

This section ranks the need for future plans and studies or research for Arches National Park. This is a comprehensive review and synthesis of plans and data needed to protect and maintain the park’s fundamental and other important resources and values, as well as address key parkwide and other major issues. The ranking of planning and data needs for Arches National Park were considered for 2012 through the following five years.

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 projects. This information will be used by staff from the park and the NPS Intermountain Regional Office to determine priorities and consider the future funding needs of the park.



Data Needs—Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or OIRV?	Data Needs	Priority (H, M, L)	Notes
FRV	Water resource inventory that produces a map (digital spatial data), condition assessment, and risk assessment for streams, wetlands, hanging gardens, and riparian areas	H+	Quantification of water needs is an essential first step for proactively protecting the park against possible future water rights applications.
FRV	Archeological surveys	H+	It is difficult to manage for unknown resources; only 1% of park has been surveyed; surveys are needed to complete other data gaps and planning needs; this meets section 110 of the National Historic Preservation Act.
FRV	Data on trends and extent of social trails and other surface disturbances in high use areas, including climbing and canyoneering routes	H	Surface disturbance, soil destabilization, and soil erosion are among the most widespread visitor-use impacts in the park. Current data on the extent and trends in surface disturbance are lacking but necessary for assessing the need for management actions.
FRV	Establish viewshed monitoring on basis of repeat photography at key observation points	H	Viewshed monitoring (i.e., repeat photography from key observation points) is needed to support NEPA analyses associated with projects external to park boundaries.
FRV	Conditions assessments for cultural resources	H	Updated condition assessments provide baseline information from which to track changes through time to cultural resources.
FRV	National register nominations	H	Meets requirements under section 110 of the National Historic Preservation Act—goes along with completing archeological surveys. There are known archeological sites that do not have a national register nomination form completed.
Parkwide Issue	Updated visitor use information; trail use; visitor use patterns	H	This information will feed other planning efforts; visitors are the biggest stressors to natural and cultural resources; need information on visitor numbers and distribution.
OIRV	Wilderness character assessment, inventory and monitoring (proposed wilderness)	H	More than 95% of the park is recommended for wilderness designation, but the park lacks information on the condition of the wilderness resource.
FRV	Special studies, including source attribution studies, to evaluate the impacts of windblown dust and climate change interactions on visibility in Arches	H	Dust emissions have many potential direct and indirect impacts on park resources. Research is necessary to identify key source areas and potential effects of climate change / variability on emission patterns. Results can be used to support NEPA analyses associated with projects external to park boundaries.

Data Needs—Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or OIRV?	Data Needs	Priority (H, M, L)	Notes
FRV	Data on the extent and trends in invasive exotic plants	H	Invasive exotic species are among the greatest threats to the integrity of park ecosystems, and treatment actions consume considerable staff time and resources. Inventory and monitoring data are necessary for project prioritization and planning.
FRV	Continued monitoring of air quality and air quality related values	H	Continued monitoring is necessary to determine trends in air quality and air quality related values, as well as to evaluate and mitigate potential impacts from human activities. The Canyonlands visibility monitor is representative of conditions at Arches, and provides information on long-term trends and conditions. Although ozone and atmospheric deposition are not monitored at the park, interpolated data from monitors at Canyonlands and other regional sites provide good estimates of ozone conditions and atmospheric wet deposition at Arches.
FRV	Evaluate adequacy of key observation points that provide basis for current viewshed modeling and analysis	H	Viewshed modeling is an important tool for evaluating potential impacts of external development activities, and we must ensure the credibility of our models.
FRV	Continued collection of weather data	H	Weather data collected in the park contribute to our understanding of regional climactic patterns and are essential for understanding trends in the condition of park natural and cultural resources.
FRV	Data and analyses that quantify water needs of water-dependent resources	H	These data and analyses are required to provide a credible basis for NPS efforts to protect water-dependent resources from external threats posed by water diversion projects.
FRV	Continued collection of water quality data	H	Monitoring data are required to understand trends in water quality and to mitigate potential impacts of human activities.
FRV	Continued collection of spring flow data	H	Monitoring data are required to understand trends in spring flow and to mitigate potential impacts of human activities.
FRV	Administrative history	H	Vanishing personal history needs to be recorded from the people who have been here for decades; could be combined with oral histories.
OIRV	Data, analyses, and reports that enable assessments of condition, trends, and risks to sensitive wildlife populations	M	



