

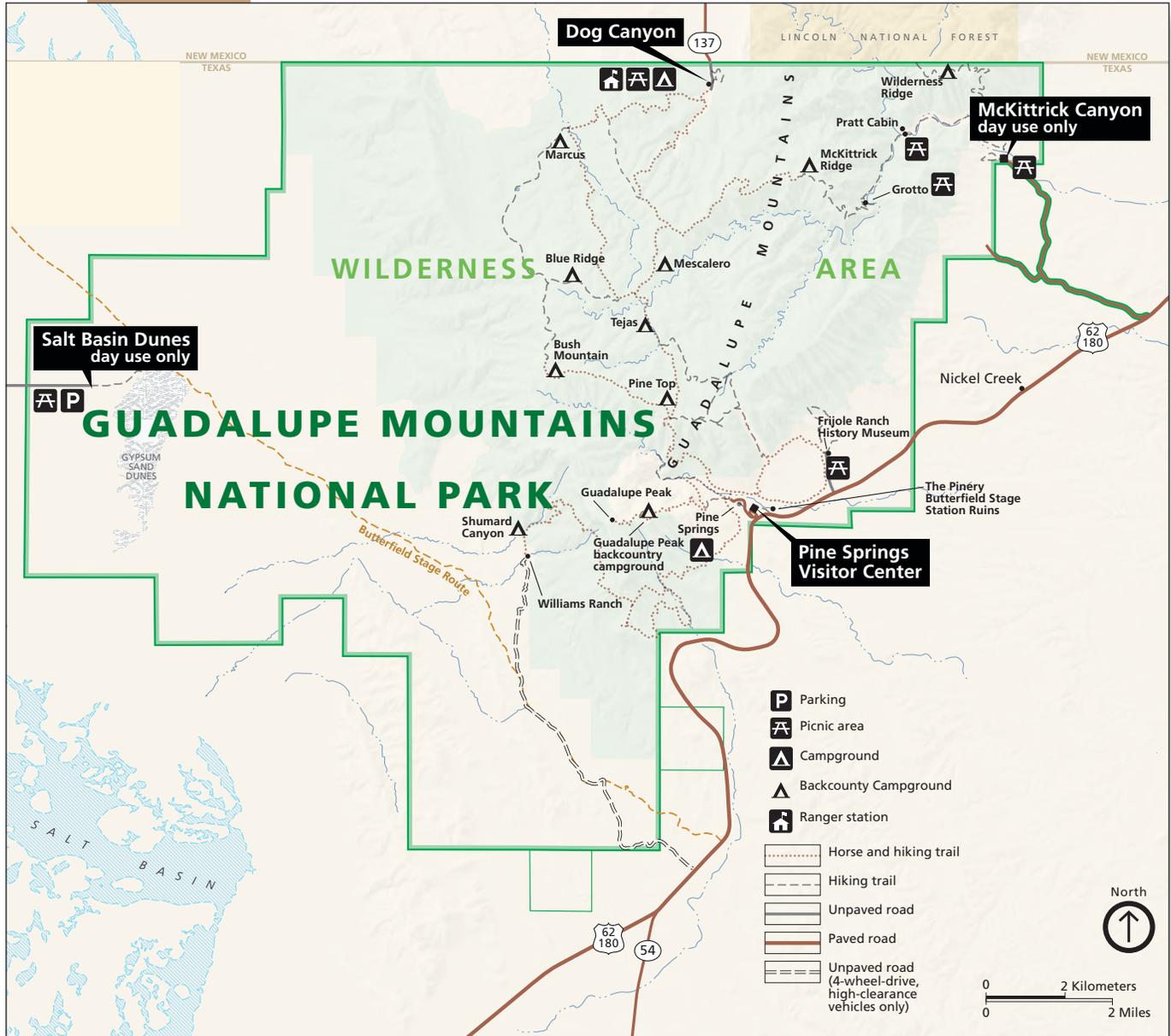


Foundation Document Guadalupe Mountains National Park

Texas

August 2017





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Mission of the National Park Service

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

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

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

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

The national park system continues to grow and comprises more than 400 park units covering more than 84 million acres in every state, the District of Columbia, American Samoa, Guam, Puerto Rico, and the Virgin Islands. These units include, but are not limited to, national parks, monuments, battlefields, military parks, historical parks, historic sites, lakeshores, seashores, recreation areas, scenic rivers and trails, and the White House. The variety and diversity of park units throughout the nation require a strong commitment to resource stewardship and management to ensure both the protection and enjoyment of these resources for future generations.



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

Introduction

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

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

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



Part 1: Core Components

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

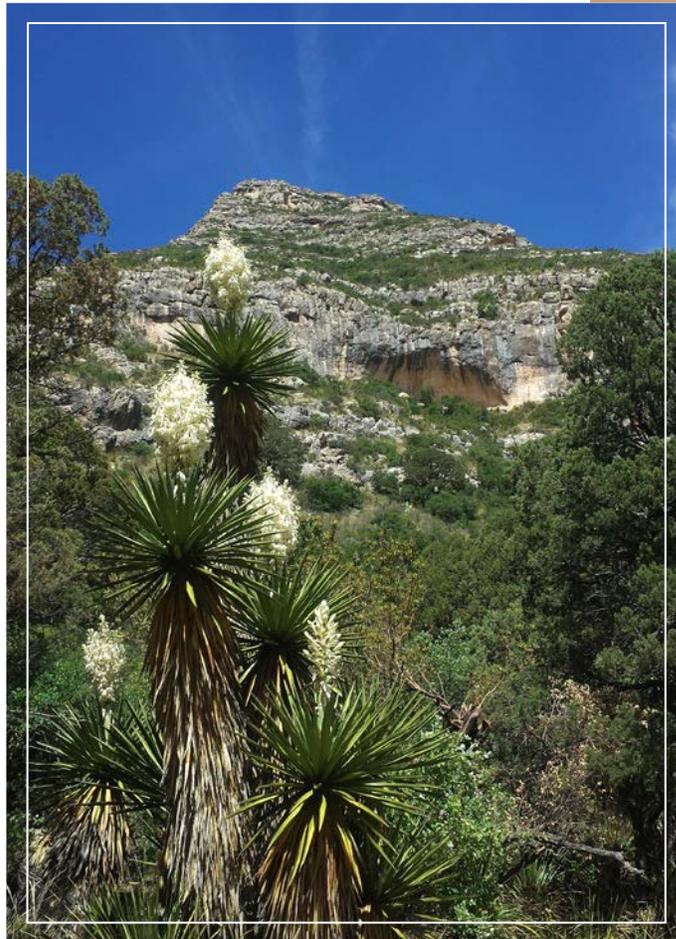
Brief Description of the Park

Guadalupe Mountains National Park was authorized by an act of Congress (Public Law 89-667) in 1966 to preserve “an area possessing outstanding geological values together with scenic and other natural values of great significance.” The park was formally established in 1972 with an area of 76,293 acres.

Today, Guadalupe Mountains National Park includes 86,416 acres in west Texas, just south of the New Mexico state line and north of U.S. Highway 62/180. The Guadalupe Mountains rise more than 3,000 feet above the arid Chihuahuan Desert that surrounds them. El Capitan, the park’s most striking feature, is a 1,000-foot-high limestone cliff. Nearby Guadalupe Peak, 8,749 feet above sea level, is the highest point in Texas.

The Guadalupe Mountains are part of a mostly buried 400-mile-long U-shaped fossil reef complex, Capitan Reef, which extends through a large area of west Texas and southeastern New Mexico. The longest exposed stretch of Capitan Reef, 12 miles of which is in the park, extends from Guadalupe Mountains National Park northeast almost to the city of Carlsbad, New Mexico, a distance of almost 40 miles. This 260-million- to 270-million-year-old reef is one of the world’s finest examples of an ancient reef system. The fossil-bearing strata of the park are also associated with the rich “oil patch” of the Delaware Basin of west Texas. Three internationally significant geological stratotype sections and points and numerous type sections of rock are present in the park.

In 1977, the park was designated a Class I air quality area under the Clean Air Act. As a result, the park receives the highest level of protection under the act, and the National Park Service has “an affirmative responsibility” to protect sensitive air quality resources in the park, including vegetation, soils, waters, wildlife, and visibility [42 USC 7475(d)(2)(B)]. Air pollution sources with the potential to affect park resources must meet stringent emission control standards, and only a very small additional amount of pollution is permitted in the area. The act also sets a goal of preventing any future impairment in Class I areas and remedying any existing impairment of visibility from manmade air pollution.

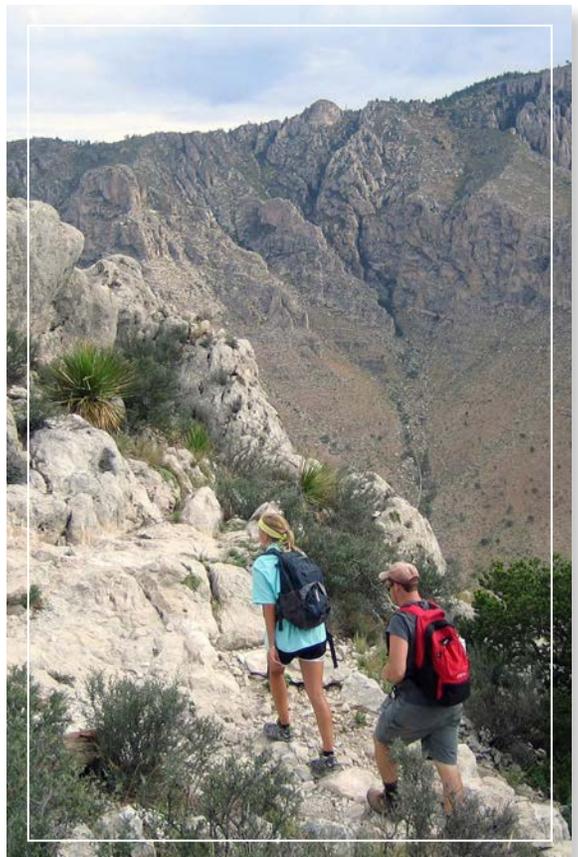


In 1978, 46,850 acres of the park's backcountry were formally designated by Congress as wilderness. This action was authorized by Public Law 95-625, the National Parks and Recreation Act of 1978. On October 28, 1988, Congress passed legislation (Public Law 100-541, 102 Stat. 2720) that enlarged the park by 10,123 acres. The new land includes gypsum and quartzose dunes in an area west of and adjacent to the park boundary. All of the land identified in the 1988 legislation has been deeded to the National Park Service.

The cultural history of the Guadalupe Mountains includes native peoples and successive waves of European American explorers, travelers, and immigrants. Although Spanish explorers passed through the area in 1692, the arid desert and remote highlands of the Guadalupe Mountains were the domain of American Indian peoples until the mid-1800s. Gradually, explorers and pioneers entered the area and navigated using the distinctive landmark of the Guadalupe. In 1858 the Butterfield Overland Stage Line began carrying mail and passengers through the Guadalupe Mountains on the nation's first transcontinental mail route.

The settlement of ranches around the Guadalupe Mountains began in the mid-1800s and led to periodic conflicts with the Mescalero Apache Tribe. During the U.S. Army's military campaign against the Mescalero Apache Tribe, the high country of the Guadalupe Mountains was one of their last sanctuaries. By 1880, the majority of the Mescalero Apache Tribe no longer occupied the Guadalupe Mountains region. Subsequent years brought more ranchers to the area. In the 1920s and 1930s, J. C. Hunter purchased many of the properties and consolidated them into one large holding. Hunter built structures and an extensive livestock watering system that pumped spring water from the southeast lowlands to the high country.

Wallace Pratt, a petroleum geologist, charmed by the Guadalupe Mountains, bought land in McKittrick Canyon in the 1930s and built two residences that remain in the park. In 1959, Pratt donated his land to the National Park Service. Adjacent lands owned by Hunter and others were eventually purchased and combined into the new Guadalupe Mountains National Park.



Park Purpose

The purpose statement identifies the specific reason(s) for establishment of a particular park. The purpose statement for Guadalupe Mountains National Park was drafted through a careful analysis of its enabling legislation and the legislative history that influenced its development. The park was established when the enabling legislation adopted by Congress was signed into law on October 15, 1966 (see appendix A for enabling legislation). The purpose statement lays the foundation for understanding what is most important about the park.

GUADALUPE MOUNTAINS NATIONAL PARK preserves, protects, and interprets an area of outstanding geological values, scenery, wilderness, and other natural resources in the northern Chihuahuan Desert of West Texas.



Park Significance

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

The following significance statements have been identified for Guadalupe Mountains National Park. (Please note that the sequence of the statements does not reflect the level of significance.)

1. Situated at the western edge of one of the world's most well-studied and well-exposed fossil reef systems, the rocks of the Guadalupe Mountains gave their name to the Middle Permian time interval, the Guadalupian Series. Within the park are three internationally recognized reference points for the Guadalupian, known as Global Stratotype Sections and Points.
2. The Border Fault on the west side of the park extends for almost 140 miles through New Mexico and Texas. Uplift along this fault has exposed more than 5,000 feet of rock such that the vertical and lateral relationships of different rock units can be seen and studied. The superb exposures reveal rocks spanning 12 million to 14 million years and show the interrelationships of three different marine depositional systems. Scientists continue to study rocks in the park to see how sedimentation changed with changes in plate tectonics and paleoclimate. The geology of the park continues to inform scientists on processes involved in, and the physical responses to, climate change.
3. The Chihuahuan Desert, Rocky Mountain, and Southern Great Plains ecosystems intersect at the park. The park's topography, with almost a mile of vertical relief from the desert floor to the top of Guadalupe Peak, provides a diversity of habitats and microhabitats, some of which contain relict and endemic species.
4. The designated and proposed Guadalupe Mountains Wilderness is the largest in the state of Texas and allows visitors to experience personal challenges and solitude in rugged and remote desert and mountain landscapes.
5. The diversity of archeological sites and early homesteads attests to the importance of the mountains' resources to generations of people. The mountains have served as a landmark along European American transportation routes including the Butterfield Overland Stage Route, early airmail transportation routes, and the original highway between Carlsbad and El Paso. Park resources continue to have spiritual significance for tribes and others.
6. Guadalupe Mountains National Park hosts eight of the ten highest peaks in Texas and provides an abundance of outstanding, primitive recreational opportunities and excellent vantage points from which to view the surrounding Chihuahuan Desert landscape.
7. Unobstructed views, both into and out of the park, highlight the stark contrast between the highest peaks in Texas and the Chihuahuan Desert surrounding them. The park showcases complex desert, riparian, and montane ecosystems where visitors can view spectacular seasonal colors, white sand dunes, wildlife, rock-ribbed canyons and cliffs, brilliant night skies, and traces of past human occupation.

