NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR

Foundation Document

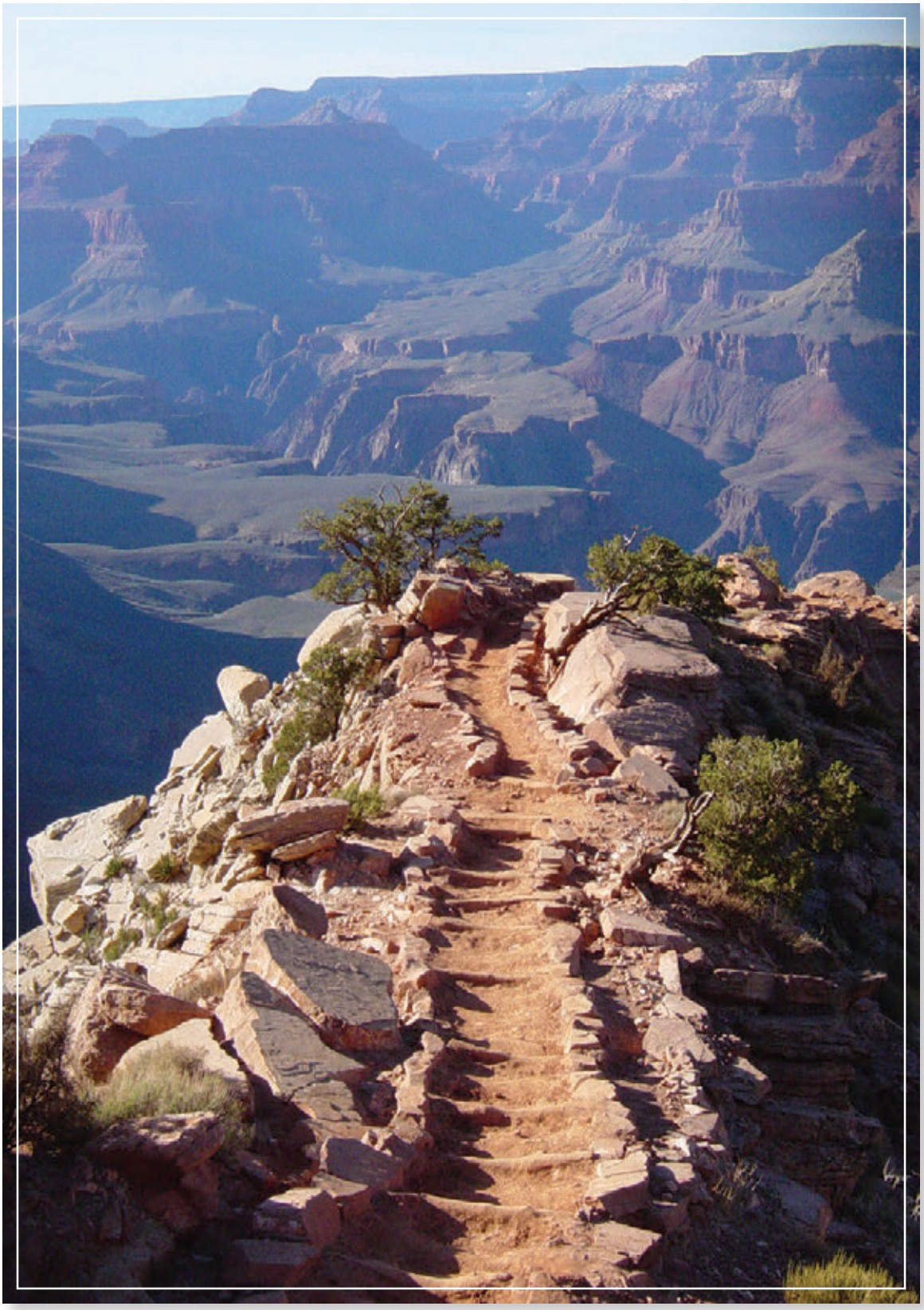
Grand Canyon National Park

Arizona

September 2017


0
50 Kilometers
0
50 Miles
North
To Salt Lake City
To Bryce Canyon N.P.
ZION NATIONAL PARK
GRAND STAIRCASE-ESCALANTE NATIONAL MONUMENT
GLEN CANYON NATIONAL RECREATION AREA
L. Powell
St. George
Kanab
UTAH
ARIZONA
NEVADA
KAIBAB INDIAN RESERVATION
Fredonia
Page
VERMILION CLIFFS NATIONAL MONUMENT
PIPE SPRING NATIONAL MONUMENT
Jacob Lake
Road closed in winter
Unpaved roads are impassable when wet
GRAND CANYON NATIONAL PARK
Colorado River
NAVAJO INDIAN RESERVATION
To Tonopah
Las Vegas
Lake Mead
GRAND CANYON–PARASHANT NATIONAL MONUMENT
Tuweep
North Rim
Pearce Ferry
Henderson
Grand Canyon Skywalk
Colorado River
Desert View
Grand Canyon Village
Tusayan
Boulder City
LAKE MEAD NATIONAL RECREATION AREA
Meadview
HAVASUPAI INDIAN RESERVATION
Cameron
To Barstow
Lake Mohave
HUALAPAI INDIAN RESERVATION
Valle
WUPATKI NATIONAL MONUMENT
NEVADA
CALIFORNIA
Hackberry
Peach Springs
SUNSET CRATER VOLCANO NATIONAL MONUMENT
Seligman
Williams
Ash Fork
Flagstaff
WALNUT CANYON N.M.
MOJAVE NATIONAL PRESERVE
Kingman
Colorado R.
Sedona
TUZIGOOT NATIONAL MONUMENT
Needles
Topock
To Los Angeles
MONTEZUMA CASTLE NATIONAL MONUMENT
Colorado River
Prescott
To Phoenix

Contents



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.

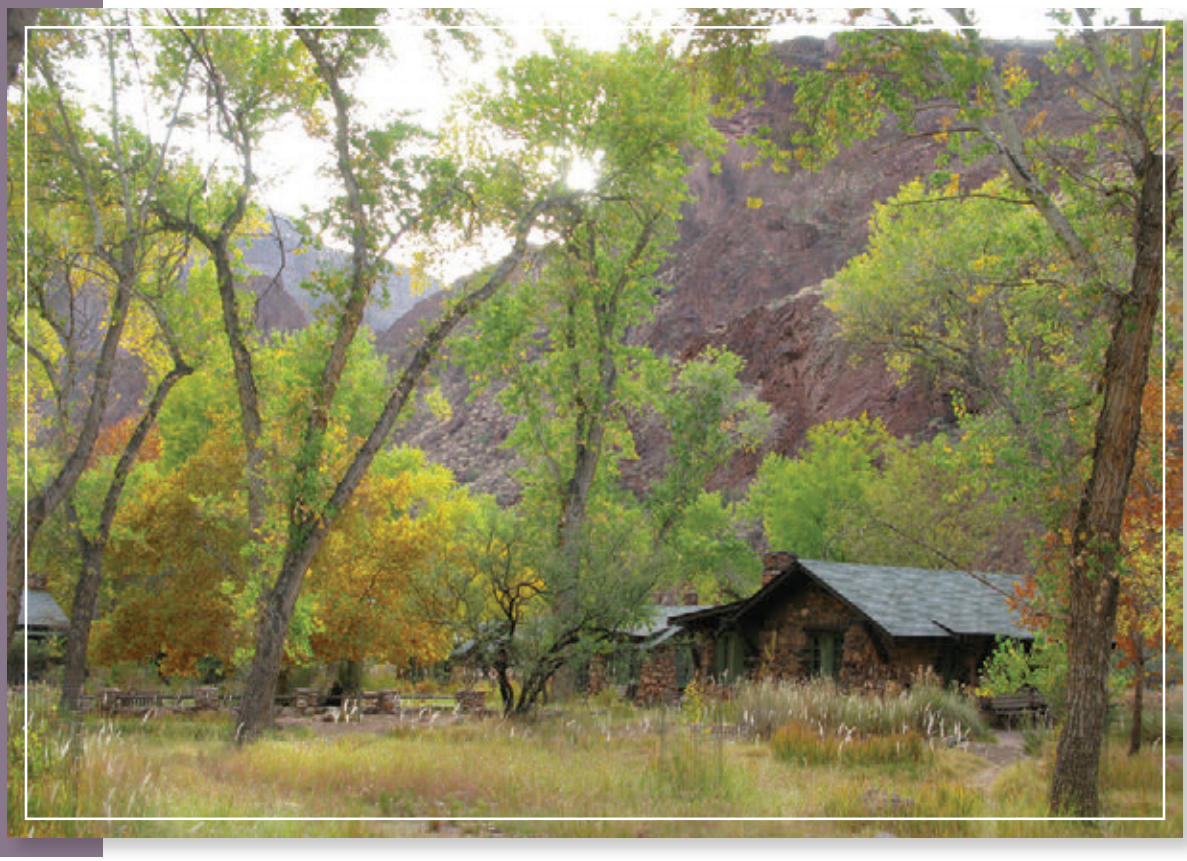
The arrowhead was authorized as the official National Park Service emblem by the Secretary of the Interior on July 20, 1951. The sequoia tree and bison represent vegetation and wildlife, the mountains and water represent scenic and recreational values, and the arrowhead represents historical and archeological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

Located on the southern end of the Colorado Plateau in northern Arizona, Grand Canyon National Park is a globally significant resource containing scenic vistas known throughout the world. The 1,218,375-acre park is dominated by the spectacular Grand Canyon, a twisting 277-mile-long gorge with thousands of miles of side canyons that formed during six million years of geological activity and erosion by the Colorado River and its tributaries. Exposed geologic strata rising for more than a mile above the river represent one of the most complete geological records seen anywhere on Earth. The park's several major ecosystems range from the lower canyon's Sonoran Desert to the North Rim's coniferous forest and contribute to the park's outstanding biological diversity, which includes many rare, endangered, and endemic species. A significant concentration of cultural resources in the park reflects 12,000 years of human use and occupation. Eleven American Indian tribes attach substantial cultural significance to the canyon, the Colorado River, and various sites and resources within Grand Canyon's landscape. Of these tribes, the Navajo, Havasupai, and Hualapai reservations share a boundary with the park.

Grand Canyon is one of the earliest additions to the national park system. On January 11, 1908, President Theodore Roosevelt issued a proclamation setting aside 818,560 acres as Grand Canyon National Monument. In 1919, Congress established the area as Grand Canyon National Park, and, in 1927, the park was enlarged. On December 22, 1932, President Herbert Hoover established a second Grand Canyon National Monument for protection of parts of the Grand Canyon downstream from Grand Canyon National Park. Marble Canyon National Monument was established on January 20, 1969, for protection of parts of the Grand Canyon upstream from the park. In 1975, Congress passed the Grand Canyon National Park Enlargement Act, which added the two national monuments, parts of Glen Canyon and Lake Mead National Recreational Areas, and other federal and state lands to the existing Grand Canyon National Park.

In recognition of its significant values, Grand Canyon National Park was designated as a World Heritage Site on October 26, 1979. As a World Heritage Site, the Grand Canyon is recognized as a place of universal value containing superlative natural and cultural features that should be preserved as part of the heritage of all the world's peoples.

Grand Canyon's spectacular scenery attracts visitors from all over the world. Visitation to the park has averaged around 4.5 million people per year and was 6 million people in 2016. Grand Canyon provides opportunities for a range of recreational experiences, from a paved-path walk to a strenuous hike, backcountry expedition, or technical river trip. The park also provides a broad spectrum of activities including rafting, hiking, sightseeing, and bicycling, to name a few. Boundless opportunities exist to experience solitude and truly dark night skies in the backcountry of Grand Canyon National Park. From the native peoples who have called these canyons home to early European explorers, and modern-day outdoor enthusiasts, philosophers, artists, poets, musicians, and photographers, the Grand Canyon of the Colorado River is spoken of as a sublime place of wonder, inspiration, and spiritual power.

Park Purpose

The purpose statement identifies the specific reason(s) for establishment of a particular park. The purpose statement for Grand Canyon National Park was drafted through a careful analysis of its enabling legislation and the legislative history that influenced its development. The park was established by presidential proclamation in 1908 and then congressional legislation in 1919 (see appendix A for presidential proclamations, enabling legislation, and legislative acts). The purpose statement lays the foundation for understanding what is most important about the park.

Grand Canyon National Park preserves and protects the natural and cultural resources and ecological and physical processes of the Grand Canyon along with its scenic, aesthetic, and scientific values for the benefit and enjoyment of the public.

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 Grand Canyon 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 Grand Canyon National Park. (Please note that the sequence of the statements does not reflect the level of significance.)

1. Grand Canyon, with its immense size, dramatic color, and extensive geologic record exposures, is one of the planet's most iconic landscapes.

2. Grand Canyon National Park includes 277 miles of the Colorado River, which flows through and helped create the Grand Canyon. The Colorado River and its tributaries have shaped the complex natural and cultural histories of the park and surrounding region.

3. More than 1.1 million acres, or 94%, of Grand Canyon National Park is managed as wilderness and, when combined with contiguous public lands, represents one of the largest undeveloped areas in the United States.

4. The park's dramatic topography and range in elevations provide diverse habitats for a vast array of life, including rare, endangered, and endemic species.

5. The human–Grand Canyon relationship has existed for at least 12,000 years, and the park contains thousands of cultural resources that reflect the long-term human use and occupation of the area.

6. Eleven federally recognized tribes maintain strong historical, cultural, and spiritual connections to the area in and around the park.

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 Grand Canyon National Park:

- **Inspirational Scenic Landscapes.** The spectacular scenic landscapes of Grand Canyon—made up of plunging depths, temple-like buttes, and vast, multihued, labyrinthine topography—awe visitors from around the world. As day turns to night, visitors can see changing natural patterns and dark skies filled with stars. Clean, clear air also contributes to the magnificent scenery.

- **Geologic Features and Processes.** The park is dominated by the spectacular Grand Canyon, a twisting 277-mile-long gorge with thousands of miles of side canyons that formed during six million years of geological activity and erosion by the Colorado River and its tributaries. The park preserves a wide range of geologic resources including an excellent record of the four eras of geological time, a rich and diverse fossil record, a great diversity of geologic features and rock types, and numerous caves containing extensive and significant geological, paleontological, archeological, and biological resources. Geologic processes, including erosion and active tectonism, continue to shape the canyon today.

- **Biodiversity and Natural Processes.** Grand Canyon National Park's great biological diversity includes the flora and fauna of three of North America's four deserts and five of Merriam's seven life zones. The park hosts almost 1,800 vascular plant species and more than 500 species of terrestrial and aquatic vertebrates, including a number of endemic, threatened, and endangered species and the most complete assemblage of native fish in the Colorado River system. Natural processes influence the system on a large scale. The park protects a large undeveloped area and is connected to a series of other significant natural areas.

- **Diverse Recreational and Experiential Opportunities.** Grand Canyon National Park is a renowned scenic and recreational destination that draws visitors from all over the world. Visitors can enjoy Grand Canyon's scenic grandeur from developed areas or find adventure and solitude with a trip into the backcountry or on the Colorado River.

- **Water Resources.** Two hundred seventy-seven miles of the Colorado River flow through, and helped create, the Grand Canyon. Important tributaries to this stretch of the Colorado include the Paria River, Little Colorado River, Kanab Creek, Bright Angel Creek, Havasu Creek, and others. These tributaries are fed by seeps and spring systems in and along the canyon.

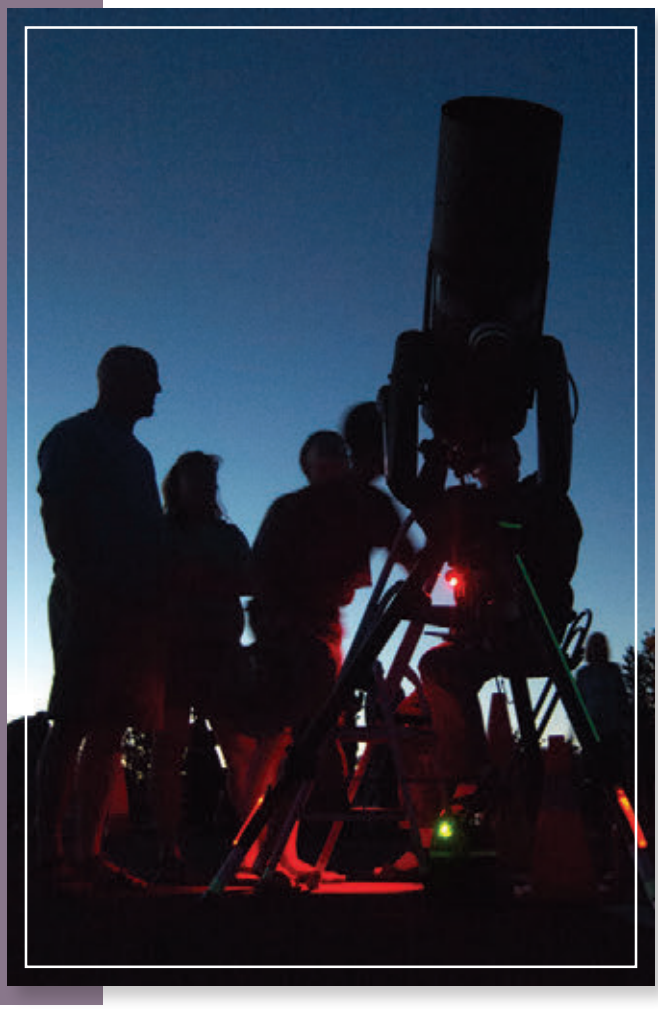
- **Cultural Resources and Tribal Values.** The Grand Canyon protects an important cultural history. More than 12,000 years of human occupation and use have resulted in an extensive archeological record, and the park preserves thousands of archeological sites from the historic and prehistoric periods. The park's traditionally associated tribes retain strong historical, cultural, and spiritual ties to the canyon and have a vested interest in management of park resources as preservation of their heritage. The park also contains many properties (sites, buildings, structures, and objects) listed or eligible for the National Register of Historic Places including hundreds of buildings and structures and thousands of archeological sites. The park has eight National Historic Landmarks, including three districts, four buildings, and one site.

Other Important Resources and Values

Grand Canyon 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 Grand Canyon National Park:

- **Research.** Grand Canyon's diverse array of habitats and rich cultural history make the park an important research environment. Endemism, extreme biological diversity, and on-site collections provide opportunities for scientific study. Numerous institutions, representing a full range of disciplines, contribute to the understanding of park resources.
- **Partnerships.** Numerous individuals, volunteers, and partner organizations assist the park in achieving its mission through a range of activities, including science, stewardship, education, interpretive programming, and facility maintenance.
- **Wilderness.** Grand Canyon National Park includes 1,117,457 acres of proposed wilderness and 26,461 acres of proposed potential wilderness. This acreage represents 94% of the park and contains a variety of culturally and ecologically unique landscapes where visitors can experience the character and solitude of wilderness.



Interpretive Themes

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

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

The following interpretive themes have been identified for Grand Canyon National Park:

- **Inspiration.** The immense and colorful Grand Canyon is valued worldwide as one of Earth's most powerful and inspiring scenic landscapes, offering people enriching opportunities to explore and experience its wild beauty in both vast and intimate spaces.
- **American Indian Connections.** Grand Canyon remains an important part of the traditional homeland for a number of American Indian tribes. These tribes value the canyon in both spiritual and material ways. The Grand Canyon is part of a much larger and interconnected landscape associated with emergence histories and clan migrations, archeological sites and artifacts, geographic features, plants, animals, and water sources. The Grand Canyon is important to associated tribes for maintaining their cultural identity and ongoing traditional practices, and it offers a valuable opportunity to understand and educate visitors about the powerful ties between people and place.
- **Pioneer History and Park Development.** In 1540, the first Europeans glimpsed the Grand Canyon. During the next few centuries, trappers, geologists, explorers, soldiers, miners, and engineers came to the canyon and surrounding area. Different groups saw the area through different lenses—for its economic potential and as an obstacle to travel, a trove of natural resources, an energy source, and a natural wonder, to name a few. Since the establishment of the Grand Canyon as a national park, tens of millions of people have come to the area as visitors. The park and its structures reflect this rich and diverse history.
- **Water.** Water is Grand Canyon's lifeblood—a force of erosion, sustainer of scarce riparian habitat in a desert environment, spiritual element for native peoples, provider of recreation, and central factor in the exploration, development, and politics of the American West.
- **Geology.** Grand Canyon reveals a beautiful sequence of rock layers carved and sculpted by the Colorado River and other erosional forces and geological processes that serves as windows into geologic time.
- **Biology.** Extreme changes in elevation, exposure, and climate in Grand Canyon support a range of biotic communities in unusual proximity. This relatively undisturbed ecosystem allows natural processes to continue and thus provides sanctuary for life.
- **Stewardship and Preservation.** Grand Canyon has sustained people materially and spiritually for thousands of years. In the early 20th century, wider recognition of its value led to its designation as a national park. Today, 94% of Grand Canyon is managed as wilderness, which prevents motorized and mechanized use and protects its natural character. Continuing threats to Grand Canyon's preservation generate dialogue about our responsibility as stewards of wilderness and the local and global environment.

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 Grand Canyon National Park.

Special Mandates

Special mandates are legal requirements specific to a park that affect management of the park. They are mandated and cannot be changed by the park.

- **Grand Canyon National Park Clean Air Act Class I Area.** Grand Canyon National Park is designated a class I area under 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 on 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.
- **Havasupai Traditional Use Lands.** The Havasupai Tribe has a unique relationship with Grand Canyon National Park because their reservation expansion was tied to the 1975 Grand Canyon Enlargement Act. That act enlarged Havasupai Lands by adding 185,000 acres of traditional homelands to the reservation and setting aside an additional 95,300 acres within Grand Canyon National Park for Havasupai traditional use.