Data Needs—Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or OIRV?	Data Needs	Priority (H, M, L)	Notes
FRV	Special studies to examine pollution dose-response relationships in sensitive park ecosystems.	M	There is research currently ongoing in the park.
FRV	Evaluate any air quality benefits associated with the new transportation plans (volunteer shuttles)	M	
OIRV	Need monitoring data that indicate status and trends in the condition of dark night skies.	M	
OIRV	Establish soundscape monitoring coincident with implementation of soundscape management plan	M	Monitoring data are required to understand trends in the condition of soundscape resources and to mitigate potential impacts of human activities.
OIRV	Complete paleontological surveys of the entire park	M	
OIRV	Collection of visitor use data in the backcountry	M	
FRV	Larger scale geology map (1:24,000)	M	
FRV	Oral histories	M	
FRV	Map (spatial data) that identifies known geologic hazards	L	
FRV	Archeological overview and assessment	L	
FRV	Ethnographic overview and assessment	L	
FRV	Cultural landscape inventory(s) and cultural landscape report(s)	L	
FRV	Historic structure report(s)	L	
FRV	Historic structure plan for Rock House	L	
FRV	Up-to-date photo monitoring and inventory for geologic features of special interest	L	Natural Arch and Bridge Society helps with this; they are the official keeper of this data.
FRV	GPS coordinates for geologic features of special interest	L	

Planning Needs—Where a Decision-making Process Is Needed to Set Long-term Strategy			
Related to an FRV or OIRV?	Planning Needs	Priority (H, M, L)	Notes
FRV	Climbing and canyoneering plan	H	Plan is in progress and almost finished; ready to implement as soon as the finding of no significant impact is signed.
FRV	Resource stewardship strategy	H	There is a need to establish strategic priorities for natural and cultural resource management for 5–10 years; other plans will depend on the completion of the resources stewardship strategy; development of the strategy should include climate change adaptation planning and integrated vulnerability assessment for natural and cultural resources.
FRV and Parkwide issue	Climate change adaptation planning	H	Integrate with resource stewardship strategy (ideally). Includes integrated vulnerability assessments for natural and cultural resources. Such planning is necessary to evaluate, prioritize, and mitigate potential climate-change impacts on park resources.
FRV and OIRV	Visitor use management plan	H	Day use regulation study should be included with a visitor use management plan; this is dependent on the resource stewardship strategy.
OIRV	Southeast Utah Group soundscape management plan	H	In progress; trying to determine what is appropriate and inappropriate noise; could impact commercial services plan.
Parkwide Issue	Fiery Furnace site strategy	H	Help manage visitor use and use allocation; need an overall strategy and plan; without this plan it is consuming a great deal of staff time; existing reservation system needs to be revisited
Parkwide Issue	Commercial services plan	M	Regulate day use (all tours); have not established appropriate limits; unlimited number of commercial use authorizations currently available. Could include in visitor use management plan.
Parkwide Issue	Backcountry management plan	L	Lack of knowledge of current use and impacts; some issues addressed in climbing and canyoneering plan; frontcountry issues are higher priority. Could include this plan within a visitor use management plan.
OIRV	Complete core management documents for museum collections	L	This includes collection condition survey, fire and security plan, housekeeping and integrated pest management plan.

## Part 3: Preparers, Consultants, and Meeting Attendees

### Workshop Attendees

Kate Cannon, Superintendent, Southeast Utah Group

Corky Hays, (former) Superintendent, Hovenweep National Monument and Natural Bridges National Monument

Paul Henderson, Assistant Superintendent, Arches National Park and Canyonlands National Park

Sabrina Henry, Environmental Protection Specialist/Planner, Southeast Utah Group

Denny Ziemann, (former) Chief Ranger, Arches National Park and Canyonlands National Park

Mary Wilson, Chief of Interpretation and Visitor Services, Southeast Utah Group

Mark Miller, Chief, Resource Stewardship and Science, Southeast Utah Group

Chris Goetze, Cultural Resource Program Manager, Southeast Utah Group

Doug Buttery, Facility Manager, Southeast Utah Group

Karen McKinlay-Jones, (former) Supervisory Park Ranger, Arches National Park

Gery Wakefield, GIS Specialist, Southeast Utah Group

Skip Meehan, Community Planner, NPS Intermountain Regional Office

Andrea Stacy, Environmental Protection Specialist, NPS Air Resources Division

James Harte, Hydrologist, NPS Water Resources Division

Mark Wondzell, Hydrologist, NPS Water Resources Division

Tim Connors, Geologist, NPS Geological Resources Division

Erika Pollard, Southwest Program Manager, National Parks Conservation Association

Joette Langianese, Executive Director, Friends of Arches and Canyonlands National Parks

### Additional Reviewers

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Gretel Enck, Planner, NPS Water Resources Division

### Preparers

Tokey Boswell, NPS Denver Service Center, Planning

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Angel Lopez, NPS Denver Service Center, Graphics

John Paul Jones, NPS Denver Service Center, Graphics

### Consultants

Nancy Shock, Foundations Coordinator, NPS WASO Park Planning and Special Studies

# Appendixes

## Appendix A: Enabling Legislation and Legislative Acts for Arches National Park

April 12, 1929.