Opposite:

1. Scanning Electron Micrograph of a ratfish tooth (*Stethacanthulus* sp.) from Guadalupe Mountains National Park. Specimen diameter approximately 0.4 mm. Image by A. O. Ivanov, Saint Petersburg State University, St. Petersburg, Russia.
2. Scanning Electron Micrograph of a shark dermal ossicle (scale) of the family Orodontidae from Guadalupe Mountains National Park. Specimen diameter approximately 0.5 mm. Image by A. O. Ivanov, Saint Petersburg State University, St. Petersburg, Russia.

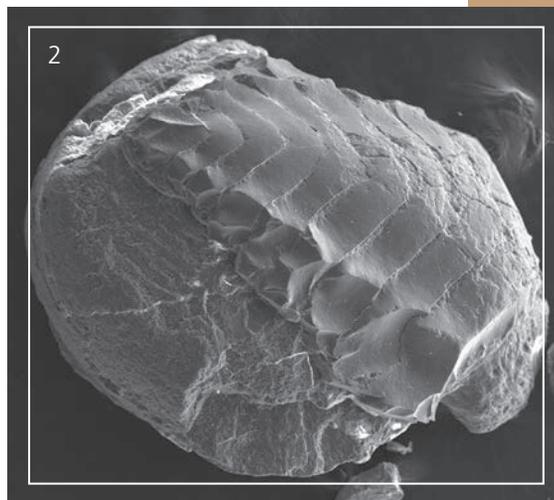
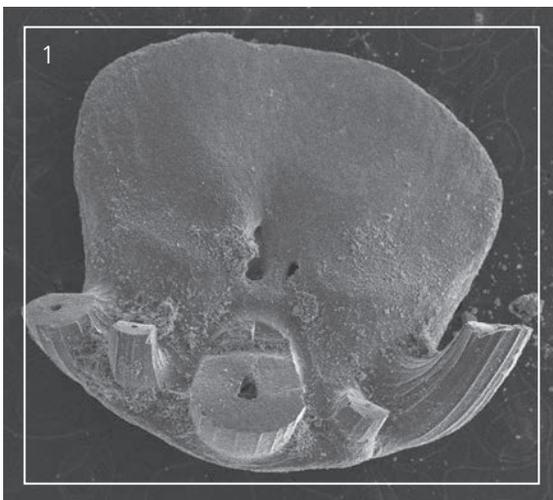
Fundamental Resources and Values

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

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

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

- **Geology.** The magnificent bedrock exposures of the Permian Capitan Reef complex are world renowned. The fossils, geologic structures, fault-derived escarpments, and Pleistocene salt lakes and dunes associated with this 265-million-year-old feature remain intact. Geologists from all over the world come to study the park's resources.
- **Paleontology.** Fossils from the park were used to develop the geologic time scale for the Permian period and form the basis of paleoecological reconstructions of the Middle Permian in the southwestern United States. They are used to correlate Permian rocks regionally and globally.
- **Scenic Values.** The highest peaks in Texas are in the park and afford unimpeded views for 60–90 miles in almost all directions. The relative isolation and remoteness of the park offer visitors spectacular views of the night skies.
- **Wilderness Values.** Isolation and the lack of urban development coupled with rugged topography allow visitors to experience unparalleled opportunities for personal challenges, solitude, and contemplation.
- **Chihuahuan Desert, Sky Island Ecosystem.** Peaks within the park rise to more than 8,700 feet and are surrounded by desert. This topography and as many as 15 major vegetation associations form an isolated montane ecosystem known as a sky island.

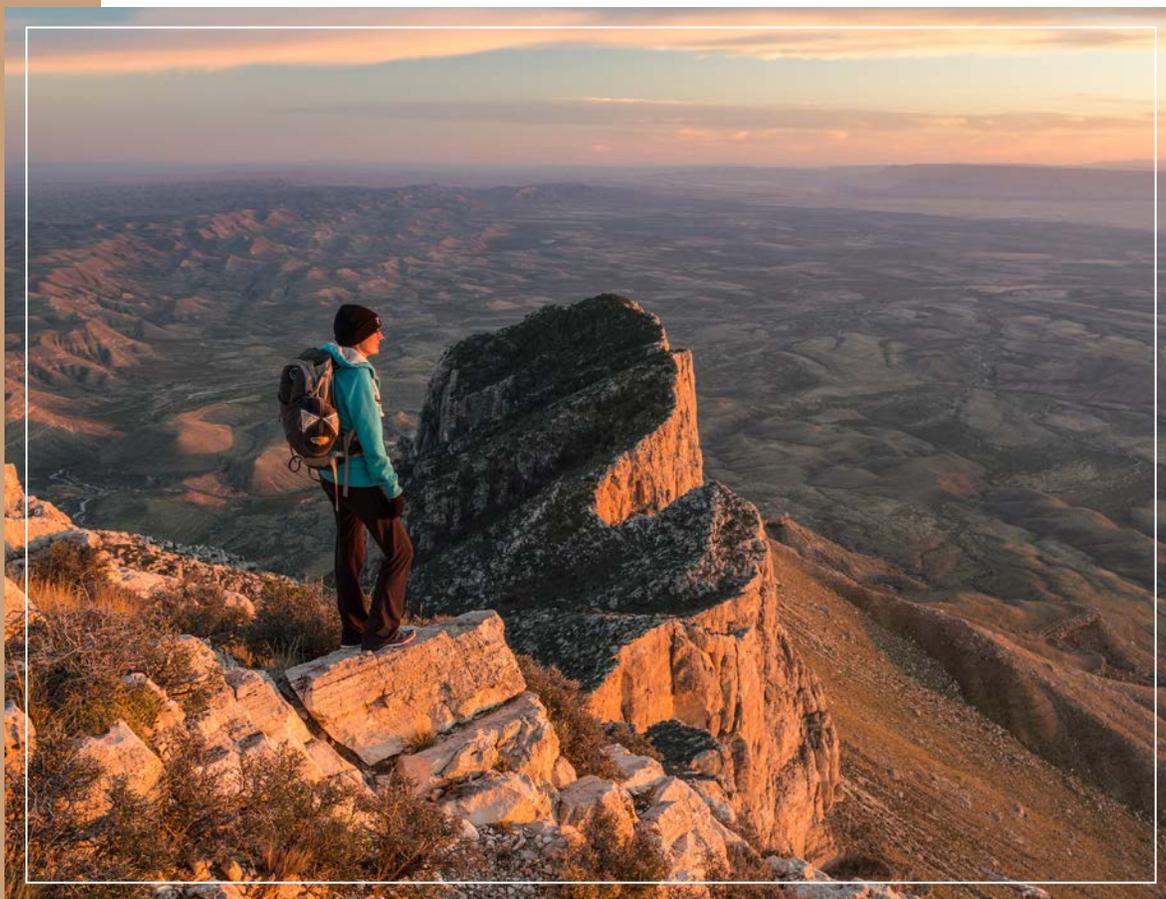


Other Important Resources and Values

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

The following other important resources and values have been identified for Guadalupe Mountains National Park:

- **Cultural Continuity.** The Guadalupe Mountains have been important to people for thousands of years because of a diversity of resources that have enduring cultural importance. Among these sites and resources are those that have sacred tribal significance or connect tribal members to stories and places that reinforce their cultural identities and document their long presence in the Guadalupe Mountains. Descendants of pioneer ranching families, early settlers, and others of European American and Mexican backgrounds who settled in the area also retain connections.
- **Cultural Landscapes.** People have exploited the resources of the Guadalupe Mountains for thousands of years up to the present day. These land use practices have left their legacy in the cultural landscapes of the park.
- **National Register of Historic Places Properties.** These properties are associated with the use and occupation of the Guadalupe Mountains by prehistoric and historic populations and include archeological districts, historic ranches, and other resources related to travel and trade in the region.



Interpretive Themes

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

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

The following interpretive themes have been identified for Guadalupe Mountains National Park:

- **Geology.** Guadalupe Mountains National Park preserves the western terminus of the Capitan Reef, a fossil reef that contains some of the best studied Middle Permian geological formations. The formations are well exposed and have extraordinary scientific and scenic values.
- **Paleontology.** Fossils recovered from the rocks tell the story of life in the Permian sea. Changes in fossil types and abundances illustrate the response of paleo-communities to changes in sea level driven by climate change and plate tectonics and document evolutionary changes in taxa through time.
- **Ecological Communities.** Four major ecological communities—montane forest, desert shrub, desert grasslands, and riparian—are present in the park. Diverse plants and animals exist because of the interaction of physical geography, latitude, climate, and hydrologic processes.
- **Environmental Protection.** Park ecological communities are inseparable from those of surrounding areas; the health and survival of natural and human communities are linked in complex and shifting relationships. Issues such as air pollution, habitat fragmentation and loss, climate change, and decreasing biodiversity concern park visitors, some of the park’s neighbors, and challenges park managers.
- **Cultural History.** The park preserves resources from thousands of years of human occupation and activities, including American Indian, African American, and European American exploration, settlement, transportation, and trade. Oral traditions document diverse livelihoods, stewardship practices, adaptations, and spiritual connections to the mountains and offer invaluable perspectives to inform contemporary management choices.
- **Wilderness.** The park manages its designated wilderness to retain its primitive character and enhance its natural condition. This wilderness provides a foundation for healthy, diverse ecosystems and offers humans opportunities for reflection, challenge, research, respite, and renewal.

Part 2: Dynamic Components

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

Special Mandates and Administrative Commitments

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

Special Mandates

- **Wilderness Designation.** In 1978, 46,850 acres of the park's high country were designated as wilderness by Congress. The 2012 Guadalupe Mountains National Park General Management Plan includes an eligibility assessment that deems an additional 35,484 acres of lower elevation park backcountry as suitable for consideration for wilderness designation. Designated and eligible wilderness comprises 95% of the park's area. According to NPS Management Policies 2006 and the park's general management plan, lands deemed eligible for wilderness will be managed to protect their wilderness character.
- **Class I Airshed.** Guadalupe Mountains National Park is designated a Class I area by the Clean Air Act Amendments of 1977 (42 USC 7401 et seq.), which provide special protection for air quality, sensitive ecosystems and clean, clear views. Under section 169A, "Congress declares as a national goal the prevention of any existing impairment of visibility in mandatory class I Federal areas which impairment results from manmade air pollution." 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 natural regulatory efforts aimed at eliminating human-caused visibility impairment in all Class I areas. This designation bestows an "affirmative responsibility" on federal land managers to integrate air resource management into NPS operations and planning for the protection of air quality and related values, including visibility, plants, animals, soils, water quality, cultural resources, and public health, from adverse air pollution impacts.

Administrative Commitments

For more information about the existing administrative commitments for Guadalupe Mountains National Park, please see appendix C.

Assessment of Planning and Data Needs

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

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

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

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

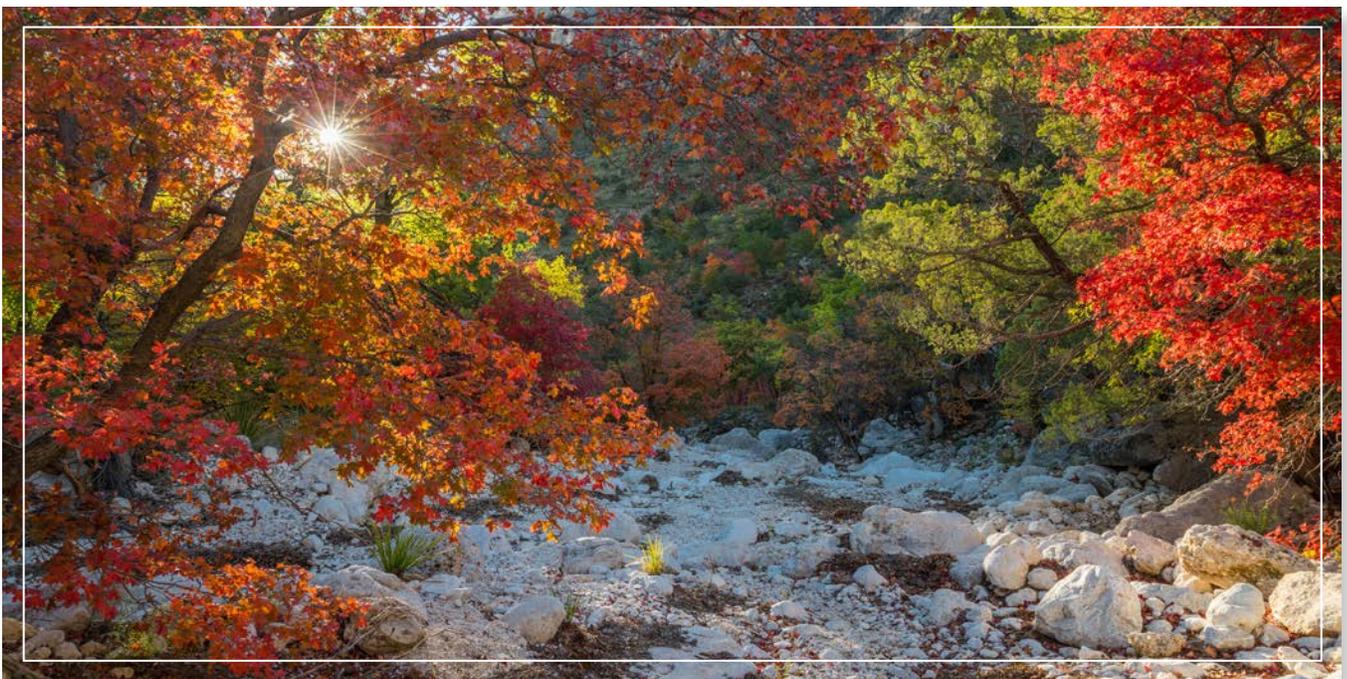
Analysis of Fundamental Resources and Values