- **Designation of the Arizona National Scenic Trail, Including Sections Within Grand Canyon National Park.** In 1968, Congress passed the National Trails System Act, which established a framework for a nationwide system of scenic, recreational, and historic trails. The Arizona National Scenic Trail extends 807 miles across the State of Arizona from the U.S.–Mexico international border to the Arizona–Utah state line. The trail enters Grand Canyon National Park near South Entrance Station, crosses the South Rim, following South and North Kaibab Trails, then crosses the North Rim, and exits the park near North Entrance Station. The Arizona Trail was designated a National Scenic Trail as part of the Omnibus Public Lands Management Act of 2009.

  Section 2 of the National Trails System Act (16 USC 1242) describes how scenic trails such as the Arizona National Scenic Trail are to be managed:

  > (2) National scenic trails, established as provided in section 1244 of this title, which will be extended trails so located as to provide for maximum outdoor recreation potential and for the conservation and enjoyment of the nationally significant scenic, historic, natural, or cultural qualities of the areas through which such trails may pass. National scenic trails may be located so as to represent desert, marsh, grassland, mountain, canyon, river, forest, and other areas, as well as landforms which exhibit significant characteristics of the physiographic regions of the Nation.

- **National Parks Overflight Management Act.** The National Parks Overflight Act of 1987, as amended by MAP-21, requires actions by the Department of the Interior / National Park Service and the Federal Aviation Administration to provide for substantial restoration of the natural quiet and experience of Grand Canyon National Park and for protection of the park and for protection of public health and safety from adverse effects associated with aircraft overflights.

- **Special Flight Rules Area.** In 1987, the Federal Aviation Administration issued Special Flight Aviation Regulation (SFAR) No. 50 to establish a Special Flight Rules Area and other flight restrictions in the vicinity of Grand Canyon National Park. In 1988, the Federal Aviation Administration issued SFAR 50-2 to revise flight procedures in Grand Canyon National Park airspace. This revision expanded the Special Flight Rules Area, prohibits flights below a certain altitude, establishes four flight-free zones, sets special routes for commercial sightseeing operators, and requires certain terrain avoidance and communication requirements.

Special Designations

Special designations apply to parts or all of some parks to highlight the additional management considerations that those designated areas warrant. These designations do not reduce the National Park Service's authority for managing the parks, although in some cases they may create additional management requirements or considerations.

- **World Heritage Site Designation.** Grand Canyon National Park was designated as a world heritage site by the United Nations Educational, Scientific and Cultural Organization in 1979. The outstanding universal value described in the world heritage designation states that the Grand Canyon is among the earth's greatest ongoing geological spectacles. Its vastness is stunning, and the evidence it reveals about the earth's history is invaluable. The almost one mile deep gorge ranges in width from about a third of a mile to 18.6 miles. It twists and turns for 276.5 miles and was formed during six million years of geologic activity and erosion by the Colorado River on the upraised earth's crust. The buttes, spires, mesas, and temples in the canyon are in fact mountains looked down upon from the rims. Horizontal strata exposed in the canyon retrace more than two billion years of geological history and represent the four major geologic eras—Precambrian, Paleozoic, Mesozoic, and Cenozoic. In addition to its geological importance, the park was also nominated as a world heritage site for its natural beauty and powerful landscapes, exceptional example of biological environments, and diverse topography that spans five life zones.

- **National Historic Landmark Designation.** National historic landmarks are nationally significant historic places designated by the Secretary of the Interior for their exceptional value or quality in illustrating or interpreting U.S. heritage. Properties designated as national historic landmarks tell stories of importance to the history of the entire nation, not just local communities or states. In addition, these properties possess a high, not simply good, level of historic integrity. All properties designated as national historic landmarks are automatically listed in the National Register of Historic Places, if not previously listed. The National Historic Preservation Act of 1966 (as amended) requires the National Park Service to ensure that any federally funded or licensed undertaking is implemented only after careful consideration of its possible impacts on properties listed in or eligible for listing in the National Register of Historic Places. The following historic landmark districts, landmark sites, and individual landmarks are present in Grand Canyon National Park:

  - *National Historic Landmark Districts*—Mary Jane Colter Buildings, Grand Canyon Lodge (North Rim), Grand Canyon Village
  - *National Historic Landmarks*—El Tovar, Grand Canyon Depot, Grand Canyon Park Operations Building, Grand Canyon Powerhouse
  - *National Historic Landmark Sites*—1956 Grand Canyon TWA–United Airlines Aviation Accident Site

- **Kaibab Squirrel Area National Natural Landmark Designation.** A large segment of Kaibab squirrel habitat north of the Grand Canyon was designated in 1965 by the Secretary of the Interior as the Kaibab Squirrel Area National Natural Landmark. Approximately 25% (75,049 acres) of the landmark is within Grand Canyon National Park; the remainder is in the Kaibab National Forest. A national natural landmark is a nationally significant natural area that contains one of the best examples of a natural region's characteristic biotic or geologic features. According to guidance provided in NPS *Natural Resource Management Reference Manual 77* (RM-77), any resource management actions must avoid damage to national natural landmark site integrity, and development should not be permitted unless compatible with resources and necessary for interpretation or educational use of the landmark. The superintendent is responsible for ensuring integrity of any designated national natural landmark in the park, accounting for national natural landmarks in appropriate park plans, and considering national natural landmarks during environmental compliance.

- **Research Natural Area Designation.** NPS *Natural Resource Management Reference Manual 77* defines research natural areas as part of a national network of sites designed to facilitate research and preserve natural features. Research natural areas generally are established in a typical example of an ecological community type, preferably one that has been little disturbed in the past and where natural processes are not unduly impeded. The tract is set aside permanently and managed exclusively for approved nonmanipulative research, that is, research that measures but does not alter existing conditions. A park research natural area is designated by the National Park Service. The 1995 *Grand Canyon National Park General Management Plan* states that six research natural areas totaling 8,845 acres were officially designated in the park in the 1970s and include Great Thumb, Neal Spring, Powell Plateau, Swamp Point, Wayside-Tusayan, and Mount Emma. Although not formally designated by the NPS Intermountain regional director, a seventh research natural area, Fishtail Mesa, was set aside by a categorical exclusion signed by the park superintendent in 2000.

- **Provisional International Dark Sky Park Status.** Grand Canyon received provisional Dark Sky Park status from the International Dark Sky Association in June 2016. An International Dark Sky Park possesses exceptional or distinguished quality of starry nights and a nocturnal environment that is specifically protected for its scientific, natural, educational, cultural heritage, and/or public enjoyment. In order to obtain full Dark Sky Park status, 60% of all light fixtures in the park need to be dark sky compliant by 2019. To meet 60% compliance approximately 1,500 fixtures require some level of retrofit, ranging from simply replacing a bulb to complete fixture replacement.

Administrative Commitments

The National Park Service and Grand Canyon National Park have entered into several commitments that include obligations from prior existing properties and rights; agreements to facilitate the operation of the park, protect resources, and enhance visitor services; and contracts, authorizations, and permits for commercial visitor services and special park uses in the park. These commitments influence park management, and the terms and conditions of the authorizations are legally binding. They are summarized in the following list. Appendix B provides additional detail.

- Conservation agreements to protect species of concern
- Cooperating agreement with the Grand Canyon Association
- Service contract for transportation and compressed natural gas
- Service contract for medical services offered at the clinic
- Concession contracts for services including lodging, food and beverage, retail, transportation, guided river rafting, bicycle rentals, and stock trail rides
- Commercial use authorizations for commercial activities including, but not limited to, interpretive services, shuttles, scenic and sightseeing tours, equipment rentals, bicycle tours, painting, and photography
- Special use permits and research permits for limited-term activities
- Long-term special use permits held by organizations such as the Grand Canyon School, Kaibab Learning Center, Grand Canyon Community Library, bank, and post office

Additional Management Considerations

- **Wilderness Recommendation for Grand Canyon National Park.** Pursuant to the 1964 Wilderness Act, Grand Canyon National Park was evaluated for wilderness suitability. After the park was enlarged in 1975, Grand Canyon's wilderness recommendation was updated following a study of the new park lands. Grand Canyon's wilderness recommendation was most recently updated in 1993, but Congress has not yet acted on a Grand Canyon wilderness bill. Grand Canyon National Park proposed wilderness or proposed potential wilderness covers 94% of the park, and, in accordance with NPS *Management Policies 2006*, these areas are managed in the same manner as designated wilderness, and the National Park Service will take no action to diminish wilderness suitability while awaiting the legislative process.

- **Protection of Downstream Resources from Glen Canyon Dam Operation.** As part of the Secretary of the Interior's responsibilities for managing water resources held behind Glen Canyon Dam and provisions of the Grand Canyon Protection Act, the National Park Service and the Bureau of Reclamation, along with 26 other stakeholders, works cooperatively on the Glen Canyon Dam Adaptive Management Program. This federal, multistakeholder program was initiated in 1996 to comply with provisions of the Grand Canyon Protection Act of 1992 and the *Operation of Glen Canyon Dam Final Environmental Impact Statement*. The Grand Canyon Protection Act directs the Secretary of the Interior to operate Glen Canyon Dam "... in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established, including, but not limited to natural and cultural resources and visitor use." The Glen Canyon Dam Adaptive Management Program provides an organization and process for cooperatively integrating dam operations, downstream resource protection and management, and monitoring and research information. In December 2016, the Secretary of the Interior signed a new Record of Decision for dam operations that commits the Department of the Interior to a renewed 20-year program of adaptive management within the Colorado River ecosystem intended to fulfill the mandates of the Grand Canyon Protection Act.

- **Overflights Management.** The Grand Canyon National Park Enlargement Act of 1975 requires studies on potential significant adverse effects of overflights. The National Parks Overflight Act of 1987 requires restoration of natural quiet and visitor experience in the park. In April 1996, President Bill Clinton issued a presidential memorandum titled "Earth Day Initiative, Parks for Tomorrow," which, among other things, required development of a management plan to complete restoration and maintenance of natural quiet in Grand Canyon, as required by the National Parks Overflight Act of 1987, not more than 12 years from the date of issuance of the memorandum. Although the date was not met, the park continues to work toward resolution. In 2000, Congress passed the National Parks Air Tour Management Act, which affirms the requirement to achieve substantial restoration of natural quiet in the park and requires the Federal Aviation Administration, in consultation with the National Park Service and the Grand Canyon Working Group, to create incentive routes for commercial air-tour quiet-technology aircraft operating in the park.
- **Government-to-Government Consultation.** Grand Canyon National Park maintains government-to-government consultative relationships with 11 federally recognized tribes that have significant historical, cultural, and spiritual connections with the Grand Canyon. Several of these tribes consider the Grand Canyon their place of origin, and most of Grand Canyon National Park is considered part of the larger ancestral homeland of these peoples. Management of all of the park's natural and cultural resources is of interest to the associated tribes. The Grand Canyon Enlargement Act, in particular, encourages the National Park Service to enter into agreements with interested Indian tribes to protect and interpret Grand Canyon in its entirety.

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	Inspirational Scenic Landscapes
Related Significance Statements	• Grand Canyon, with its immense size, dramatic color, and extensive geologic record exposures, is one of the planet's most iconic landscapes. • Grand Canyon National Park includes 277 miles of the Colorado River, which flows through and helped create the Grand Canyon. The Colorado River and its tributaries have shaped the complex natural and cultural histories of the park and surrounding region. • More than 1.1 million acres, or 94%, of Grand Canyon National Park is managed as wilderness and, when combined with contiguous public lands, represents one of the largest undeveloped areas in the United States.
Current Conditions and Trends	**Conditions** • Grand Canyon night skies are some of the darkest in the United States. • Night skies are generally considered to be of high quality, with some impacts observed associated with developed areas. • The park received provisional Dark Sky Park status in June 2016 from the International Dark Sky Association. Sixty percent of all light fixtures need to be dark sky compliant by 2019 in order to obtain full Dark Sky Park status. • The park is a Clean Air Act class I area, and air quality monitoring data demonstrates it has some of the cleanest air in the United States. • Although air quality monitoring suggests the park has some of the cleanest air in the country, air pollution still reaches levels sufficiently high to interfere with visitor enjoyment and damage park resources. Scenic views are sometimes obscured by pollution-caused haze and the average natural visual range reduced from about 185 miles (without the effects of pollution) to about 135 miles. On high pollution days the visual range is reduced to less than 90 miles. At night, air pollution scatters artificial lights, thus increasing the effect of light pollution on the night sky. • Most visitors access and experience the park's inspirational scenic landscapes by way of four scenic drives: West Rim Drive, a nationally significant cultural landscape; East Rim Drive; Cape Royal / Point Imperial Roads; and North Rim Entrance Road, a scenic byway. • The park's extensive trail network provides hiking access to the inner canyon and other scenic park settings. • The Arizona National Scenic Trail traverses the park. **Trends** • From 2006 to 2015, visibility improved on both the 20% clearest days and 20% haziest days, resulting in an overall improving visibility trend. Increasing use of energy efficient bulbs and dark sky compliant light fixtures is improving the protection of dark night skies and air quality. Nevertheless, use of energy certain efficient lights, such as LED bulbs, can conflict with preservation of dark night skies because they are brighter and contribute more blue light to the environment than previous lighting. In addition, both regional growth and the ease of adding artificial lighting to existing developments contribute to increases in regional light pollution.
Threats and Opportunities	**Threats** • Growth of surrounding and regional communities (St. George and Kanab, Utah; Las Vegas, Nevada; Cameron, Williams, Flagstaff, and Page, Arizona) threatens dark night skies and air quality conditions. More locally, threats include lighting on the South Rim within the park as well as in the Tusayan area, which can be viewed rather prominently at night from several North Rim viewpoints. • Potential development outside the park, including mining, and development inside the park could impact park views, air quality, and night skies. • Sources of air pollution include coal-fired power plants, copper smelters, urban development (including southern California, Las Vegas), fires, dust, vehicle exhaust, and agriculture. Past and future closures and emissions reduction from regional coal-fired power plants should improve air quality. • Fires—both managed and wild—may impact scenic views by harming or destroying native vegetation, and smoke from fires temporarily affects air quality and scenic views.

Fundamental Resource or Value	Inspirational Scenic Landscapes
Threats and Opportunities	**Opportunities** • Retrofit light fixtures. As part of its Centennial Campaign, the Grand Canyon Association is fundraising for the retrofit of as many as 1,500 light fixtures within the park. Sixty percent of all light fixtures need to be dark sky compliant by 2019 in order to obtain full Dark Sky Park status, and the association's funding will enable the park to meet that status. • Work with adjacent landowners to protect park views, air quality, and night skies. • Partner with Colorado Plateau Dark Sky Cooperative or other organizations to develop regionwide strategies to protect naturally dark skies. • Continue using opportunities through federal air quality programs (e.g., regional haze program) to work cooperatively with other federal and state air quality agencies and local stakeholders to reduce air quality impacts in the park.
Data and/or GIS Needs	• Night sky monitoring. • Visual resources inventory, including night skies.
Planning Needs	• Dark sky lighting retrofit implementation plan.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Americans with Disabilities Act of 1990 • Architectural Barriers Act of 1968 • Grand Canyon Protection Act of 1992 • National Environmental Policy Act of 1969 • National Park Service Concessions Management Improvement Act of 1998 • National Parks and Recreation Act of 1978 • Park System Resource Protection Act • Rehabilitation Act of 1973 • Wilderness Act of 1964 • Amendment to the Federal Water Pollution Control Act (Clean Water Act) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§4.10) "Lightscape Management" • NPS *Management Policies 2006* (§8.2) "Visitor Use" • NPS *Management Policies 2006* (§8.6) "Special Park Uses" • NPS *Management Policies 2006* (§9.3) "Visitor Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 9: *Law Enforcement Program* • Director's Order 41: *Wilderness Stewardship* • Director's Order 48A: *Concession Management*

Fundamental Resource or Value	Geologic Features and Processes
Related Significance Statements	• Grand Canyon, with its immense size, dramatic color, and extensive geologic record exposures, is one of the planet's most iconic landscapes.
Current Conditions and Trends	**Conditions** • Geologic research in many disciplines continues in the park. Research into Grand Canyon's origin and evolution is a dynamic field, partly as a result of new dating techniques and evolution of other geologic methods. Much Grand Canyon geologic research receives international interest. • Several well-known fossil sites receive significant visitation (ranger-led and independent exploration). Visitor use trends and associated site conditions are unknown. • Grand Canyon contains an estimated 1,000 caves. Only a small number have been recorded and documented, and additional studies of cave resource conditions and trends would be beneficial. Grand Canyon contains the largest known cave west of the Continental Divide, unique mineralogy and speleothem formations, and endemic cave species. Caves in the park also protect well-preserved cultural and paleontological resources. • Glen Canyon Dam altered the Colorado River's natural hydrological cycle and reduced the river's sediment load by more than 90%, leading to erosion of beaches, sandbars, and eolian deposits on river terraces and reduction of important backwater habitats. A great deal of research on the Colorado River's hydrology and geology is done each year as part of the Glen Canyon Dam Adaptive Management Program, including various high-flow experiments and other flow tests. Current trends show high-flow events can replenish sediment. • Due to the remote and rugged nature of most of the park, soils remain in generally good condition. In areas with high human use erosion rates and impacts on cryptobiotic crusts are greater. • Given its well-exposed and scenic geologic resources, Grand Canyon continues to play an important role in geoscience education and geoscience literacy efforts. • Natural geologic processes tend to be intact in Grand Canyon tributaries but can be impacted by climate change, fire regime changes in the headwaters, and ungulate management changes in the headwaters. • The Park System Resource Protection Act (2007) allows the National Park Service to seek compensation for injuries to natural and cultural resources and facilities; recovered funds are used to restore, replace, or acquire equivalent resources. **Trends** • Geologic processes continue mostly unimpeded (i.e., erosion, rifting, uplifting). • Continued research, both by park scientists and external partners, is leading to a greater understanding of the geologic and paleontological resources within the park. • Paleontological resources will receive greater attention as the Paleontological Resources Preservation Act (2009) is enforced in the National Park Service. • Rock surfaces along main trails continue to be defaced by visitors. • Colorado River operations continue to be managed under the Glen Canyon Dam Adaptive Management Program and will be managed through the *Glen Canyon Dam Long-Term Experimental and Management Plan*.

Fundamental Resource or Value	Geologic Features and Processes
Threats and Opportunities	**Threats** • Glen Canyon Dam has significantly altered natural river processes and, without operational modifications, will continue to do so. However, the *Glen Canyon Dam Long-Term Experimental Management Plan* will provide a comprehensive framework for adaptively managing Glen Canyon Dam over the next 20 years consistent with the Grand Canyon Protection Act and other provisions of applicable federal law. • Lower levels in Lake Mead have exposed massive reservoir sediment deposits between Separation Canyon and Pearce Ferry. These deposits effectively isolate the river from the uplands and could provide a vector for contaminated soils, if present, to come in contact with the public. • There is ongoing interest in mining mineral resources (especially uranium) from breccia pipes near the park boundary, particularly on the Coconino and Kanab Plateaus. Mining activities could have substantial impacts on park resources, including groundwater. • Climate change may further impact regional water availability and alter existing geologic processes such as hill slope processes and debris flow initiation. • Baseline information concerning cave resource extent, scope, and significance is lacking. Lack of appropriate management could put these resources at risk; less than 10% of Grand Canyon's caves are inventoried and mapped. Cave resources are also threatened by a lack of monitoring and mitigation protocols and by increased illegal visitation, looting, and climate change. • Paleontological resources lack adequate inventory and monitoring information. • Geologic hazards, including seismic activity on faults, possible renewed volcanism in the Uinkaret Volcanic Field, rock falls, and debris flows, potentially threaten the park. • Radionuclides are present in water discharged from some springs and may pose a human health hazard. It is unknown whether these radionuclides result from natural processes or from historic mining in the Grand Canyon region. • The park contains a variety of abandoned mineral lands, mostly small adits and shafts. Although some mines may provide important wildlife habitat, they pose human risks from poor air quality, collapse, and other hazards. The majority of accessible abandoned mine land sites with high human hazards have been mitigated. **Opportunities** • Increased study and education regarding the park's geology and paleontology, potentially including field schools, outdoor laboratories, and new interpretive programs. • Discovery, survey, and inventory of previously unknown caves, including opportunities to study and understand karst systems and landscapes within the park. • Continue to build internal park capacity regarding scientific expertise. • Build on existing partnerships with nationally recognized science organizations that work in the park (e.g., Grand Canyon Monitoring and Research Center, Utah State University, University of New Mexico). • Build on existing partnership with Northern Arizona University to mentor and develop graduate students in various areas of physical science. • Work with NPS Washington Support Office (WASO) and Intermountain Region (IMR) specialists to develop robust management and science tools. • Continue and build collaboration with the U.S. Geological Survey / Department of the Interior uranium withdrawal science team. • Work closely with river specialists in multiple agencies and within the park to adaptively manage river corridor resources.