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

### A PROCLAMATION

Arches National Monument, Utah. Preamble.

WHEREAS, there are located in unsurveyed townships twenty-three and twenty-four south, range twenty-one east, and twenty four south, range twenty-two east of the Salt Lake meridian, in Grand County, Utah, two areas, known locally as the "Devil's Garden" and the "Windows," containing approximately 2,600 acres and 1,920 acres, respectively;

WHEREAS, these areas contain extraordinary examples of wind erosion in the shape of gigantic arches, natural bridges, "windows," spires, balanced rocks, and other unique wind-worn sandstone formations, the preservation of which is desirable because of their educational and scenic value; and

WHEREAS, it appears that the public interest would be promoted by reserving these features as a national monument, together with such land as may be needed for the protection thereof;

National monument, Utah. Vol. 34, p. 225.

NOW, THEREFORE, I, HERBERT HOOVER, President of the United States of America, by virtue of the power in me vested by section two of the act of Congress entitled, "An Act for the Preservation of American Antiquities," approved June 8, 1906 (34 Stat. 225), do proclaim that there are hereby reserved from all forms of appropriation under the public land laws and set apart as a national monument all those pieces and parcels of land in Grand County, State of Utah, shown as the Arches National Monument upon the diagram hereto annexed and made a part hereof, subject to prior valid claims and pending applications for permits to prospect for potassium under the act of Congress approved October 2, 1917 (40 Stat. 297), provided that they do not involve the ultimate disposition of the title of the United States to any lands within the area hereby reserved.

Description.

Potassium prospecting. Vol. 40, p. 297.

Reserved from settlement, etc.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy or remove any feature of this Monument and not to locate or settle upon any of the lands thereof.

Supervision, etc., by Director of National Park Service.

Vol. 39, p. 535; Vol. 41, p. 732.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this Monument as provided in the act of Congress entitled, "An Act to establish a National Park Service and for other purposes," approved August 25, 1916 (39 Stat. 535), and acts additional thereto or amendatory thereof.

## Appendix B: Related Federal Legislation, Regulations, and Executive Orders

The Clean Air Act, as amended, requires all park units to meet federal, state, and local pollution standards. Additionally, Arches National Park is a mandatory Class I area under the Prevention of Significant Deterioration provisions of the act. This gives the National Park Service an “affirmative responsibility” to protect the air quality and air quality related values within the park from the adverse effects of air pollution. Air quality related values are resources that are sensitive to air pollution, such as visibility, plants, animals, soils, water and certain cultural resources. State and federal permitting authorities must consult with the National Park Service regarding new sources of air pollution, and impacts to park air quality related values must be considered in the permitting process. Further, the act requires NPS involvement in national regulatory efforts aimed eliminating human-caused visibility impairment in all Class I areas.

### Executive Order 13112 (1999) on Invasive Species requires all federal agencies to:

- identify actions that may affect the status of invasive species
- prevent the introduction of invasive species
- detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner
- monitor invasive species populations accurately and reliably
- provide for restoration of native species and habitat conditions in ecosystems that have been invaded
- conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species
- promote public education on invasive species and the means to address them

## Appendix C: Inventory of Concessions and Permits

Table of Concessions and Permits						
Name	Agreement Type	Start Date	End Date	Parties	Purpose	Notes
Oars Canyonlands, Inc.	Concession – vehicle tour CC-CA-NY022-04	2004	2013	National Park Service and concessioner	Provide for visitor experience	
Navtec Expeditions	Concession – vehicle tour CC-CA-NY025-04	2004	2013	National Park Service and concessioner	Provide for visitor experience	
Niskanen & Jones DBA Tag-A-Long Expeditions	Concession – vehicle tour CC-CA-NY024-04	2004	2013	National Park Service and concessioner	Provide for visitor experience	Operating under a limited contract
Canyonlands Natural History Association	Concession – visitor convenience item CC-CA-NY008-03	2003	2012	National Park Service and concessioner	Provide for visitor experience	Prospectus development happening in 2012
Williams Pipeline	Special use permit	January 2010	December 2014	National Park Service and permittee	Allows use of and maintenance to a natural gas pipeline	The National Park Service has no authority to allow gas pipelines
Cattle Trailing	Special use permit	September 2011	December 2015	National Park Service and permittee	Allows stock driving twice a year through a small portion of Arches National Park	In the enabling legislation for Arches National Park
Jeep Safari	Special use permit	Short term	Reissued annually	National Park Service and permittee	Allows organized Jeep trips through the parks	



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## Intermountain Region Foundation Document Recommendation Arches National Park

July 2013

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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.

*Kate Cannon*

*7/31/2013*

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**RECOMMENDED**

Superintendent, Arches National Park

Date

*J. W. Weis*

*8/21/13*

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**APPROVED**

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.

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August 2013

# Foundation Document • Arches National Park