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



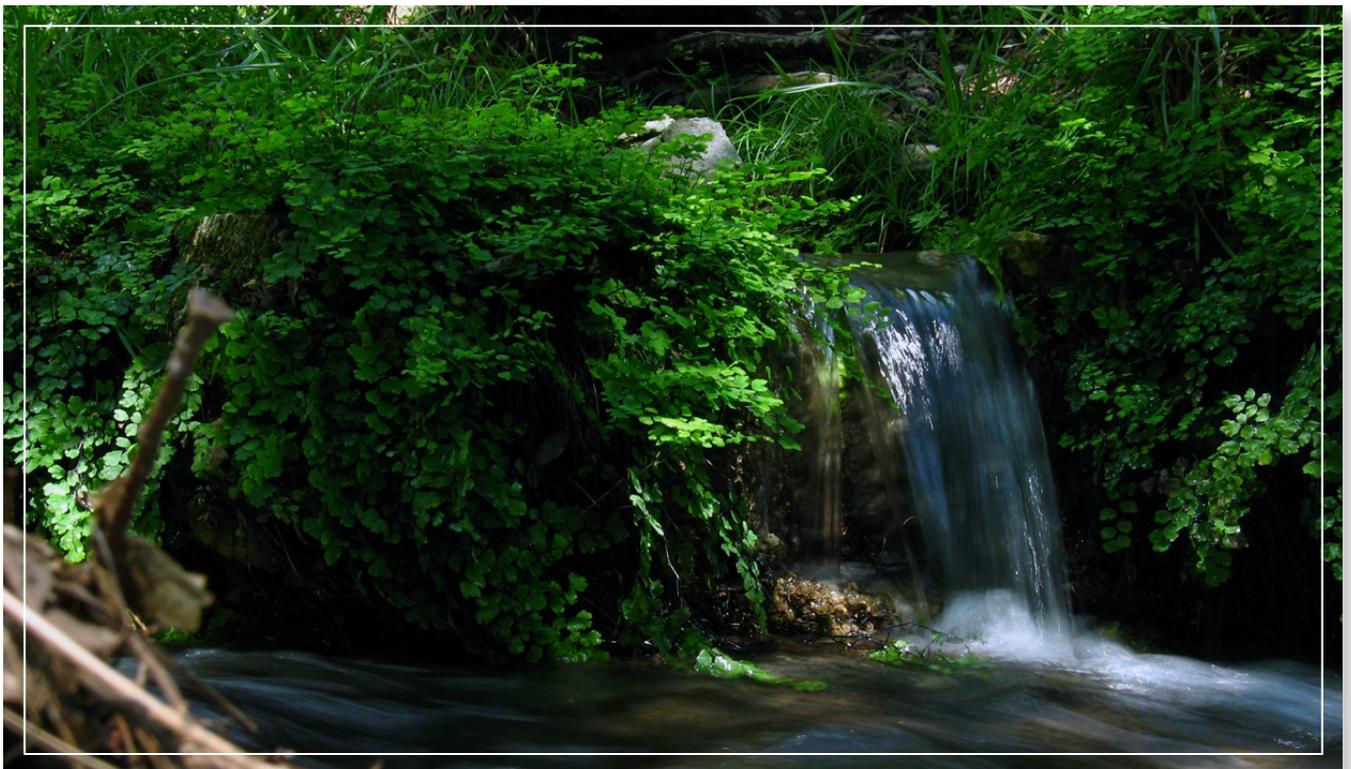
Fundamental Resource or Value	Geology
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • Situated at the western edge of one of the world’s most well-studied and well-exposed fossil reef systems, the rocks of the Guadalupe Mountains gave their name to the Middle Permian time interval, the Guadalupian Series. Within the park are three internationally recognized reference points for the Guadalupian, known as Global Stratotype Sections and Points. • The Border Fault on the west side of the park extends for almost 140 miles through New Mexico and Texas. Uplift along this fault has exposed more than 5,000 feet of rock such that the vertical and lateral relationships of different rock units can be seen and studied. The superb exposures reveal rocks spanning 12 million to 14 million years and show the interrelationships of three different marine depositional systems. Scientists continue to study rocks in the park to see how sedimentation changed with changes in plate tectonics and paleoclimate. The geology of the park continues to inform scientists on processes involved in, and the physical responses to, climate change.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Outcrops are well exposed and have not been seriously modified by human activities. <p>Trends</p> <ul style="list-style-type: none"> • The outcrops continue to weather naturally.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Vandalism, especially graffiti, of rock surfaces by visitors. • Modification of outcrops by mass movements (rock falls, rock slides), earthquakes, and flooding. • Erosion of rock surfaces by acidification over long periods of time. • Inappropriate sampling techniques by researchers that impede future research. • Impacts on soils, microbial communities, and vegetation from oil and gas spills associated with highway accidents. These generally are limited to road rights-of-way. <p>Opportunities</p> <ul style="list-style-type: none"> • Opportunities for new research provided by new rock exposures resulting from mass movements, earthquakes, and floods. • Interpret the geologic history of the park to inform park visitors about the intimate relationships between the past and present. • Interpret the uplift of the mountains to educate park visitors about the interactions of plate tectonics, earthquakes, uplift and erosion, and formation of modern topography. • Improve interpretation of the park’s geologic history and how it relates to regional and global geologic events. • Establish a multiagency information center to provide information and interpretation regarding the geologic record. • Interpret how the park’s rocks relate to mineral exploration in the Delaware Basin. • Interpret water table monitoring and research related to formation of gypsum sediment that forms dunes to answer the question: Is sediment being generated to refresh dunes?
<p>Existing Data and Plans Related to the FRV</p>	<ul style="list-style-type: none"> • Some data on geologic samples collected within the park in museum collections. • NPS Geologic Resources Inventory Report (2008). • NPS Geologic Resources Inventory geologic map (2007).

Fundamental Resource or Value	Geology
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Updated park geologic map. • High resolution digital scans of reef segments along trails. • Expanded and enhanced research into Paleogene and Neogene geologic history. • Relocation of legacy locations for geologic and paleontological resources. • Collect representative fossils from all geologic facies. • Fossil documentation including taxonomic identification, photographic documentation, and three-dimensional modeling.
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Geologic resources management plan. • Revised comprehensive interpretive plan and long-range interpretive plan.
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Federal Cave Resources Protection Act of 1988 • National Parks Omnibus Management Act of 1998 • Paleontological Resources Preservation Act of 2009 • Clean Water Act of 1972 • Secretarial Order 3289, “Addressing the Impacts of Climate Change on America’s Water, Land, and Other Natural and Cultural Resources” <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director’s Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§4.6.1) “Protection of Surface Waters and Groundwaters” • NPS Management Policies 2006 (§4.6.2) “Water Rights” • NPS Management Policies 2006 (§4.6.4) “Floodplains” • NPS Management Policies 2006 (§4.8) “Geologic Resource Management” • NPS Management Policies 2006 (§4.8.2.1) “Paleontological Resources and Their Contexts” • NPS Management Policies 2006 (§4.8.2.2) “Caves” • NPS Natural Resource Management Reference Manual 77



Fundamental Resource or Value	Paleontology
Related Significance Statements	<ul style="list-style-type: none"> • Situated at the western edge of one of the world’s most well-studied and well-exposed fossil reef systems, the rocks of the Guadalupe Mountains gave their name to the Middle Permian time interval, the Guadalupian Series. Within the park are three internationally recognized reference points for the Guadalupian, known as Global Stratotype Sections and Points. • The Border Fault on the west side of the park extends for almost 140 miles through New Mexico and Texas. Uplift along this fault has exposed more than 5,000 feet of rock such that the vertical and lateral relationships of different rock units can be seen and studied. The superb exposures reveal rocks spanning 12 million to 14 million years and show the interrelationships of three different marine depositional systems. Scientists continue to study rocks in the park to see how sedimentation changed with changes in plate tectonics and paleoclimate. The geology of the park continues to inform scientists on processes involved in, and the physical responses to, climate change.
Current Conditions and Trends	<p>Conditions</p> <ul style="list-style-type: none"> • Few fossils are vandalized or damaged by visitors. • Since 2006, only three law enforcement case incident reports (in separate years) have involved geological or paleontological sites. • New fossil species continue to be described from the park as more areas of the park are sampled. <p>Trends</p> <ul style="list-style-type: none"> • Fossils continue to weather naturally.
Threats and Opportunities	<p>Threats</p> <ul style="list-style-type: none"> • Theft of fossils by visitors. • Vandalism, carving graffiti on outcrops that can obscure or damage fossils. • Inappropriate sampling techniques by researchers that impedes future research. <p>Opportunities</p> <ul style="list-style-type: none"> • Develop a symposium bringing together experts in marine ecology and paleontology to inform park staff on accurate representation of paleocommunities. • Develop interpretive materials on life in the Permian seas and how life in the Permian is related to life regionally and globally (e.g., movies, books). • Improve interpretation of paleontological history of the park based on fossils recovered from park rocks and caves emphasizing Permian life and ecosystems and Pleistocene/ Holocene life. • Interpret the role of mass extinctions in the evolution of modern ecosystems. • Interpret how plate tectonics and atmospheric circulation created Permian mega-monsoons and how they may have contributed to mass extinction at the end of Permian. • Develop paleontological history exhibits for the visitor center. • Partner with academic and museum institutions to develop interpretive materials and research opportunities using existing collections. • Use fossil casts as interpretive teaching aids.
Existing Data and Plans Related to the FRV	<ul style="list-style-type: none"> • GIS layers of known paleontological resources. • Database of known paleontological fossils and related data including photographs and field notes. • NPS Paleontological Resource Inventory and Monitoring Report, Chihuahuan Desert Network (2007).

Fundamental Resource or Value	Paleontology
Data and/or GIS Needs	<ul style="list-style-type: none"> • Fossil documentation including taxonomic identification, photographic documentation, and three-dimensional modeling. • Relocation of legacy locations for geologic and paleontological resources. • Collect representative fossils from all geologic facies. • High resolution digital scans of reef segments along trails. • Expanded and enhanced research into Paleogene and Neogene geologic history.
Planning Needs	<ul style="list-style-type: none"> • Geologic resources management plan (including paleontological resources). • Revised comprehensive interpretive plan and long-range interpretive plan.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Federal Cave Resources Protection Act of 1988 • National Parks Omnibus Management Act of 1998 • Paleontological Resources Preservation Act of 2009 • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§4.6.1) "Protection of Surface Waters and Groundwaters" • NPS Management Policies 2006 (§4.6.2) "Water Rights" • NPS Management Policies 2006 (§4.6.4) "Floodplains" • NPS Management Policies 2006 (§4.8) "Geologic Resource Management" • NPS Management Policies 2006 (§4.8.2.1) "Paleontological Resources and Their Contexts" • NPS Management Policies 2006 (§4.8.2.2) "Caves" • NPS Natural Resource Management Reference Manual 77

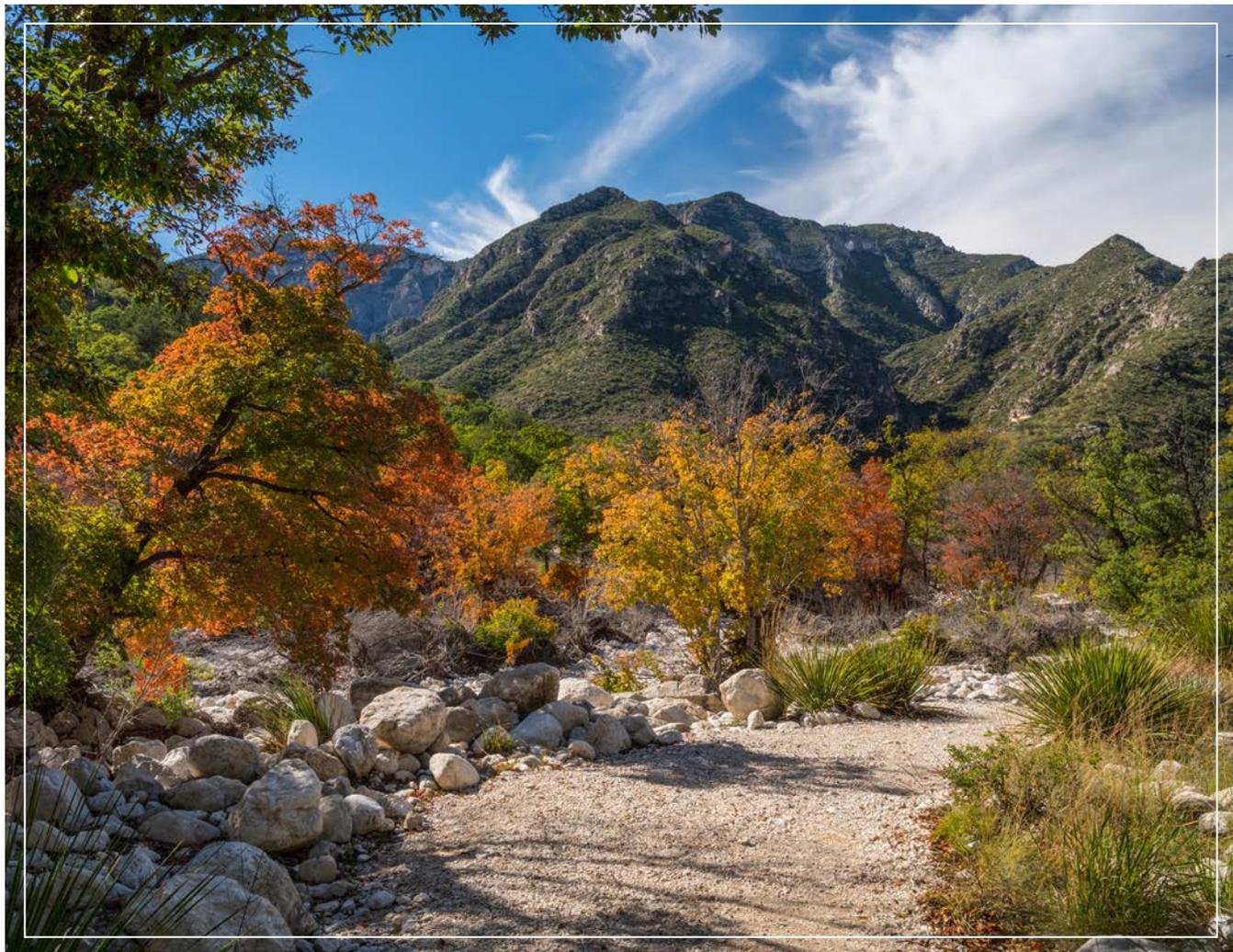


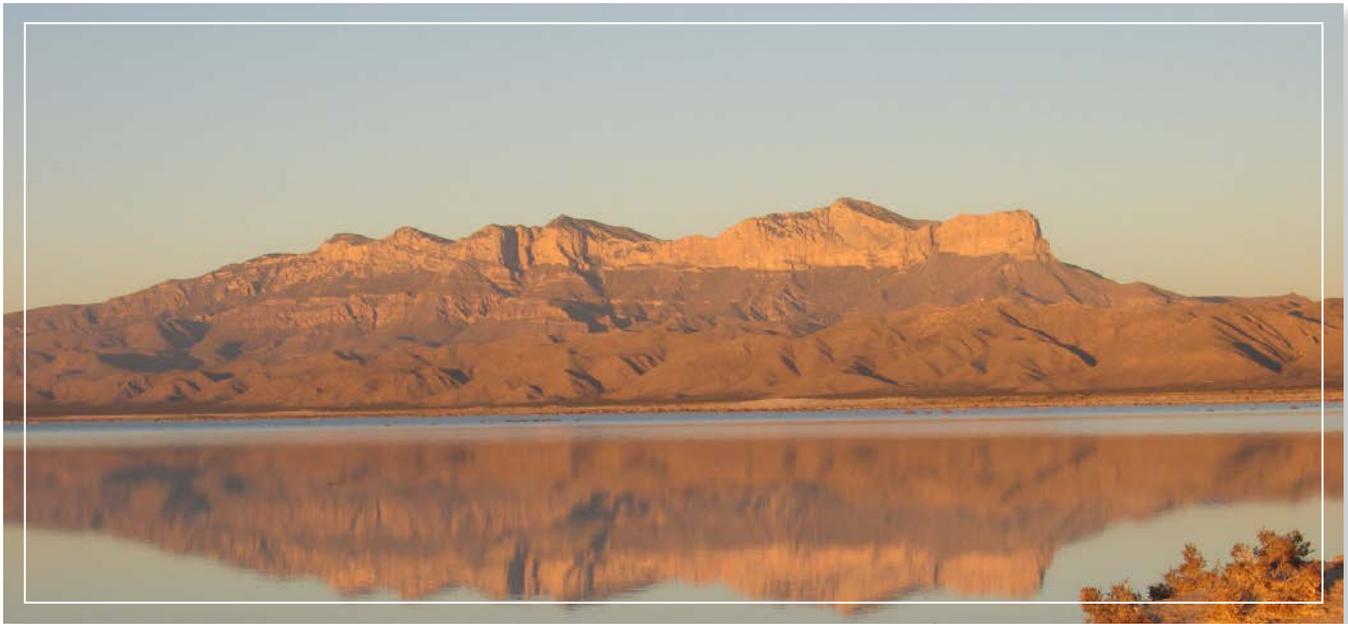


Fundamental Resource or Value	Scenic Values
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> • The Chihuahuan Desert, Rocky Mountain, and Southern Great Plains ecosystems intersect at the park. The park’s topography, with almost a mile of vertical relief from the desert floor to the top of Guadalupe Peak, provides a diversity of habitats and microhabitats, some of which contain relict and endemic species. • The designated and proposed Guadalupe Mountains Wilderness is the largest in the state of Texas and allows visitors to experience personal challenges and solitude in rugged and remote desert and mountain landscapes. • Guadalupe Mountains National Park hosts eight of the ten highest peaks in Texas and provides an abundance of outstanding, primitive recreational opportunities and excellent vantage points from which to view the surrounding Chihuahuan Desert landscape. • Unobstructed views, into and out of the park, highlight the stark contrast between the highest peaks in Texas and the Chihuahuan Desert surrounding them. The park showcases complex desert, riparian, and montane ecosystems where visitors can view spectacular seasonal colors, white sand dunes, wildlife, rock-ribbed canyons and cliffs, brilliant night skies, and traces of past human occupation.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Park housing affects some scenic views, and intermittent noise from highway traffic affects the soundscape. • Scenic views are sometimes obscured by pollution-caused haze. Average natural visual range is reduced from the farthest horizon to about 85 miles because of pollution around the park. The visual range is reduced to below 50 miles on high pollution days. The modeled mean anthropogenic light ratio (an indicator of night sky conditions) of 0.15 represents a good condition as compared with other non-urban park units • Views range from almost pristine to slightly modified by the existence of development, primarily roads, visible from some viewpoints. <p>Trends</p> <ul style="list-style-type: none"> • From 2005 to 2014, visibility remained relatively unchanged on both the 20% clearest days and 20% haziest days.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • The Coyote Fire in May 2016 has reduced (but not eliminated) the threat of catastrophic wildfire. Monitoring will be required over the next two to three years to assess wildfire threats due to rapid growth after and trees dying from the fire, which could increase wildfire threat in the burned area. • Noise from the highway and park activities threatens the park’s natural soundscape. The expansion of U.S. Highway 62/180 from the New Mexico state line to El Paso could further impact viewsheds and natural sounds.

Fundamental Resource or Value	Scenic Values
<p>Threats and Opportunities</p>	<p>Threats (continued)</p> <ul style="list-style-type: none"> • Air pollution-caused haze from anthropogenic sources diminishes visibility and visitor enjoyment of scenic resources. Regional sources of air pollution include coal-fired power plants, vehicle exhaust, oil and gas production, wildfire smoke, and dust. At night, air pollution scatters artificial lights, increasing the effect of light pollution on the night sky. Haze and air pollution from anthropogenic sources may degrade visibility and visitor enjoyment of scenic resources. • Possible oil and gas and rare earth element development on the Otero Mesa and in the Orogrande Basin, west-northwest of the park, could result in increased emissions and light pollution. • Air quality and scenic resources are affected by anthropogenic sources originating locally, regionally, and globally. • Potential climate change-related impacts such as fire risk, smoke from regional fires, extreme weather events, and species extirpation threaten the park's scenic values. <p>Opportunities</p> <ul style="list-style-type: none"> • Collaborate with International Dark-Sky Association for the protection of night sky resources. • Minimize light pollution by applying fully sustainable outdoor lighting principles that limit when and where lights are on, uses the minimum brightness necessary for a task, uses warmer color spectra, shields and directs light to only where it is warranted, and/or uses energy efficient fixtures. • Hold public meetings to garner support for minimizing light pollution. • Explore ongoing opportunities through federal air quality programs (e.g., regional haze program) for the park to work cooperatively with other federal and state air quality agencies and local stakeholders to reduce air quality impacts in park. • Partner with nearby landowners, communities, planners, and developers to increase awareness and protection of the park's scenic views and night skies. • Improve park sustainability and environmental leadership through Climate Friendly Parks certification and action plan. • Educate visitors about climate change impacts on scenic vistas and the natural beauty of the park.
<p>Existing Data and Plans Related to the FRV</p>	<ul style="list-style-type: none"> • Night sky study (2008). • Project-specific viewshed analyses. • Visibility data (1990s). • Ongoing IMPROVE (Interagency Monitoring of Protected Visual Environments) air quality monitoring station data.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Updated light pollution study. • Visual resource inventory. • Water quality and flow data for surface and ground water. • Climate change vulnerability assessment. • Baseline information to monitor impacts of development on park resources. • Characterization of atmospheric dust geochemistry. • Long-term ozone monitoring.
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Visual resource management plan. • Night sky management plan. • Revised comprehensive interpretive plan and long-range interpretive plan. • Climate change adaptation strategy.

Fundamental Resource or Value	Scenic Values
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations that Apply to the FRV</p> <ul style="list-style-type: none"> • Clean Air Act (42 USC 7401 et seq.) • Executive Order 11514, "Protection and Enhancement of Environmental Quality" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§1.4) "Park Management" • NPS Management Policies 2006 (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS Management Policies 2006 (§3.1) "General" • NPS Management Policies 2006 (§4.7) "Air Resource Management" • NPS Management Policies 2006 (§4.9) "Soundscape Management" • NPS Management Policies 2006 (§4.10) "Lightscape Management" • NPS Policy Memorandum 12-02 "Applying NPS Management Policies in the Context of Climate Change" • NPS Natural Resource Management Reference Manual 77 • Director's Order 47: <i>Soundscape Preservation and Noise Management</i>

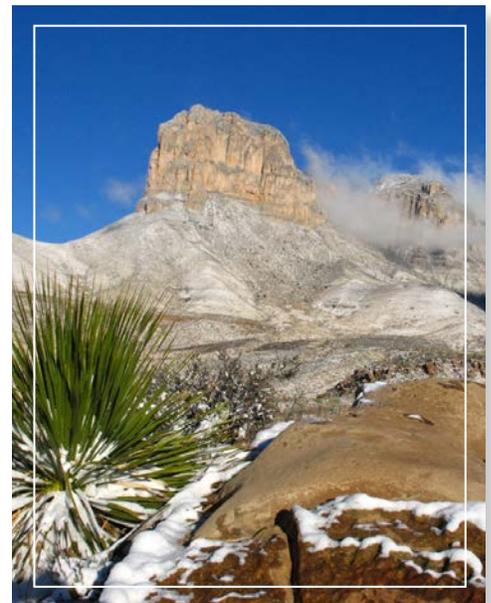
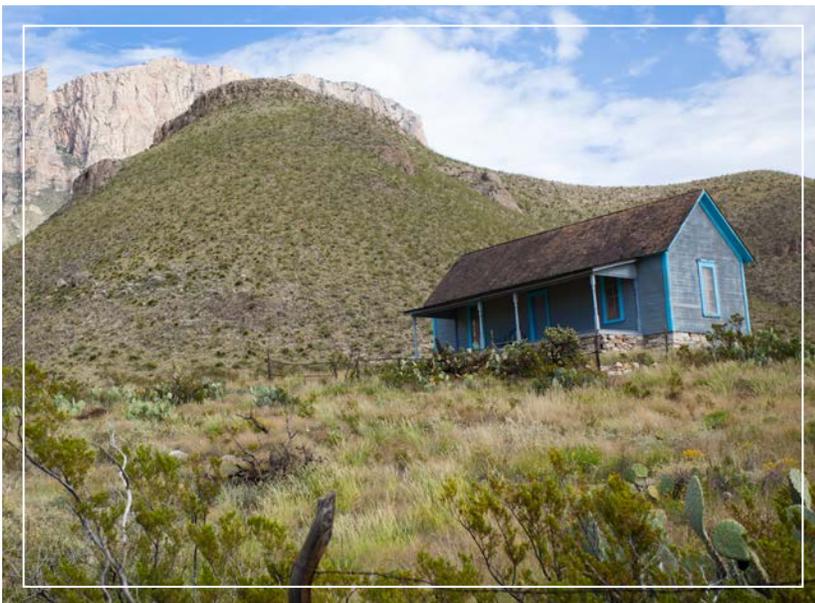




Fundamental Resource or Value	Wilderness Values
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> The designated and proposed Guadalupe Mountains Wilderness is the largest in the state of Texas and allows visitors to experience personal challenges and solitude in rugged and remote desert and mountain landscapes.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> The condition of the wilderness areas of the park is fair. The number of acres managed as wilderness has increased and now includes parts of the west side of the park. More than 95% of the park is managed as wilderness. Large tracts of public lands north of the park boundary are also managed as wilderness or wilderness study areas for a collective (noncontiguous) wilderness area of more than 145,000 acres. Four official entry points and three other trailheads provide direct and indirect access to the wilderness. The primary actions that degrade the untrammelled quality include the removal of nonnative species, native plant revegetation, and trail management and fire management activities. Ongoing efforts to eradicate Barbary sheep, feral hogs, mullein, Russian thistle, and horehound, among other nonnative species, help to improve the natural quality while also degrading the untrammelled quality. Several modern developments detract from the undeveloped quality (e.g., radio repeaters and a fire weather station), while others are historic and are considered compatible with wilderness character. In most places recreation within wilderness is unconfined, although several restrictions limit visitor opportunities for recreation somewhat (e.g., designating campsites, prohibiting campfires, etc.). The wilderness has been affected by more than a century of livestock ranching, and water and soil resources still show effects of these uses. <p>Trends</p> <ul style="list-style-type: none"> Removal of fences has reduced the footprint of past development, and has benefited the undeveloped quality of wilderness character. The character of the wilderness has remained largely unchanged, although some qualities have improved in the last 25–40 years and will continue to do so.

Fundamental Resource or Value	Wilderness Values
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • The Coyote Fire in May 2016 has reduced (but not eliminated) the threat of catastrophic wildfire. Monitoring will be required over the next two to three years, to assess wildfire threats due to rapid growth after and trees dying from the fire, which could increase wildfire threat in the burned area. • Abnormal fuel accumulations could produce stand-replacing fires. • Noise from highway and park activities degrades the wilderness experience. • Increased light pollution from anthropogenic light sources hinders night sky viewing. • Air pollution-caused haze from anthropogenic sources diminishes visibility and visitor enjoyment. • Formation of social trails can affect the experience of primitive and unconfined recreation in wilderness. • Trespass cattle from adjacent ranches affect the natural quality of wilderness. • Climate change may increase the risk of fire in the park and the frequency of regional fires that reduce visibility. • The expansion of U.S. Highway 62/180 from the New Mexico state line to El Paso has the potential to increase traffic noise, visual impacts, and how visitors and affiliated groups access and interact with the park. <p>Opportunities</p> <ul style="list-style-type: none"> • Conduct prescribed burns to reduce fuel load, enhance fire recurrence intervals, and prevent stand replacement fires. • Improve landscape level management of wilderness through enhanced collaboration with public and private stakeholders. • Educate park visitors on the importance of wilderness. • Develop multiagency information center to promote wilderness values and educate public. • Educate visitors about climate change impacts on wilderness quality and experiences.
<p>Existing Data and Plans Related to the FRV</p>	<ul style="list-style-type: none"> • GIS layer of designated and proposed wilderness. • Wilderness stewardship plan (underway). • Ongoing IMPROVE air quality monitoring station data.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • GPS social trails and adjoining federal agency trails. • High-resolution landscape level digital elevation models. • Climate change vulnerability assessment. • Baseline information to monitor impacts of development on park resources. • Monitoring of Mexican spotted owl. • Long-term ozone monitoring. • Water quality and flow data for surface and ground water. • Characterization of atmospheric dust geochemistry.
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Invasive mammal management plan. • West side unit implementation plan. • Updated land protection plan. • Exhibit/sign plan for dunes area. • Visual resource management plan. • Night sky management plan. • Revised comprehensive interpretive plan and long-range interpretive plan.

Fundamental Resource or Value	Wilderness Values
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Clean Air Act (42 USC 7401 et seq.) • National Parks Air Tour Management Act of 2000 • National Parks Overflight Act of 1987 (PL 100-91) • Wilderness Act of 1964 • National Invasive Species Act of 1996 • "Audio disturbances" (36 CFR 2.12) <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§1.4) "Park Management" • NPS Management Policies 2006 (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS Management Policies 2006 (§3.1) "Land Protection" • NPS Management Policies 2006 (§4.4.4.2) "Removal of Exotic Species Already Present" • NPS Management Policies 2006 (§4.7) "Air Resource Management" • NPS Management Policies 2006 (§4.9) "Soundscape Management" • NPS Management Policies 2006 (§4.10) "Lightscape Management" • NPS Management Policies 2006 (chapter 6) "Wilderness Preservation and Management" • NPS Management Policies 2006 (§8.2.3) "Use of Motorized Equipment" • NPS Management Policies 2006 (§8.4) "Overflights and Aviation Uses" • NPS Policy Memorandum 12-02 "Applying NPS Management Policies in the Context of Climate Change" • Director's Order 41: <i>Wilderness Stewardship</i> • Director's Order 47: <i>Soundscape Preservation and Noise Management</i> • <i>Keeping It Wild in the National Park Service: A User Guide to Integrating Wilderness Character into Park Planning, Management, and Monitoring</i> (User Guide) • NPS Reference Manual 18: <i>Wildland Fire Management</i> • NPS Reference Manual 41: <i>Wilderness Stewardship</i> • NPS Natural Resource Management Reference Manual 77



Fundamental Resource or Value	Chihuahuan Desert, Sky Island Ecosystem
<p>Related Significance Statements</p>	<ul style="list-style-type: none"> The Chihuahuan Desert, Rocky Mountain, and Southern Great Plains ecosystems intersect at the park. The park’s topography, with almost a mile of vertical relief from the desert floor to the top of Guadalupe Peak, provides a diversity of habitats and microhabitats, some of which contain relict and endemic species.
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> Moderate habitat fragmentation has occurred due to historic roads and fences. Presence of invasive plants and animals is of significant concern because nonnative plants and animals directly affect natural biodiversity and ecosystem function. Natural communities are at risk for harmful effects of air pollution including nutrient enrichment and acidification from excess deposition of nitrogen and sulfur, mercury/toxics contamination, and impacts on ozone-sensitive plants. The park’s arid shrubland and grassland and wetland are sensitive to nutrient enrichment, which can alter plant communities and reduce biodiversity, including helping invasive plant species to grow faster and out-compete native vegetation adapted to lower nitrogen conditions. Surface waters are generally well-buffered from acidification. However, areas where the rock is resistant to weathering, and small streams with steep-sided canyon walls, may be sensitive to acid deposition. Airborne toxics, including mercury and pesticides, can be deposited with rain or snow and accumulate in park wildlife, resulting in reduced foraging efficiency, survival, and reproductive success. <p>Trends</p> <ul style="list-style-type: none"> The quality of ecosystems may be changing due to impacts of climate change, air pollution, and regional development, including oil and gas.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> The Coyote Fire in May 2016 has reduced (but not eliminated) the threat of catastrophic wildfire. Monitoring will be required over the next two to three years, to assess wildfire threats due to rapid growth after and trees dying from the fire, which could increase wildfire threat in the burned area. Modification of vegetative cover by invasive animals such as Barbary sheep and feral pigs. Modification of vegetation communities by invasive species such as Lehmann lovegrass, woolly mullein, horehound, Malta starthistle, and Johnson grass. Foliar damage due to long-term exposures to ozone. Declining water levels as grassland is converted to scrubland. Addition of pollutants adhering to dust soil and water particles and becoming incorporated into food chains. Vandalism to native ecosystems including carving initials in trees. Potential changes in vegetation communities such as expansion of invasive species, and upward movement of species ranges, potentially leading to extirpation, due to changes in climate.

Fundamental Resource or Value	Chihuahuan Desert, Sky Island Ecosystem
<p>Threats and Opportunities</p>	<p>Opportunities</p> <ul style="list-style-type: none"> • Prescribed fire to reduce threat of stand-replacement fires. • Cooperate with area partners (Bureau of Land Management, U.S. Forest Service, and The Nature Conservancy) on grasslands restoration and management. • Encourage natural species diversity through nonnative species control and the promotion of natural disturbance regimes. • Collaborate with regional research groups on landscape management. • Engage with the Sister Parks Program. • Implement the park’s wilderness stewardship plan. • Improve park sustainability and environmental leadership through Climate Friendly Parks certification and action plan. • Continue work to identify resources sensitive to air quality and assess future needs for air quality research and monitoring. • Explore ongoing opportunities through federal air quality programs (e.g., regional haze program) for the park to work cooperatively with other federal and state air quality agencies and local stakeholders to reduce air quality impacts in park. • Educate visitors about the uniqueness of a sky island ecosystem and the effects of climate change on upward and poleward movements of species ranges in mountain systems.
<p>Existing Data and Plans Related to the FRV</p>	<ul style="list-style-type: none"> • National Atmospheric Deposition Program network. • Wilderness stewardship plan (underway). • Ongoing IMPROVE air quality monitoring station data.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Additional studies to examine pollution dose-response relationships in sensitive park resources. • Information on ecological restoration of west side of park. • Updated light pollution study; ongoing pollution monitoring. • Baseline information to monitor impacts of development on park resources. • Characterization of atmospheric dust geochemistry. • Climate change vulnerability assessment. • Monitoring of Mexican spotted owl. • Long-term ozone monitoring. • Visual resource inventory. • Water quality and flow data for surface and ground water.
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Invasive mammal management plan. • West side unit implementation plan. • Grasslands management plan. • Climate change adaptation strategy. • Invasive species management plan. • Visual resource management plan. • Night sky management plan.

Fundamental Resource or Value	Chihuahuan Desert, Sky Island Ecosystem
<p>Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the FRV</p> <ul style="list-style-type: none"> • Bald and Golden Eagle Protection Act of 1962 • Migratory Bird Treaty Act of 1918 • Clean Air Act (42 USC 7401 et seq.) • Clean Water Act of 1972 • Endangered Species Act of 1973, as amended • Federal Noxious Weed Act of 1974, as amended • Lacey Act of 1900, as amended • National Invasive Species Act of 1996 • Executive Order 13112, "Invasive Species" • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS Management Policies 2006 (§4.1) "General Management Concepts" • NPS Management Policies 2006 (§4.1.4) "Partnerships" • NPS Management Policies 2006 (§4.4.1) "General Principles for Managing Biological Resources" • NPS Management Policies 2006 (§4.7) "Air Resource Management" • NPS Management Policies 2006 (§4.7.1) "Air Quality" • NPS Management Policies 2006 (§4.7.2) "Weather and Climate" • Director's Order 18: <i>Wildland Fire Management</i> • NPS Reference Manual 18: <i>Wildland Fire Management</i> • NPS Natural Resource Management Reference Manual 77 • NPS Policy Memorandum 12-02 "Applying NPS Management Policies in the Context of Climate Change" • Department of the Interior Policy on Consultation with Indian Tribes





Analysis of Other Important Resources and Values

Other Important Resource or Value	Cultural Continuity
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Unknown. Very little research has been done on ethnographic relationships between and among traditionally associated peoples and the park. • See appendix B for a list of traditionally associated tribes. <p>Trends</p> <ul style="list-style-type: none"> • None identified.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Lack of communication between the park and traditionally associated tribes and potential loss of oral histories. • Lack of documentation of ethnographic resources and connections. • Cultural change and ethnocentrism that favors the story of European American use of the natural landscape over that of American Indians or Hispanic Americans. • The expansion of U.S. Highway 62/180 from the New Mexico state line to El Paso has the potential to increase traffic noise and visual impacts. <p>Opportunities</p> <ul style="list-style-type: none"> • More consultation and involvement, including other staff. • Build relationships with tribes. • More regular communication with tribal historic preservation officers. • Increase consultation with traditionally associated groups and peoples, in part to identify historically significant cultural landscapes. • Increase interpretations of ethnographic connections and resources with various groups.
<p>Existing Data and Plans Related to the OIRV</p>	<ul style="list-style-type: none"> • Resource stewardship strategy.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Oral histories of traditionally associated peoples. • Ethnographic resources study. • Cultural landscape inventories.
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Cultural resource management plan. • Cultural landscape reports. • Inadvertent discovery plan. • Revised comprehensive interpretive plan and long-range interpretive plan.

Other Important Resource or Value	Cultural Continuity
<p>Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the OIRV</p> <ul style="list-style-type: none"> • American Indian Religious Freedom Act of 1978 • Antiquities Act of 1906 • Archeological and Historic Preservation Act of 1974 • Archaeological Resources Protection Act of 1979 • Historic Sites Act of 1935 • Museum Properties Management Act of 1955, as amended • National Historic Preservation Act of 1966, as amended • Native American Graves Protection and Repatriation Act of 1990 • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13007, "Indian Sacred Sites" • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • "Curation of Federally-Owned and Administered Archaeological Collections" (36 CFR 79) • "Protection of Historic Properties" (36 CFR 800) <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS Management Policies 2006 (chapter 5) "Cultural Resource Management" • NPS Management Policies 2006 (§5.3.5.3) "Ethnographic Resources" • Director's Order 24: <i>NPS Museum Collections Management</i> • Director's Order 28: <i>Cultural Resource Management</i> • Director's Order 28A: <i>Archeology</i> • <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> • Department of the Interior Policy on Consultation with Indian Tribes



Other Important Resource or Value	Cultural Landscapes
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Eleven cultural landscapes have been identified at the park and are listed in the National Park Service Cultural Landscape Inventory: Ship-On-The-Desert, Pratt Cabin/Lodge, Frijole Ranch, Williams Ranch, Bowl Cabin, Dog Canyon Mining, Hunter Line Cabin, Pinery Station, Pine Springs Store/Café (destroyed), Butterfield Stage Route/ Emigrant Trail, and McKittrick Canyon Archeological District. • Only two cultural landscapes have been inventoried—Frijole Ranch and Pinery Station—and they are listed as being in good and fair condition respectively. • Landscapes are eroding naturally. • Deferred maintenance of built environments means that condition of elements within the cultural landscapes is highly variable, ranging from excellent to poor. • Some cultural landscapes that are known to have existed have not been delineated or documented. • More than 400 archeological sites are known in the park, ranging from the Paleoindian Period through the historic European American Period. <p>Trends</p> <ul style="list-style-type: none"> • Insufficient data exist to establish a trend.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Deterioration of structures due to lack of adequate resources and a lack of adequate maintenance activities. • No documentation or inventories for large areas of the park. • The expansion of U.S. Highway 62/180 from the New Mexico state line to El Paso has the potential to increase traffic noise and visual impacts. <p>Opportunities</p> <ul style="list-style-type: none"> • Implement cyclic maintenance for cultural landscapes and landscape elements. • Document cultural landscapes through surveys, assessments, inventories and reports. • Add updates and addendums to old reports (if completed) to reflect current conditions and preservation planning, such as cultural landscape reports and historic structure reports. • Work with NPS Intermountain Region staff and others to maintain historic structures (e.g., NPS Vanishing Treasures Program). • Develop collaborative projects with stakeholders. • Develop living history presentations based on current scientific data.
<p>Existing Data and Plans Related to the OIRV</p>	<ul style="list-style-type: none"> • Limited archeological and historic structure surveys. • List of Classified Structures database.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Ground truth surveys of existing site boundaries and datum locations and incorporate into GIS data layers. • Ethnographic resources study. • Cultural landscape inventories. • Ranching-themed historic resource study.

Other Important Resource or Value	Cultural Landscapes
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Cultural resource management plan. • Museum collections management plan. • Inadvertent discovery plan. • Cultural landscape reports. • Historic structure reports. • Rock image management plan. • Revised comprehensive interpretive plan and long-range interpretive plan. • Archives assessment and management plan.
<p>Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the OIRV</p> <ul style="list-style-type: none"> • American Indian Religious Freedom Act of 1978 • Antiquities Act of 1906 • Archaeological Resources Protection Act of 1979 • Archeological and Historic Preservation Act of 1974 • Historic Sites Act of 1935 • Museum Properties Management Act of 1955, as amended • National Historic Preservation Act of 1966, as amended • Native American Graves Protection and Repatriation Act of 1990 • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13007, "Indian Sacred Sites" • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • "Curation of Federally-Owned and Administered Archaeological Collections" (36 CFR 79) • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> (chapter 5) "Cultural Resource Management" • NPS <i>Management Policies 2006</i> (§5.3.5.2) "Cultural Landscapes" • Director's Order 24: <i>NPS Museum Collections Management</i> • Director's Order 28: <i>Cultural Resource Management</i> • Director's Order 28A: <i>Archeology</i> • <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> • Department of the Interior Policy on Consultation with Indian Tribes

Other Important Resource or Value	National Register of Historic Places Properties
<p>Current Conditions and Trends</p>	<p>Conditions</p> <ul style="list-style-type: none"> • Six historic properties in the park have been listed in the National Register of Historic Places: Frijole (Guadalupe) Ranch, Pinery Station, Wallace Pratt Cabin/Lodge, Wallace Pratt House (Ship-On-The-Desert), McKittrick Canyon Archeological District, and the Butterfield Overland Mail Corridor. • Several other properties are eligible or potentially eligible for listing: Bowl Cabin, Felix McKittrick Dugout, Dog Canyon Copper Mines, Hunter Cabin (aka Hunter Line Cabin), Segura Dugout, Williams Ranch House, and remnants of historic ranching activities. • Conditions of properties are highly variable, and many require stabilization work. Some have suffered from deferred maintenance, and many have a backlog of condition assessments. • Wallace Pratt Properties: seven structures are in good condition, one is in fair condition, and one (Building 241 Pratt Garage) is in serious condition. • Pinery Station and Ship-On-The-Desert are in fair condition. • Frijole Ranch House and outbuildings (e.g., Frijole Bath House) are in poor condition due to a loss of bedding mortar, latex paint, and structural concerns. Williams Ranch is also in poor condition. • The conditions of McKittrick Canyon Archeological District and Grisham-Hunter Line Shack are unknown. <p>Trends</p> <ul style="list-style-type: none"> • Trends are difficult to establish because of the number of properties and lack of condition assessments. • Failing preservation materials used in the past are causing general deterioration of properties. • Property conditions improve when they are assessed and treated.
<p>Threats and Opportunities</p>	<p>Threats</p> <ul style="list-style-type: none"> • Lack of personnel trained in appropriate historic preservation techniques. • Unknown conditions for many properties. • Wear and tear from visitation and weather events. • Some vandalism, primarily along trails. • Rodents and other pests. • The current reactive approach to managing National Register of Historic Places properties frequently means only the most extreme issues are addressed, and sometimes too late. <p>Opportunities</p> <ul style="list-style-type: none"> • Complete new National Register of Historic Places nominations and update old nominations. • Participate in the National Register of Historic Places nomination process for Butterfield National Historic Trail. • Implement NPS historic preservation guidelines. • Implement cyclic maintenance for historic structures. • Train maintenance staff in historic preservation techniques. • Develop partnerships with historic preservation organizations. • Develop preservation and stabilization projects that enlist partners with student help. • Develop partnerships with stakeholders for preservation of Ship-On-The-Desert. • Enter work orders into Facility Management Software System.

Other Important Resource or Value	National Register of Historic Places Properties
<p>Existing Data and Plans Related to the OIRV</p>	<ul style="list-style-type: none"> • Historic structure reports for a limited number of structures. • Collection of existing surveys and reports. • Limited number of archeological surveys. • Limited number of treatment plans for historic structures.
<p>Data and/or GIS Needs</p>	<ul style="list-style-type: none"> • Evaluate sites to determine if they are eligible for listing in the National Register of Historic Places. • Complete National Register of Historic Places property nominations. • Cultural landscape inventories. • Ranching-themed historic resource study. • Ethnographic resources study.
<p>Planning Needs</p>	<ul style="list-style-type: none"> • Cultural resource management plans. • Historic structure reports. • Revised comprehensive interpretive plan and long-range interpretive plan. • Rock image management plan. • Exhibit/sign plan for dunes area. • Cultural landscape reports. • Inadvertent discovery plan.
<p>Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance</p>	<p>Laws, Executive Orders, and Regulations That Apply to the OIRV</p> <ul style="list-style-type: none"> • American Indian Religious Freedom Act of 1978 • Archaeological Resources Protection Act of 1979 • Archeological and Historic Preservation Act of 1974 • Historic Sites Act of 1935 • National Historic Preservation Act of 1966, as amended • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13007, "Indian Sacred Sites" • "Protection of Historic Properties" (36 CFR 800) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" <p>NPS Policy-level Guidance (NPS Management Policies 2006 and Director's Orders)</p> <ul style="list-style-type: none"> • NPS <i>Management Policies 2006</i> (chapter 5) "Cultural Resource Management" • Director's Order 28: <i>Cultural Resource Management</i> • Director's Order 28A: <i>Archeology</i> • <i>The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation</i> • <i>The Secretary of the Interior's Standards for the Treatment of Historic Properties</i>

Identification of Key Issues and Associated Planning and Data Needs

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

The following are key issues for Guadalupe Mountains National Park and the associated planning and data needs to address them:

- **External Threats.** The park is faced with a number of threats originating outside of park boundaries. Unauthorized releases of production water through illegal dumping could negatively impact surface and groundwater quality in the region. Commercial, industrial, and residential developments constitute the most serious threats, posing direct and indirect impacts on park air quality, soundscapes, viewsheds, water resources, night skies, water quantity and quality, habitat fragmentation, and vectors for invasive species. Scenic vistas, desert and sky island ecosystems, wilderness, and biological diversity are a few of the resources at the park that could be negatively impacted from increased air pollution. Nitrogen and sulfur deposition and ground-level ozone pollutants could affect the health and distribution of native vegetation and encourage the growth of nonnative plants.

The park has been subject to sulfate deposition for at least the past 20,000 years from the gypsum playas immediately upwind of the park. Although deposition monitoring suggests sulfur deposition is of moderate concern, the natural contribution of sulfur from the playas to park ecosystems is unknown. Research into the amount of sulfate brought into the park from the playa systems is needed.

Methylmercury has been detected in fish collected from McKittrick Canyon. The levels are at or near the maximum level safe for human consumption and exceed wildlife consumption thresholds. Mercury is apparently being converted into methylmercury in the aquatic system and is accumulating in the aquatic food chain. There is no bedrock source for mercury in the park; therefore, the mercury probably is brought into the park via atmospheric transport and deposition from sources such as coal-fired power plants.



Another external threat is water extraction, diversion, and out-of-basin transfers, specifically for Dell Valley and Crow Flat. Lower water tables could have far-reaching consequences for the park, including the formation of gypsum sand dunes, invasive species encroachment (on former farms adjacent to the park), and other operational concerns. Solar energy development in the region and aerospace activities that may be undertaken at the nearby Blue Origin site could further contribute to viewshed, soundscapes, night skies, and air and water quality disturbances.

- *Associated planning needs:* Visual resource management plan, Night sky management plan, Updated land protection plan
- *Associated data needs:* Visual resource inventory, Additional studies to examine pollution dose-response relationships in sensitive park resources, Baseline information to monitor impacts of development on park resources, Updated light pollution study, Characterization of atmospheric dust geochemistry, Long-term ozone monitoring
- **Regional Collaboration.** The park has an opportunity to collaborate on a number of initiatives with other public, private, and nonprofit entities in the region, including the city of Carlsbad, National Cave and Karst Research Institute, Bureau of Land Management, and U.S. Forest Service. Joint laboratory space and visitor contact points, shared educational/interpretive outreach materials, and designation of a multiagency trail from the park to White's City (adjacent to Carlsbad Caverns National Park) are just a few of the opportunities park staff would like to pursue with park neighbors to better manage resources and enhance the visitor experience. Trails already exist on each agency's land and a route has been identified by connecting adjacent trail segments into a pathway known as the Guadalupe Ridge Trail. Air quality, soundscapes, scenic views, night skies, water resources are some of the park's resources that could benefit from improved regional collaboration.
 - *Associated planning needs:* Revised comprehensive interpretive plan and long-range interpretive plan, Multiagency trail designation (in progress), Exhibit plan for multiagency information center
- **Climate Change.** Changes to precipitation patterns, fire regimes, biologic communities, and visitation patterns resulting from climate change could affect resources and visitor experiences across the park.

Most climate models show an increase in aridity as well as more intense droughts punctuated by more intense rain events. The greatest decreases in precipitation could occur in winter or spring. Long-term changes in precipitation and land use in aquifer recharge areas, combined with changes in demand for groundwater over time, will affect groundwater availability in ways that are not well understood.

As with many NPS units, Guadalupe Mountains National Park is very sensitive to any changes in climate due to its unique habitat and setting. The park's topography and intersection of three ecoregions mean any changes will very likely affect current ecosystem form and function. The challenge is to collect enough data and have a sufficient understanding of form and function so that contingency strategies can be developed. Thus far, climate models have been used in an attempt to predict broad regional changes. Some changes (such as shifts in phenology) are being observed but other changes cannot be predicted or predicted accurately. Additional effort needs to be applied to understand park resources, how they are changing, and why. Without sufficient data, it may be impossible to discern if changes are occurring due to climate shifts or to other factors that may not be apparent. It is incumbent upon management to recognize events that may result in immediate hazards to human health and safety or to resources and act accordingly.

- *Associated planning needs:* Climate change adaptation strategy, Invasive mammal management plan, Grasslands management plan, Invasive species management plan
- *Associated data needs:* Water quality and flow data for surface and ground water, Characterization of atmospheric dust geochemistry, Climate change vulnerability assessment
- **Management of West Side and Visitor Access.** Several key issues relate to management of the west side of the park including visitor access, land ownership and acquisition, a potential recreational vehicle park, and the Dell City contact station. Park staff needs to be able to staff the contact station in Dell City and would like to see increased visitation on that side of the park. Moving signage from U.S. Highway 62/180 to a more appropriate location could improve visibility and direct visitors through Dell City on their way to the park. In order to accommodate both the recreational vehicle park and additional recreational vehicle spaces, which were identified as a need in the park's general management plan, new land outside of the wilderness boundary would need to be acquired.
 - *Associated planning needs:* Updated land protection plan, Grasslands management plan, Exhibit/sign plan for dunes area, West side unit implementation plan, Updated visitor use management plan
 - *Associated data needs:* High-resolution landscape level digital elevation models, Information on ecological restoration of west side of park, Inventory of current waysides
- **Museum Collections Management.** More than 150,000 items comprise Guadalupe Mountains National Park's museum collection with specimens relating to geology, paleontology, zoology, botany, archeology, ethnography, and history. These important collections relate to all of the park's resources and are vital to understanding the cultural and natural history of the park. Included in those collections are more than 230 type specimens (upon which species are described and named) for fossil and extant species. That may seem like a large number; however, it is a relatively small percentage of the actual diversity of the park as there are countless species remaining to be described from the park's different formations.

Consequently, the park would like for all collections to be identified and inventoried, cataloged, documented, preserved, and protected. Additionally, there should be provisions for access to and use of items in the collections for exhibits, research, and interpretation. Currently, improper storage, long delays between accessioning and cataloging, insect activity, and lack of regular maintenance are the most prominent threats to museum collections. A variety of issues, from collection storage to emergency operations and pest management, are aggregated into the need for a single museum collections management plan.

- *Associated planning need:* Museum collections management plan



Planning and Data Needs

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

Items considered of the utmost importance were identified as high priority, and other items identified, but not rising to the level of high priority, were listed as either medium- or low-priority needs. These priorities inform park management efforts to secure funding and support for planning projects.



Planning Needs – Where A Decision-Making Process Is Needed			
Related to an FRV, OIRV, or Key Issue?	Planning Needs	Priority (H, M, L)	Notes
Wilderness, Sky Island Ecosystem, Key Issue	Invasive mammal management plan	H	This plan would include guidance on long-term management of feral pigs and other nuisance mammals. Currently only the new fence on the west side is antelope-friendly, and the plan should include guidance on best practices for using wildlife-friendly fencing.
Sky Island Ecosystem, Key Issue	Grasslands management plan	H	This plan would include guidelines for invasive vegetation management and planning for seasonal or annual vegetation mapping to record changing conditions. The invasive species management plan relates to this task but is a separate, lower priority process. Funding is available and a task agreement is in place. Management of invasive vegetation would require involvement with the Texas Department of Transportation.
Cultural Continuity, Cultural Landscapes, National Register Properties	Inadvertent discovery plan	H	This plan would provide park-specific guidance in case of inadvertent discovery of human remains by park staff, researchers, or visitors.
Cultural Landscapes, National Register Properties	Historic structure reports	H	Structure-specific plans for preservation and/or treatment would include recommended cycle of maintenance and suggested materials for treatment. Park needs to update all existing historic structure reports and complete new reports where structures are missing a report (5).
Scenic Values, Wilderness, Sky Island Ecosystem, Key Issue	Visual resource management plan	H	This plan is needed to address impacts of development outside the park boundary on night sky, viewshed, and air resources. Developments include solar, oil and gas, and possible rare earth element extraction. The plan would use the visual resource inventory as a baseline to develop goals, objectives and strategies for the protection of important views.
Scenic Values, Wilderness, Sky Island Ecosystem, Key Issue	Night sky management plan	H	This plan would address management actions specific to night sky and lighting management.
Geology, Paleontology	Geologic resources management plan	H	This plan would address management of geological and paleontological resources, caves and karst features, and dunes.
Scenic Values, Sky Island Ecosystem, Key Issue	Climate change adaptation strategy	M	This strategy would provide guidance and associated management actions to address an uncertain climate future including extreme weather events that could impact many park resources and visitor experience/safety. From a resource perspective there is the potential for major biological effects on resources at the edge of their range.

Planning Needs – Where A Decision-Making Process Is Needed			
Related to an FRV, OIRV, or Key Issue?	Planning Needs	Priority (H, M, L)	Notes
Geology, Paleontology, Scenic Values, Wilderness, Cultural Continuity, Cultural Landscapes, National Register Properties, Key Issue	Revised comprehensive interpretive plan and long-range interpretive plan	M	These revised plans would include updated interpretation of all park resources, especially cultural resources, based on up-to-date science and historical research. They should address exhibits, improved media, and collaboration with partners on interpretive topics in order to reach a wider audience. They could include updates to waysides and other signs, as well as updates to exhibits in the visitor center auditorium.
Cultural Landscapes	Archives assessment and management plan	M	This plan would facilitate documentation and recovery of data on cultural landscapes and proper maintenance of future documentation.
Cultural Landscapes, National Register Properties	Rock image management plan	M	This plan would address actions needed to protect and maintain rock image sites and documentation of site conditions.
Wilderness, National Register Properties, Key Issue	Exhibit/sign plan for dunes area	L	This plan would be related to the comprehensive interpretive plan but would be a more specific effort. It would provide detail about specific requirements for signs and waysides such as for the Butterfield Overland Stage Route and Buffalo Soldiers.
Wilderness, Sky Island Ecosystem, Key Issue	West side unit implementation plan	L	This plan would address multiple issues including the need for a manned contact station and how to provide appropriate access, visitor use, and recreation opportunities on the west side of the park. It would also address trails and trails management (including in the proposed wilderness), dune management, and resource monitoring.
Sky Island Ecosystem, Key Issue	Invasive species management plan	L	This plan would address invasive species in the park and necessary collaboration with stakeholders outside the park.
Wilderness, Key Issue	Updated land protection plan	L	This plan would address possible land acquisition to protect scenery and other resources from outside development activities. Acquisition could provide services considered in the park’s general management plan such as a recreational vehicle campground. It would also address possible interim collaboration with a nonprofit organization such as The Nature Conservancy.

Planning Needs – Where A Decision-Making Process Is Needed			
Related to an FRV, OIRV, or Key Issue?	Planning Needs	Priority (H, M, L)	Notes
Key Issue	Multiagency trail designation (in progress)	L	This plan would address networking of trails in neighboring federal agency land units managed by the National Park Service, Bureau of Land Management, and U.S. Forest Service. Trails already exist on each agency’s land and a route has been identified by connecting adjacent trail segments into a pathway known informally as the Guadalupe Ridge Trail.
Cultural Landscapes, Key Issue	Museum collections management plan	L	The plan would include core museum documents: security survey, fire protection survey, collection storage plan, integrated pest management plan, housekeeping plan, emergency operations plan, and a structural fire plan.
Key Issue	Exhibit plan for multiagency information center	L	Discussions regarding a shared information center are ongoing, but are unlikely to require resources in the long term.
Cultural Continuity, Cultural Landscapes, National Register Properties	Cultural landscape reports	L	Cultural landscape reports are needed for the Williams, Grisham-Hunter Line Shack, Pratt Cabin and Ship-On-The-Desert. Updates are needed for Frijole and Pinery.
Key Issue	Updated visitor use management plan	L	An updated plan would address ongoing visitor use challenges including how to provide a more appropriate national park experience for visitors traveling in a recreational vehicle, as well as trail use.
Cultural Continuity, Cultural Landscapes, National Register Properties	Cultural resource management plan	L	The cultural resource management plan would provide specific guidance and set priorities for the long-term management of park cultural resources. It would identify cultural resources, future research needs, the most appropriate uses for cultural resources and determine the ultimate treatment. The plan would explore alternative management options and provides site-specific direction for long-term monitoring. It would be informed by cultural landscape inventories and reports, historic structures reports, and National Register of Historic Places documentation.

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV, OIRV, or Key Issue?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
Scenic Values, Wilderness, Sky Island Ecosystem, Key Issue	Long-term ozone monitoring	H	Because of its highly reactive chemical nature, ozone levels at or above 70 ppb (parts per billion) may pose a risk to human and animal health and may cause foliar damage in vegetation. An ozone monitor would help park management address air quality issues, especially as industrial and commercial enterprises encroach on park boundaries.
Geology	Updated park geologic map	H	The current geologic map for the park is almost 70 years old. Significant advancements have been made in the understanding of rock formations, (e.g., new formations and members have been identified). The effort would incorporate new geologic research, known as sequence stratigraphy, into the park’s geologic map.
National Register Properties	Complete national register property nominations	H	Completion of and updates to National Register of Historic Places nominations.
Cultural Continuity, Cultural Landscapes, National Register Properties	Cultural landscape inventories	H	Cultural landscape inventories are needed for Williams Ranch, Hunter Line Cabin, Pratt Lodge/Cabin and associated structures, Ship-On-The-Desert, Military Encampments/Activity Areas, The Bowl Cabin, Dog Canyon Mining Landscape, and McKittrick Canyon Archeological District as well as any other as yet unidentified cultural landscapes.
Cultural Landscapes, National Register Properties	Ranching-themed historic resources study	H	Ranching history has not been adequately assessed for Guadalupe Mountains National Park, particularly on the west side of the park. The study would document important elements of ranching history within the park.
Scenic Values, Sky Island Ecosystem, Key Issue	Updated light pollution study	H	Light pollution studies were last done in 2006–2008 and should be updated to take into account recent developments outside the park. The results would contribute directly to the night sky management plan. A consistent monitoring schedule for light pollution and soundscape is needed, as well as guidance to process, analyze, and interpret data.
Scenic Values, Wilderness, Sky Island Ecosystem, Key Issue	Water quality and flow data for surface and groundwater	H	The NPS Chihuahuan Desert Network periodically monitors water quality; however, water quantity and flow data are critical for managing desert ecosystems and currently are insufficient, especially for McKittrick Creek. Methylmercury has been identified as potential concern for aquatic ecosystems in the park.

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV, OIRV, or Key Issue?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
Scenic Values, Wilderness, Sky Island Ecosystem, Key issue	Characterization of atmospheric dust geochemistry	H	<p>Sulfate, mercury, nitrogen, and pesticides are atmospheric pollutants that can be introduced by dust. Gypsum playas (dry lake beds) immediately upwind of the park generate sulfate dust, and differentiating between that natural background sulfate dust and anthropogenic sources of sulfate would help to accurately assess the impact of regional manmade pollution on air quality, vegetation, soils, and water.</p> <p>Although there are no bedrock sources of mercury in the park, methylmercury has been detected in the aquatic ecosystem. Identification of the amount of mercury deposited in the park would aid in understanding how mercury is moving through the aquatic food chain and in identifying its potential effects on the aquatic ecosystem and Sky Island ecosystem as a whole.</p> <p>Studies could also include surveying for ozone-sensitive plant foliar ozone injury, and additional monitoring of mercury and other toxic contaminants in park biota.</p>
Cultural Continuity, Cultural Landscapes, National Register Properties	Ethnographic resources study	H	The park has little information regarding ethnographic use of park resources in the past. These studies would specifically focus on ethnographic uses of resources such as plants and minerals in the park (traditional use study) and might inform future guidance on allowable collection practices. This information would also contribute to interpretation in the park. The study needs to be as inclusive as possible including affiliated tribes.
Cultural Continuity	Oral histories of traditionally associated peoples	H	Oral histories would help form the basis of the ethnographic management plan. They would include ethnographic surveys with traditionally associated peoples.
Scenic Values, Sky Island Ecosystem, Key Issue	Visual resource inventory	H	The inventory would identify scenic quality and NPS/visitor values for important views within and beyond park boundaries and serve as the baseline for the development of the visual resource management plan.
Wilderness	GPS social trails and adjoining federal agency trails	M	Many social trails in the wilderness have been mapped, and those trails should either be incorporated into the trails network or removed. The effort would include digitization of adjoining federal agency trails and ground truth for those trails using GPS.
Scenic Values, Wilderness, Sky Island Ecosystem, Key issue	Baseline information to monitor impacts of development on park resources	M	Data for atmospheric dust geochemistry, particulate matter and aerosol assessments, visible light pollution, and acoustical pollution from anthropogenic noise would help determine how human actions affect park resources. Of particular concern are impacts related to oil and gas development, possible mining activities, and other commercial development.

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV, OIRV, or Key Issue?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
Geology, Paleontology	Fossil documentation including taxonomic identification, photographic documentation, and three-dimensional modeling	M	<p>Most of the park’s invertebrate fossil collection has been lot or bulk cataloged. In order to accurately reconstruct and interpret the story of life in the Permian seas, a complete inventory of all fossil species in the park should be conducted. Taxonomic identification to the genus and species level would form the basis for paleoecosystem reconstruction.</p> <p>Photographic documentation of museum specimens would enable the park to enlist the expertise of individuals specializing in various fossil groups who cannot travel to the park.</p> <p>Preparation of fossil casts would allow fragile fossils to be replicated in durable material. These models could be used to train staff in fossil identification and to develop interpretive aids for park visitors and could be sent to experts around the world for scientific study.</p>
National Register Properties	Evaluate sites to determine if they are eligible for listing in the National Register of Historic Places	M	<p>Large parts of the park remain unsurveyed. In many areas, surveys and documentation of cultural resources need to be completed (e.g., the bajadas on the west side of the park). Approximately 25–45 sites need to be evaluated and recorded. The effort would entail developing a National Register of Historic Places site standard in the form of a programmatic agreement.</p>
Wilderness, Sky Island Ecosystem	Monitoring of Mexican spotted owl	M	<p>Monitoring data for Mexican spotted owl populations in the park should be collected and staff trained to conduct this monitoring, which is required by a memorandum of understanding with the U.S. Fish and Wildlife Service.</p>
Wilderness, Key Issue	High-resolution landscape level digital elevation models	M	<p>The relief on the west side of the park is very low. Existing digital elevation models are too coarse to enable park staff to differentiate habitats, small scale features, and delineate watersheds. These data are necessary to inform future management actions.</p>
Scenic Values, Wilderness, Sky Island Ecosystem, Key Issue	Climate change vulnerability assessment	M	<p>Vulnerability assessments quantify the potential responses of plants, animals, cultural resources, and infrastructure to increasing temperatures, sea level rise, range shifts, extreme events, and other climate change impacts. They identify vulnerable areas and potential refugia, providing key information to prioritize areas for climate adaptation measures.</p>
Sky Island Ecosystem, Key Issue	Information on ecological restoration and historic resources of the west side of park	M	<p>Information is needed for the west side implementation plan on options for ecological restoration of the west side as well as identifying significant historic resources. Without these data, a comprehensive analysis cannot be performed.</p>
Cultural Landscapes	Ground truth surveys of existing site boundaries and datum locations and incorporation into GIS layers	M	<p>Relates to several plans including ethnographic resources study, cultural landscape inventories, cultural landscape reports, historic structures reports, National Register of Historic Places nominations, west side historic resources theme study, west side implementation plan and rock image management plan.</p>

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV, OIRV, or Key Issue?	Data and GIS Needs	Priority (H, M, L)	Notes, Including Which Planning Need This Data Need Relates To
Sky Island Ecosystem, Key Issue	Additional studies to examine pollution dose-response relationships in sensitive park resources	M	Relates to visual resource management plan and climate change adaptation strategy.
Geology, Paleontology	High resolution digital scans of reef segments along trails	L	To produce a model outcrop of the reef system for people (especially physically challenged) who cannot hike to reef exposures or otherwise access the reef.
Geology, Paleontology	Expanded and enhanced research into Paleogene and Neogene geologic history	L	Fill data gap for the last 42 million years of the geologic and paleontological history of the park. Use data to contribute to the understanding of how modern topography has evolved.
Key Issue	Inventory of current waysides	L	This inventory would assist in annual reporting and contribute to an exhibit/sign plan for west side of the park.
Geology, Paleontology	Relocation of legacy locations for geologic and paleontological resources	L	Using references from publications to locate the physical geographic location of historic site work in the park.
Geology, Paleontology	Collect representative fossils from all geologic facies	L	Systematic collection of invertebrate fossils from all sedimentary facies should be conducted. These data would contribute to the geologic and paleontologic resources management plan.



Part 3: Contributors

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Appendixes

Appendix A: Enabling Legislation and Legislative Acts for Guadalupe Mountains National Park

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PUBLIC LAW 89-667—OCT. 15, 1966

[80 STAT.]

Public Law 89-667

AN ACT

October 15, 1966
[H. R. 698]

To provide for the establishment of the Guadalupe Mountains National Park in the State of Texas, and for other purposes.

Guadalupe Mountains National Park, Texas.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to preserve in public ownership an area in the State of Texas possessing outstanding geological values together with scenic and other natural values of great significance, the Secretary of the Interior shall establish the Guadalupe Mountains National Park, consisting of the land and interests in land within the area shown on the drawing entitled "Proposed Guadalupe Mountains National Park, Texas", numbered SA-GM-7100C and dated February 1965, which is on file and available for public inspection in the offices of the National Park Service, Department of the Interior.

Land acquisition, etc.

Notwithstanding the foregoing, however, the Secretary shall omit from the park sections 7 and 17, P.S.L. Block 121, in Hudspeth County, and revise the boundaries of the park accordingly if the owner of said sections agrees, on behalf of himself, his heirs and assigns that there will not be erected thereon any structure which, in the judgment of the Secretary, adversely affects the public use and enjoyment of the park.

SEC. 2. (a) Within the boundaries of the Guadalupe Mountains National Park, the Secretary of the Interior may acquire land or interests therein by donation, purchase with donated or appropriated funds, exchange, or in such other manner as he deems to be in the public interest. Any property, or interest therein, owned by the State of Texas, or any political subdivision thereof, may be acquired only with the concurrence of such owner.

(b) In order to facilitate the acquisition of privately owned lands in the park by exchange and avoid the payment of severance costs, the Secretary of the Interior may acquire approximately 4,667 acres of land or interests in land which lie adjacent to or in the vicinity of the park. Land so acquired outside the park boundary may be exchanged by the Secretary on an equal-value basis, subject to such terms, conditions, and reservations as he may deem necessary, for privately owned land located within the park. The Secretary may accept cash from or pay cash to the grantor in such exchange in order to equalize the values of the properties exchanged.

Publication in Federal Register.

SEC. 3. (a) When title to all privately owned land within the boundary of the park, subject to such outstanding interests, rights, and easements as the Secretary determines are not objectionable, with the exception of approximately 4,574 acres which are planned to be acquired by exchange, is vested in the United States and after the State of Texas has donated or agreed to donate to the United States whatever rights and interests in minerals underlying the lands within the boundaries of the park it may have and other owners of such rights and interests have donated or agreed to donate the same to the United States, notice thereof and notice of the establishment of the Guadalupe Mountains National Park shall be published in the Federal Register. Thereafter, the Secretary may continue to acquire the remaining land and interests in land within the boundaries of the park. The Secretary is authorized, pending establishment of the park, to negotiate and acquire options for the purchase of lands and interests in land within the boundaries of the park. He is further authorized to execute contracts for the purchase of such lands and interests, but the liability of the United States under any such contract shall be contingent on the availability of appropriated or donated funds to fulfill the same.

Preferential rights to reconveyance.

(b) In the event said lands or any part thereof cease to be used for national park purposes, the persons (including the State of Texas)

who donated to the United States rights and interests in minerals in the lands within the park shall be given notice, in accordance with regulations to be prescribed by the Secretary, of their preferential right to a reconveyance, without consideration, of the respective rights and interests in minerals which they donated to the United States. Such notice shall be in a form reasonably calculated to give actual notice to those entitled to such preferential right, and shall provide for a period of not less than one hundred and eighty days within which to exercise such preferential right. The preferential right to such reconveyance shall inure to the benefit of the successors, heirs, devisees, or assigns of such persons having such preferential right to a reconveyance, and such successors, heirs, devisees, or assigns shall be given the notice provided for in this subsection.

(c) Such rights and interests in minerals, including all minerals of whatever nature, in and underlying the lands within the boundaries of the park and which are acquired by the United States under the provisions of this Act are hereby withdrawn from leasing and are hereby excluded from the application of the present or future provisions of the Mineral Leasing Act for Acquired Lands (Aug. 7, 1947, c. 513, 61 Stat. 913) or other Act in lieu thereof having the same purpose, and the same are hereby also excluded from the provisions of all present and future laws affecting the sale of surplus property or of said mineral interests acquired pursuant to this Act by the United States or any department or agency thereof, except that, if such person having such preferential right to a reconveyance fails or refuses to exercise such preferential right to a reconveyance as provided in subparagraph (b) next above, then this subsection (c) shall not be applicable to the rights and interests in such minerals in the identical lands of such person so failing or refusing to exercise such preferential right to a reconveyance from and after the one hundred and eighty-day period referred to in subparagraph (b) next above.

(d) If at any time in the future an Act of Congress provides that the national welfare or an emergency requires the development and production of the minerals underlying the lands within the boundaries of the national park, or any portion thereof, and such Act of Congress, notwithstanding the provisions of subsection (c) of this section or any other Act, authorizes the Secretary to lease said land for the purpose of drilling, mining, developing, and producing said minerals, the Secretary shall give the persons (including the State of Texas) who donated such minerals to the United States notice of their preferential right to lease, without consideration, all or any part of the respective rights and interests in minerals which they donated to the United States, subject to such terms and conditions as the Secretary may prescribe. Such preferential right shall inure to the benefit of the successors or assigns, and of the heirs or devisees of such persons having such preferential right in the premises. The persons entitled to a preferential right under this subsection shall be given the same notice thereof as persons entitled to preferential rights under subsection (b) of this section. If such person having such preferential right fails or refuses to exercise such right within the time specified in the above notice, the Secretary may thereafter lease the minerals involved to any other person under such terms and conditions as he may prescribe.

(e) If at any time oil, gas, or other minerals should be discovered and produced in commercial quantities from lands outside of the boundaries of the park, thereby causing drainage of oil, gas, or other minerals from lands within the boundaries of the park, and if the Secretary participates in a communitization agreement or takes other action to protect the rights of the United States, the proceeds, if any, derived from such agreement or action shall inure to the benefit of the

Lands withdrawn from leasing.

30 USC 351 note.

Future mineral development.

Oil or gas communitization agreement.

donors of the oil, gas, or other minerals, or their successors, heirs, devisees, or assigns.

Administration.

SEC. 4. The Guadalupe Mountains National Park shall be administered by the Secretary of the Interior in accordance with the provisions of the Act of August 25, 1916 (39 Stat. 535; 16 U.S.C. 1-4), as amended and supplemented.

Availability of certain funds.

SEC. 5. Any funds available for the purpose of administering the five thousand six hundred and thirty-two acres of lands previously donated to the United States in Culberson County, Texas, shall upon establishment of the Guadalupe Mountains National Park pursuant to this Act be available to the Secretary for purposes of such park.

Appropriation.

SEC. 6. There are hereby authorized to be appropriated such sums, but not more than \$1,800,000 in all, as may be necessary for the acquisition of lands and interest in lands, and not more than \$10,362,000, as may be necessary for the development of the Guadalupe Mountains National Park.

Approved October 15, 1966.

Public Law 94-174
94th Congress

An Act

To authorize an exchange of lands for an entrance road at Guadalupe Mountains National Park, Texas, and for other purposes.

Dec. 23, 1975
[S. 313]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That subsection (b) of section 2 of the Act approved October 15, 1966 (80 Stat. 920), providing for the establishment of the Guadalupe Mountains National Park in the State of Texas, is amended by adding the following after the third sentence: "In order to provide for an adequate entrance road into the McKittrick Canyon area of the park, the Secretary may accept title to and interests in lands comprising a right-of-way for a road or roads outside of the boundary of the park from United States Highway numbered 62 and 180 to the park boundary, and in exchange therefor he may convey title to and interests in lands comprising a right-of-way from said highway to the boundary which have been donated to the United States. The Secretary may accept cash from or pay cash to the grantor in such exchange in order to equalize the values of the properties exchanged. Lands and interests in lands comprising the right-of-way acquired pursuant to this subsection shall be administered as part of the park."

Guadalupe
Mountains
National Park,
Tex.
Lands exchange.
16 USC 283a.

Approved December 23 1975.

LEGISLATIVE HISTORY:

HOUSE REPORT No. 94-683 accompanying H.R. 1747 (Comm. on Interior and Insular Affairs).

SENATE REPORT No. 94-164 (Comm. on Interior and Insular Affairs).

CONGRESSIONAL RECORD, Vol. 121 (1975):

June 4, considered and passed Senate.

Dec. 1, considered and passed House, amended, in lieu of H.R. 1747.

Dec. 17, Senate concurred in House amendment.

92 STAT. 3490

PUBLIC LAW 95-625—NOV. 10, 1978

TITLE IV—WILDERNESS

DESIGNATION OF AREAS

SEC. 401. The following lands are hereby designated as wilderness in accordance with section 3(c) of the Wilderness Act (78 Stat. 890; 16 U.S.C. 1132(c)), and shall be administered by the Secretary in accordance with the applicable provisions of the Wilderness Act:

Administration.
16 USC 1132
note.
16 USC 1131

(4) Guadalupe Mountains National Park, Texas, wilderness comprising approximately forty-six thousand eight hundred and fifty acres, depicted on a map entitled "Wilderness Plan, Guadalupe Mountains National Park, Texas", numbered 166-20,006-B and dated July 1972, to be known as the Guadalupe Mountains Wilderness.

MAP AND DESCRIPTION

SEC. 402. A map and description of the boundaries of the areas designated in this title shall be on file and available for public inspection in the office of the Director of the National Park Service, Department of the Interior, and in the Office of the Superintendent of each area designated in this title. As soon as practicable after this Act takes effect, maps of the wilderness areas and descriptions of their boundaries shall be filed with the Committee on Interior and Insular Affairs of the House of Representatives and the Committee on Energy and Natural Resources of the United States Senate, and such maps and descriptions shall have the same force and effect as if included in this Act: *Provided*, That correction of clerical and typographical errors in such maps and descriptions may be made.

CESSATION OF CERTAIN USES

SEC. 403. Any lands which represent potential wilderness additions in this title, upon publication in the Federal Register of a notice by the Secretary that all uses thereon prohibited by the Wilderness Act have ceased, shall thereby be designated wilderness. Lands designated as potential wilderness additions shall be managed by the Secretary insofar as practicable as wilderness until such time as said lands are designated as wilderness.

ADMINISTRATION

SEC. 404. The areas designated by this Act as wilderness shall be administered by the Secretary of the Interior in accordance with the applicable provisions of the Wilderness Act governing areas designated by that Act as wilderness, except that any reference in such provisions to the effective date of the Wilderness Act shall be deemed to be a reference to the effective date of this Act, and, where appropriate, any reference to the Secretary of Agriculture shall be deemed to be a reference to the Secretary of the Interior.

SAVINGS PROVISIONS

SEC. 405. Nothing in this title shall be construed to diminish the authority of the Coast Guard, pursuant to sections 2 and 81 of title 14, United States Code, and title 1 of the Ports and Waterways Safety Act of 1972 (33 U.S.C. 1221), or the Federal Aviation Administration to use the areas designated wilderness by this Act within the Everglades National Park, Florida; and the Gulf Islands National Seashore, Florida and Mississippi, for navigational and maritime safety purposes.

102 STAT. 2720

PUBLIC LAW 100-541—OCT. 28, 1988

Public Law 100-541
100th Congress

An Act

Oct. 28, 1988
[H.R. 4777]

To modify the boundary of the Guadalupe Mountains National Park, and for other purposes.

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

SECTION 1. BOUNDARY MODIFICATION.

The first section of the Act entitled "An Act to provide for the establishment of the Guadalupe Mountains National Park in the State of Texas, and for other purposes" (16 U.S.C. 283) is amended—

- (1) by changing "in" after "That" to "(a) In"; and
- (2) by adding at the end thereof the following:

Public information.

"(b) The boundary of Guadalupe Mountains National Park is hereby modified to include the area which comprises approximately 10,123 acres as generally depicted on the map entitled 'Boundary Proposal' and dated August 1986, which shall be on file and available for public inspection in the office of the Director of the National Park Service and in the office of the Superintendent of the Guadalupe Mountains National Park."

SEC. 2. AUTHORIZATION OF APPROPRIATIONS.

16 USC 283e. (a) PROTECTION OF AREA.—Section 6 of the Act entitled "An Act to provide for the establishment of the Guadalupe Mountains National Park in the State of Texas, and for other purposes" (16 U.S.C. 283) is amended—

- (1) by inserting "(a)" after "SEC. 6"; and
- (2) by inserting at the end thereof the following:

"(b) In addition to amounts authorized to be appropriated under subsection (a), there is authorized to be appropriated such sums as may be necessary for the construction of a fence to protect the natural and cultural resources of the area added to Guadalupe Mountains National Park by section 2(b)."

(b) LAND ACQUISITION.—Subsection (a) of section 6 of such Act (as redesignated by subsection (a) of this section) is amended by striking out "sums," and all that follows through "all," and inserting in lieu thereof "sums".

Approved October 28, 1988.

LEGISLATIVE HISTORY—H.R. 4777:

HOUSE REPORTS: No. 100-837 (Comm. on Interior and Insular Affairs).
CONGRESSIONAL RECORD, Vol. 134 (1988):
Aug. 8, considered and passed House.
Oct. 14, considered and passed Senate.

Appendix B: Traditionally Associated Tribes

Traditionally associated tribes refer to those groups that have had a significant connection to a place that has endured for two generations or more. The following list was derived from the NPS Intermountain Region's tribal contact database and other sources.

**Absentee-Shawnee Tribe
of Indians of Oklahoma**
2025 South Gordon Cooper Drive
Shawnee, OK 74801

Apache Tribe of Oklahoma
PO Box 1330
Anadarko, OK 73005-1220

Comanche Nation, Oklahoma
PO Box 908
Lawton, OK 73507

Fort Sill Apache Tribe of Oklahoma
Route 2, Box 121
Apache, OK 73006

Hopi Tribe of Arizona
PO Box 123
Kykotsmovi, AZ 86039

Jicarilla Apache Nation, New Mexico
PO Box 507
Dulce, NM 87528

Kiowa Indian Tribe of Oklahoma
PO Box 369
Carnegie, OK 73015

**Mescalero Apache Tribe of the
Mescalero Reservation, New Mexico**
PO Box 227
Mescalero, NM 88340

Pueblo of Isleta, New Mexico
PO Box 1270
Isleta, NM 87022

Pueblo of Zia, New Mexico
135 Capitol Square Drive
Zia Pueblo, NM 87053-6013

**San Carlos Apache Tribe of the San
Carlos Reservation, Arizona**
PO Box 0
San Carlos, AZ 85550

Tonto Apache Tribe of Arizona
Tonto Reservation #30
Payson, AZ 85541

**White Mountain Apache Tribe of the
Fort Apache Reservation, Arizona**
PO Box 700
Whiteriver, AZ 85941

**Yavapai-Apache Nation of the Camp
Verde Indian Reservation, Arizona**
2400 West Datsi Street
Camp Verde, AZ 86322

Ysleta Del Sur Pueblo of Texas
PO Box 17579
El Paso, TX 79917

**Zuni Tribe of the Zuni Reservation,
New Mexico**
PO Box 339
Zuni, NM 87327-0339

Appendix C: Inventory of Administrative Commitments

Title / Agency / Organization	Purpose / Description	Expiration Date	Responsible Party
Memorandums of Understanding			
Culberson County Hospital District, Texas	Ambulance stationed in park	Ongoing	Law enforcement
Texas Parks and Wildlife	Cooperation in wildlife management activities	Needs to be renewed	Resource management
New Mexico Joint Powers Agreement	Fire suppression	Annual	Fire management
National Cave and Karst Research Institute	Research and outreach	Ongoing	Superintendent
Texas Department of Public Safety Aircraft Section	Aviation support	2018	Fire management
Eddy County EMS / Structural and Wildland Fire	Fire department	2017	Fire management
City of Carlsbad	Glass recycling	Ongoing	Superintendent
Mexico Reserva de la Biosfera La Machilia	Sister park agreement	Ongoing	Resource management and interpretation
Museum Repository Agreements			
New Mexico Museum of Natural History and Science	Museum collections agreement	2036	Resource management
University of Wisconsin Geology Museum	Museum collections agreement	2026	Resource management
Texas Tech University, The Museum	Museum collections agreement (held in trust agreement)	2036	Resource management
Interagency Agreements			
Interagency Helicopter	Wildfire aviation support	2018	Fire management
Federal Aviation Administration	IMPROVE air quality monitoring station	2024	Resource management/superintendent
Cooperative Agreements			
Cornerstones Community Partnerships	Task agreement for preservation activities	2020	Resource management
Texas Department of Transportation	Park water and sewer systems	Ongoing	Facilities management
Western National Parks Association	Operation of cooperating association	2021	Superintendent

Title / Agency / Organization	Purpose / Description	Expiration Date	Responsible Party
Rights-of-Way			
Rio Grande Electric	Electric power line	Ongoing	Superintendent
AT&T	Fiber optic conduit(s)	Ongoing	Superintendent
Dell Telephone	Telephone line	Ongoing	Superintendent
El Paso Natural Gas	Pipeline, telephone line, power transmission, earthen dike, and road easements	Ongoing	Superintendent
El Paso Products Pipeline Co.	Pipeline, telephone line, power transmission, and road easements	Ongoing	Superintendent
Pasotex Pipeline Co.	Pipeline, telephone, and telegraph line easements	Ongoing	Superintendent



Appendix D: Basics for Wilderness Stewardship

Wilderness Background

Congress authorized creation of Guadalupe Mountains National Park on October 15, 1966, in order to preserve an area “. . . possessing outstanding geological values together with scenic and other natural values of great significance.” Then, on September 30, 1972, it established 76,293 acres as Guadalupe Mountains National Park. On October 28, 1988, Congress authorized the addition of 10,123 acres in the Salt Basin, bringing the park to its present 86,416 acres.

In 1978, 46,850 acres of the park’s high country were designated as wilderness by Congress. The 2013 *Guadalupe Mountains National Park, Final General Management Plan/Environmental Impact Statement* includes an eligibility assessment that deems an additional 35,484 acres of lower elevation park backcountry as suitable for consideration for wilderness designation. Designated and eligible wilderness comprises 95% of the park’s area. According to the general management plan, lands deemed eligible for wilderness will be managed to protect their wilderness character. Although the Wilderness Act of 1964 mandates preservation of “wilderness character,” this term is not defined within the act. In American culture, “wilderness” evokes a complex emotional response to a suite of biophysical, experiential, and symbolic concepts that differentiate wilderness from other lands and would seem to be impossible to quantify. In 2015, the *Wilderness Stewardship and Trail Management Plan and Environmental Assessment* was released for Guadalupe Mountains National Park in which a full discussion of wilderness character and the state of wilderness in the park is documented. Please refer to that document for detailed information on wilderness in the park.



**Intermountain Region Foundation Document Recommendation
Guadalupe Mountains National Park**

August 2017

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.

Eric Brunnemann

07.12.2017

RECOMMENDED

Eric Brunnemann, Superintendent, Guadalupe Mountains National Park

Date

Sue E. Masica

8-7-17

APPROVED

Sue E. Masica, Regional Director, Intermountain Region

Date



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

GUMO 451/124638

August 2017

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