Fundamental Resource or Value	Geologic Features and Processes
Data and/or GIS Needs	• Debris flow risk assessment for tributaries. • Fine-resolution (spatial and temporal) digital elevation models, vegetation maps, and imagery. • Inventory of mines and assessment of hazards posed by uranium mining and mineralization of geologic features in Grand Canyon. • Geologic hazards evaluations. • Cave inventory and mapping. • Cave data collection of sediment, microbiota, and water to determine ecology and vulnerability. • Cave visitation data (paired with bat counts). • Paleontological resources inventory. • High-resolution remote sensing data at multiple temporal scales to track changes in landscape form.
Planning Needs	• Comprehensive cave and karst resources plan. • Abandoned mineral lands implementation plan. • Paleontological resources protection plan. • Resource stewardship strategy.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Federal Cave Resources Protection Act of 1988 • Grand Canyon Protection Act of 1992 • National Environmental Policy Act of 1969 • National Parks and Recreation Act of 1978 • Paleontological Resources Preservation Act of 2009 • Park System Resource Protection Act • Amendment to the Federal Water Pollution Control Act (Clean Water Act) • 46 Stat. 1043 (1931) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (§4.3.7) "World Heritage List" • NPS *Management Policies 2006* (§4.8) "Geologic Resource Management" • NPS *Natural Resource Management Reference Manual 77* • Director's Order 77: *Natural Resource Protection* • Director's Order 100: *Resource Stewardship for the 21st Century* • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"

Fundamental Resource or Value	Biodiversity and Natural Processes
Related Significance Statements	• Grand Canyon, with its immense size, dramatic color, and extensive geologic record exposures, is one of the planet's most iconic landscapes. • Grand Canyon National Park includes 277 miles of the Colorado River, which flows through and helped create the Grand Canyon. The Colorado River and its tributaries have shaped the complex natural and cultural histories of the park and surrounding region. • The park's dramatic topography and range in elevations provide diverse habitats for a vast array of life, including rare, endangered, and endemic species.
Current Conditions and Trends	**Conditions** • Grand Canyon is a valuable wildlife resource due to its size, elevation range, and variety of habitats. • The park provides important habitat for mule deer, desert bighorn sheep, mountain lion, coyote, bobcat, a wide variety of small mammals, 56 reptiles and amphibians, and more than 350 species of birds including raptors and neotropical migrants. • Twenty-two species of bats have been detected in the park, and researchers are currently establishing population trends and threats. • The park is within the habitat range for a number of species listed by the federal government as threatened or endangered including, but not limited to, the California condor, Mexican spotted owl, southwestern willow flycatcher, razorback sucker, and humpback chub. • Other species recognized as sensitive / special status species include nine species of bats, desert bighorn sheep, northern goshawk, peregrine falcon, northern leopard frogs, flannelmouth sucker, bluehead sucker, bald and golden eagles. • A high number of known nesting pairs of Mexican spotted owls are using the unique side canyons below the rim and the microclimates found there. • Glen Canyon Dam operations continue to have long-term adverse impacts on natural and cultural resources along the Colorado River corridor. • Three of Grand Canyon's eight native fish are extirpated, and two are federally listed as endangered. The Colorado River and its tributaries in the park contain approximately 18 introduced fish species, but tributary habitats are intact. Native fish now dominate most reaches of the Colorado River in western Grand Canyon.

Fundamental Resource or Value	Biodiversity and Natural Processes
Current Conditions and Trends	**Conditions (continued)** • Since 2009 the National Park Service worked in partnership with the Bureau of Land Management, U.S. Fish and Wildlife Service, Arizona Game and Fish Department, and other partners to restore populations of endangered humpback chub (*Gila cypha*) to select tributaries of the Colorado River. Fish have been translocated to Havasu and Shinumo Creeks. • Two-hundred-fifty of the park's 373 known bird species are found along the Colorado River. Altered river geomorphology and associated vegetation changes have affected river corridor riparian habitat. • Knowledge of conditions and trends regarding riparian diversity is limited, including which endemic species may be present. • Factors reducing spatial heterogeneity across the landscape and promoting habitat fragmentation (fire suppression, roads, trails, flight corridors) negatively impact plant and wildlife species. • The high concentration and diversity of invertebrates serve as prey base for a myriad of species. • Historic land uses and activities such as ranching, grazing, water construction projects, mining, and road construction have altered the park's natural environment. • The Diamond Down segment of the Colorado River has been impacted by very high (60–90 feet) lake terraces caused by low levels at Lake Mead. **Trends** • Range expansion of some mammalian species including hognosed-skunk and javelina has been documented. • California condors are successfully nesting within the park; however, external threats to the species keep the population from growing. • Current data indicate a stable population of desert bighorn sheep in the park relative to other desert bighorn populations in the southwest. The park's population is susceptible, however, to stochastic events such as die-offs related to respiratory disease. • Current data indicate the population of Mexican spotted owls in the park is stable. • The elk population is anecdotally increasing on the South Rim, with the highest densities in developed areas. • The bison population on the North Rim is steadily increasing. There are no natural predators in the park, and hunting by humans outside the park is decreasing. • Based on survival rates, the mountain lion population appears to be sustainable but is susceptible to increased hunting pressure outside the park. • The mule deer population on the North Rim appears to be stable, and hunting outside the park boundaries is heavily managed by the Arizona Game and Fish Department. • Recent monitoring indicates that razorback sucker are spawning and native fish dominate the fish community in western Grand Canyon. Through fisheries management actions, a second spawning population of humpback chub was established in Havasu Creek, and nonnative trout have been reduced in Bright Angel Creek. However, brown trout are becoming established in Glen Canyon upstream. • Knowledge and understanding of riparian diversity is limited; therefore, trends are not known. • Ozone concentrations and exposure indices are surprisingly high for such a remote area. Concentrations are not yet at the EPA-established level to protect human health but are very close. Long-term monitoring reveals a steady rise in ozone concentrations through the 1990s that leveled out well above natural levels in the early 2000s and has not declined. Wet deposition of nitrates, ammonium, and sulfates has increased, but the increase is not statistically significant. Between the 1999 and 2001 growing seasons, a 6% increase in ultraviolet radiation was measured in the park. • Lake Mead water levels will continue to drive the riparian ecology between Separation Canyon and Pearce Ferry.

Fundamental Resource or Value	Biodiversity and Natural Processes
Threats and Opportunities	**Threats** • Adjacent development such as mining, grazing, timber harvesting, and water withdrawal could degrade native plant communities, destroy wildlife habitat, interrupt migration corridors, and disturb wildlife breeding activities. • Bison entered the park around 2000 and are believed to be impacting North Rim native plant communities and water resources. • Rocky Mountain elk and invasive brown-headed cowbirds are also of concern. Cowbirds, originally associated with Great Plains bison herds, expanded their range in response to agricultural and livestock practices beginning in the late 1800s and were first noted in the park in the 1930s. • Fish and other native aquatic species are threatened by changes to Colorado River flows wrought by Glen Canyon Dam and by nonnative fish predation and competition. • Human-wildlife habituation (elk in particular) puts animal and visitor safety and health at risk, especially in developed areas. • Terrestrial and aquatic systems inventories show invasive species are one of the greatest threats to ecosystem function. • Wildlife disturbances during critical reproductive periods, particularly from recreational overuse and development, are poorly understood. • Years of fire suppression may have permanently altered park forest communities. • Nonnative pests and pathogens pose threats to local biodiversity. • Zoonotic disease such as plague, rabies, and hantavirus are known in park wildlife. • Poaching exists in the park, particularly on North and South Rim boundaries. • Increasing South Rim elk populations could become an issue if winter range impacts and adverse human interactions increase. • Illegal trails, roads, camping, and other inadequate recreational practices disturb wildlife and destroy native vegetation. • Low-flying aircraft disturb wildlife. • White-nose syndrome is a devastating disease that has killed millions of bats across the United States. Monitoring of the park's bat species to detect white-nose syndrome is ongoing. • Natural communities are at risk for harmful effects from air pollution due to potential impacts to ozone sensitive plants, mercury contamination in wildlife, and nutrient enrichment from runoff and excess deposition of nitrogen. Air pollution in the park comes from external and internal sources such as: coal-fired power plants, copper smelters, urban development (including southern California, Las Vegas), fires, dust, vehicle exhaust, and agriculture. • Climate change may increase extreme storm and heat events, drought, flooding, invasive species, and a northward shift in native species habitats. **Opportunities** • Continued collaboration with the Grand Canyon Association on new wildlife studies. • Continued collaboration with external partners such as the U.S. Geological Survey, Bureau of Reclamation, U.S. Fish and Wildlife Service, universities, Peregrine Fund, and Arizona Game and Fish Department to promote better wildlife and fish conservation with better research. • Continue using opportunities through federal air quality programs (e.g., regional haze program) to work cooperatively with other federal and state air quality agencies and local stakeholders to reduce air quality impacts in park.

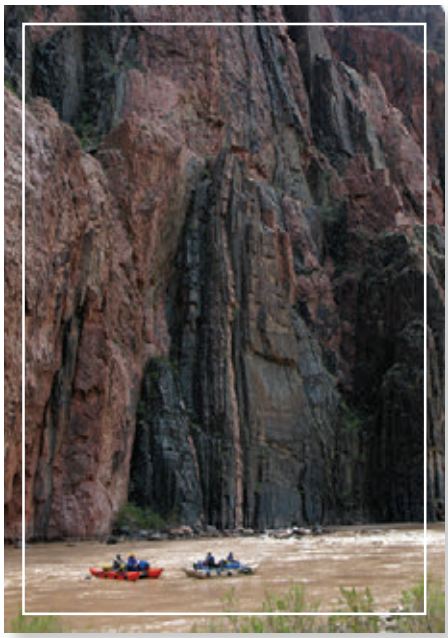
Fundamental Resource or Value	Biodiversity and Natural Processes
Data and/or GIS Needs	• Population level data on the park's 22 bat species and threats from white-nose syndrome and mercury contamination. • Data on the history and current status of and trends in the North and South Rim elk populations, as well as elk habitat use patterns and interactions with other ungulates, predators, and humans. • Data on bison movement and ecology on the North Rim. • Data on status of Mexican spotted owl population in the park. • Population estimates for native fish species, including juvenile survival and recruitment rates. • Information on trend and distribution of javelina in park and their effects on park resources. • Information on numbers and distribution of burros in park. • Nest surveys of goshawks and golden eagles to determine condition and trend of these species. • Migrant and wintering bird surveys. • Data on specific mechanisms causing reduced aquatic invertebrate richness in the Colorado River. • Continued research and monitoring of razorback sucker population dynamics. • Colorado pikeminnow reintroduction feasibility study (see *Comprehensive Fisheries Management Plan*). • Assessment of high-risk predatory nonnative fish species. • Modeling of stream channel sensitivity to watershed disturbance to assess overall trend in species composition and determination of overall condition and trend of fish community. • Spatial data for at least three special-status plant taxa known to occur in analysis area (*Ipomopsis tridactyla*, *Phyllodoce empetriformis*, and *Silene menziesii*). • Sampling surveys across less visited areas of the park for special status species to improve understanding of spatial distributions. • Social science research to develop new, more effective ways to convince hunters to reduce or eliminate use of lead-based ammunition in carcasses available to scavengers. • Riparian woodlands—historical extent (pre- and post-dam) and current extent and status, including ground truthing in known areas. • Regular surveys for exotic species at springs, especially in rim areas subject to impacts from ungulates and inner canyon areas with high human visitation. • Data collection and modeling of wildlife range expansion (or contraction) due to climate-induced variability. • Continued collection of fire effects and burn severity data. • Baseline inventory of biota, including reptiles, amphibians, small mammals, and insects. • Data on human-wildlife interactions.
Planning Needs	• Vegetation management plan. • Integrated pest management plan. • Climate change scenario planning. • Resource stewardship strategy. • Interagency bison management plan. • Elk management plan. • Human-wildlife interaction plan. • Nonnative fish management and emergency response plan.

Fundamental Resource or Value	Biodiversity and Natural Processes
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Bald and Golden Eagle Protection Act • Clean Air Act of 1977 • Endangered Species Act of 1973, as amended • Federal Insecticide, Fungicide, and Rodenticide Act • Federal Noxious Weed Act, as amended (1974, 1988, 1994) • Grand Canyon Protection Act of 1992 • Lacey Act, as amended (1900, 2008) • Migratory Bird Treaty Act of 1918 • National Environmental Policy Act of 1969 • National Invasive Species Act of 1996 • National Park Service Concessions Management Improvement Act of 1998 • National Parks and Recreation Act of 1978 • Park System Resource Protection Act • Wildfire Disaster Recovery Act of 1989 • Amendment to the Federal Water Pollution Control Act (Clean Water Act) • Executive Order 11514, "Protection and Enhancement of Environmental Quality" • Executive Order 11990, "Protection of Wetlands" • Executive Order 12088, "Federal Compliance with Pollution Control Standards" • Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds" • Executive Order 13751, "Safeguarding the Nation from the Impacts of Invasive Species" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (§4.4) "Biological Resource Management" • NPS *Management Policies 2006* (§4.4.1.1) "Plant and Animal Population Management Principles" • NPS *Management Policies 2006* (§4.4.1.2) "Genetic Resource Management Principles" • NPS *Management Policies 2006* (§4.4.2) "Management of Native Plants and Animals" • NPS *Management Policies 2006* (§4.4.2.2) "Restoration of Native Plant and Animal Species" • NPS *Management Policies 2006* (§4.5) "Fire Management" • NPS *Management Policies 2006* (§4.7) "Air Resource Management" • NPS *Management Policies 2006* (§4.9) "Soundscape Management" • Director's Order 9: *Law Enforcement Program* • Director's Order 18: *Wildland Fire Management* • Director's Order 47: *Soundscape Preservation and Noise Management* • Director's Order 77: *Natural Resource Protection* • Director's Order 77-7: *Integrated Pest Management* • Director's Order 100: *Resource Stewardship for the 21st Century* • NPS *Natural Resource Management Reference Manual 77* • NPS *Reference Manual 18: Wildland Fire Management* • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"

Fundamental Resource or Value	Diverse Recreational and Experiential Opportunities
Related Significance Statements	• Grand Canyon National Park includes 277 miles of the Colorado River, which flows through and helped create the Grand Canyon. The Colorado River and its tributaries have shaped the complex natural and cultural histories of the park and surrounding region. • More than 1.1 million acres, or 94%, of Grand Canyon National Park is managed as wilderness and, when combined with contiguous public lands, represents one of the largest undeveloped areas in the United States.
Current Conditions and Trends	**Conditions** *Undeveloped Areas* • Backcountry use is relatively stable due to a well-established permit system. Visitors spend approximately 90,000 user-nights annually in the backcountry, more than half in the Cross-Canyon Corridor including the North and South Kaibab and Bright Angel Trails. • The *Colorado River Management Plan* (2006) allows year-round river trip opportunities for 24,000 visitors and establishes parameters for 16 river concessionaires offering motorized and nonmotorized trips from April through October. Self-guided noncommercial trips are available for groups of as many as 16 people. More than six months of nonmotorized use provides outstanding opportunities to experience river-based solitude, night skies, and natural sounds. • The park has more than 400 miles of backcountry trails, many of which are unmaintained. • Backcountry activities include backpacking and overnight camping, day hiking, extended day hiking and running (including rim to rim), stock use, river-assisted backcountry travel (including pack rafting), and canyoneering. • Impacts on resources are more prevalent in the higher use backcountry areas including those in the Cross-Canyon Corridor and Threshold Zone. • Approximately 25 commercial use authorization permits are issued annually for backpacking, 40 for day hiking, 10 for bicycling, 5 for photography, 8 for Tuweep tours, and 3 for river equipment rental. *Developed Areas* • A variety of recreational opportunities are available in the park's developed areas—South Rim, the park's primary destination; North Rim; Tuweep; and Cross-Canyon Corridor. Most activities involve day-use canyon viewing supported by park- and concessioner-based visitor services. • Bicycling occurs on paved surfaces in developed areas, with some use of utility / U.S. Forest Service roads. • Yearly Grand Canyon visitation has averaged around 4.5 million visitors per year and increased to 6 million in 2016. Visitation fluctuates seasonally. The average day-visitor spends approximately 7 hours in the park; multiday visitors spend 2.5 days. • More than 600 commercial use authorization permits are issued annually for transit services. Concession bus tours and the train take place through concession contracts. • Five commercial use authorization permits are issued annually for photography. Typically, photographers are active in developed areas above the canyon rim. • On average, 300 special park use permits are issued each year for weddings and First Amendment and other gatherings. • Approximately 75 filming permits are issued each year. • In 2015 and 2016, the shuttle bus system received an average of 7.4 million boardings per year. **Trends** • Overall visitation is increasing, including use of the shuttle system. • Visitation is increasing year-round. • More visitors are arriving by commercial bus or train.

Fundamental Resource or Value	Diverse Recreational and Experiential Opportunities
Current Conditions and Trends	**Trends (continued)** • During peak visitation periods, parking lots are full, there are lines to enter the park and to board shuttle buses, and lodging and campgrounds are full to capacity. • Commercial backpacking and day hiking is increasing. • The numbers of transportation tours are increasing. • Rim to rim hiking and running has increased significantly during the past 10 years. • Peak Corridor trail day use has increased more than 30% in 4 years.
Threats and Opportunities	**Threats** • Availability (or lack thereof) of high-quality visitor services affects visitor experiences. • Recreational trends and developing activities (canyoneering, climbing, pack rafting, mountain biking, geocaching) may not be included in or are inconsistent with current planning documents and park regulations. • Glen Canyon Dam altered the Colorado River ecosystem. Dam operations have a profound effect on quantity and quality of camping beaches along the Colorado River, which affects the quality of river and backcountry recreational activities and experiences. • Monitoring and tracking of commercial use authorization permits is difficult, and unauthorized uses can lead to impacts on visitor experience and resources. • Increasing visitation can negatively impact visitor experiences and park resources and put additional pressure on park facilities. • Although tour flights allow people to view and experience the Grand Canyon, they also can affect other visitors on the ground. Studies show that some backcountry visitors experience annoyance from overflights because the noise from flights is not part of their expectations. **Opportunities** • Work with park's Inter-tribal Advisory Council to repurpose Desert View area into a tribal heritage area. • Educate public on Leave No Trace principles, especially as related to human waste. • Effectively manage day use. • Work with commercial use authorization holders and concessioners on visitor education and outreach. • Improve process to evaluate, monitor, and track commercial use authorization permits. • Expand shuttle bus operation.
Data and/or GIS Needs	• Commercial use authorization data (including where buses and day hiking groups go and when). • Visitor use monitoring. • Visitor capacity studies by area. • Improve understanding of the density of users and activities in greater Grand Canyon landscape beyond boundaries of park, and evaluate how stressors may impact broader recreational landscape. • Data on emerging recreational uses and resource impacts.
Planning Needs	• Backcountry management plan. • Visitor use management plan. • Desert View plan. • Phantom Ranch concept plan. • Backcountry sign plan. • Commercial services strategy.

Fundamental Resource or Value	Diverse Recreational and Experiential Opportunities
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Americans with Disabilities Act of 1990 • Architectural Barriers Act of 1968 • Clean Air Act of 1977 • Grand Canyon Protection Act of 1992 • National Environmental Policy Act of 1969 • National Park Service Concessions Management Improvement Act of 1998 • National Parks and Recreation Act of 1978 • National Parks Air Tour Management Act of 2000 • National Parks Overflight Act of 1987 • Park System Resource Protection Act 2007 • Rehabilitation Act of 1973 • Wilderness Act of 1964 • Amendment to the Federal Water Pollution Control Act (Clean Water Act) • 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" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§1.4.6) "What Constitutes Park Resources and Values" • NPS *Management Policies 2006* (§1.6) "Cooperative Conservation Beyond Park Boundaries" • 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* (§6.4) "Wilderness Use Management" • NPS *Management Policies 2006* (§8.2) "Visitor Use" • NPS *Management Policies 2006* (§8.6) "Special Park Uses" • NPS *Management Policies 2006* (§9.1.7) "Energy Management" • NPS *Management Policies 2006* (§9.3) "Visitor Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 9: *Law Enforcement Program* • Director's Order 41: *Wilderness Stewardship* • Director's Order 47: *Soundscape Preservation and Noise Management* • Director's Order 48A: *Concession Management* • Director's Order 100: *Resource Stewardship for the 21st Century* • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"



Fundamental Resource or Value	Water Resources
Related Significance Statements	• Grand Canyon National Park includes 277 miles of the Colorado River, which flows through and helped create the Grand Canyon. The Colorado River and its tributaries have shaped the complex natural and cultural histories of the park and surrounding region.
Current Conditions and Trends	**Conditions** • Federal areas are subject to state and local water quality regulations. Grand Canyon National Park must meet Arizona State Water Quality Standards. • Glen Canyon Dam has caused tremendous changes to the Colorado River system in Grand Canyon. Water below the dam is colder and contains less sediment than historically. Daily fluctuations and artificial release patterns have significantly altered flood and sandbar deposits. • Park water resources inventory is incomplete; water quality and hydrologic data are limited or unavailable for most park water resources. The greatest amount of available water resource data is for the Colorado River, three small tributaries (Cottonwood, Hermit, and Pumphouse Spring), and the Roaring Springs / Bright Angel Creek system. • Many backcountry campsites and popular hiking areas are adjacent to park water resources; these areas are desirable to hikers as drinking water sources and destinations in the arid desert. • Tributary water quality, including springs, has been only partially assessed for contaminants and for risks including debris flows and flash floods. Monitoring has just begun on the impact of rim fires on stream resources (Shinumo and Nankoweap Creeks). Uranium and heavy metal sampling of springs also takes place. • Arizona's *2016 Clean Water Act Integrated Report* identifies several rivers and creeks in the park as impaired (failing to attain one or more state-designated beneficial uses). The Colorado River from Lake Powell to the Paria River, the Paria River, Diamond Creek, and Kanab Creek are listed as impaired due to selenium. The Paria River and Diamond Creek are listed as impaired due to suspended sediments. The Paria River is listed as impaired due to *E. coli*. • The riparian area between Separation Canyon and Pearce Ferry is influenced by Lake Mead. During high water these areas are inundated, whereas during low water (since 2008) these areas are exposed with massive reservoir terraces that isolate the river from upland communities, produce abnormally high sediment loads to the river and through eolian processes, and provide a novel vegetation community that changes depending on lake level.

Fundamental Resource or Value	Water Resources
Current Conditions and Trends	**Trends** • The Colorado River today is impacted by upstream and downstream dam regulation that also impacts water and sediment supply and characteristics. • Tributary streams continue to be variable in terms of water quality and quantity depending on annual snowpack, monsoon storms, and fire intensity. • Tributary water quality, quantity, and stream morphology will likely be more variable in the future due to predicted climate change impacts on the Kaibab and Coconino Plateaus and associated changes in fire intensity. • The majority of tributary streams (excluding the Paria and, to a lesser extent, the Little Colorado River) are spring-supported. Therefore, trends in water quantity are related to aquifer recharge of springs. • Spring water quality is variable and is being assessed. • Trends in spring flow are being investigated with past and current gages in a number of locations.
Threats and Opportunities	**Threats** • Knowledge of park water resources remains somewhat limited. Spring inventory and monitoring are difficult due to the park's rugged and remote terrain and current staffing. • Human domestic water supply developments inside and outside the park (such as wells) may have a serious impact on park water resources. • Mining near the park boundary, particularly for uranium, could impact both water quality and quantity inside the park. • Former mining inside and outside the park has impacted water quality in selected tributaries; other water resources have naturally occurring water quality problems. • Glen Canyon Dam has altered the ecosystem. The river system no longer provides all critical habitat components for native species, and some introduced species thrive in the altered environment. • Nonnative plant species, such as tamarisk, threaten streams, springs, seeps, and species that depend on them. Tamarisk is of special concern because it threatens backcountry seeps, springs, and Colorado River tributaries—among the most pristine watersheds and desert riparian habitats in the lower 48 states. The park has removed tens of thousands of individual tamarisk trees from hundreds of project sites across 63 Colorado River tributaries using manual tree removal, herbicides, and other methods. • Drainages for the Colorado, Little Colorado, and Paria Rivers and Kanab and Havasu Creeks originate outside the park; these and other park wetlands may be at risk from a variety of external pollutant sources such as grazing, mining operations, sewage, and atmospheric deposition. • Sections of the Paria River (suspended solids, *E. coli*, selenium), Kanab Creek (selenium), and the Colorado River (suspended solids, selenium) within the park are on the Section 303(d) list of impaired waters. • Water development projects proposed in areas adjacent to the park to support growing communities (Navajo Reservation; Kanab and St. George, Utah; Williams and Tusayan, Arizona) may impact park hydrologic resources. Wells and water withdrawals could significantly alter natural hydrological groundwater regimes and their accompanying processes. • Internal developments or management actions could impact park water sources and other park resources. • Recreational use and developments are concentrated near sensitive park water resources. Overall recreational use impact on water resources in many areas is unknown. Many established backcountry campsites are located closer than 200 feet to water in violation of park regulations. • Projected changes in precipitation such as drought and more frequent extreme storm events threaten water resources.

Fundamental Resource or Value	Water Resources
Threats and Opportunities	**Opportunities** • The park's general management plan acknowledges that the Colorado River and selected tributaries meet designation criteria under the Wild and Scenic Rivers Act. Prior to designation, a wild and scenic rivers study must be conducted. Under a cooperative agreement, Prescott College completed the eligibility study (2003) for Colorado River tributaries and main stem. Suitable segments are yet to be determined. • Continue to build internal park capacity regarding scientific expertise. • Build on existing partnerships with nationally recognized science organizations that work in the park (e.g., Grand Canyon Monitoring and Research Center, Utah State University, University of New Mexico). • Build on existing partnership with Northern Arizona University to mentor and develop graduate students in related physical science pursuits. • Work with NPS WASO and IMR specialists to develop robust management and science tools. • Continue and build collaboration with the U.S. Geological Survey / Department of the Interior uranium withdrawal science team. • Work closely with river specialists in multiple agencies, and within the park, to adaptively manage river corridor resources. • Continue to study feasibility of solutions for water supply that could reduce or eliminate dependence on Roaring Springs. For example, determine potential for a well to be developed on the North Rim to supply water. • Potentially, an infiltration gallery at Phantom Ranch could eliminate need for much of the failing Transcanyon Pipeline and restore some of captured flow at Roaring Springs.
Data and/or GIS Needs	• Studies and surveys for wild and scenic rivers designation. • Watershed condition assessment. • Better understanding of regional aquifers and how they connect with Grand Canyon seeps and springs. • Continuous water quality and quantity monitoring using stream gauges. • Spatial and temporal water quantity and quality data from representative springs. • Complete spring inventories and updated information for water quality, quantity, flora, and fauna. • Tributary hydrograph assessment. • Tributary fish habitat mapping and modeling. • Hyporheic zone mapping and modeling in tributaries. • Wastewater impacts on the inner canyon. • Roaring Springs (water source) hydrologic characterization and study of water availability and resiliency. • Fracture/fault mapping on the Kaibab Plateau to better understand groundwater movement. • Holistic karst groundwater model. • Measure changes in vegetation along tributaries. • Determine current status of marshes along the river corridor. • Database management: integration of disparate datasets to generate usable, comparable data to determine long-term trends in the mainstem and tributaries. • Assessment of Lake Mead river terraces. • Data on tamarisk removal using consistent methods. • Tamarisk beetle effects on hydro-riparian areas along mainstem and tributaries. • Trends in tamarisk mortality along the mainstem and tributaries using consistent methods.

Fundamental Resource or Value	Water Resources
Planning Needs	• Wetland preservation plan. • Resource stewardship strategy. • Water resource management plan. • Regional water resource strategy. • Comprehensive plan to address cave and karst resources. • Backcountry management plan.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Clean Air Act of 1977 • Clean Water Act • Comprehensive Environmental Response, Compensation, and Liability Act of 1980 • Endangered Species Act of 1973, as amended • Federal Insecticide, Fungicide, and Rodenticide Act • Grand Canyon Protection Act of 1992 • Migratory Bird Treaty Act of 1918 • National Environmental Policy Act 1969 • National Invasive Species Act of 1966 • National Parks and Recreation Act of 1978 • National Parks Omnibus Management Act of 1998 • NPS General Authorities Act of 1970 • Oil Pollution Act of 1990 • Park System Resource Protection Act 2007 • Water Resource Planning Act of 1965 • Watershed Protection and Flood Prevention Act of 1954 • Wild and Scenic Rivers Act of 1968 • Amendment to the Federal Water Pollution Control Act (Clean Water Act) • Executive Order 11514, "Protection and Enhancement of Environmental Quality" • Executive Order 11988, "Floodplain Management" • Executive Order 11990, "Protection of Wetlands" • Executive Order 12088, "Federal Compliance with Pollution Control Standards" • Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds" • Executive Order 13751, "Safeguarding the Nation from the Impacts of Invasive Species" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§2.3.1.9) "Wild and Scenic Rivers" • NPS *Management Policies 2006* (§4.3.4) "National Wild and Scenic Rivers System" • NPS *Management Policies 2006* (§4.6) "Water Resource Management" • NPS *Management Policies 2006* (§4.7) "Air Resource Management" • NPS *Management Policies 2006* (§9.5) "Dams and Reservoirs" • Director's Order 77-1: *Wetland Protection* • Director's Order 77-2: *Floodplain Management* • Director's Order 100: *Resource Stewardship for the 21st Century* • NPS *Natural Resource Management Reference Manual 77* • NPS *Procedural Manual 77-1: Wetland Protection* • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"

Fundamental Resource or Value	Cultural Resources and Tribal Values
Related Significance Statements	• The human–Grand Canyon relationship has existed for at least 12,000 years, and the park contains thousands of cultural resources that reflect the long-term human use and occupation of the area. • Eleven federally recognized tribes maintain strong historical, cultural, and spiritual connections to the area in and around the park.
Current Conditions and Trends	**Conditions** • Government-to-government consultation with the park's traditionally associated tribes provides opportunities for integration of tribal perspectives into NPS management. • Historic structure and ruins preservation are ongoing programs addressing historic and prehistoric fabric deterioration and maintenance. • Archeological site data collection is increasing; newly discovered sites are recorded when identified, condition assessments are made yearly, and an integrated database has been developed. An archeological monograph synthesizing the state of understanding of the archeological history of the Grand Canyon will be published in 2017. Tribes consider these sites to be the "footprint of the ancestors" and have a vested interest in how they are managed. • Significant and well-preserved archeological resources are found in the protected environments of the park's caves. • A 50-year agreement (beginning 2008) allows for continued Havasupai use of South Rim's Supai Camp. In a park/tribal partnership project, three new accessible units were completed in 2011 and other renovations and improvements followed. • Increased modern development is directly impacting Grand Canyon's cultural landscapes and historic character. • Adjacent land use directly impacts resources in some areas and threatens parkwide cultural resources and tribal values. • The National Park Service has been successful with mitigation efforts in some locations (through archeological excavations and visitor education) to minimize Glen Canyon Dam's adverse effects on significant historic properties. Tribal consultation and project involvement is an integral part of this work.

Fundamental Resource or Value	Cultural Resources and Tribal Values
Current Conditions and Trends	**Conditions (continued)** • Visitor use often has a negative effect on archeological site condition and tribal values, especially in the backcountry. Technological advances, such as GPS devices and use of social media to share archeological site locations and characteristics, have direct negative effects on cultural resources. • Annual reporting provides summaries of current conditions and identifies management needs for certain classes of cultural resources on a rotating basis (archeological sites, historic structures, and cultural landscapes). • Improvements to the museum collection facility (new roof and new heating, ventilation, and air conditioning system) better protects valuable collections for preservation in perpetuity. • Critical review of space utilization is being undertaken at the museum collection facility to account for long-term growth of archives and objects. • Increased documentation of the park's cultural landscape areas is ongoing, and historic structures reports are being prepared for the park's national register-listed buildings. • The culturally significant Desert View Watchtower and murals are in the process of being conserved using various preservation treatments in consultation with tribes. • Cultural resource program integration with other disciplines is helping to meet the ever-increasing demands of complex management issues. For example, fires can directly impact historic park properties. A dedicated fire archeologist helps manage concerns for preserving archeological sites while facilitating fire management goals. In addition, working closely with the hazard tree program has helped preserve cultural landscape areas by identifying locations where tree replanting is necessary following tree removals. • 4,403 archeological sites are currently documented, based on approximately 6% survey; 2,434 sites are in good condition (stable), 487 sites are in fair condition and require some form of treatment to return them to good condition, and 95 sites are in poor condition and require some form of treatment to return them to good condition. The condition of 1,387 sites is currently unknown. • Three cultural landscape areas are currently in good condition, despite development. Thirteen landscape areas require completed documentation and condition ratings but are believed to be in fair to good condition with low to moderate threats due to development. • There are currently 866 historic structures and buildings on the List of Classified Structures (database) and another 146 on the inactive list (building and structures that lack a determination of eligibility or nomination); 624 buildings and structures are in good condition, 203 are in fair condition and require treatment to return them to good condition, and 39 are in poor condition and require treatments to return them to good condition. • Known ethnographic resources include 25 landscape areas, 367 natural resources including plants, animals, insects, and birds, 68 places including archeological sites and specific places in the landscape, and 7 miscellaneous items. Information about ethnographic resources of the Grand Canyon comes from specific studies, gray literature searches, and tribal consultation activities and has been entered in the park's ethnographic database. The total number of these resources may never be known due to the sensitive nature of such information. **Trends** • Based on known site conditions, most sites are stable with moderate threats of disturbance from environmental and human factors. Water erosion is the most frequently reported effect along the river corridor. Sites in the front and backcountry are most frequently disturbed by human activities. • There is greater visitor understanding and interest in the importance of the park's general and tribal history and archeology due to increased visitor education and research.

Fundamental Resource or Value	Cultural Resources and Tribal Values
Threats and Opportunities	**Threats** • Current archeological inventories only cover about 6% of the park, and cave archeological resource knowledge is even more limited. Likewise, ethnographic inventories are incomplete, and most information is gleaned through project consultation or gray literature searches. This limited knowledge hampers staff ability to appropriately manage resources and values. • Historic properties and tribal interests are impacted by Glen Canyon Dam operations, park development, and other external threats including the proposed Navajo Escalade project, Tusayan expansion and development, and mining on nearby forest lands. • Historic structures, buildings and objects, such as trails and buildings, need appropriate maintenance. This is true for both NPS resources and concessioner facilities. • Both designated and at-large backcountry campsites impact archeological sites. Data recovery activities are needed at a number of these sites so they can continue to be used as camp locations while preserving their scientific value. • Continued development in historic districts throughout the park threatens the quality of the cultural landscape and historic character that makes these places eligible for listing in the National Register of Historic Places. • Climate change may impact historic properties, cultural landscapes, and traditional cultural resources. • Archeological sites and ethnographic resources are sometimes threatened due to unintended consequences of planned and unplanned wildland fire. • Emerging recreational pursuits, such as canyoneering and pack rafting, have the potential to expose previously unknown cultural resources to the effects of increased visitation and associated human disturbances. • Increased use of social media to share information threatens and could directly impact sensitive cultural resources. • Uranium mining and mineral exploration, hunting, off-road vehicle use, and cattle grazing may have direct and indirect impacts on certain types of cultural resources. • Bison on the North Rim are impacting archeological sites. • Increased visitation throughout the park could adversely affect cultural resources. • Transition of historic buildings to the National Park Service, specifically the powerhouse and powerhouse area buildings, will require considerable funding and personnel resources to be directed toward these structures for preservation and maintenance. **Opportunities** • Continue working with traditionally associated tribes to understand their histories and relationships with Grand Canyon and to identify and protect resources and places of tribal importance in the park. • Actively involve tribes in project planning, field activities, data analysis, and interpretation. • Share park resource reports and information with tribes. • Continue ranger monitoring activities to protect archeological sites in the front and backcountry. • Work with universities to develop an annual archeological field school to increase archeological site inventory. • Work with volunteer groups such as the Grand Canyon Historical Society to implement historic structures preservation activities. • Share staff between programs for cross-training opportunities and to develop work efficiencies. • Continue partnership with the Grand Canyon Association Field Institute to conduct inventory and monitoring activities. • Adaptively reuse historic buildings, specifically the powerhouse and powerhouse area buildings. • Continue baseline inventories and monitoring.

Fundamental Resource or Value	Cultural Resources and Tribal Values
Threats and Opportunities	**Opportunities (continued)** • Eliminate database and other archeological backlogs. • Cross-reference the cultural resources database with the caves database where archeological resources are present to facilitate sharing of inventory and monitoring data. • Continue reducing the museum collection backlog. • Finish preparing standards of procedures and guiding documents for the cultural resource program. • Expand understanding of tribal perspectives and relationships to the canyon and specific locations (i.e., Ribbon Falls, Colorado River).
Data and/or GIS Needs	• Ethnographic studies including Traditional Cultural Property determinations of eligibility. • Historic structure reports. • Cultural landscape reports for 13 park areas. • Monitoring to better understand trends in conditions of historic structures parkwide. • Update Grand Canyon's multiple properties nomination for historic and prehistoric archeological sites. • Complete determinations of eligibility or national register nominations for districts, buildings, and sites for various locations in the Grand Canyon. • North Rim bison monitoring to determine impacts of bison on cultural resources and tribal values. • Increase inventory of cultural resources in western Grand Canyon. • Archeological and ethnographic research in Deer Creek. • Re-inventory and re-record archeological sites on Walhalla Plateau. • Archeological and ethnographic inventory in Pasture Wash and Desert View areas. • Visitor capacity studies by area.
Planning Needs	• Resource stewardship strategy. • Transition plan for powerhouse and powerhouse area buildings. • Long-range interpretive plan. • Visitor use management plan.
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • American Indian Religious Freedom Act of 1978 • Antiquities Act of 1906 • Archaeological Resources Protection Act of 1979 • Grand Canyon Protection Act of 1992 • Historic Sites Act of 1935 • Indian Self-Determination and Education Assistance Act of 1975 • Museum Properties Management Act of 1955, as amended • National Environmental Policy Act of 1969 • National Historic Preservation Act of 1966, as amended • National Parks and Recreation Act of 1978 • Native American Graves Protection and Repatriation Act of 1990 • Park System Resource Protection Act • 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" • "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"

Fundamental Resource or Value	Cultural Resources and Tribal Values
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§1.4.6) "What Constitutes Park Resources and Values" • NPS *Management Policies 2006* (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • NPS *Management Policies 2006* (§8.10) "Natural and Cultural Studies, Research, and Collection Activities" • Director's Order 9: *Law Enforcement Program* • Director's Order 18: *Wildland Fire Management* • Director's Order 28: *Cultural Resource Management* • Director's Order 28A: *Archeology* • Director's Order 28B: *Ethnography* • Director's Order 71A: *Relationship with American Indian Tribes* • Director's Order 71B: *Indian Sacred Sites* • Director's Order 100: *Resource Stewardship for the 21st Century* • "NPS-28: Cultural Resources Management Guideline" • Presidential Memorandum Government-to-Government Relations with Native American Tribal Governments 1994 • Programmatic Agreement among the National Park Service, the Advisory Council on Historic Preservation, and the National Council of State Historic Preservation Officers (2008) • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change" • Director's Policy Memorandum 14-02, "Climate Change and Stewardship of Cultural Resources" • "Department of the Interior Policy on Consultation with Indian Tribes" • *The Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* • *The Secretary of the Interior's Standards for the Treatment of Historic Properties* • *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*

Analysis of Other Important Resources and Values

Other Important Resource or Value	Research
Current Conditions and Trends	**Conditions** • Active research is underway with multiple partners including Grand Canyon National Park, NPS Southern Colorado Plateau Network, U.S. Geological Survey, U.S. Fish and Wildlife Service, Arizona Game and Fish Department, Peregrine Fund, Northern Arizona University, Utah State University, University of New Mexico, and other universities. • There are active Cooperative Ecosystem Studies Units for research in many fields. • Many of the research products are held in the Science and Resource Management Museum Collections at the South Rim and online at the Integrated Resource Management Applications (IRMA) portal. The IRMA portal provides easy access to NPS applications that manage and deliver resource information to parks, partners, and the public. • At any given time, approximately 60 active studies are occurring in Grand Canyon National Park with 120 researchers. **Trends** • Opportunities for research partnerships are increasing. • Number of research permits is gradually increasing. • External and internal project funding is generally decreasing.
Threats and Opportunities	**Threats** • Funding challenges for important research. • Loss of continuity of research at park due to fluctuations in interest. • Potential loss of park specimens and associated field records due to lack of accountability (accessioning and cataloging). **Opportunities** • Continually update research needs list to address park management needs. • Identify partners interested in NPS priority research needs. • Work with Grand Canyon Association to develop science endowment fund to fund external research directed by National Park Service.
Data and/or GIS Needs	• Research efforts are identified in other FRV tables.
Planning Needs	• Research agenda. • Resource stewardship strategy.
Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the OIRV** • Archaeological Resources Protection Act of 1979 • Museum Properties Management Act of 1955, as amended • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • "Commercial and Private Operations" (36 CFR 5) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§2.3.1.4) "Science and Scholarship" • NPS *Management Policies 2006* (§4.2) "Studies and Collections" • NPS *Management Policies 2006* (§5.1) "Research" • NPS *Management Policies 2006* (§8.10) "Natural and Cultural Studies, Research, and Collection Activities" • Director's Order 24: *NPS Museums Collections Management* • Director's Order 53: *Special Park Uses* • "Department of the Interior Policy on Consultation with Indian Tribes" • NPS *Reference Manual 53: Reference Manual Special Park Uses* • NPS *Museum Handbook*, parts I, II, and III

Other Important Resource or Value	Partnerships
Current Conditions and Trends	**Conditions** • The park collaborates with multiple agencies on resource management, including state, federal, local, and tribal governments. • The official nonprofit partner of the park, Grand Canyon Association, raises funds and supports the park to enhance visitor experiences and resource protection. • The park has multiple partnerships with local community groups, tourism councils, and outfitters groups that promote park tourism. • The park works with multiple partners on public education and outreach. • The park has education and youth outreach programs serving the Grand Canyon Unified School District and other schools and communities throughout the country. • Concessioners (Xanterra, Delaware North and Forever Resorts) participate in donation programs, whereby overnight visitors are given the option to donate to the Grand Canyon Association, the cooperating association of the park. The park can then request those funds for uses that benefit park visitors, including interpretation and resource protection. **Trends** • Grand Canyon Association is getting larger and stronger and is advocating more for the park. • Established partnerships (e.g., tourism council, community groups) are growing. • Partnership opportunities have been increasing in the last few years.
Threats and Opportunities	**Threats** • Possible change of concessioners and related transition issues. **Opportunities** • Increased funding for park from friends group. • Work with Grand Canyon Association to develop science endowment fund to fund external research directed by National Park Service.
Data and/or GIS Needs	• None identified.
Planning Needs	• Resource stewardship strategy. • Partnerships strategy.
Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the OIRV** • National Park Service Concessions Management Improvement Act of 1998 • Executive Order 13175, "Consultation and Coordination with Indian Tribal Governments" • Executive Order 13352, "Facilitation of Cooperative Conservation" • "Commercial and Private Operations" (36 CFR 5) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§1.6) "Cooperative Conservation Beyond Park Boundaries" • NPS *Management Policies 2006* (§1.10) "Partnerships" • NPS *Management Policies 2006* (§7.6) "Interpretive and Educational Partnerships" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 21: *Donations and Philanthropic Partnerships* • Director's Order 32: *Cooperating Associations* • Director's Order 48A: *Concession Management* • Director's Order 75A: *Civic Engagement and Public Involvement* • Director's Order 100: *Resource Stewardship for the 21st Century* • "Department of the Interior Policy on Consultation with Indian Tribes"

Other Important Resource or Value	Wilderness
Current Conditions and Trends	**Conditions** • Grand Canyon manages more than 1.1 million acres of proposed and proposed potential wilderness as designated wilderness while awaiting congressional action. • Conditions of resources and visitor experience in wilderness are generally acceptable. • Visitors have outstanding opportunities to experience wilderness at Grand Canyon National Park. • Natural soundscapes tend toward poorer quality (more noise) in frontcountry and along air tour corridors and higher quality (less noise) in areas devoid of anthropogenic noises. **Trends** • Conditions in wilderness are generally stable with some negative impacts from human waste, construction of toilets, trail maintenance, overflights, increased numbers of exotic species, resource management, and fire management.
Threats and Opportunities	**Threats** • Threats to natural quality of wilderness include loss of native species, climate change, air pollution, proliferation of nonnative species (including alteration of fire regimes and natural disturbance cycles), and activities outside the park. • Threats to undeveloped quality of wilderness include structures inside wilderness, short-term use of motorized equipment, helicopter flyovers and landings, unauthorized use of unmanned aircraft systems (drones), mechanical transport in wilderness, and semipermanent equipment placed by researchers. • Threats to untrammeled quality of wilderness include nonnative vegetation removal, trail stabilization, Glen Canyon Dam operations, translocation of native fish, removal of nonnative fish, ignition of fires, wildlife research, wildland fire suppression, and trespass livestock. • Threats to solitude and primitive and unconfined types of recreation quality of wilderness include lack of understanding of wilderness values, increased visitation in popular areas of wilderness (reducing solitude), climbing bolts, enlargement of campsites due to visitor-caused impacts, visitor-directed campsite development, deposition of human waste and trash, and aircraft overflights (administrative, commercial, and private). Developments outside the wilderness, including developments outside the park, could threaten visitors' ability to obtain solitude inside wilderness. • Threats to cultural resources in wilderness, the fifth quality of wilderness, include intentional or unintentional damage or degradation of resources, theft and vandalism of cultural resources, and exposure of cultural resources to extreme weather events, erosion, and dam operations. • Air tours provide alternative visitor experience but are detrimental to natural quiet within park soundscapes. **Opportunities** • Educate visitors and students on wilderness values. • Create park wilderness team to prepare and review minimum requirement process.
Data and/or GIS Needs	• Wilderness character monitoring. • Data on anthropogenic sound and dark sky to improve estimates of sounds and light pollution in wilderness. • Targeted surveys of biodiversity, improved spatial information, and information on effects of management actions and treatments related to wilderness qualities and objectives. • Backcountry soundscape baseline data. • Visitor use studies related to wilderness. • Wilderness inventory (e.g., signs, bolts, research markers and equipment). • Wilderness character narrative. • Data on emerging recreational uses and resource impacts.

Other Important Resource or Value	Wilderness
Planning Needs	• Wilderness stewardship plan. • Visitor use management plan.
Laws, Executive Orders, and Regulations That Apply to the OIRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the OIRV** • Americans with Disabilities Act of 1990 • Architectural Barriers Act of 1968 • Clean Air Act of 1977 • Grand Canyon Protection Act of 1992 • National Environmental Policy Act of 1969 • National Park Service Concessions Management Improvement Act of 1998 • National Parks and Recreation Act of 1978 • National Parks Air Tour Management Act of 2000 • National Parks Overflight Act of 1987 • Park System Resource Protection Act • Wilderness Act of 1964 • Amendment to the Federal Water Pollution Control Act (Clean Water Act) • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • 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) "Visitor Use" • NPS *Management Policies 2006* (§8.6) "Special Park Uses" • NPS *Management Policies 2006* (§9.3) "Visitor Facilities" • NPS *Management Policies 2006* (chapter 10) "Commercial Visitor Services" • Director's Order 9: *Law Enforcement Program* • Director's Order 41: *Wilderness Stewardship* • Director's Order 47: *Soundscape Preservation and Noise Management* • Director's Order 48A: *Concession Management* • Director's Policy Memorandum 12-02, "Applying National Park Service Management Policies in the Context of Climate Change"

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 Grand Canyon National Park and the associated planning and data needs to address them:

- **Infrastructure, Financial, and Operational Sustainability.** The park's deferred maintenance backlog is more than half a billion dollars and growing. Almost 50% of park building and housing assets are more than 40 years old, and much of the park's infrastructure, including water and wastewater infrastructure, has exceeded the end of its life cycle. These fiscal realities place increasing strain on park operations and personnel and could negatively affect the visitor experience. Smart infrastructure management and replacement will be critical to the park's financial future. The park must continue to identify funding opportunities and partnerships to address infrastructure needs.

    - *Associated planning and data needs:* Comprehensive infrastructure and asset management plan; housing management plan; water and wastewater infrastructure improvement strategy; transcanyon water distribution pipeline replacement plan; financial plans and revenue projections; staffing and organizational assessment; partnerships strategy; communications infrastructure plan

- **Visitation and Visitor Safety.** Park visitation has grown in recent years, up 25% since 2005 and reaching 6 million people in 2016. The South Rim is the most popular area of the park, and traffic congestion, crowding, and natural and cultural resource impacts have become more serious there. Although the park's shuttle system addresses some of the vehicular congestion in the park, visitors often find long shuttle bus lines, queues to enter the park, limited parking, and campgrounds and lodging filled to capacity. Medical incidents and search and rescue operations have also increased with growing visitation.

    - *Associated planning and data needs:* Visitor capacity studies by area; visitor use monitoring; visitor use surveys; visitor use management plan; update to Lower Gorge section of the *Colorado River Management Plan*; accessibility self-evaluation and transition plan

- **Adjacent Land Management.** Grand Canyon National Park is bordered by a mix of federal, state, tribal, and private lands. Developments and management practices on lands adjacent to the park affect park resources and the visitor experience, including night sky viewing, water quality and quantity, air quality, wilderness character, cultural resources, scenic views, soundscapes, vegetation, and wildlife habitat and migration corridors.

    - *Associated planning and data needs:* Inventory of external planning efforts; data on local potable water consumption; inventory of uranium mining and related water withdrawals; visual resources inventory, including night skies; comprehensive water needs assessment for the Coconino Plateau; interagency bison management plan

- **Tribal Relationships and Engagement.** A high priority for Grand Canyon National Park is maintaining its long-standing relationships with the park's 11 traditionally associated tribes based on a shared interest in resource stewardship. Tribal input on park planning and projects needs to be considered and impacts on tribal values and relationships understood.

    - *Associated planning and data needs:* Desert View plan; recruitment and hiring strategy; Supai Camp needs assessment; Supai Camp improvement plan

- **Employee Safety, Community Building, and Community Well-Being.** Although operational leadership is well established as a risk management tool, the overall park safety system and health and wellness of employees are underdeveloped. Also a high priority for Grand Canyon is working on community building and well-being for the local community. The poverty rate in Grand Canyon community is 45%, and 75% of children in some grade levels at the Grand Canyon School qualify for a free or reduced price lunch. Mental health services, consistent health care, and community events are noticeably absent from the Grand Canyon community.

    - *Associated planning and data needs:* Five-year park strategic plan; housing management plan; staffing and organizational assessment; safety dashboard input; park values survey; community needs assessment; community building strategy; phase 2 of safety, health, and wellness program; long-term funding strategy for the Grand Canyon Clinic

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.

Criteria and Considerations for Prioritization. The following criteria were used to evaluate the priority of each planning or data need:

- Immediacy and magnitude of threat addressed by the planning or data need.
- Whether the planning or data need affects two or more divisions.
- Timeline for initiation. High priority items are those that the park intends to initiate in zero to three years, as funding allows. Medium priority items are those that the park intends to initiate in three to six years. Low priority items are those that the park intends to initiate in seven or more years.

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	Community building strategy	H	This strategy is the top priority for the park. It would formalize the community enhancement group and lay out a strategy for improving community health, safety, and wellness. It would address mental health services, consistent health care, community events, and other quality of life improvements. It would also address suicide prevention in the greater Grand Canyon community.
FRV	Transition plan for powerhouse and powerhouse area buildings	H	This plan would address adaptive re-use of the powerhouse on the South Rim.
Key Issue	Five-year park strategic plan	H	This plan would lay out a vision, goals, and top priorities for the park and its divisions for the next five years.
Key Issue	Supai Camp improvement plan	H	The plan would address facilities and long-term use of the site.
FRV, OIRV, Key Issue	Visitor use management plan	H	This plan would address increased visitation, especially on the South Rim. It would include components on transportation and the shuttle system, as well as messaging to improve pre-trip planning for visitors. More visitor use data is needed to inform development of this plan.
FRV	Backcountry management plan	H	This plan would address visitation and resource management in the backcountry. It is being prepared and is expected to be completed within 1–2 years. It would also involve developing the backcountry management programmatic agreement.
Key Issue	Transcanyon water distribution pipeline replacement plan	H	This plan would address replacement of the existing pipeline that provides water for visitors and employees.
Key Issue	Update to Lower Gorge section of the Colorado River management plan	H	This plan would focus on increased visitor use and resource protection challenges in the Lower Gorge.
FRV	Dark sky lighting retrofit implementation plan	H	Replacement, retrofit, or removal of light fixtures inside the park is necessary to preserve and protect natural darkness and to obtain International Dark Sky Park designation.
FRV, Key Issue	Desert View plan	H	Development of this plan is underway, and visioning workshops have been completed. This will be a multicomponent plan, including compliance.

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	Comprehensive infrastructure and asset management plan	H	This plan would address aging infrastructure and help the park prioritize its maintenance and engineering efforts.
Key Issue	Communications infrastructure plan	H	The focus of this plan would be communications infrastructure such as cell phone towers, Wi-Fi, and internet / broadband wiring inside the park. It would include a needs assessment.
Key Issue	Water and wastewater infrastructure improvement strategy	H	This strategy would be influenced by the Phantom Ranch concept plan. The transcanyon water distribution pipeline replacement plan would also be considered in development of the strategy.
FRV	Nonnative fish management and emergency response plan	H	The plan would focus on management of nonnative fish species and emergency response procedures for detected expansion or new nonnative species introduction.
Key Issue	Long-term funding strategy for the Grand Canyon Clinic	M	This strategy would develop a plan to have consistent, high-quality health services for the Grand Canyon community.
FRV, OIRV	Resource stewardship strategy	M	This strategy would prioritize resource management efforts.
FRV	Human-wildlife interaction plan	M	This plan would focus on improved visitor safety and reducing the occurrence of negative interactions, particularly between visitors and elk on the South Rim.
FRV	Phantom Ranch concept plan	M	This plan would inform the water and wastewater infrastructure improvement strategy. This would also be influenced by the Transcanyon Pipeline plan.
FRV	Comprehensive cave and karst resources plan	M	The park's cave and karst resources are important for wildlife, protect well-preserved cultural and paleontological resources, and are attractive to visitors. Currently, there is no comprehensive plan for managing these resources.
FRV	Paleontological resources protection plan	M	There currently is no comprehensive protection plan.
FRV	Climate change scenario planning	M	This planning should incorporate range expansion or contraction of species.
FRV	Commercial services strategy	M	This strategy should specifically address commercial use authorizations.

Planning Needs – Where A Decision-Making Process Is Needed			
Related to an FRV, OIRV, or Key Issue?	**Planning Needs**	**Priority (H, M, L)**	**Notes**
FRV	Regional water resource strategy	M	This strategy would incorporate a larger landscape consideration of water needs and uses.
OIRV	Wilderness stewardship plan	M	This plan would address the recommended wilderness in the park (approximately 1.1 million acres) and must be consistent with the backcountry management plan.
OIRV	Research agenda	M	This agenda would focus research on key issues and information needs, including the efforts of outside groups.
FRV, Key Issue	Interagency bison management plan	M	This plan would address the size and health of bison herds on the North Rim.
Key Issue	Accessibility self-evaluation and transition plan	M	This plan would lay out a strategy for accessibility improvements inside the park.
FRV	Abandoned mineral lands implementation plan	L	
FRV	Vegetation management plan	L	
FRV	Integrated pest management plan	L	
FRV	Elk management plan	L	
FRV	Backcountry sign plan	L	
FRV	Wetland preservation plan	L	
FRV	Water resource management plan	L	
FRV	Long-range interpretive plan	L	
OIRV, Key Issue	Partnerships strategy	L	This strategy would address new grant and partnership opportunities.
Key Issue	Housing management plan	L	
Key Issue	Recruitment and hiring strategy	L	This strategy would focus on increasing tribal engagement.
Key Issue	Phase 2 of safety, health, and wellness program	L	

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**
FRV	Roaring Springs (water source) hydrologic characterization and study of water availability and resiliency	H	To better understand water availability and trends.
FRV, Key Issue	Visitor use monitoring	H	To identify patterns and trends in visitation, particularly on the South Rim. Visitor use of the shuttle bus system and parking areas would be included. These data would inform the visitor use management plan.
FRV, Key Issue	Visitor capacity studies by area	H	For recreation and resource impacts. These studies would be used to address growing crowds and congestion and help maintain a high-quality visitor experience. They would inform a visitor use management plan.
OIRV, Key Issue	Visitor use surveys	H	To inform visitor use management plans.
Key Issue	Supai Camp needs assessment	H	To inform Supai Camp improvement plan.
Key Issue	Staffing and organizational assessment	H	To improve long-term park management. It could include workforce planning, position management, succession management, and office space utilization.

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**
FRV	Data on bison movement and ecology on the North Rim	H	Could reach out to partners to assist in project.
FRV	Improved understanding of density of users and activities in the greater Grand Canyon landscape beyond boundaries of park, and evaluation of how stressors may impact broader recreational landscape	H	To inform visitor use management planning and potential effects of actions inside park.
FRV	North Rim bison monitoring to determine impacts of bison on cultural resources and tribal values	H	To determine range of effects on cultural resources and tribal values of bison on the North Rim.
FRV	Increased inventory of cultural resources in western Grand Canyon	H	Would help prioritize monitoring and law enforcement needs in this vulnerable part of park.
Key Issue	Comprehensive water needs assessment for the Coconino Plateau	H	Would inform water resource planning efforts.
Key Issue	Community needs assessment	H	To better understand community wellness and quality of life. It would inform community improvement strategy.
FRV	Assessment of high-risk predatory nonnative fish species	H	To protect native fish species.
OIRV	Wilderness character narrative	H	Would inform backcountry management and wilderness stewardship plans.
Key Issue	Financial plans and revenue projections	H	To address financial sustainability.
FRV	Night sky monitoring	M	Would include photos and photometry of lights before and after light fixture retrofits as well as all-sky brightness data that would monitor night sky trends over time. Monitoring is required as part of final application for International Dark Sky Park designation and could help with interpretive programs related to night skies.

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**
FRV	Geologic hazards evaluations	M	For visitor and employee safety and to inform with infrastructure decisions.
FRV	Better understanding of regional aquifers and how they connect with Grand Canyon seeps and springs	M	For water resource management and water availability.
FRV, Key Issue	Visual resources inventory, including night skies	M	To inform park's stance on adjacent land use and developments.
FRV	Data collection and modeling of wildlife range expansion (or contraction) due to climate-induced variability	M	To inform wildlife and habitat management.
FRV	Watershed condition assessment	M	To inform water resource management.
FRV	Continuous water quality and quantity monitoring using stream gauges	M	To identify long-term trends.
FRV	Historic structure reports	M	To improve cultural resource management and recommend treatments for structures.
FRV	Cultural landscape reports for 13 park areas	M	To improve cultural resource management and recommend treatments for landscapes.
FRV	Monitoring of conditions of historic structures parkwide	M	To better understand trends and improve cultural resource management.
FRV	Complete determinations of eligibility or nominations to the National Register of Historic Places for districts, buildings, sites for various locations in the Grand Canyon	M	To improve cultural resource management.
Key Issue	Safety dashboard input	M	To improve employee safety and reduce injuries/incidents.
Key Issue	Park values survey	M	To inform community improvement strategy.

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**
FRV	Archeological and ethnographic research in Deer Creek	L	To discern archeological chronology and purpose of human-made features on west slope of the drainage and to synthesize human use and possible agricultural development of that part of canyon.
FRV	Re-inventory and re-record archeological sites on Walhalla Plateau	L	Systematic inventory of area is more than 30 years old. Archeological sites need to be recorded using current methods and recording forms. This research would allow a more in-depth understanding of chronological and human use patterns in this part of canyon.
FRV	Archeological and ethnographic inventory in Pasture Wash and Desert View areas	L	To understand breadth and complexity of settlement and use of the South Rim during prehistoric and historic periods, particularly of ancestral and modern American Indian peoples.
FRV	Debris flow risk assessment for tributaries	L	
FRV	Fine resolution (spatial and temporal) digital elevation models, vegetation maps, and imagery	L	
FRV	Inventory of mines and assessment of hazards posed by uranium mining and mineralization of geologic features in Grand Canyon	L	
FRV	Cave inventory and mapping	L	
FRV	Cave data collection of sediment, microbiota, water to determine ecology and vulnerability	L	
FRV	Cave visitation data (paired with bat counts)	L	
FRV	Paleontological resources inventory	L	Would include cave resources and be done in accordance with the Paleontological Resources Preservation Act of 2009.

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**
FRV	Population level data on park's 22 bat species and threats from white-nose syndrome	L	
FRV	Data on history and current status of and trends in North and South Rim elk populations, as well as elk habitat use patterns and interactions with other ungulates, predators, and humans	L	
FRV	Data on status of Mexican spotted owl population in park	L	
FRV	Information on trend and distribution of javelina in park and their effects on park resources	L	
FRV	Information on numbers and distribution of burros in park	L	
FRV	Nest surveys of goshawks and golden eagles to determine condition and trend of these species	L	
FRV	Migrant and wintering bird surveys	L	
FRV	Population estimates for native fish species, including juvenile survival and recruitment rates	L	
FRV	Data on specific mechanisms causing reduced aquatic invertebrate richness in Colorado River	L	
FRV	Continued research and monitoring of razorback sucker population dynamics	L	
FRV	Colorado pikeminnow reintroduction feasibility study	L	See *Comprehensive Fisheries Management Plan*.

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**
FRV	Modeling of stream channel sensitivity to watershed disturbance data to assess overall trend in species composition and determination of overall condition and trend of fish community	L	
FRV	Spatial data for at least three special-status plant taxa known to occur in analysis area (*Ipomopsis tridactyla, Phyllodoce empetriformis,* and *Silene menziesii*)	L	
FRV	Sampling surveys across less visited areas of park for special status species to improve understanding of spatial distributions	L	
FRV	Social science research to develop new, more effective ways to convince hunters to reduce or eliminate use of lead-based ammunition in carcasses available to scavengers	L	
FRV	Data on tamarisk removal using consistent methods	L	
FRV	Tamarisk beetle effects on hydro-riparian areas along mainstem and tributaries	L	
FRV	Trends in tamarisk mortality along mainstem and tributaries using consistent methods	L	
FRV	Historical extent (pre- and post-dam) and current extent and status of riparian woodlands, including ground truthing known areas	L	

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**
FRV	Regular surveys for exotic species at springs, especially on rim areas subject to impacts from ungulates and inner canyon areas with high human visitation	L	
FRV	Continued collection of fire effects and burn severity data	L	
FRV	Baseline inventory of biota, including reptiles, amphibians, small mammals, and insects	L	
FRV	Data on human-wildlife interactions	L	
FRV	Commercial use authorization data (including where buses and day hiking groups go and when)	L	
FRV, OIRV	Data on emerging recreational uses and resource impacts	L	
FRV	Studies and surveys for wild and scenic rivers designation	L	
FRV	Spatial and temporal water quantity and quality data from representative springs	L	
FRV	Complete spring inventories and updated information for water quality, quantity, flora, and fauna	L	
FRV	Tributary hydrograph assessment	L	
FRV	Tributary fish habitat mapping and modeling	L	
FRV	Hyporheic zone mapping and modeling in tributaries	L	
FRV	Wastewater impacts on inner canyon	L	

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**
FRV	Fracture/fault mapping on Kaibab Plateau to better understand groundwater movement	L	
FRV	Holistic karst groundwater model	L	
FRV	Measure changes in vegetation along tributaries	L	
FRV	Current status of marshes along river corridor	L	
FRV	Database management: Integration of disparate datasets to generate usable, comparable data to determine long-term trends in mainstem and tributaries	L	
FRV	Assessment of Lake Mead river terraces	L	
FRV	Ethnographic studies including Traditional Cultural Property determination of eligibility	L	
FRV	Update Grand Canyon's multiple properties nomination for historic and prehistoric archeological sites	L	
FRV	High resolution remote sensing data at multiple temporal scales to track changes in landscape form	L	Particularly related to Lake Mead sedimentation, river channel dynamics in the old lake (Separation Canyon to Pearce Ferry), and for debris flow monitoring in tributaries.
OIRV	Visitor use studies related to wilderness	L	
OIRV	Wilderness character monitoring	L	
OIRV	Data on anthropogenic sound and dark sky to improve estimates of sounds and light pollution in wilderness	L	

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**
OIRV	Targeted surveys of biodiversity, improved spatial information, and information on the effects of management actions and treatments related to wilderness qualities and objectives	L	
OIRV	Backcountry soundscape baseline data	L	
OIRV	Wilderness inventory (e.g., signs, bolts, research markers and equipment)	L	
Key Issue	Inventory of external planning efforts	L	
Key Issue	Data on local potable water consumption	L	
Key Issue	Inventory of uranium mining and related water withdrawals	L	

Part 3: Contributors

Grand Canyon National Park

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Appendixes

Appendix A: Presidential Proclamations, Enabling Legislation, and Legislative Acts for Grand Canyon National Park

Copies of the most significant acts of enabling legislation mentioned here are contained in this appendix.

- Establishment of Grand Canyon Forest Reserve, Territory of Arizona; Proclamation No. 349, February 20, 1893
- Enlargement of Grand Canyon Forest Reserve, Territory of Arizona; Proclamation No. 547, May 6, 1905 (34 Stat. 3009)
- Enlargement of Grand Canyon Forest Reserve, Territory of Arizona; Proclamation No. 641, August 8, 1906 (34 Stat. 3223)
- Establishment of the Grand Canyon Game Preserve, Territory of Arizona; Proclamation No. 694, November 28, 1906
- Grand Canyon National Monument, Arizona; Proclamation No. 794, January 11, 1908 (35 Stat. 2175)
- An Act to establish the Grand Canyon National Park in the State of Arizona, approved February 26, 1919 (40 Stat. 1175) (PL 65-277)
- An Act to authorize the exchange of certain patented lands in the Grand Canyon National Park for certain Government lands in said park, approved May 10, 1926 (44 Stat. 497) (PL 69-210)
- An Act to revise the boundary of the Grand Canyon National Park in the State of Arizona, and for other purposes, approved February 25, 1927 (44 Stat. 1238) (PL 69-645)
- An Act making appropriations for the Department of the Interior for the fiscal year ending June 30, 1929, and for other purposes, approved March 7, 1928 (45 Stat. 200) (PL 70-100)
- An Act to authorize the appointment of a commissioner for Grand Canyon National Park, Arizona, approved September 14, 1959 (73 Stat. 258) (PL 86-258)
- An Act to provide for the acquisition of a patented mining claim on the south rim of Grand Canyon National Park, and for other purposes, approved May 28, 1962, (76 Stat. 79) (PL 87-456)
- An Act to further protect the outstanding scenic, natural, and scientific values of the Grand Canyon by enlarging the Grand Canyon National Park in the State of Arizona, and for other purposes, approved January 3, 1975 (88 Stat. 2089) (PL 93-620)

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

January 11, 1908.

A PROCLAMATION

Grand Canyon National Monument, Ariz. Preamble.

WHEREAS, the Grand Canyon of the Colorado River, which is situated upon public land within the Grand Canyon National Forest, in the Territory of Arizona, is an object of unusual scientific interest, being the greatest eroded canyon within the United States, and it appears that the public interests would be promoted by reserving it as a National Monument, with such other land as is necessary for its proper protection;

Now, therefore, I, Theodore Roosevelt, President of the United States of America, by virtue of the power in me vested by section two of the Act of Congress, approved June eighth, nineteen hundred and six, entitled, "An Act For the preservation of American antiquities," do proclaim that there are hereby reserved from appropriation and use of all kinds under all of the public land laws, subject to all prior valid adverse claims, and set apart as a National Monument, all the tracts of land, in the Territory of Arizona, shown as the Grand Canyon National Monument on the diagram forming a part hereof.

The reservation made by this proclamation is not intended to prevent the use of the lands for forest purposes under the proclamation establishing the Grand Canyon National Forest, but the two reservations shall both be effective on the land withdrawn, but the National Monument hereby established shall be the dominant reservation.

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

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

Done at the City of Washington this 11th day of January, in the year of our Lord one thousand nine hundred and eight, and of the Independence of the United States the one hundred and thirty-second.

[SEAL.]

THEODORE ROOSEVELT

By the President:

ELIHU ROOT

Secretary of State.

CHAP. 44.—An Act To establish the Grand Canyon National Park in the State of Arizona.

February 26, 1919.
[S. 390.]
[Public, No. 277.]

Grand Canyon National Park, Ariz.
Land set apart for.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby reserved and withdrawn from settlement, occupancy, or disposal under the laws of the United States and dedicated and set apart as a public park for the benefit and enjoyment of the people, under the name of the "Grand Canyon National Park," the tract of land in the State of Arizona particularly described by and included within metes and bounds as follows, to wit:

Description.

Beginning at a point which is the northeast corner of township thirty north, range one east, of the Gila and Salt River meridian, Arizona; thence west on township line between townships thirty and thirty-one north, range one east, to section corner common to sections one and two, township thirty north, range one east, and thirty-five and thirty-six, township thirty-one north, range one east; thence north on section lines to the intersection with Tobocobya Spring-Rowe Well Road; thence northwesterly along the southwesterly side of said Tobocobya Spring-Rowe Well Road, passing and in relation to United States Geological Survey bench marks stamped "Canyon" and numbered 6340, 6235, 6372, 6412, 6302, 6144, and 6129, through townships thirty-one and thirty-two north, ranges one east and one and two west, to its intersection with the section line between sections nine and sixteen in township thirty-two north, range two west; thence west along the section lines through townships thirty-two north, ranges two and three west, to its intersection with upper westerly rim of Cataract Canyon; thence northwesterly along upper rim of

Cataract Canyon, crossing Hualapai Canyon and continuing northwesterly along said upper rim to its intersection with range line, township thirty-three north, between ranges four and five west; thence north on said range line, townships thirty-three and thirty-four north, ranges four and five west, to north bank of the Colorado River; thence northeasterly along the north bank of the Colorado River to junction with Tapeats Creek; thence easterly along north bank of Tapeats Creek to junction with Spring Creek; thence easterly along the north bank of Spring Creek to its intersection with Gila and Salt River meridian, township thirty-four north, between ranges one east and one west and between section six, township thirty-four north, range one east, and section one, township thirty-four north, range one west; thence south on range line between ranges one east and one west to section corner common to sections seven and eighteen, township thirty-four north, range one east, and sections twelve and thirteen, township thirty-four north, range one west; thence east on section lines to section corner common to sections seven, eight, seventeen, and eighteen, township thirty-four north, range two east; thence south on section lines to township line between townships thirty-three and thirty-four north, range two east, at section corner common to sections thirty-one and thirty-two, township thirty-four north, range two east, and sections five and six, township thirty-three north, range two east; thence east on township line to section corner common to sections thirty-one and thirty-two, township thirty-four north, range three east, and sections five and six, township thirty-three north, range three east; thence south on section lines to section corner common to sections seventeen, eighteen, nineteen, and twenty, township thirty-three north, range three east; thence east on section lines to section corner common to sections thirteen, fourteen, twenty-three, and twenty-four, township thirty-three north, range three east; thence north on section lines to section corner common to sections one, two, eleven, and twelve, township thirty-three north, range three east; thence east on section lines to the intersection with upper rim of Grand Canyon; thence northerly along said upper rim of Grand Canyon to main hydrographic divide north of Nankoweap Creek; thence easterly along the said hydrographic divide to its intersection with the Colorado River, approximately at the mouth of Nankoweap Creek; thence easterly across the Colorado River and up the hydrographic divide nearest the junction of Nankoweap Creek and Colorado River to a point on the upper east rim of the Grand Canyon; thence by shortest route to an intersection with range line, townships thirty-three and thirty-four north, between ranges five and six east; thence south on said range line, between ranges five and six east, to section corner common to sections eighteen and nineteen, township thirty-three north, range six east, and sections thirteen and twenty-four, township thirty-three north, range five east; thence east on section lines to section corner common to sections sixteen, seventeen, twenty, and twenty-one, township thirty-three north, range six east; thence south on section lines to section corner common to sections eight, nine, sixteen, and seventeen, township thirty-one north, range six east; thence west on section line to section corner common to sections seven, eight, seventeen, and eighteen, township thirty-one north, range six east; thence south on section lines to township line between townships thirty and thirty-one north at section corner common to sections thirty-one and thirty-two, township thirty-one north, range six east, and sections five and six, township thirty north, range six east; thence west on township line to section corner common to sections thirty-four and thirty-five, township thirty-one north, range five east, and sections two and three, township thirty north, range five east; thence south on section line to section corner common to sections two,

three, ten, and eleven, township thirty north, range five east; thence west on section lines to range line, township thirty north, between ranges four and five east, at section corner common to sections six and seven, township thirty north, range five east, and one and twelve, township thirty north, range four east; thence south on range line, township thirty north, between ranges four and five east, to section corner common to sections seven and eighteen, township thirty north, range five east, and sections twelve and thirteen, township thirty north, range four east; thence west on section line to section corner common to sections eleven, twelve, thirteen, and fourteen, township thirty north, range four east; thence south on section line to section corner common to sections thirteen, fourteen, twenty-three, and twenty-four, township thirty north, range four east; thence west on section lines to section corner common to sections fifteen, sixteen, twenty-one, and twenty-two, township thirty north, range four east; thence south on section line to section corner common to sections twenty-one, twenty-two, twenty-seven, and twenty-eight, township thirty north, range four east; thence west on section lines to range line, township thirty north, between ranges three and four east, at section corner common to sections nineteen and thirty, township thirty north, range four east, and sections twenty-four and twenty-five, township thirty north, range three east; thence north on range line to section corner common to sections eighteen and nineteen, township thirty north, range four east, and sections thirteen and twenty-four, township thirty north, range three east; thence west on sections lines to section corner common to sections fourteen, fifteen, twenty-two, and twenty-three, township thirty north, range three east; thence north on section line to section corner common to sections ten, eleven, fourteen, and fifteen, township thirty north, range three east; thence west on section lines to range line at section corner common to sections seven and eighteen, township thirty north, range three east, and sections twelve and thirteen, township thirty north, range two east; thence north on range line to section corner common to sections six and seven, township thirty north, range three east, and sections one and twelve, township thirty north, range two east; thence west on section line to section corner common to sections one, two, eleven, and twelve, township thirty north, range two east; thence north on section line to township line at section corner common to sections thirty-five and thirty-six, township thirty-one north, range two east, and sections one and two, township thirty north, range two east; thence west on township line to the northeast corner of township thirty north, range one east, the place of beginning.

Administration by National Park Service. Vol. 39, p. 535.

SEC. 2. That the administration, protection, and promotion of said Grand Canyon National Park shall be exercised, under the direction of the Secretary of the Interior, by the National Park Service, subject to the provisions of the Act of August twenty-fifth, nineteen hundred and sixteen, entitled "An Act to establish a National Park Service, and for other purposes": *Provided*, That all concessions for hotels, camps, transportation, and other privileges of every kind and nature for the accommodation or entertainment of visitors shall be let at public bidding to the best and most responsible bidder.

Proviso. Concessions to highest bidder.

Rights of Havasupai Indians not abridged.

SEC. 3. That nothing herein contained shall affect the rights of the Havasupai Tribe of Indians to the use and occupancy of the bottom lands of the Canyon of Cataract Creek as described in the Executive order of March thirty-first, eighteen hundred and eighty-two, and the Secretary of the Interior is hereby authorized, in his discretion, to permit individual members of said tribe to use and occupy other tracts of land within said park for agricultural purposes.

Existing rights not affected.

SEC. 4. That nothing herein contained shall affect any valid existing claim, location, or entry under the land laws of the United States,

whether for homestead, mineral, right of way, or any other purpose whatsoever, or shall affect the rights of any such claimant, locator, or entryman to the full use and enjoyment of his land and nothing herein contained shall affect, diminish, or impair the right and authority of the county of Coconino, in the State of Arizona, to levy and collect tolls for the passage of live stock over and upon the Bright Angel Toll Road and Trail, and the Secretary of the Interior is hereby authorized to negotiate with the said county of Coconino for the purchase of said Bright Angel Toll Road and Trail and all rights therein, and report to Congress at as early a date as possible the terms upon which the property can be procured.

Bright Angel Toll Road and Trail. Purchase authorized.

Rights of way authorized. Vol. 31, p. 790.

SEC. 5. That whenever consistent with the primary purposes of said park the Act of February fifteenth, nineteen hundred and one, applicable to the locations of rights of way in certain national parks and the national forests for irrigation and other purposes, and subsequent Acts shall be and remain applicable to the lands included within the park. The Secretary of the Interior may, in his discretion and upon such conditions as he may deem proper, grant easements or rights of way for railroads upon or across the park.

For railroads.

Mineral prospecting permitted.

SEC. 6. That whenever consistent with the primary purposes of said park, the Secretary of the Interior is authorized, under general regulations to be prescribed by him, to permit the prospecting, development, and utilization of the mineral resources of said park upon such terms and for specified periods, or otherwise, as he may deem to be for the best interests of the United States.

Irrigation projects.

SEC. 7. That, whenever consistent with the primary purposes of said park, the Secretary of the Interior is authorized to permit the utilization of areas therein which may be necessary for the development and maintenance of a Government reclamation project.

Building, etc., restrictions on private lands.

SEC. 8. That where privately owned lands within the said park lie within three hundred feet of the rim of the Grand Canyon no building, tent, fence, or other structure shall be erected on the park lands lying between said privately owned lands and the rim.

Grand Canyon National Monument vacated.

SEC. 9. The Executive order of January eleventh, nineteen hundred and eight, creating the Grand Canyon National Monument, is hereby revoked and repealed, and such parts of the Grand Canyon National Game Preserve, designated under authority of the Act of Congress, approved June twenty-ninth, nineteen hundred and six, entitled "An Act for the protection of wild animals in the Grand Canyon Forest Reserve," as are by this Act included with the Grand Canyon National Park are hereby excluded and eliminated from said game preserve.

Park lands excluded from game preserve. Vol. 34, p. 607.

Approved, February 26, 1919.

CHAP. 281.—An Act To authorize the exchange of certain patented lands in the Grand Canyon National Park for certain Government lands in said park.

May 10, 1916.
[S. 3595.]
[Public, No. 210.]

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the owner of the land described as the northeast quarter of the northwest quarter of section 17, township 30 north, range 4 east, Gila and Salt River meridian, Arizona, containing 40 acres, more or less, and that portion of lot numbered 2 of section 17, township 30 north, range 4 east, Gila and Salt River meridian, Arizona, lying west of the east line of a right of way of a proposed road, described as follows: Beginning at a point on the south line of said section 17, eight hundred feet west of the quarter section corner of said section 17; thence north twenty-four degrees forty-five minutes west, five hundred feet; thence north fourteen degrees forty-five minutes west, five hundred feet; thence north thirteen degrees five minutes west, eight hundred and thirty-one feet to the intersection of the west line of the northeast quarter of the southwest quarter of said section 17; thence south one thousand seven hundred and forty-eight feet on the east line of the west half of the southwest quarter of said section 17 to the south line of said section 17; thence east along said south line, five hundred and twenty-three and five-tenths feet to the point of beginning, containing eight and nine-tenths acres, more or less, all within the Grand Canyon National Park, is hereby permitted and authorized to convey the fee simple title to said land to the United States of America, and select in lieu of said land above described the Government land within the area described as follows: Beginning at a point on the south line of section 17, township 30 north, range 4 east, Gila and Salt River meridian, Arizona, approximately eight hundred and seventy feet east of the south quarter section corner of said section 17, which point is south of a point just east of the east bank of a draw on the south rim of the Grand Canyon; thence north approximately five hundred and fifty feet to said point on the south rim of the Grand Canyon; thence northwesterly along the south rim of the Grand Canyon approximately four thousand eight hundred and ten feet to its intersection with the east line of the southeast quarter of the northwest quarter of said section 17; thence south on the north and south center line of said section 17 approximately three thousand seven hundred and seventy-five feet to the south line of said section 17; thence east along said south line of said section 17 approximately eight hundred and seventy feet to the point of beginning, containing twenty-five and eight-tenths acres, more or less, and the Secretary of the Interior is hereby authorized, empowered, and directed to accept a duly executed grant deed from said owner conveying said owner's land above described to the United States of America, and upon acceptance of such grant deed to cause to be issued and delivered to said owner a patent conveying absolutely to said owner the Government land above described: *Provided, however*, That the lands so conveyed by said owner shall become and be a part of the Grand Canyon National Park and be subject to all laws and regulations relating to said park.

Grand Canyon National Park, Ariz. Lands in, transferred to United States.

Description.

Lands to be selected in lieu.

Description.

Patent to owner.

SEC. 2. Upon the completion of the exchange authorized by the preceding section hereof there shall be, and is hereby, relinquished and quitclaimed to said owner any right, title, and interest that the United States of America may have in and to the now existing road over other land of said owner in the Grand Canyon National Park, the center line of said road being described as follows: Beginning at a point approximately at the south quarter section corner of section 17, township 30 north, range 4 east, Gila and Salt River meridian, Arizona, thence north ten degrees eleven minutes west, five hundred feet; thence north thirty-six degrees six minutes west, one hundred and forty-five feet; thence north forty-two degrees sixteen minutes west, one thousand seven hundred feet to the east line of the west half of the west half of said section 17.

Approved, May 10, 1926.

February 25, 1927.
[H. R. 9916.]
[Public, No. 645.]

CHAP. 197.—An Act To revise the boundary of the Grand Canyon National Park in the State of Arizona, and for other purposes.

Grand Canyon National Park, Ariz.

Boundary changed.
Vol. 40, p. 1175, amended.
Description.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the boundary of the Grand Canyon National Park is hereby changed so as to read as follows:

Beginning at a point on the present south boundary of Grand Canyon National Park, being the northeast corner of township 30 north, range 1 east, of the Gila and Salt River meridian, Arizona;

thence westerly along north line of said township to the northwest corner of section 1, said township; thence northerly along west line of section 36, township 31 north, range 1 east, to a point one-half mile south of the center line of the Supai road survey as mapped and staked by the Bureau of Public Roads during the field season of 1925; thence in a northwesterly direction following a line, which maintains a uniform distance one-half mile south and west of the center line of said road survey, to its intersection with the projected section line between what probably will be when surveyed sections 9 and 16, township 32 north, range 2 west; thence westerly along projected section lines through probable townships 32 north, ranges 2, 3, and 4 west, to its intersection with the upper west rim of Havasu (Cataract) Canyon; thence northwesterly along said upper west rim, crossing Hualapai Canyon to Wescogame Point and continuing northwesterly along said upper rim to Watahomigie Point; thence due north along the top of a ridge a distance of approximately three-fourths of a mile to the point of said ridge, the elevation of which is given as four thousand eight hundred and sixty-five feet; thence northwesterly, crossing Beaver Canyon, to Yumtheska Point and continuing northwesterly, following the lower rim of Yumtheska Point, crossing the projected range line between ranges 4 and 5 west to the divide west of Havasu Creek; thence northerly along said divide to the north bank of the Colorado River; thence northeasterly along said bank to the divide immediately west of Tapeats Creek; thence northeasterly along said divide, including the entire drainage area on the north side of Tapeats Creek, to the point at which this divide touches the ledge of cross-bedded sandstone generally known as the Coconino sandstone; thence southerly along said sandstone ledge to its junction with the Gila and Salt River meridian; thence southerly along the Gila and Salt River meridian to the northwest corner of what will probably be when surveyed section 18, township 34 north, range 1 east; thence easterly along projected section lines to the northeast corner of what will probably be when surveyed section 14, township 34 north, range 2 east; thence southerly along projected section line to the southeast corner of said section 14; thence easterly along projected section lines, a distance of approximately six miles to a point on the divide between South Canyon and Thompson Canyon; thence southeasterly along said divide, including the entire drainage area of Thompson Canyon and Neal Spring Canyon, to the intersection with the upper rim of the Grand Canyon; thence easterly along the main hydrographic divide north of Nankoweap Creek and Little Nankoweap Canyon to its intersection with the Colorado River, approximately at the mouth of Little Nankoweap Canyon; thence due east across the Colorado River to the east bank of the Colorado River; thence southeasterly along said bank, to the north bank of Little Colorado River; thence easterly along said bank of Little Colorado River to its intersection with what probably will be when surveyed the east line of section 32, township 33 north, range 6 east, or the east line of section 5, township 32 north, range 6 east; thence southerly along projected section lines to the northeast corner of what probably will be when surveyed section 8, township 30 north, range 6 east; thence westerly along projected section lines to the southwest corner of what probably will be when surveyed section 6, township 30 north, range 5 east; thence southerly to the northeast corner of section 13, township 30 north, range 4 east; thence westerly to the northwest corner of said section 13; thence southerly to the southwest corner of said section 13; thence westerly along section lines to a point nine hundred and fifty feet west of the northeast corner of section 22, said township; thence due south a distance of one thousand three hundred and twenty feet

to a point on the south line of the north tier of forties of said section 22; thence westerly to the west line of said section 22; thence southerly along said west line, to the southwest corner of said section 22; thence westerly along section lines to the southwest corner of section 19, township 30 north, range 4 east; thence northerly to the northwest corner of said section 19; thence westerly to the southwest corner of section 14, township 30 north, range 3 east; thence northerly to the northwest corner of said section 14; thence westerly on section lines to the southwest corner of section 12, township 30 north, range 2 east; thence northerly along section lines to the north line of said township 30 north, range 2 east; thence westerly along said north township line to the place of beginning; and all of those lands lying within the boundary line above described are hereby included in and made a part of the Grand Canyon National Park; and all of those lands excluded from the present Grand Canyon National Park are hereby included in and made a part of the contiguous national forests, subject to all national forest laws and regulations.

Excluded lands added to national forests.

SEC. 2. That the provisions of the Act of February 26, 1919, entitled "An Act to establish the Grand Canyon National Park in the State of Arizona," the Act of August 25, 1916, entitled "An Act to establish a national park service, and for other purposes," and all Acts supplementary to and amendatory of said Acts are made applicable to and extended over the lands hereby added to the park: *Provided*, That the provisions of the Act of June 10, 1920, entitled "An Act to create a Federal power commission; to provide for the improvement of navigation; the development of water power; the use of the public lands in relation thereto; and to repeal section 18 of the River and Harbor Appropriation Act, approved August 8, 1917, and for other purposes," shall not apply to or extend over such lands.

National park provisions made applicable. Vol. 40, p. 1177; Vol. 39, p. 535.

Proviso. Water power Act, not applicable. Vol. 41, p. 1063.

Approved, February 25, 1927.

NATIONAL PARK SERVICE

National Park Service.

Director, and office personnel.

For the Director of the National Park Service and other personal services in the District of Columbia in accordance with the Classification Act of 1923, including accounting services in checking and verifying the accounts and records of the various operators, licensees, and permittees conducting utilities and other enterprises within the national parks and monuments, $70,200.

Accounting services.

Crater Lake, Oreg.

Crater Lake National Park, Oregon: For administration, protection, and maintenance, including not exceeding $1,800 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, $37,500; for construction of physical improvements, $9,600, of which not exceeding $3,000 shall be available for a warehouse, to be constructed in Medford, Oregon, on a site donated therefor, $4,400 for construction of two employees' cottages, and $2,200 for a checking station and cabin; in all, $47,100.

General Grant, Calif.

General Grant National Park, California: For administration, protection, and maintenance, $15,650, including $2,000 for a garbage incinerator.

Glacier, Mont.

Glacier National Park, Montana: For administration, protection, and maintenance, including necessary repairs to the roads from Glacier Park Station through the Blackfeet Indian Reservation to various points in the boundary line of the Glacier National Park and the international boundary, including not exceeding $2,900 for the purchase, maintenance, operation, and repair of horse-drawn and motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, including $10,000 for fire prevention, $163,200; for construction of physical improvements, $25,000, including not exceeding $18,500 for the construction of buildings, of which not exceeding $3,000 shall be available for a residence for the chief ranger, $2,200 for a ranger station, $5,000 for a warehouse, and $5,000 for fire caches; in all, $188,200.

Grand Canyon, Ariz.

Grand Canyon National Park, Arizona: For administration, protection, and maintenance, including not exceeding $2,100 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, $113,460; for construction of physical improvements, $55,540, including not exceeding $45,700 for the construction of buildings, of which not exceeding $1,700 shall be available for a checking station, $18,000 for an administration building, and $20,000 for a hospital building and equipment; in all, $169,000. The amount of $1,800 for the construction of a caretaker's cabin at sewage-purification plant, appropriated for the current fiscal year, is made immediately available for the construction of such employee's cottage in the Grand Canyon village site. Funds herein appropriated shall be available for the maintenance of a road within the following described area which is hereby added to and made a part of the Grand Canyon National Park: Beginning at the corner common to sections 14, 15, 22, and 23, township 30 north, range 4 east, Gila and Salt River meridian; thence west along the section line between sections 15 and 22 a distance of nine hundred and fifty feet; thence south a distance of one thousand three hundred and twenty feet to a point on the south line of the north tier of forties of said section 22; thence east a distance of one thousand six hundred and ten feet; thence north a distance of one thousand three hundred and twenty feet to a point on the line between sections 14 and 23; thence west along said section line a distance of six hundred and sixty feet to the place of beginning, containing an area of forty-eight and seventy-nine hundredths acres, more or less: *Provided*, That livestock permitted to graze in adjoining national forest areas shall be allowed to drift across the land described herein to private land north thereof within the park.

Public Law 86-258

September 14, 1959
[S. 1164]

AN ACT

To authorize the appointment of a commissioner for Grand Canyon National Park, Arizona.

Grand Canyon National Park, Ariz.
Appointment of commissioner.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the United States District Court for the District of Arizona shall appoint a special commissioner for the Grand Canyon National Park, Arizona. The commissioner shall hold office for four years, unless sooner removed by the district court, and he shall be subject to the general laws and requirements applicable to United States commissioners.

Petty offenses, trial.

62 Stat. 684.

SEC. 2. The jurisdiction of the commissioner in adjudicating cases brought before him shall be limited to the trial, and sentencing upon conviction, of persons charged with the commission of those misdemeanors classified as petty offenses (18 U.S.C. 1) relating to the violation of Federal laws or regulations applicable within the park: *Provided*, That any person charged with a petty offense may elect to be tried in the district court of the United States; and the commissioner shall apprise the defendant of his right to make such election, but shall not proceed to try the case unless the defendant, after being so apprised, signs a written consent to be tried before the commissioner. The exercise of additional functions by the commissioner shall be consistent with and be carried out in accordance with the authority, laws, and regulations of general application to United States commissioners. The rules of procedure set forth in title 18, section 3402, of the United States Code, shall be followed in the handling of cases by such commissioner. The probation laws shall be applicable to persons tried by the commissioner and he shall have power to grant probation.

62 Stat. 831.

Salary.

SEC. 3. The commissioner shall receive an annual salary to be fixed by the district court with the approval of the Judicial Conference of the United States and shall account for all fees, fines, and costs collected by him as public moneys. He shall reside within the boundary of the park or at some place reasonably adjacent thereto designated by the Secretary of the Interior with the approval of the district court.

Approved September 14, 1959.

Public Law 87-457

AN ACT

May 28, 1962
[S. 383]

To provide for the acquisition of a patented mining claim on the south rim of Grand Canyon National Park, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That, in order to acquire for Grand Canyon National Park certain private land strategically located inside the park on the south rim of Grand Canyon and to provide for the removal of surface structures thereon and the termination of mining activities in connection with such land which intrudes upon the rim of Grand Canyon and adversely affects the public enjoyment of the park, the Secretary of the Interior is authorized to accept on the terms hereinafter stated the conveyance of title to the Orphan Claim, a mining claim of approximately 20.64 acres patented to D. L. Hogan and C. J. Babbitt on March 23, 1906, patent numbered 43506: *Provided*, Said authority is conditioned upon the grantor releasing any extralateral rights it may have to follow under adjoining park lands any mineral discovery made on the aforesaid Orphan Claim. The grantor shall, within six months following the passage of this Act, execute to the United States deeds of conveyance of good and sufficient fee simple title to the said claim, subject to the following reservations and conditions:

Grand Canyon National Park. Mining claim, acquisition.

Conditions.

(a) All mineral rights on the said claim shall be reserved to the said grantor for a period of twenty-five years, but the exercise of said rights shall be limited to underground mining.

(b) Until the close of 1966 the grantor shall be permitted to maintain and operate the Grand Canyon Inn and related cottages and facilities and may reserve for said period the customary rights to use so much of the surface area of the claim as is necessary for mining operations.

(c) After 1966 and until the expiration of the mineral reservation the grantor shall have reserved to it the surface rights to only the following described tract of approximately three acres which is necessary to operate the said mine:

Description.

Beginning at an iron stake known as corner numbered 2 of the Orphan Claim, mineral survey numbered 2004 in section 14, township 31 north, range 2 east, Gila and Salt River base and meridian; thence north 41 degrees 03 minutes east 500 feet; thence north 60 degrees 15 minutes west 300 feet; thence south 41 degrees 03 minutes west 500 feet to the south end center of said claim; thence south 60 degrees 15 minutes east 300 feet to place of beginning, including all buildings and improvements as per survey of April 21, 1905.

Structures.

(d) Any structures erected on the reserved portion of surface rights shall be no more than two stories in height and shall be so designed as to be appropriate to the region.

Rights of grantor.

(e) The grantor shall be permitted to maintain and operate the present aerial tramway for not to exceed two years from the date of the conveyance to the United States; and throughout the allowable period of its mining to maintain and operate the sixty-thousand-gallon water tank; the access road across the claim to the mine area, the portal area of the present adit, and such ventilators from the mine as may be required by mine safety laws.

(f) The grantor shall be permitted to haul ore from its mining operations to such mills as directed by the Atomic Energy Commission or otherwise, over roads of the Grand Canyon National Park upon payment of use charges therefor, as agreed between the parties but reasonably calculated to provide such additional cost of maintenance of said roads, if any, as may be occasioned by such operations.

Rights of grantor.

SEC. 2. (a) In exchange for the foregoing conveyance to the United States of the said Orphan Claim and the release by the owner thereof of any claims to pursue any extralateral rights to the ore body under park land, the grantor shall have the right for a period of twenty-five years to mine and remove on a royalty basis all uranium ore and such other metalliferous ore of commercial value as can be recovered through the shaft existing on the Orphan Claim and additional underground workings beyond the northeast boundary of said claim, along the dip of any ore body apexing within the said claim: *Provided*, Said mining and removal rights shall be limited to underground mining, which shall be conducted so as not to disturb in any manner the surface of park land or the canyon walls, except for ventilation as required in accordance with mine safety laws: *Provided further*, That nothing in this Act shall be construed to create any obligation on the Atomic Energy Commission for the purchase of uranium derived from ores removed from beyond the vertical boundaries of the Orphan Claim: *Provided further*, That neither the enactment of this Act nor anything contained in it shall be construed to relieve any party from any liability which would or might otherwise exist for the removal of ore from beyond the boundaries of said Orphan Claim, if any such removal occurred prior to the enactment of this Act.

Royalty payments to U. S.

(b) The United States shall be paid a royalty for ore extracted from under Government lands pursuant to this section, in accordance with the following Uranium Percentage Royalty Schedule:

Mine value per dry ton	Royalty percentage of mine value per dry ton
$0.01 to $10.00	5 per centum
$10.01 to $20.00	5½ per centum
$20.01 to $30.00	6 per centum
$30.01 to $40.00	6½ per centum
$40.01 to $50.00	7 per centum
$50.01 to $60.00	7½ per centum
$60.01 to $70.00	8 per centum
$70.01 to $80.00	8½ per centum
$80.01 to $90.00	9 per centum
$90.01 to $100.00	9½ per centum
$100.01 or more	10 per centum

"Mine value per dry ton."

"Mine value per dry ton" is hereby defined as the dollar value per dry ton of crude ores at the mine as paid for by the Atomic Energy Commission or other Government agency before allowance for transportation and development; however, if the Government at any time hereafter does not establish and pay for said ores on a fixed or scheduled dollar value per dry ton of crude ores at the mine, or said ores contain salable minerals, some or all, or which are disposed of to a custom treatment plant or smelter for treatment and sale, then mine value per dry ton shall be the gross value per dry ton of said crude ore as paid for by the Atomic Energy Commission or other Government authorized agency mill or other buyer, less any allowances or reimbursements for the following specific items: (1) transportation of ores, and (2) treatment or beneficiation of ores; which specific items shall in such event be deducted from the gross sales price received from the metal content of said ores by the seller before said percentage royalty is calculated and paid.

Whenever mineral or other products are recovered which are not included in determining mine value per dry ton as defined herein, there shall be paid for such minerals or other products a royalty of 5 per centum of the gross value of such products at the mine site.

Provided, That on all ore having a mine value per dry ton of less than $50, the royalty to be paid hereunder shall not exceed 15 per centum of the grantor's net profit on such ore which shall be determined by the amount remaining from the total sales price of such ore after the payment of reasonable operating expenses, taxes, and cost depletion.

(c) When paid, the royalty shall be deposited to miscellaneous receipts of the Treasury in accordance with the provisions of title 31, United States Code, section 484.

Approved May 28, 1962.

Public Law 93-620

AN ACT

January 3, 1975
[S. 1296]

To further protect the outstanding scenic, natural, and scientific values of the Grand Canyon by enlarging the Grand Canyon National Park in the State of Arizona, and for other purposes.

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

Grand Canyon National Park Enlargement Act.

SHORT TITLE

SECTION 1. This Act may be cited as the "Grand Canyon National Park Enlargement Act".

16 USC 228a note.

DECLARATION OF POLICY

SEC. 2. It is the object of this Act to provide for the recognition by Congress that the entire Grand Canyon, from the mouth of the Paria

16 USC 228a.

River to the Grand Wash Cliffs, including tributary side canyons and surrounding plateaus, is a natural feature of national and international significance. Congress therefore recognizes the need for, and in this Act provides for, the further protection and interpretation of the Grand Canyon in accordance with its true significance.

ENLARGEMENT OF GRAND CANYON NATIONAL PARK BOUNDARIES

16 USC 228b.

SEC. 3. (a) In order to add to the Grand Canyon National Park certain prime portions of the canyon area possessing unique natural, scientific, and scenic values, the Grand Canyon National Park shall comprise, subject to any valid existing rights under the Navajo Boundary Act of 1934, all those lands, waters, and interests therein, constituting approximately one million two hundred thousand acres, located within the boundaries as depicted on the drawing entitled "Boundary Map, Grand Canyon National Park," numbered 113–20, 021 B and dated December 1974, a copy of which shall be on file and available for public inspection in the offices of the National Park Service, Department of the Interior.

48 Stat. 960.

Abolishment.

(b) For purposes of this Act, the Grand Canyon National Monument and the Marble Canyon National Monument are abolished.

Study.

(c) The Secretary of the Interior shall study the lands within the former boundaries of the Grand Canyon National Monument commonly known as the Tuckup Point, Slide Mountain, and Jensen Tank areas to determine whether any portion of these lands might be unsuitable for park purposes and whether in his judgment the public interest might be better served if they were deleted from the Grand Canyon National Park. The Secretary shall report his findings and recommendations to the Congress no later than one year from the date of enactment of this Act.

Report to Congress.

ACQUISITION OF LANDS BY DONATION OR EXCHANGE

16 USC 228c.

SEC. 4. (a) Within the boundaries of the Grand Canyon National Park, as enlarged by this Act, the Secretary of the Interior (hereinafter referred to as the "Secretary") may acquire land and interest in land by donation, purchase with donated or appropriated funds, or exchange.

(b) Federal lands within the boundaries of such park are hereby transferred to the jurisdiction of the Secretary for the purposes of this Act.

PROHIBITION AGAINST TAKING OF STATE OR INDIAN LANDS

16 USC 228d.

SEC. 5. Notwithstanding any other provision of this Act (1) land or interest in land owned by the State of Arizona or any political subdivision thereof may be acquired by the Secretary under this Act only by donation or exchange and (2) no land or interest in land, which is held in trust for any Indian tribe or nation, may be transferred to the United States under this Act or for purposes of this Act except after approval by the governing body of the respective Indian tribe or nation.

COOPERATIVE AGREEMENTS FOR UNIFIED INTERPRETATION OF GRAND CANYON

16 USC 228e.

SEC. 6. In the administration of the Grand Canyon National Park, as enlarged by this Act, the Secretary is authorized and encouraged to enter into cooperative agreements with other Federal, State, and local public departments and agencies and with interested Indian tribes providing for the protection and interpretation of the Grand

Canyon in its entirety. Such agreements shall include, but not be limited to, authority for the Secretary to develop and operate interpretative facilities and programs on lands and waters outside of the boundaries of such park, with the concurrence of the owner or administrator thereof, to the end that there will be a unified interpretation of the entire Grand Canyon.

PRESERVATION OF EXISTING GRAZING RIGHTS

SEC. 7. Where any Federal lands within the Grand Canyon National Park, as enlarged by this Act, are legally occupied or utilized on the effective date of this Act for grazing purposes, pursuant to a Federal lease, permit, or license, the Secretary shall permit the persons holding such grazing privileges to continue in the exercise thereof during the term of the lease, permit, or license, and periods of renewal thereafter: *Provided*, That no such renewals shall be extended beyond the period ending ten years from the date of enactment of this Act, except that any present lease, permit, or license within the boundaries of the Grand Canyon National Monument as abolished by subsection 3(b) of this Act may be renewed during the life of the present holder which renewals shall terminate upon the death of the present holder. 16 USC 228f.

AIRCRAFT REGULATION

SEC. 8. Whenever the Secretary has reason to believe that any aircraft or helicopter activity or operation may be occurring or about to occur within the Grand Canyon National Park, as enlarged by this Act, including the airspace below the rims of the canyon, which is likely to cause an injury to the health, welfare, or safety of visitors to the park or to cause a significant adverse effect on the natural quiet and experience of the park, the Secretary shall submit to the Federal Aviation Agency, the Environmental Protection Agency pursuant to the Noise Control Act of 1972, or any other responsible agency or agencies such complaints, information, or recommendations for rules and regulations or other actions as he believes appropriate to protect the public health, welfare, and safety or the natural environment within the park. After reviewing the submission of the Secretary, the responsible agency shall consider the matter, and after consultation with the Secretary, shall take appropriate action to protect the park and visitors. 16 USC 228g. 42 USC 4901 note.

PRESERVATION OF EXISTING RECLAMATION PROVISIONS

SEC. 9. (a) Nothing in this Act shall be construed to alter, amend, repeal, modify, or be in conflict with the provisions of sections 601 to 606 of the Colorado River Basin Project Act, approved September 30, 1968 (82 Stat. 885, 901). 16 USC 228h. 43 USC 1551-1556.

(b) Section 7 of the Act of February 26, 1919 (40 Stat. 1175, 1178), is amended to read as follows: 16 USC 227.

"Whenever consistent with the primary purposes of such park, the Secretary of the Interior is authorized to permit the utilization of those areas formerly within the Lake Mead National Recreation Area immediately prior to enactment of the Grand Canyon National Park Enlargement Act, and added to the park by such Act, which may be necessary for the development and maintenance of a Government reclamation project."

HAVASUPAI INDIAN RESERVATION

SEC. 10. (a) For the purpose of enabling the tribe of Indians known as the Havasupai Indians of Arizona (hereinafter referred to as the 16 USC 228i.

"tribe") to improve the social, cultural, and economic life of its members, the lands generally depicted as the "Havasupai Reservation Addition" on the map described in section 3 of this Act, and consisting of approximately one hundred and eighty-five thousand acres of land and any improvements thereon, are hereby declared to be held by the United States in trust for the Havasupai Tribe. Such map, which shall delineate a boundary line generally one-fourth of a mile from the rim of the outer gorge of the Grand Canyon of the Colorado River and shall traverse Havasu Creek from a point on the rim at Yumtheska Point to Beaver Falls to a point on the rim at Ukwalla Point, shall be on file and available for public inspection in the Offices of the Secretary, Department of the Interior, Washington, District of Columbia.

Administration.

(b) The lands held in trust pursuant to this section shall be included in the Havasupai Reservation, and shall be administered under the laws and regulations applicable to other trust Indian lands: *Provided*, That—

(1) the lands may be used for traditional purposes, including religious purposes and the gathering of, or hunting for, wild or native foods, materials for paints and medicines;

(2) the lands shall be available for use by the Havasupai Tribe for agricultural and grazing purposes, subject to the ability of such lands to sustain such use as determined by the Secretary;

(3) any areas historically used as burial grounds may continue to be so used;

Study.

(4) a study shall be made by the Secretary, in consultation with the Havasupai Tribal Council, to develop a plan for the use of this land by the tribe which shall include the selection of areas which may be used for residential, educational, and other community purposes for members of the tribe and which shall not be inconsistent with, or detract from, park uses and values; *Provided further*, That before being implemented by the Secretary, such plan shall be made available through his offices for public review and comment, shall be subject to public hearings, and shall be transmitted, together with a complete transcript of the hearings, at least 90 days prior to implementation, to the Committees on Interior and Insular Affairs of the United States Congress; and *Provided further*, that any subsequent revisions of this plan shall be subject to the same procedures as set forth in this paragraph;

Plan and transcript, transmittal to congressional committees.

Commercial industries, restrictions.

(5) no commercial timber production, no commercial mining or mineral production, and no commercial or industrial development shall be permitted on such lands: *Provided further*, That the Secretary may authorize the establishment of such tribal small business enterprises as he deems advisable to meet the needs of the tribe which are in accordance with the plan provided in paragraph (4) of this section;

Nonmembers, privileges.

(6) nonmembers of the tribe shall be permitted to have access across such lands at locations established by the Secretary in consultation with the Tribal Council in order to visit adjacent parklands, and with the consent of the tribe, may be permitted (i) to enter and temporarily utilize lands within the reservation in accordance with the approved land use plan described in paragraph (4) of this section for recreation purposes or (ii) to purchase licenses from the tribe to hunt on reservation lands subject to limitations and regulations imposed by the Secretary of the Interior; and

(7) except for the uses permitted in paragraphs 1 through 6 of this section, the lands hereby transferred to the tribe shall remain forever wild and no uses shall be permitted under the plan which

detract from the existing scenic and natural values of such lands.

Conservation measures.

(c) The Secretary shall be responsible for the establishment and maintenance of conservation measures for these lands, including, without limitation, protection from fire, disease, insects, or trespass and reasonable prevention or elimination of erosion, damaging land use, overgrazing, or pollution. The Secretary of the Interior is authorized to contract with the Secretary of Agriculture for any services or materials deemed necessary to institute or carry out any such measures. Any authorized Federal programs available to any other Indian tribes to enhance their social, cultural, and economic well-being shall be deemed available to the tribe on these lands so long as such programs or projects are consistent with the purposes of this Act. For these purposes, and for the purpose of managing and preserving the resources of the Grand Canyon National Park, the Secretary shall have the right of access to any lands hereby included in the Havasupai Reservation. Nothing in this Act shall be construed to prohibit access by any members of the tribe to any sacred or religious places or burial grounds, native foods, paints, materials, and medicines located on public lands not otherwise covered in this Act.

"Raintank Allotment", grazing rights.

(d) The Secretary shall permit any person presently exercising grazing privileges pursuant to Federal permit or lease in that part of the Kaibab National Forest designated as the "Raintank Allotment", and which is included in the Havasupai Reservation by this section, to continue in the exercise thereof, but no permit or renewal shall be extended beyond the period ending ten years from the date of enactment of this Act, at which time all rights of use and occupancy of the lands will be transferred to the tribe subject to the same terms and conditions as the other lands included in the reservation in paragraph (b) of this section.

"Havasupai Use Lands", use.

(e) The Secretary, subject to such reasonable regulations as he may prescribe to protect the scenic, natural, and wildlife values thereof, shall permit the tribe to use lands within the Grand Canyon National Park which are designated as "Havasupai Use Lands" on the Grand Canyon National Park boundary map described in section 3 of this Act, and consisting of approximately ninety-five thousand three hundred acres of land, for grazing and other traditional purposes.

(f) By the enactment of this Act, the Congress recognizes and declares that all right, title, and interest in any lands not otherwise declared to be held in trust for the Havasupai Tribe or otherwise covered by this Act is extinguished. Section 3 of the Act of February 26, 1919 (40 Stat. 1177; 16 U.S.C. 223), is hereby repealed.

Repeal.

AUTHORIZATION OF APPROPRIATIONS

16 USC 228j.

SEC. 11. There are authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act, not to exceed, however, $1,250,000, in the aggregate for the period of the five fiscal years beginning with the fiscal year ending June 30, 1074, for the acquisition of lands and property, and not to exceed $49,000 for the fiscal year ending June 30, 1974, $255,000 for the fiscal year ending June 30, 1975, $265,000 for the fiscal year ending June 30, 1976, and $235,000 for the fiscal year ending June 30, 1977, for development, plus or minus such amounts, if any, as may be justified by reason of ordinary fluctuations in construction costs as indicated by engineering cost indexes applicable to the types of construction involved herein. The sums authorized in this section shall be available for acquisition and development undertaken subsequent to the date of enactment of this Act.

Approved January 3, 1975.

Appendix B: Inventory of Administrative Commitments

The following table lists the general agreements, memorandums, and cooperative agreements that the park has entered into. They may be revised over time to meet park needs. It includes commitments that are specific to the park and is not an inventory of all laws applicable to the national park system.

Abbreviations: ACHP, Advisory Council on Historic Preservation; GCA, Grand Canyon Association; GLCA, Glen Canyon National Recreation Area; GRCA, Grand Canyon National Park; LAKE, Lake Mead National Recreation Area; NPS, National Park Service; SHPO, Arizona State Historic Preservation Officer

Name	Agreement Type	Stakeholders	Purpose
Memorandum of Understanding between Grand Canyon National Park and Glen Canyon National Recreation Area Regarding Management of Meadview, Arizona	Memorandum of understanding	GRCA, GLCA	Cooperation in managing Meadview.
Memorandum of Understanding between the National Park Service and the U.S. Coast Guard Regarding Recreational Boating in Lake Mead National Recreation Area, Glen Canyon National Recreation Area, and Grand Canyon National Park, Arizona	Memorandum of understanding	GLCA, GRCA, LAKE, U.S. Coast Guard	Cooperation in overseeing recreational boating in LAKE, GLCA, and GRCA.
Memorandum of Understanding between Grand Canyon National Park and Glen Canyon National Recreation Area Regarding Management of Lees Ferry, Arizona	Memorandum of understanding	GLCA, GRCA	Cooperation in managing Lees Ferry.
General Agreement between the National Park Service, Grand Canyon National Park, and the Havasupai Tribe Regarding Use and Occupancy of Supai Camp	General agreement	Havasupai Tribe, GRCA	Recognizes historic use and occupancy of Supai Camp by tribal members and establishes terms and conditions under which use and occupancy may occur.
Memorandum of Understanding between the National Park Service and the Hualapai Tribe Regarding the Area of Cooperation	Memorandum of understanding	GRCA, LAKE, Hualapai Tribe	Defines area of cooperation and provides process for mutually developing operational and management protocols for area.
Memorandum of Agreement Between Grand Canyon National Park and the Arizona State Historic Preservation Officer Regarding Hazardous Substance Investigations and Cleanup at the Orphan Mine Site, Grand Canyon National Park, Arizona	Memorandum of understanding	GRCA, SHPO	Cooperation in hazard substance investigations and cleanup at the Orphan Mine Site. Expires within eight years if stipulations are not completed unless signatories agree to extension.
Memorandum of Agreement Between the National Park Service and the Arizona State Historic Preservation Officer, Regarding the Comprehensive Fisheries Management Plan for Grand Canyon National Park and Glen Canyon National Recreation Area, Arizona	Memorandum of understanding	NPS, GRCA, GLCA, SHPO	Records terms and conditions agreed upon to resolve adverse effects on historic properties.

Name	Agreement Type	Stakeholders	Purpose
Programmatic Agreement By and Among the National Park Service, Grand Canyon National Park and the Arizona State Historic Preservation Officer Regarding Fire Management Plan at Grand Canyon National Park	Programmatic agreement	NPS, GRCA, SHPO	Cooperation in avoiding, minimizing, or mitigating potential effects to national register-eligible heritage resources in Colorado River corridor from implementation of fire management plan.
Amendment to Programmatic Agreement By and Among the National Park Service, Grand Canyon National Park and the Arizona State Historic Preservation Officer Regarding Fire Management Plan at Grand Canyon National Park	Programmatic agreement	NPS, GRCA, SHPO	Amendment to programmatic agreement regarding fire management plan.
Memorandum of Agreement for Archeological Excavations at Nine Sites Along the Colorado River in Grand Canyon National Park Among the National Park Service and the Arizona State Historic Preservation Officer, the Navajo Nation, the Havasupai Tribe, the Hopi Tribe, the Hualapai Tribe, the Kaibab Band of Paiute Indians, the Las Vegas Paiute Tribe, the Moapa Band of Paiute Indians, the Paiute Indian Tribe of Utah, the Pueblo of Zuni, the San Juan Southern Paiute Tribe, and the Yavapai-Apache Nation	Memorandum of understanding	NPS, SHPO, Navajo Nation, Havasupai Tribe, Hopi Tribe, Hualapai Tribe, Kaibab Band of Paiute Indians, Las Vegas Paiute Tribe, Moapa Band of Paiute Indians, Paiute Indian Tribe of Utah, Pueblo of Zuni, San Juan Southern Paiute Tribe, Yavapai-Apache Nation	Cooperation in addressing effects to cultural resources from archeological excavations at nine sites along Colorado River.
Memorandum of Agreement Regarding Collections, Inadvertent Discovery, and Intentional Excavation of Native American Human Remains, Funerary Objects, Sacred Objects, and Objects Of Cultural Patrimony at Grand Canyon National Park, Arizona	Memorandum of understanding	GRCA, Havasupai Tribe, Hopi Tribe, Kaibab Band of Paiute Indians, Las Vegas Paiute Tribe, Moapa Band of Paiute Indians, Navajo Nation, Paiute Indian Tribe of Utah, Pueblo of Zuni, San Juan Southern Paiute Tribe of Arizona, Yavapai-Apache Nation	Cooperation regarding collections, inadvertent discovery, and intentional excavation of American Indian human remains, funerary objects, sacred objects, and objects of cultural patrimony.

Name	Agreement Type	Stakeholders	Purpose
Programmatic Agreement Among the National Park Service, Advisory Council on Historic Preservation, Arizona State Historic Preservation Officer, the Hualapai Tribe, the Navajo Nation, the Havasupai Tribe, the Hopi Tribe, the Pueblo of Zuni, the Kaibab Band of Paiute Indians, the San Juan Southern Paiute Tribe, the Paiute Indian Tribe of Utah, the Las Vegas Paiute Tribe, the Moapa Band of Paiute Indians, and the Yavapai/ Apache Nation Concerning Impacts from Implementation of the Colorado River Management Plan for Grand Canyon National Park	Programmatic agreement	NPS, ACHP, SHPO, Hualapai Tribe, Navajo Nation, Havasupai Tribe, Hopi Tribe, Pueblo of Zuni, Kaibab Band of Paiute Indians, San Juan Southern Paiute Tribe, Paiute Indian Tribe of Utah, Las Vegas Paiute Tribe, Moapa Band of Paiute Indians, and Yavapai-Apache Nation	Cooperation in avoiding, minimizing, or mitigating potential effects to national register-eligible heritage resources in Colorado River corridor from implementation of Colorado River management plan.
Programmatic Agreement Among the Bureau of Reclamation, the Advisory Council on Historic Preservation, the National Park Service, the Arizona State Historic Preservation Officer, Havasupai Tribe, Hopi Tribe, Hualapai Tribe, Kaibab Paiute Tribe, Navajo Nation, San Juan Southern Paiute Tribe, Shivwits Paiute Tribe and Zuni Pueblo Regarding Operations of the Glen Canyon Dam	Programmatic agreement	Bureau of Reclamation, ACHP, NPS, SHPO, Havasupai Tribe, Hopi Tribe, Hualapai Tribe, Kaibab Paiute Tribe, Navajo Nation, San Juan Southern Paiute Tribe, Shivwits Paiute Tribe, Zuni Pueblo	Cooperation in addressing effects to cultural resources from operation of Glen Canyon Dam.
Grand Canyon National Park and Grand Canyon Association Friends Group Agreement	Friends group agreement	GRCA, GCA	Sets forth terms and conditions under which GCA may conduct a variety of fundraising, philanthropic, and related activities that benefit GRCA.
Grand Canyon National Park and Grand Canyon Association Friends Group Fundraising Agreement	Friends group fundraising agreement	GRCA, GCA	Authorizes GCA to design fundraising campaign that solicits money and/or in-kind goods and services above $1 million, up to $15 million for benefit of specifically identified GRCA projects or programs.
Grand Canyon Association Cooperating Association Agreement	Cooperating association agreement	GRCA, GCA	Authorizes GCA to operate retail operations including bookstores, publishing house, art gallery, and Field Institute for benefit of interpretive and educational programming at GRCA.
American Conservation Experience Youth Service Agreement	Annual task agreements under master cooperative agreement	NPS and American Conservation Experience	Provides rewarding environmental service opportunities for volunteers for benefit of GRCA natural and cultural resource protection.

Name	Agreement Type	Stakeholders	Purpose
Conservation Legacy Youth Service Agreement	Annual task agreements under master cooperative agreement	NPS and Arizona Conservation Corps; NPS and Southwest Conservation Corps	Provide rewarding environmental service opportunities for volunteers for benefit of GRCA natural and cultural resource protection.
Student Conservation Association Youth Service Programs	Annual task agreements under master cooperative agreement	NPS and Student Conservation Association	Provide rewarding environmental service opportunities for volunteers for benefit of GRCA natural and cultural resource protection.
Memorandum of Agreement between the National Park Service and Arizona State Historic Preservation Officer, regarding the Comprehensive Fisheries Management Plan for Grand Canyon National Park and Glen Canyon National Recreation Area, Arizona	Memorandum of understanding	AZ SHPO, GLCA, GRCA	Cooperation in avoiding, minimizing, or mitigating effects to cultural resources related to fisheries management in GRCA and GLCA.
NPS implementation of Brown Trout Conservation Measures	Interagency agreement	NPS, U.S. Bureau of Reclamation	Implementation of conservation measures for endangered fish species in Grand Canyon, by reducing the threat of brown trout predation and competition.
Lower Grand Canyon Razorback Sucker and Small-bodied Fish Monitoring	Interagency agreement	NPS, U.S. Bureau of Reclamation	Monitoring and research to evaluate the current status of razorback sucker in Grand Canyon, and determine the impacts of Glen Canyon Dam operations on the species.
Translocations of Humpback Chub in Grand Canyon	Interagency agreement	NPS, U.S. Bureau of Reclamation	Implementation of endangered humpback chub to tributaries within Grand Canyon to develop additional spawning and rearing opportunities.

Appendix C: List of Traditionally Associated American Indian Tribes

Traditionally associated tribes are tribes who remain attached to the park despite having been relocated from the area and:

- Who regard park resources as essential to their development and continued identity as a culturally distinct people
- Whose association began prior to the establishment of the park
- Whose association with the park has endured for at least two generations

The traditionally associated tribes are:

Havasupai Tribe

Hopi Tribe

Hualapai Tribe

Kaibab Band of Paiute Indians

Las Vegas Band of Paiute Indians

Moapa Band of Paiute Indians

Navajo Nation

Paiute Indian Tribe of Utah

San Juan Southern Paiute Tribe

Yavapai – Apache Nation

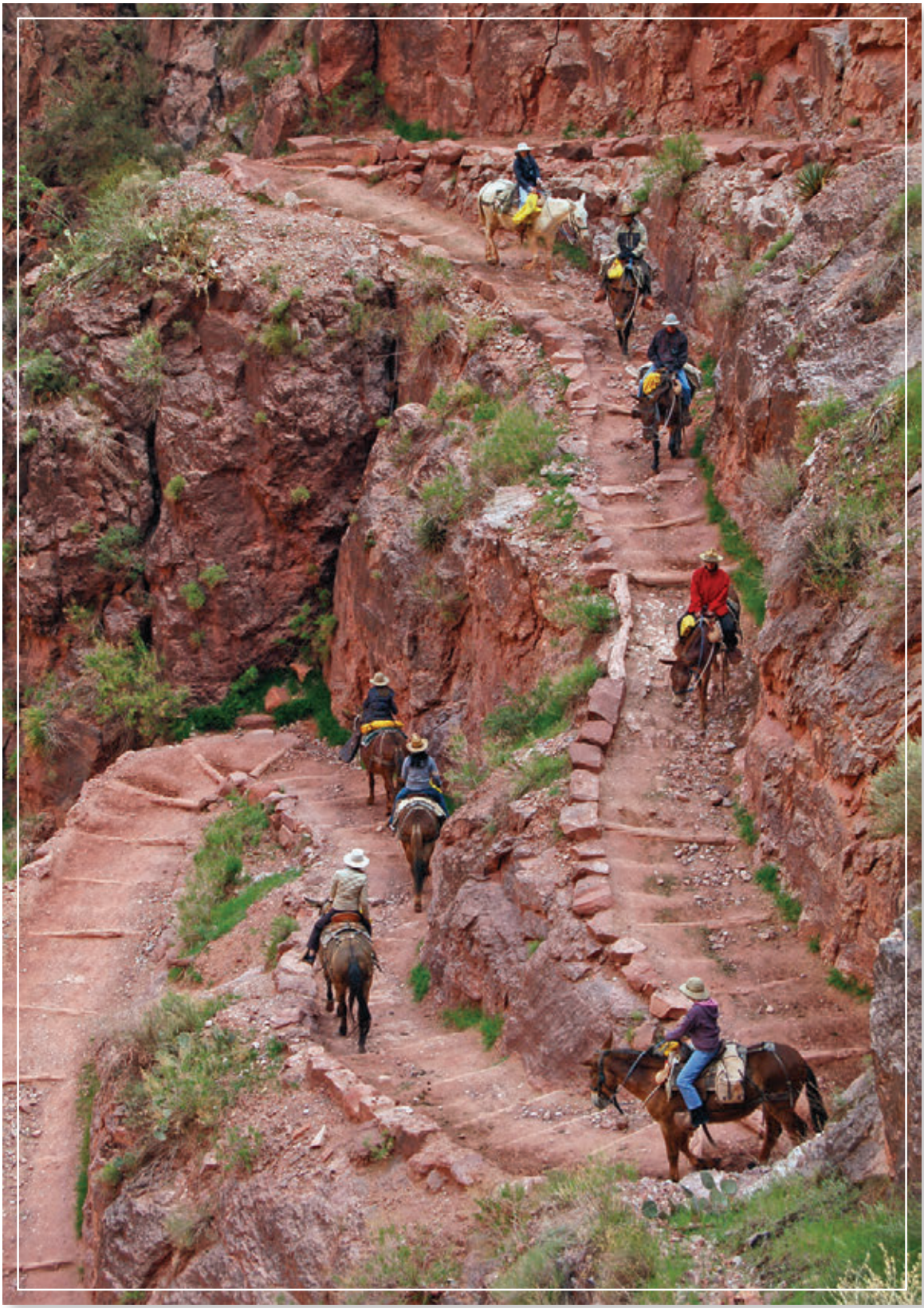
Zuni Tribe

Appendix D: Past and Ongoing Park Planning Efforts

Planning Document	Year
Master Plan for Grand Canyon National Park, Mission 66 Edition	1962
Backcountry Use and Operations Plan	1974
Feral Burro Management and Ecosystem Restoration Plan and Final Environmental Statement	1979
Grand Canyon Wilderness Recommendation	1980
Backcountry Management Plan	1983
Modify Wastewater Treatment Plan, South Rim Environmental Assessment	1985
Reinstitution of Passenger Rail Service Finding of No Significant Impact	1985
Aircraft Management Plan Environmental Assessment	1986
Sale of Water to Tusayan, AZ Environmental Assessment	1986
Backcountry Management Plan Environmental Assessment	1988
Modification of Effluent Discharge Point Environmental Assessment	1989
Reconstruct Village Roads Environmental Assessment	1990
Construct Employee Housing Environmental Assessment	1992
Day Care Facility Environmental Assessment	1992
Bat Cave Restoration Draft Environmental Assessment	1994
Babbitt's Multi-family Housing Development Environmental Assessment	1995
General Management Plan and Environmental Impact Statement	1995
Development of Maintenance and Warehouse Site Environmental Assessment	1996
Resurfacing of South Entrance and Village Loop Roads Reconstruct Bright Angel and Maswik Parking Lots Environmental Assessment	1996
Grand Canyon / Tusayan Community Development Plan	1997
Kanab Plateau Restoration Draft Environmental Assessment	1997
Mather Point Orientation / Transit Center and Transit System Environmental Assessment	1997
Resource Management Plan	1997
South Rim Wildland Fire Helibase Facility Environmental Assessment	1997
Closure of Abandoned Mine Openings Last Chance Mine Horseshoe Mesa Environmental Assessment	1998
Draft Wilderness Management Plan	1998
Establishment of a New Wild Population of Kanab Ambersnail in Grand Canyon Draft Environmental Assessment	1998
South Rim Maintenance, Warehouse, and Transportation Facilities Environmental Assessment	1999
Constructing Privatized Employee Housing at the South Rim	2000

Planning Document	Year
Improvements for Desert View Wastewater Treatment System Environmental Assessment	2000
Desert View Housing and Management Support Environmental Assessment	2001
Emergency Services Facility Environmental Assessment	2001
North Rim Marble Flats and Lindberg Hill Inactive Landfill Closures Environmental Assessment	2001
Backcountry Information Center Environmental Assessment	2002
Desert View Improvements and Road Rehabilitation Environmental Assessment	2002
Grand Canyon School Kitchen Expansion Environmental Assessment	2002
Greenway Trail Segments in Undisturbed Areas Environmental Assessment	2002
Mather Campground Rehabilitation Environmental Assessment	2002
Tamarisk Management and Tributary Restoration Environmental Assessment	2002
North Rim Emergency Services / Wildland Fire Facility and Preservation Treatments of Exposed Frame Cabins Environmental Assessment	2003
Ranger Operations Building Rehabilitation Environmental Assessment	2003
Relocation of the Power Substation at Grand Canyon Village Environmental Assessment / Assessment of Effect	2003
Replacement, Rehabilitation and Maintenance of Backcountry and Corridor Toilets	2003
South Rim and North Rim Firing Range Rehabilitation Environmental Assessment	2003
Upgrade of North Rim Concessioners Recreational Vehicle Park and Construction of 44 Unit Dormitory Environmental Assessment	2003
Yavapai Observation Station Rehabilitation	2003
Construct, Rehabilitate, and Repair Restrooms Parkwide Environmental Assessment	2004
Grand Canyon National Park Business Plan	2004
Update Corridor Area Fire Protection Environmental Assessment	2004
North Rim Development Plan Environmental Assessment	2005
Bright Angel Creek Trout Reduction Project Environmental Assessment	2006
Colorado River Management Plan Environmental Impact Statement	2006
Hermit Road Rehabilitation Environmental Assessment	2006
Park Asset Management Plan	2006
Relocation of the Concessioner Retail Distribution Warehouse to Former Maintenance Complex	2006
First Annual Centennial Strategy for Grand Canyon National Park	2007
Narrowband / Digital Radio System Conversion Environmental Assessment	2007
South Entrance Road Improvements Environmental Assessment / Assessment of Effect	2007

Planning Document	Year
Bright Angel Trailhead Area Design Plan Environmental Assessment	2008
Core Operational Needs: Sustaining Critical Park Operations into the 21st Century	2008
Greenway V Trail – Pipe Creek Vista to South Kaibab Trailhead Environmental Assessment	2008
South Rim Visitor Transportation Plan Environmental Assessment	2008
Exotic Plant Management Plan Environmental Assessment / Assessment of Effect	2009
Grand Canyon National Park Train Operations Environmental Assessment	2009
Abandoned Mine Lands Closure Plan and Environmental Assessment	2010
Draft Wilderness Recommendation Update	2010
Mule Operations and Stock Use Environmental Assessment	2010
Science and Resource Management Facility Environmental Assessment	2010
Supai Camp Improvements Environmental Assessment	2010
Internal Aviation Management Plan	2011
Fire Management Plan Environmental Impact Statement / Assessment of Effect	2012
Comprehensive Fisheries Management Plan Environmental Assessment	2013
Transportation Needs Assessment	2015
Compendium of Designations, Closures, Use and Activity Restrictions, Permit Requirements, and Other Regulations	2016
Glen Canyon Dam Long-Term Experimental and Management Plan Environmental Impact Statement	2016
Greater Grand Canyon Landscape Assessment	2017
Initial Bison Herd Reduction Environmental Assessment	2017
Backcountry Management Plan Environmental Impact Statement	In progress



Intermountain Region Foundation Document Recommendation
Grand Canyon 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.

08/22/2017

RECOMMENDED
Chris Lehnertz, Superintendent, Grand Canyon National Park **Date**

9/15/17

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.

GRCA 113/140152
September 2017

Foundation Document • Grand Canyon National Park

NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR