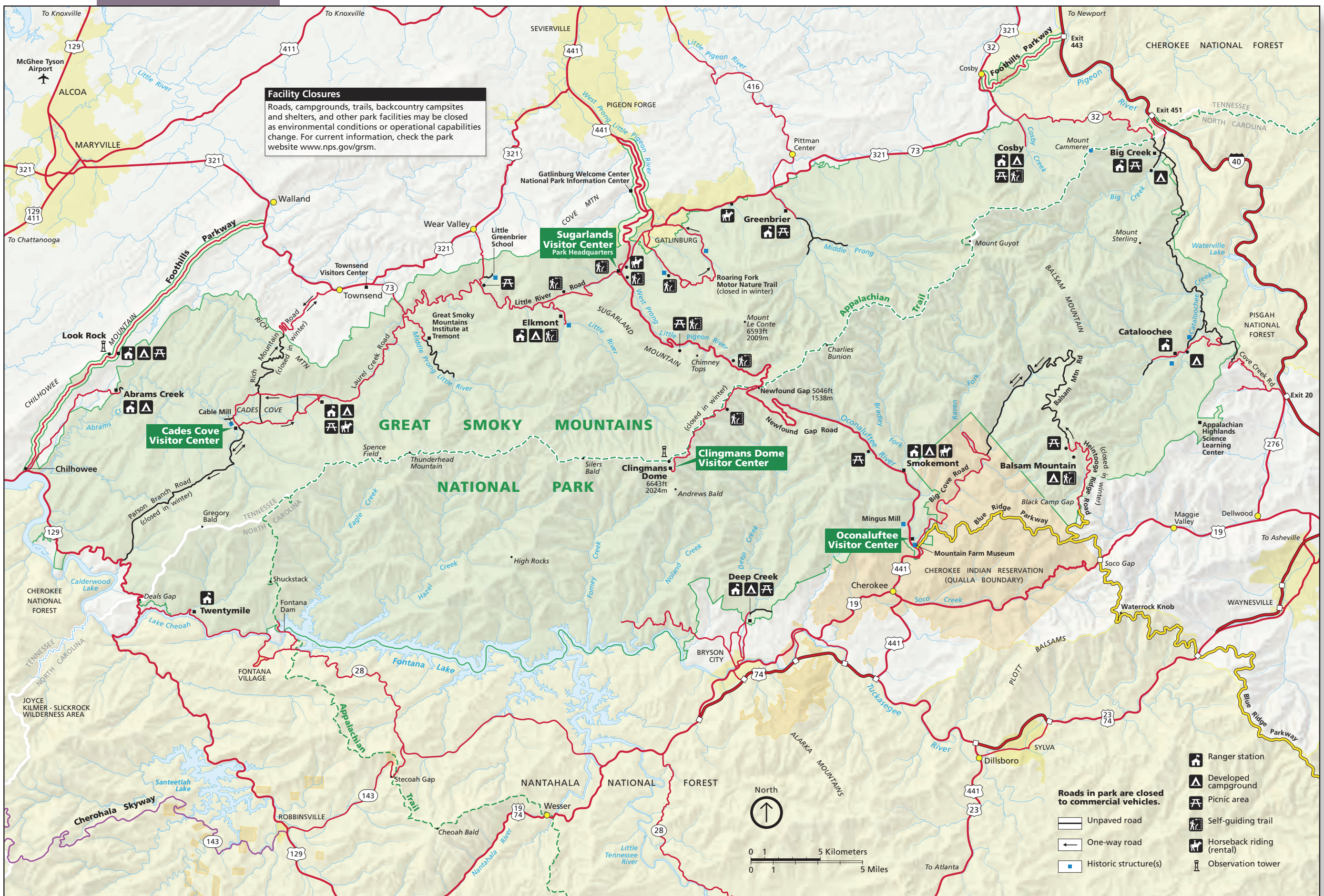
NATIONAL PARK SERVICE • U.S. DEPARTMENT OF THE INTERIOR

Foundation Document

Great Smoky Mountains National Park

North Carolina and Tennessee

October 2016


Facility Closures
Roads, campgrounds, trails, backcountry campsites and shelters, and other park facilities may be closed as environmental conditions or operational capabilities change. For current information, check the park website www.nps.gov/grsm.
GREAT SMOKY MOUNTAINS NATIONAL PARK
Sugarlands Visitor Center
Park Headquarters
Cades Cove Visitor Center
Clingmans Dome Visitor Center
Oconaluftee Visitor Center
Clingmans Dome
6643ft
2024m
Mount Le Conte
6593ft
2009m
Newfound Gap 5046ft
1538m
Gatlinburg Welcome Center
National Park Information Center
Little Greenbrier School
Great Smoky Mountains Institute at Tremont
Roaring Fork Motor Nature Trail
(closed in winter)
Mountain Farm Museum
Mingus Mill
Appalachian Highlands Science Learning Center
Look Rock
Abrams Creek
Cable Mill
Elkmont
Greenbrier
Cosby
Big Creek
Cataloochee
Smokemont
Balsam Mountain
Deep Creek
Twentymile
Appalachian Trail
Foothills Parkway
Blue Ridge Parkway
Cherohala Skyway
Newfound Gap Road
Little River Road
Laurel Creek Road
Parson Branch Road
(closed in winter)
Rich Mountain Road
(closed in winter)
Heintooga Ridge Road
(closed in winter)
Big Cove Road
Fontana Lake
Lake Cheoah
Calderwood Lake
Santeetlah Lake
GATLINBURG
PIGEON FORGE
SEVIERVILLE
MARYVILLE
ALCOA
Townsend
Walland
Wear Valley
Cosby
Pittman Center
Cherokee
BRYSON CITY
SYLVA
Dillsboro
Maggie Valley
Dellwood
WAYNESVILLE
FONTANA VILLAGE
ROBBINSVILLE
Wesser
CHEROKEE INDIAN RESERVATION
(QUALLA BOUNDARY)
CHEROKEE NATIONAL FOREST
NANTAHALA NATIONAL FOREST
PISGAH NATIONAL FOREST
JOYCE KILMER - SLICKROCK WILDERNESS AREA
TENNESSEE
NORTH CAROLINA
To Knoxville
To Newport
To Chattanooga
To Asheville
To Atlanta
McGhee Tyson Airport
North
0 1 5 Kilometers
0 1 5 Miles
Roads in park are closed to commercial vehicles.
Unpaved road
One-way road
Historic structure(s)
Ranger station
Developed campground
Picnic area
Self-guiding trail
Horseback riding (rental)
Observation tower

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, 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 geospatial data for use in a web mapping environment. The park atlas for Great Smoky Mountains National Park can be accessed online at: http://insideparkatlas.nps.gov/.

Part 1: Core Components

The core components of a foundation document include a brief description of the park, park purpose, significance statements, fundamental resources and values, 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

Great Smoky Mountains National Park is located in the Southern Appalachian Mountains and straddles the border between North Carolina and Tennessee. The park encompasses more than 800 square miles and is dominated by ancient mountains, with elevations ranging from 850 feet to 6,643 feet at Clingmans Dome. The park is world-renowned for the diversity of its plant and animal life, beautiful scenery, and the size and integrity of the wilderness sanctuary within its boundaries. More than 19,000 species have been documented in the park. No other area of equal size in a temperate climate can match the park's diversity of plants, animals, and invertebrates. This is evident in the park's status as the core unit of one of America's few International Biosphere Reserves (1988) and its designation as a World Heritage Site (1983). The park also preserves one of the largest collections of historic Appalachian log structures, and maintains more than 800 miles of trails, including a section of the Appalachian Trail.

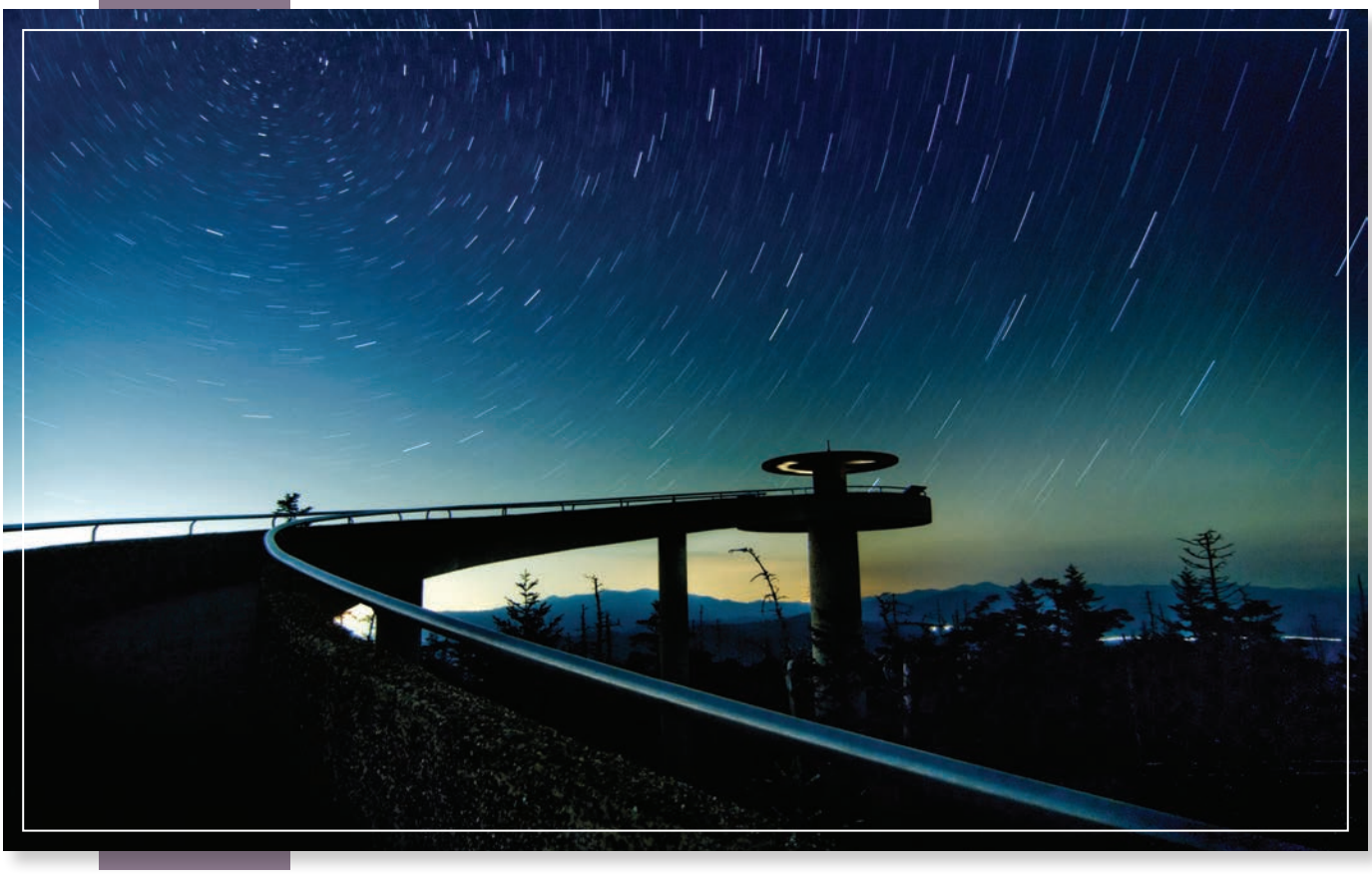
The park is situated within a day's drive of more than half the population of the United States, and more than 9 million visitors come to the park annually to enjoy its resources. They come from local communities, the region, the nation, and from across the world, making the park one of the most visited national parks in the country. Hence, the park contributes to the economic vitality of the surrounding communities and the region.

Throughout time, many people have maintained close connections to the Great Smoky Mountains. Private citizens, civic groups, and even school children, worked tirelessly to raise funds for land acquisition and establishment of the park. This grassroots dedication continues today—the park benefits from one of the largest volunteer cadres in the national park system. Volunteers and partnerships with public, private, and nonprofit groups for education, scientific research, and stewardship of park resources are integral to achieving the purpose of Great Smoky Mountains National Park.

Park Purpose

The purpose statement identifies the specific reason(s) for establishment of a particular park. The purpose statement for Great Smoky Mountains National Park was drafted through a careful analysis of its enabling legislation and the legislative history that influenced its development. The park was established when the enabling legislation adopted by Congress was signed into law on May 22, 1926 (see appendix A for enabling legislation). The purpose statement lays the foundation for understanding what is most important about the park.

Great Smoky Mountains National Park preserves a vast expanse of the southern Appalachian Mountains ecosystem including its scenic beauty, extraordinary diversity of natural resources, and rich human history, and provides opportunities for the enjoyment and inspiration of present and future generations.



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 Great Smoky Mountains National Park, and are supported by data, research, and consensus. Statements of significance describe the distinctive nature of the park and why an area is important within a global, national, regional, and systemwide context. They focus on the most important resources and values that will assist in park planning and management.

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

- **Close to Home.** Great Smoky Mountains National Park is the largest mountainous park east of the Mississippi River and is one of the most visited national park units. The park lies within a day's drive of more than half the U.S. population and thus offers the opportunity for tens of millions of people to have a national park experience close to home while also drawing visitors from around the world.
- **Scenic Qualities.** The Great Smoky Mountains exhibit the finest example of the ruggedness, magnitude, height, and scenic grandeur of the southern Appalachian Mountains, including 16 peaks over 6,000 feet. Visitors are drawn to a variety of park features, including waterfalls, historic landscapes, panoramic mountain vistas, and the changing of the seasons.
- **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system.
- **Vestiges of Human History.** Humans have lived in and around the park for more than 9,000 years. The park preserves a significant number of archeological sites, historic structures, and other vestiges of human interaction with the land. The time periods represented by these resources include American Indian, Appalachian mountain settlement, and early National Park Service / Civilian Conservation Corps (CCC) eras.
- **Philanthropy and Stewardship.** The park was established through the efforts of private philanthropists, local residents, and community leaders. The park was stitched together through the sacrifices of families from North Carolina and Tennessee whose private lands were acquired to create a new kind of "National Park in the East." Their connections to the land endure and are demonstrated by strong advocacy and stewardship of the park today.

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 Great Smoky Mountains National Park:

- **Air and Water – Sustaining the Health of the Smokies.** Air and water quality contribute to the ecological health of the park's flora and fauna and are critical to maintaining high quality visitor experiences. Long-term research and monitoring associated with the park's designation as a Class I air area has produced critical data that have significantly influenced the protection and improvement of air quality and related values such as visibility, clean streams, and healthy soils, vegetation, and ecosystems throughout the park and Southeastern United States. More than 2,900 miles of streams support native populations of flora and fauna, including southern Appalachian brook trout.
- **A Living Laboratory and Outdoor Classroom.** Since the late 1800s, the Great Smoky Mountains have served as an important destination for scientific research and discovery. An extensive body of literature and vast museum collections provide rich opportunities for interpretation and education. This ongoing tradition of inquiry dynamically shapes public education, interpretation, and outreach, reaching a wide variety of learners of all ages.

- **Ancient Mountain Ecosystems.** The Great Smoky Mountains are one of the oldest mountain ranges in North America. Elevations range from low-lying foothills at 850 feet to Clingmans Dome at 6,643 feet. These elevation differences, along with varied climatic conditions, drive the diverse ecology of the park. The park is a refuge for 79 vegetation communities, including about 75% of the nation's red spruce-Fraser fir forests. Approximately 30% of the forests within the park are old growth, making it one of the largest concentrations of old growth forests east of the Mississippi River. Unique communities include grassy balds, heath balds, beech gap forests, cove hardwood forests, caves and karst, and rare mountain wetlands.

- **Backcountry and Wilderness Experiences.** Visitors can experience adventure, challenge, and solitude while exploring the park's vast wild and rugged backcountry, one of the largest in the Eastern United States. These areas can be accessed by 848 miles of maintained trail, including 70 miles of the Appalachian Trail, which runs through the highest peaks in the East, and more than 100 backcountry campsites and shelters. Visitors can enjoy the experience of natural sounds, dark night skies, scenic vistas, and nature untrammeled while exploring the backcountry, and immerse themselves in high-elevation experiences at places such as Mt. Le Conte, Mt. Cammerer, Charlies Bunion, and Mt. Sterling.

- **Biodiversity – Wondrous Variety of Life.** Great Smoky Mountains is one of the most biologically diverse parks in the national park system. More than 19,000 species have been documented in the park through the All Taxa Biodiversity Inventory, which continues to grow as the park identifies more species. Of these, 970 species are new scientific discoveries and have yet to be described. There are 37 species currently known to exist only within the park. This extraordinary diversity led to the park's designation as a United Nations Educational, Scientific and Cultural Organization (UNESCO)World Heritage Site and International Biosphere Reserve.

- **Connections.** Visitors of all backgrounds will find a wide range of opportunities to connect to the park's cultural and natural history and to have high-quality outdoor experiences through traditional and contemporary means. The park provides countless opportunities for adventure, reflection, self-discovery, and learning. The Smokies also provides a magnificent setting for visitors to make and share their own interpersonal connections.
- **Enduring Cultural Ties to the Land.** Throughout time, people have maintained strong cultural ties to the Great Smoky Mountains. The Cherokee and other American Indian tribes maintain close ties to the land. Their history in the landscape is also shown in well-preserved archeological sites. The park contains one of the largest collections of 19th century log structures, furnishings, and other associated remnants including cemeteries, stone walls, and roads. These are testament to the rich southern Appalachian folk history of the area. In the 1930s, the Civilian Conservation Corps operated numerous camps in the park. The skilled workforce built roads, bridges, and trails, many of which are still in use.
- **Journeys.** The park has more than 350 miles of scenic roadways showcasing the Smokies' highest peaks, mountain valleys, and river ways. Along these routes, visitors can enjoy walkways, overlooks, observation towers, campgrounds, picnic areas, education exhibits, and other features while on their way to iconic destinations such as Cades Cove, Newfound Gap, Clingmans Dome, Foothills Parkway, Oconaluftee and Cataloochee Valleys.
- **Partnerships, Volunteerism, and Stewardship.** Since its inception, the park has benefited from the support and stewardship of individuals and organizations alike. Intimate community connections are reflected in activities such as volunteer involvement, philanthropic donations, and oral histories. The park has one of the largest volunteer cadres in the National Park Service, averaging more than 2,000 volunteers annually, while tens of millions of dollars in philanthropic donations have helped launch major projects and initiatives to improve park resources and the visitor experience. Numerous individuals and partner organizations assist the park in fulfilling its mission through a range of science and stewardship, education, and interpretive programming.
- **Scenic Beauty.** The park's scenic beauty is world-renowned. Visitors come to see sweeping mountain vistas, the natural "smoke" of the Smokies, and to view nature's ever-changing tapestry of colors throughout the seasons, such as the profusion of spring wildflowers, the vibrant greens of summer, brilliant fall colors, and winter's glistening ice and snow on majestic peaks.

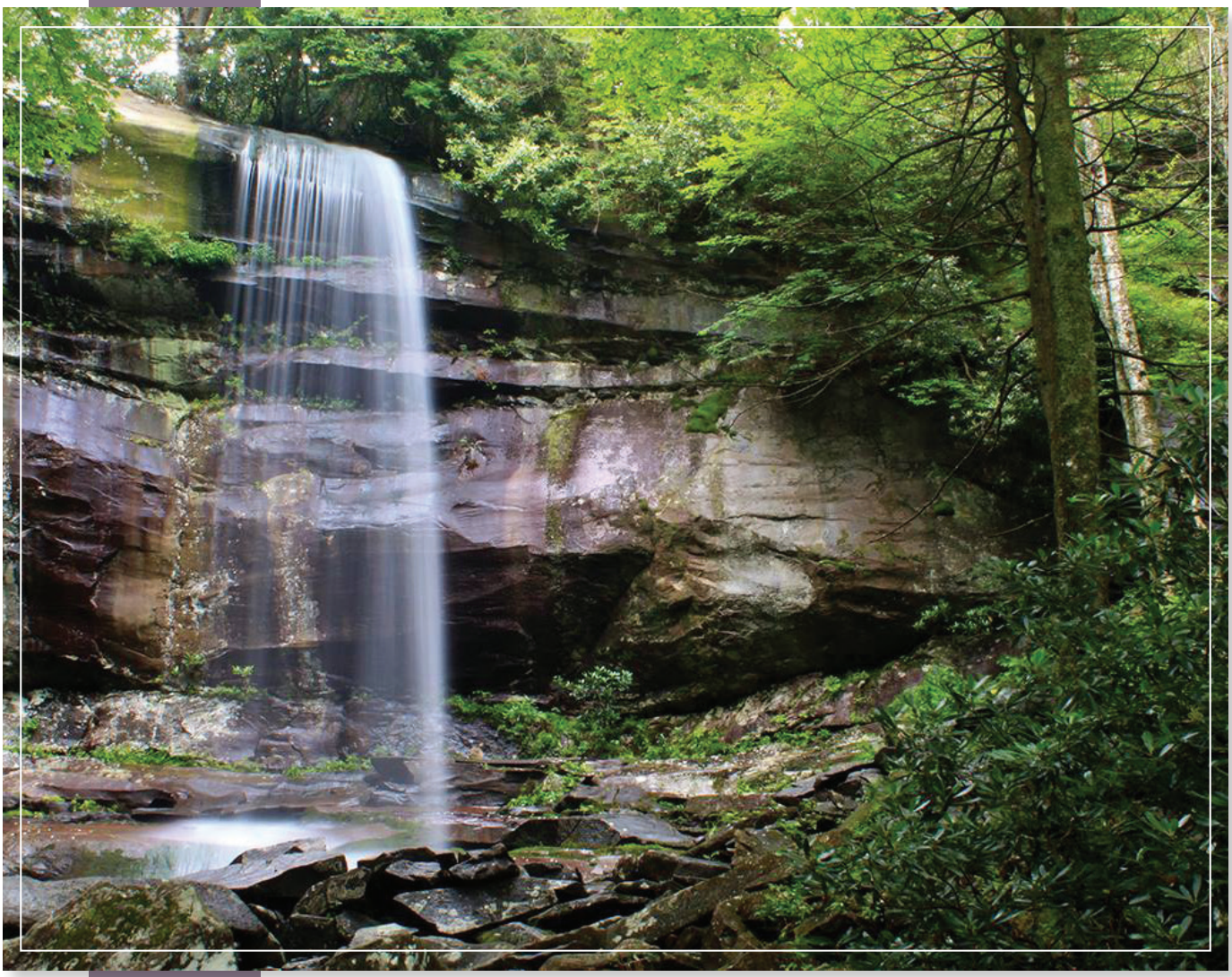
Interpretive Themes

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 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 Great Smoky Mountains National Park:

- **Diversity and Abundance.** The park is a sanctuary for a remarkably diverse array of native plants and animals. A large part of Great Smoky Mountains National Park is a relatively undisturbed ecosystem, in sharp contrast to other land areas in the Eastern United States. Natural communities with endemic gene pools provide opportunities for scientific research and education. These natural systems can be used as a barometer of change occurring locally, regionally, nationally, and internationally. Improving air and water quality in and around the Smokies is critical to maintaining and protecting diversity in the park. The park is noted for its abundant numbers of species and is a center for diversity for several groups including salamanders, lichens, tardigrades, and flowering plants as well as its 2,900 miles of stream supporting a variety of life.
- **Continuum of Human Heritage.** The park is inextricably tied to a sense of place. The park protects more than 9,000 years of human history embodied in a wide variety of evidence of human interactions with the mountain landscape, illustrating the variety of ways these mountains have been providing habitation, sustenance and livelihood over time. The park's current use as a place for refuge, recreation, and spiritual renewal for millions is only possible through the sacrifices of many who enabled the creation of the park. This changing land ethic embodied in the history of the park is central to understanding not only local and regional history, but also the growth of a national environmental awareness.



- **Scenic Beauty.** The park's 800 square miles of massive mountain ridges, deep-cleft valleys, clean streams, improved air quality, healthy soils, endemic life forms, and unique cultural components combine to create a spectacular scenic beauty that shapes visitor experiences. The park provides opportunities for an increasingly urban population to experience sanctuary, wilderness, solitude, and respite from the impacts of modern technological society.

- **Visitor Experience and Engagement.** Great Smoky Mountains National Park offers refuge from everyday life challenges for the mind and body and the rejuvenation, relaxation, and renewal fostered by immersion in an ancient mountain landscape via roads, trails, and waterways. Sharing the multitude of stories in this park, both natural and cultural, fosters lasting stewardship that results in philanthropy, partnerships, and volunteerism.

- **Caring for the Gift.** Forever connected with the surrounding world, the survival of Great Smoky Mountains National Park is dependent upon effective management of numerous complex challenges brought by local, regional, and global environmental threats and society's changing demands. The backcountry of the Smokies is ripe with wilderness character and includes the largest contiguous area of old growth forest east of the Mississippi. As an internationally significant protected area, the park will continue to rely on the contributions of the scientific community, an engaged public, and key stakeholders to accomplish its mission and goals.

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 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 Great Smoky Mountains National Park.

Special Mandates and Designations

- Great Smoky Mountains National Park is one of 30 U.S. national parks designated by the United Nations Educational, Scientific and Cultural Organization as an International Biosphere Reserve.
- The park is one of 21 UNESCO World Heritage Sites within the United States.
- The park is designated as a Class I air area under the Clean Air Act. Under section 169A, Congress declared 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.
- Sections of the park have been recommended and proposed as wilderness. According to NPS *Management Policies 2006*, such areas are treated as wilderness. For more information about the recommended and proposed wilderness in the park, see appendix C.
- The Appalachian National Scenic Trail runs through the park. The trail is a unit of the national park system and the national trails system. Trail management is subject to the provisions of the National Trails System Act of 1968, the Organic Act of 1916, and NPS *Management Policies 2006*.
- The waters of the park enjoy elevated protections from both the states of North Carolina and Tennessee, which recognize that the waters should not be allowed to degrade and should continue to support their state-designated beneficial uses. In North Carolina, most of the park waters are designated as either “Outstanding Resource Waters” or “High Quality Waters.” In Tennessee, most of the park’s waters are designated as “Exceptional Tennessee Waters.”

- Authority to acquire or dispose of land: Land acquisition authorities specific to Great Smoky Mountains National Park include the following:
    - 44 Stat. 616 of May 22, 1926, provided for the acquisition of lands for the park by public or private donation but precluded the purchase of lands with public monies.
    - 47 Stat. 37 of February 4, 1932, gave the Secretary of the Interior authority to accept donations of land subject to life leases for individuals or 20-year leases for corporations. It also authorized the acceptance of land subject to rights-of-way and easements.
    - 52 Stat. 29 of February 12, 1938, authorized the Secretary to purchase (and under some circumstances to use condemnation authority) lands for the park in the State of Tennessee and appropriated monies for that purpose.
    - 58 Stat. 19 of Feb. 22, 1944, authorized the Secretary to accept donations of land for the Foothills Parkway. (See Foothills Parkway.)
    - 72 Stat. 115 of May 16, 1958, provided for the exchange of lands up to 200 acres. This authority is no longer useable because the 200-acre limit was reached.
    - 83 Stat. 100 of August 9, 1969, (16 USC403h-16) provides for the United States to re-convey to the State of Tennessee, with certain limitations, lands associated with the Gatlinburg Spur.
    - Per the Land Protection Plan: "A legal opinion on December 4, 1979, and affirmation on December 7, 1982, established that lands for the park must be acquired in fee simple."
- Entrance Fees
    - The North Carolina resolution of 1938 (NPS deed #34) abandoned its interest in North Carolina 107 (Newfound Gap Road) within the park, effectively transferring complete ownership to the United States. The resolution does not prohibit imposition of a toll, but recognized that "under present policy" there was no intent by the National Park Service to impose a toll on the road.
    - Chapter 57 Tennessee Public Acts of 1951 (NPS deed #131) conveyed to the United States the ownership of all [Tennessee] state highways within the park. The act specifically provided that "no toll or license fee shall ever be imposed by the United States of America, or any agency thereof for the use by the public of State Highways Nos. 71 [now Newfound Gap Road) and 73 [now Little River Road]…"
    - Public Law 88-578 of September 3, 1964 (aka The Land & Water Conservation Fund Act) included the stipulation that, "In Smoky Mountains National Park unless fees are charged for entrance into said park on main highways and thoroughfares, fees shall not be charged for entrance on other routes into said park or any part thereof." That restriction has been included in subsequent revisions to the statute.
- Foothills Parkway – Federal legislation in 1944 (58 stat. 19) authorized the Secretary of the Interior to accept donations of land for the construction of a scenic parkway, now known as the Foothills Parkway. Tennessee legislation subsequently provided for acquisition of the land with construction of the parkway to be done by the United States. All of the rights-of-way, including the Gatlinburg Spur, have been conveyed to the federal government. To date, 22.5 miles of the 72-mile corridor, plus another 4.3 miles of the Gatlinburg Spur, have been built, and another 16 miles from Walland to Wears Valley interchange are under contract. The federal legislation restricts acquisition to an average of 125 acres per mile. As of 2016, land acquisition was very close to the statutory limit. The state reserved a right of reentry to section C & D of the parkway (NPS tracts 03-119 and 120) "if the Federal Government has not commenced construction" after 10 years after the date of conveyance.

- Cemeteries – Some deeds conveyed to the federal government reserve certain rights to a cemetery in the park (160 cemeteries are known to exist in the park). The provisions vary from one deed to another. In some cases a cemetery was not referenced in the deed. The park maintains an inventory of cemeteries that is used for both archeological and maintenance purposes. Interest in access to a percentage of cemeteries, including those on the north side of Fontana Lake, is particularly high during Memorial Day and annual family reunions. Vehicle access via existing administrative roads is provided for such occasions and on request at other times. Many cemeteries are still accepting burials.

    - A letter to Mr. W.H. Woodbury, Executive Secretary, North Carolina Park Commission, dated November 23, 1931, from Director Horace M. Albright, states that the National Park Service will grant use of family members and relatives, "all freedom" of access and some maintenance assistance.

    - A letter of May 7, 1980, from Secretary of the Interior Cecil D. Andrus to Mr. James L. Coggins, states that "The [NPS] will continue to work with the North Shore Cemetery Association to provide access to the existing cemeteries within the park, including transportation across Fontana Reservoir and suitable transportation on existing trails within the park. The Park Service will continue maintenance and upkeep of the cemeteries within the park."

- Law Enforcement – Legislation establishing Great Smoky Mountains National Park provided for exclusive [partial legislative] jurisdiction throughout the park. Responding to requests from the National Park Service, on July 27, 1984, the State of North Carolina enacted legislation changing jurisdiction on the North Carolina side of the park from exclusive to concurrent. By memorandum of agreement with the State of Tennessee dated April 23, 1997, jurisdiction for the Foothills Parkway was changed from exclusive [partial legislative] jurisdiction to concurrent jurisdiction. The Gatlinburg Spur and the bypass, though previously concurrent, were included in that agreement.

For information about the existing administrative commitments for Great Smoky Mountains National Park, please see appendix B.

Assessment of Planning and Data Needs

Once the core components of part 1 of the foundation document have been identified, it is important to gather and evaluate existing information about the park's fundamental 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 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 resources and values and identification of key issues leads up to and supports the identification of planning and data collection needs.

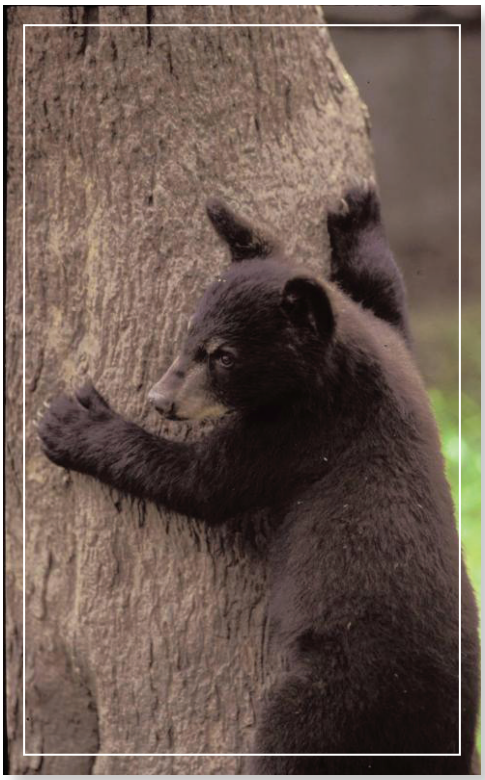
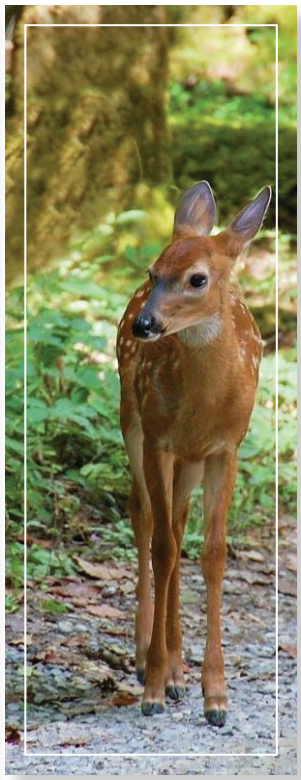
Analysis of Fundamental Resources and Values

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	Air and Water – Sustaining the Health of the Smokies
Related Significance Statements	• **Scenic Qualities.** The Great Smoky Mountains exhibit the finest example of the ruggedness, magnitude, height, and scenic grandeur of the southern Appalachian Mountains, including 16 peaks over 6,000 feet. Visitors are drawn to a variety of park features including waterfalls, historic landscapes, panoramic mountain vistas, and the changing of the seasons. • **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system.
Current Conditions and Trends	**Conditions** • Air quality has improved overall in the last 15 years, but air quality related values continue to be adversely impacted by air pollution and are still a management concern. • After nearly two decades, the park is in attainment for human-health based standards for ozone and particulate matter under the Clean Air Act, but is not meeting NPS Air Resources Division benchmarks for ecological health. Despite the health standards getting more stringent, the number of unhealthy days at the park has decreased. • Despite air quality improvements, decades of acid deposition have leached most of the soil nutrients from high elevation soils. Natural recovery of these positive nutrients will take a long time. • Atmospheric mercury deposition is contributing to the bioaccumulation of toxic methyl mercury found in some species (birds and salamanders) at the park and is a significant concern to the health of the food web. • The park has impaired waterways (under the Clean Water Act) as a result of decades of elevated atmospheric sulfur and nitrogen deposition. Twelve of the park's streams are on the U.S. Environmental Protection Agency's Clean Water Act 303d list for being impaired for low pH. • Roughly 49% of park streams are sensitive to acidification. Eighteen percent of park streams are too acidic to support fish and other aquatic biota. • Five park water resources are designated by the states of Tennessee and North Carolina as "Outstanding Natural Resource Waters." • Great Smoky Mountains National Park is a Climate Friendly Park taking action to reduce park operational emissions to improve park sustainability and environmental leadership. **Trends** • Regional emissions have been significantly reduced over the past 15 years. Trends in air quality (ozone, particulate matter, haze, sulfate, and nitrate) have been improving. • From 1999 to 2014, visibility on the haziest days has improved from 12 to 32 miles visual range. • From 1999 to 2014, ozone exposures have improved 36%. • Sulfur deposition has been reduced in response to emission controls over the past 30 years, but nitrogen deposition (as ammonium) is generally unchanged and is difficult to regulate because it comes from a variety of sources. • Air quality at Great Smoky Mountains National Park has been a significant concern over the past four decades. The park and park partners have made enormous strides in reducing air pollution with continued support from the NPS Air Resources Division. • Parkwide water quality is generally declining in high elevation streams (>3,000 feet) and stable to improving in low elevation streams (<3,000 feet). • Model forecasts indicate it will take more than 100 years for pH in some impaired streams to improve to levels that will support fish.

Fundamental Resource or Value	Air and Water – Sustaining the Health of the Smokies
Threats and Opportunities	**Threats** • Emissions from motor vehicles, coal-fired power plants, and industrial sources, although generally improving, continue to impact the parks' air and water resources. • Increasing urban and industrial development in the area is impacting air quality and scenic resources. Additional development could also increase emissions of concern and the resulting air pollutants that are harming park resources. • Airborne pollution from regional agricultural sources is a significant contributor to the park's nitrogen deposition. Agricultural pesticides applied nearby also probably drift into the park, potentially accumulating in organisms. • Mercury deposition is increasingly posing a significant threat to the food web of aquatic and terrestrial resources of the park. • Emerging contaminants may impact park aquatic biota (e.g., pesticides, pharmaceuticals, personal care products, endocrine disruptors, nanotoxins). • New nonnative animals and diseases are currently threatening water quality and fish populations in waters bordering the park. • Changes in hydrology due to climate change and changes in vegetation types. **Opportunities** • Educate park visitors about air and water quality issues and challenges to promote informed actions and behaviors that could support protective air and water quality standards. • Continue to look at ways to improve sustainability practices in the park (reduce NPS-generated emissions, low-flow plumbing fixtures, energy efficient lights, etc.). • Work with community leaders and regulators to reduce pollution sources, mitigate impacts, and enact regulations to protect park waters from air pollutants. The air is getting cleaner, but streams are still impaired and more needs to be done. • Work cooperatively with other federal and state air and water quality agencies and local stakeholders to address impacts in the park from sources of pollution (such as the Environmental Protection Agency's Regional Haze Program or Total Maximum Daily Load process). • Strongly encourage state, federal, tribal, and private partners to require all fish stocked into waters of the United States downstream of Great Smoky Mountains National Park to be certified free of listed diseases and pathogens. • Expand interpretive and educational tools to communicate the connections between clean air, water, scenic views, night skies, ecosystems, and human health. • Continue long-term monitoring of air and water quality parkwide through the park Vital Signs program. • Showcase park efforts and successes to improve air and water quality, and the regional impacts of those efforts.
Data and/or GIS Needs	• Develop critical loads for pH-impaired streams in the park (impairment defined under the Clean Water Act). • Study biotic effects of air pollution on terrestrial species.
Planning Needs	• Restoration plan for pH-impaired streams in the park (impairment defined under the Clean Water Act).

Fundamental Resource or Value	Air and Water – Sustaining the Health of the Smokies
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 • Clean Water Act • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13287, "Preserve America" • Executive Order 13352, "Facilitation of Cooperative Conservation" • Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" • Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" • 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* (§4.6) "Water Resource Management" • NPS *Management Policies 2006* (§4.7) "Air Resource Management" • Director's Order 13A: *Environmental Management Systems* • Director's Order 25: *Land Protection* • Director's Order 28: *Cultural Resource Management* • Director's Order 32: *Cooperating Associations* • Director's Order 75A: *Civic Engagement and Public Involvement* • *NPS-75 Natural Resources Inventory and Monitoring Guideline* • "NPS-28, Cultural Resource Management Guideline" • NPS *Natural Resource Management Reference Manual 77* • *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*


Fundamental Resource or Value	A Living Laboratory and Outdoor Classroom
Related Significance Statements	• **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system. • **Vestiges of Human History.** Humans have lived in and around the park for more than 9,000 years. The park preserves a significant number of archeological sites, historic structures, and other vestiges of human interaction with the land. The time periods represented by these resources include American Indian, Appalachian mountain settlement, and early National Park Service / Civilian Conservation Corps eras. • **Philanthropy and Stewardship.** The park was established through the efforts of private philanthropists, local residents, and community leaders. The park was stitched together through the sacrifices of families from North Carolina and Tennessee whose private lands were acquired to create a new kind of "National Park in the East." Their connections to the land endure and are demonstrated by strong advocacy and stewardship of the park today.

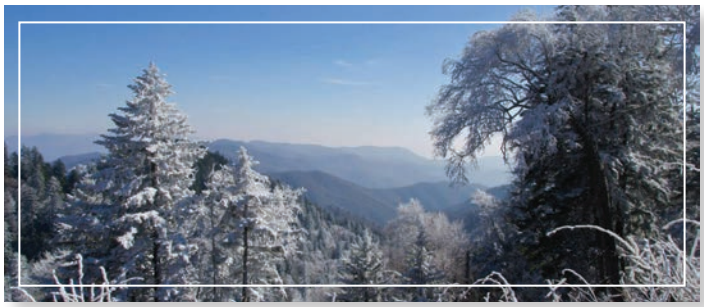
Fundamental Resource or Value	A Living Laboratory and Outdoor Classroom
Current Conditions and Trends	**Conditions** • The park serves more than 18,000 students annually. • There are aging research/educational facilities at the Great Smoky Mountains Institute at Tremont, and none at Cades Cove. • Park science is in good condition. There are solid baseline data and the interest in park science is high. • There is robust involvement in park science from the scientific community, including strong partnerships with several education and science organizations. • A National Ecological Observatory Network site was recently established. • The park has strong community ties to support research and education efforts. • The park has a very strong citizen science program. The program serves as a model throughout the National Park Service. • The park has a long history of in-house and external research, scientific publications, and natural and cultural history collections. • The park has several centers for research and education including the Great Smoky Mountains Institute at Tremont, the Appalachian Highlands Science Learning Center, the Twin Creeks Science and Education Center, and the Collections Preservation Center. **Trends** • The number of research permits issued has generally increased over the last five years. • The number of citizen science projects has increased in recent years. • The park relies heavily on the Volunteers-In-Parks program for staffing visitor centers. • The park is using technology to reach new audiences (distance learning, social media). • The park has increased its outreach to urban audiences. • Park employees are increasingly using online databases (Integrated Resource Management Applications, data store) for research efforts. • More schools are requesting funding for bus transportation to participate in park programs. • Schools are increasingly focusing on science, technology, engineering, and mathematics and looking to the park for guidance and assistance.
Threats and Opportunities	**Threats** • There are fewer research experts for less-known species. • Long term curation of the natural history collection. **Opportunities** • Much information is available for resource education to incorporate science and research into programs and products. • Use new messages and communication tools to reach diverse audiences. • Recruit retirees with professional experience for volunteer positions. • Align outside research requests/expertise with park priorities. • Form agreements with scientists from local universities to encourage more research in the park. • Search out new funding sources for youth programs. • Climate change presents opportunities for novel research and education, and for engaging the next generation of scientists. • Seek collaborative solutions to continue a robust science and monitoring program. • Develop creative approaches for using new technology and communication media (social media, apps, etc).

Fundamental Resource or Value	A Living Laboratory and Outdoor Classroom
Data and/or GIS Needs	• Natural resource condition assessment (underway). • Updated vegetation map. • Long term monitoring data on air, water, vegetation, soil, aquatic life and climate.
Planning Needs	• Data management plan (underway). • Update the comprehensive resource education 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** • Clean Air Act • Volunteers in the Parks Act • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13287, "Preserve America" • Executive Order 13352, "Facilitation of Cooperative Conservation" • Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" • Executive Order 13443, "Facilitation of Hunting Heritage and Wildlife Conservation" • Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • "Endangered and Threatened Wildlife and Plants" (50 CFR 17) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • Director's Order 7: *Volunteers in Parks* • Director's Order 18: *Wildland Fire Management* • NPS Reference Manual 18: *Wildland Fire Management* • *Interagency Burned Area Emergency Response Guidebook* • Director's Order 24: *NPS Museum Collections Management* • Director's Order 25: *Land Protection* • Director's Order 28: *Cultural Resource Management* • "NPS-28, Cultural Resource Management Guideline" • NPS *Museum Handbook*, parts I, II, and III • Director's Order 32: *Cooperating Associations* • Director's Order 47: *Soundscape Preservation and Noise Management* • *NPS-75 Natural Resources Inventory and Monitoring Guideline* • Director's Order 75A: *Civic Engagement and Public Involvement* • NPS *Natural Resource Management Reference Manual 77* • NPS *Integrated Pest Management Manual* • *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*

Fundamental Resource or Value	Ancient Mountain Ecosystems
Related Significance Statements	• **Close to Home.** Great Smoky Mountains National Park is the largest mountainous park east of the Mississippi River and is one of the most visited national park units. The park lies within a day's drive of more than half the U.S. population and thus offers the opportunity for tens of millions of people to have a national park experience close to home while also drawing visitors from around the world. • **Scenic Qualities**. The Great Smoky Mountains exhibit the finest example of the ruggedness, magnitude, height, and scenic grandeur of the southern Appalachian Mountains, including 16 peaks over 6,000 feet. Visitors are drawn to a variety of park features including waterfalls, historic landscapes, panoramic mountain vistas, and the changing of the seasons. • **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system.
Current Conditions and Trends	**Conditions** • The condition of the park's different natural resources varies widely. • The park has high biological diversity due to geologic and climatic history. • Some forest communities are in poor condition due to forest insects and diseases (e.g., Fraser fir, hemlock, southern yellow pine, beech gap). • High- and mid-elevation streams are impaired under the Clean Water Act for low pH, thereby altering stream fauna. Twelve of the park's streams are on the Environmental Protection Agency's 303d list for being impaired for low pH. • Nonnative species continue to be introduced to many parts of the park, resulting in fundamental changes in ecosystem function in some areas. • High visitation has led to overuse and trampling in some areas. • Thirty percent of the park's forests are old growth. • Plant and animal poaching is occurring in some areas. **Trends** • Air quality is improving, but decades worth of pollution continues to have a residual impact on park ecosystems. • Climate change may reduce the range and distribution of some vegetation communities. While impacts are largely uncertain, there has been a 50 year warming trend and earlier spring warming coupled with later frost. • Forest health is declining in some communities (e.g., hemlock, Fraser fir, beech gap) due to invasive pests. • Urban development outside the park has increased for decades, particularly on the Tennessee side. This development degrades historic viewsheds, night skies, and soundscapes.

Fundamental Resource or Value	Ancient Mountain Ecosystems
Threats and Opportunities	**Threats** • Current and future forest insects and diseases are and will continue to degrade ecosystems in some areas of the park. • Alteration of the natural fire regime is creating uncharacteristically dense forests or converting them to mixed mesophytic communities types. • Some endemic species are declining due to habitat loss. • High elevation grasslands are declining due to succession and the encroachment of surrounding forests. • Invasive nonnative plants spread into the park from adjacent lands by wind, water, birds, and construction, causing new infestations and increasing need for surveillance and treatment. • Nonnative hogs are negatively impacting sensitive communities (e.g., wetlands). • Ecosystems have been harmed by effects of air pollution including acidification from excess deposition of nitrogen and sulfur, mercury contamination, and impacts on ozone-sensitive plants. • High visitation is impacting sensitive ecosystems through trampling and related overuse activities. • Urban development and associated noise, artificial light, scenic intrusion, and habitat fragmentation. • Ongoing climate change will have widespread and complex impacts on natural systems because of species range shifts, altered phenology, acidification of rain, and other reasons. **Opportunities** • Additional cooperation and coordination with neighboring agencies can reduce the spread and potentially the impact of forest insects and diseases (e.g., firewood regulations). • Continue long-term monitoring of natural resource vital signs. • Finalize the park's policy for science informed, sustainable plant harvesting by American Indian tribes.
Data and/or GIS Needs	• Best-practices study of effective bio-controls for forest pests. • Forestry-level LiDAR. • High resolution meteorological models to predict climate change impacts. • Updated vegetation maps. • Research on climate change impacts on specific forest ecosystems.
Planning Needs	• Landscape level planning. • Resource stewardship strategy.

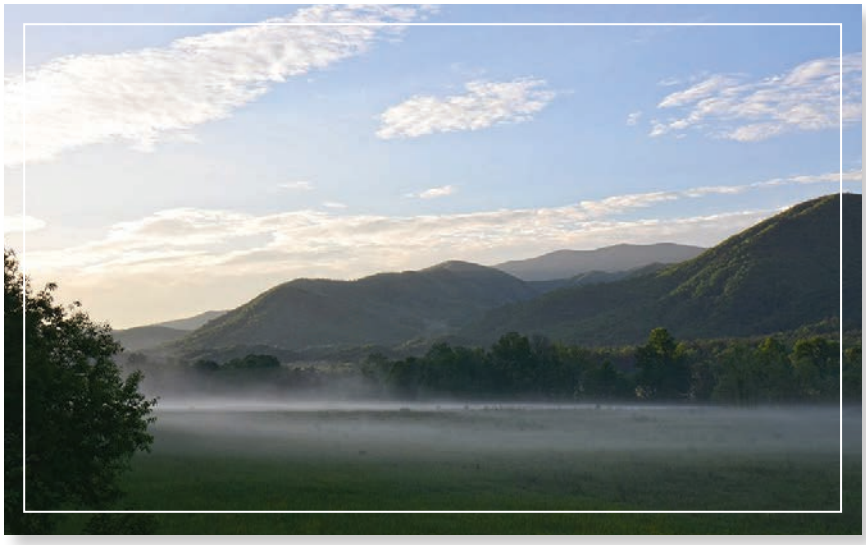
Fundamental Resource or Value	Ancient Mountain Ecosystems
Laws, Executive Orders, and Regulations That Apply to the FRV, and NPS Policy-level Guidance	**Laws, Executive Orders, and Regulations That Apply to the FRV** • Clean Air Act • Volunteers in the Parks Act • Endangered Species Act of 1973, as amended • National Invasive Species Act • Lacey Act, as amended • Migratory Bird Treaty Act • National Environmental Policy Act of 1969 • Federal Noxious Weed Act of 1974, as amended • Clean Water Act • Paleontological Resources Preservation Act of 2009 • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13112, "Invasive Species" • Executive Order 13287, "Preserve America" • Executive Order 13352, "Facilitation of Cooperative Conservation" • Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" • Executive Order 13443, "Facilitation of Hunting Heritage and Wildlife Conservation" • Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • "Endangered and Threatened Wildlife and Plants" (50 CFR 17) **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* (§4.1) "General Management Concepts" • NPS *Management Policies 2006* (§4.4.1) "General Principles for Managing Biological Resources" • NPS *Management Policies 2006* (§4.6.1) "Protection of Surface Waters and Groundwaters" • 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" • Director's Order 7: *Volunteers in Parks* • Director's Order 18: *Wildland Fire Management* • NPS *Reference Manual 18: Wildland Fire Management* • *Interagency Burned Area Emergency Response Guidebook* • Director's Order 25: *Land Protection* • Director's Order 28: *Cultural Resource Management* • "NPS-28, Cultural Resource Management Guideline" • Director's Order 47: *Soundscape Preservation and Noise Management* • *NPS-75 Natural Resources Inventory and Monitoring Guideline* • Director's Order 75A: *Civic Engagement and Public Involvement* • NPS *Natural Resource Management Reference Manual 77* • NPS *Integrated Pest Management Manual*



Fundamental Resource or Value	Backcountry and Wilderness Experiences
Related Significance Statements	• **Close to Home.** Great Smoky Mountains National Park is the largest mountainous park east of the Mississippi River and is one of the most visited national park units. The park lies within a day's drive of more than half the U.S. population and thus offers the opportunity for tens of millions of people to have a national park experience close to home while also drawing visitors from around the world. • **Scenic Qualities.** The Great Smoky Mountains exhibit the finest example of the ruggedness, magnitude, height, and scenic grandeur of the southern Appalachian Mountains, including 16 peaks over 6,000 feet. Visitors are drawn to a variety of park features including waterfalls, historic landscapes, panoramic mountain vistas, and the changing of the seasons. • **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system.
Current Conditions and Trends	**Conditions** • The park has a wide range of backcountry opportunities and experiences – high use in some areas, opportunities for solitude in others. • The park maintains a diverse network of hundreds of miles of hiking trails that allow access to the backcountry. • The condition of the backcountry trails and campsites varies according to level of use. • All backcountry campsites and shelters are designated and require a reservation/ permit for use. • Backcountry is managed as wilderness due to its status as proposed/recommended wilderness. • Noise and light pollution are affecting the wilderness experience in some areas. **Trends** • The park has increased contact with backcountry users due to staff dedicated to the backcountry program. • The park is focusing its trail rehabilitation efforts on high-use trails. • Overnight backcountry use is increasing. • Forest health issues are increasing the need for management actions at designated backcountry sites. • There is increased public focus on health-based recreation opportunities in the backcountry. • Technology and apps have increased the backcountry/wilderness information available to visitors. • Opportunities for visitors to see dark night skies in the backcountry are diminishing.

Fundamental Resource or Value	Backcountry and Wilderness Experiences
Threats and Opportunities	**Threats** • Technology can create unrealistic expectations for services in the backcountry. • Litter and human waste negatively impacts resources and the visitor experience. • Improper food storage can threaten humans and animals. • Cultural sites can be impacted by backcountry use. • Forest health issues threaten multiple aspects of the backcountry visitor experience. • Overuse of the Appalachian Trail corridor and the sustainability of the park's current user management strategies. • High number of organized events that attract large groups of users to the backcountry. • Noise pollution and impacts on natural soundscapes. • Light pollution and impacts on dark night skies. At night, air pollution scatters artificial lights, increasing the effect of light pollution on the night sky. During the day, air pollution can degrade scenic views. **Opportunities** • Evaluate alternative management actions for backcountry infrastructure (i.e., food storage, foot bridges). • Establish a trail maintenance classification system (i.e., not all trails maintained at the same level; also broadens the types of trail opportunities). • Evaluate campsite network for alternative types of camping experiences, multiple uses, and large groups. • Create more opportunities for solitude. • Improve distribution of backcountry use. • Trails Forever provides for rehabilitation of high-use, high-priority trails in the park. • Improve Leave-No-Trace education. • Use of existing Limits of Acceptable Change data to improve impacts and characteristics of backcountry sites. • Define desired conditions of resources and facilities using visitor input and management criteria. Select indicators and identify thresholds. Develop monitoring and management strategies.
Data and/or GIS Needs	• Baseline data collection and assessments for acoustic resources and soundscapes in developed, backcountry, and wilderness areas (underway). • Baseline data/assessments for night sky in developed, backcountry, and wilderness areas (underway). • Condition assessment of backcountry infrastructure trail surface and bridges (includes primitive foot logs) (underway). • Condition assessment of signage and bear cables (underway). • Maps showing forest health along the trail system and overnight sites, location of cultural resources in the backcountry, as well as locations of bridges and trail signage. • Trail counts and use data. • Visitor use survey.
Planning Needs	• Foot bridge replacement plan. • Search and rescue plan. • Trail maintenance/management classification. • Wilderness/backcountry management plan.

Fundamental Resource or Value	Backcountry and Wilderness Experiences
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 • Federal Lands Recreation Enhancement Act (related to fees) • Outdoor Recreation Act • Volunteers in the Parks Act • Wilderness Act • Executive Order 13287, "Preserve America" • Executive Order 13352," Facilitation of Cooperative Conservation" • "Resource Protection, Public Use, and Recreation" (36 CFR 2) • 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* (§4.7) "Air Resource Management" • NPS *Management Policies 2006* (§4.9) "Soundscape Management" • NPS *Management Policies 2006* (§4.10) "Lightscape Management" • NPS *Management Policies 2006* (chapter 6) "Wilderness Preservation and Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • NPS *Management Policies 2006* (chapter 8) "Use of the Parks" • Director's Order 7: *Volunteers in Parks* • Director's Order 17: *National Park Service Tourism* • Director's Order 18: *Wildland Fire Management* • NPS Reference Manual 18: *Wildland Fire Management* • *Interagency Burned Area Emergency Response Guidebook* • Director's Order 25: *Land Protection* • Director's Order 41: *Wilderness Stewardship* • NPS Reference Manual 41: *Wilderness Stewardship* • Director's Order 47: *Soundscape Preservation and Noise Management* • *NPS-75 Natural Resources Inventory and Monitoring Guideline* • Director's Order 75A: *Civic Engagement and Public Involvement* • NPS *Natural Resource Management Reference Manual 77*





Fundamental Resource or Value	Biodiversity – Wondrous Variety of Life
Related Significance Statements	• **Close to Home.** Great Smoky Mountains National Park is the largest mountainous park east of the Mississippi River and is one of the most visited national park units. The park lies within a day's drive of more than half the U.S. population and thus offers the opportunity for tens of millions of people to have a national park experience close to home while also drawing visitors from around the world. • **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system.
Current Conditions and Trends	**Conditions** • The park is known for high biological and community diversity and endemism (species unique to the park). • Many park species are well known due to the All Taxa Biodiversity Inventory. However, there are likely to be undiscovered species in several more taxa groups. • Lack of a visitor use management plan/framework allows unlimited access to all park areas. There is evidence of impacts on both archeological and natural resources as a result of high levels of visitation. • The park is host to 2,177 plant species, 67 mammal species, 77 fish species, 44 amphibian species, more than 2,800 fungal species, and more than 11,000 invertebrate species. • Biodiversity has been affected by air pollution due to acidification from excess deposition of nitrogen and sulfur, mercury contamination, and impacts on ozone-sensitive plants. **Trends** • Knowledge is increasing due to the All Taxa Biodiversity Inventory as well as interaction and connection between species discovered and previously known species. • Some taxa groups remain understudied, resulting in incomplete datasets or poor distribution data. Declining professional expertise in these areas from outside partners (universities) compounds the problem. • The number of new nonnative species is increasing as populations of invasive species increase outside the park. • While the number of known species is increasing, overall biodiversity is decreasing due to the lack of natural disturbance (namely natural fire regimes). • The park is consistently one of the most researched parks in the National Park Service with broad support and partnership from universities locally and nationally.

Fundamental Resource or Value	Biodiversity – Wondrous Variety of Life
Threats and Opportunities	**Threats** • Current and future forest insects and diseases are degrading ecosystems in some areas of the park. Recovery is uncertain. • Alteration of the natural fire regime is creating uncharacteristically dense forests or mesophytic communities. • Air quality is improving but there are still problems with acid deposition, ozone, mercury, and particulates. • Decreasing water quality due to acidification is making some areas of the park unsuitable for some species. • Nonnative insects and diseases have displaced some species and/or altered natural ecosystems. Recovery is uncertain. • Nonnative plants and animals have displaced some species and/or altered natural ecosystems. Recovery is uncertain. • Climate change may reduce the range and distribution of some vegetation communities and amplify invasive species, diseases and pests, and possibly fire. Ecosystem impacts are currently unknown. • Increased visitation impacts sensitive habitats through trampling/erosion, poaching, and inadvertent introduction of pests. • High levels of visitation exceed the park's capacity to manage use and prevent impacts on resources. **Opportunities** • Stratified sampling would increase overall knowledge of the park's species and their distribution. • Long-term monitoring of vital signs would result in an increase in biodiversity data, data on trends of key resources, and would contribute to informed management decisions. • Outside research would continue to help park managers understand park biological resources. Strong partnerships continue to develop with local and national universities. • Discover Life in America is a park partner dedicated to completing the All Taxa Biodiversity Inventory. • Partnerships with The Nature Conservancy, Tennessee Invasive Plant Council, other nongovernmental organizations, and state and federal agencies are effective in preventing forest insect and disease (e.g., the Don't Move Firewood campaign) as well as limiting spread of invasive plants and increasing coordination of fire use on a regional landscape level. • Prescribed and natural fire will continue to restore fire-adapted ecosystems including both open meadow and forest areas where fuel loads are high and increasing. Increased funding through federal or private sources is needed to expand this effort. • Citizen science will provide opportunities to increase the knowledge of the park's biodiversity and help field test distribution models. • Increase and nurture partnerships with state, federal, and tribal agencies to address issues that cross jurisdictional boundaries. • Continue to prevent introduction of new forest insects and diseases by limiting imported wood, particularly firewood. • Continue to limit accidental introduction of nonnative plants through park operations by ensuring that materials used in construction and maintenance (quarried stone, fill soil, seed and seeding equipment) are free of invasive nonnative plants.

Fundamental Resource or Value	Biodiversity – Wondrous Variety of Life
Data and/or GIS Needs	• Assess future forest insect diseases. • Create species distribution models for all known park biota (underway). • Forestry-level LiDAR. • High resolution meteorological models to predict climate change impacts. • Studies to determine the extent and impacts of introduced nonnative species. • Studies to determine the feasibility and utility of using new genetic inventory and monitoring techniques. • Visitation impact studies.
Planning Needs	• Climate change adaptation 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 • Clean Water Act • National Invasive Species Act • Volunteers in the Parks Act • Executive Order 13112, "Invasive Species" • Executive Order 13352, "Facilitation of Cooperative Conservation" • Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" • Executive Order 13443, "Facilitation of Hunting Heritage and Wildlife Conservation" • Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • "Endangered and Threatened Wildlife and Plants" (50 CFR 17) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (chapter 4) "Natural Resource Management" • NPS *Management Policies 2006* (chapter 7) "Interpretation and Education" • Director's Order 7: *Volunteers in Parks* • Director's Order 18: *Wildland Fire Management* • NPS Reference Manual 18: *Wildland Fire Management* • *Interagency Burned Area Emergency Response Guidebook* • Director's Order 25: *Land Protection* • Director's Order 47: *Soundscape Preservation and Noise Management* • *NPS-75 Natural Resources Inventory and Monitoring Guideline* • Director's Order 75A: *Civic Engagement and Public Involvement* • NPS *Natural Resource Management Reference Manual 77* • NPS *Integrated Pest Management Manual*

Fundamental Resource or Value	Connections
Related Significance Statements	• **Close to Home.** Great Smoky Mountains National Park is the largest mountainous park east of the Mississippi River and is one of the most visited national park units. The park lies within a day's drive of more than half the U.S. population and thus offers the opportunity for tens of millions of people to have a national park experience close to home while also drawing visitors from around the world. • **Scenic Qualities.** The Great Smoky Mountains exhibit the finest example of the ruggedness, magnitude, height, and scenic grandeur of the southern Appalachian Mountains, including 16 peaks over 6,000 feet. Visitors are drawn to a variety of park features including waterfalls, historic landscapes, panoramic mountain vistas, and the changing of the seasons. • **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system. • **Vestiges of Human History.** Humans have lived in and around the park for more than 9,000 years. The park preserves a significant number of archeological sites, historic structures, and other vestiges of human interaction with the land. The time periods represented by these resources include American Indian, Appalachian mountain settlement, and early National Park Service / Civilian Conservation Corps eras. • **Philanthropy and Stewardship.** The park was established through the efforts of private philanthropists, local residents, and community leaders. The park was stitched together through the sacrifices of families from North Carolina and Tennessee whose private lands were acquired to create a new kind of "National Park in the East." Their connections to the land endure and are demonstrated by strong advocacy and stewardship of the park today.

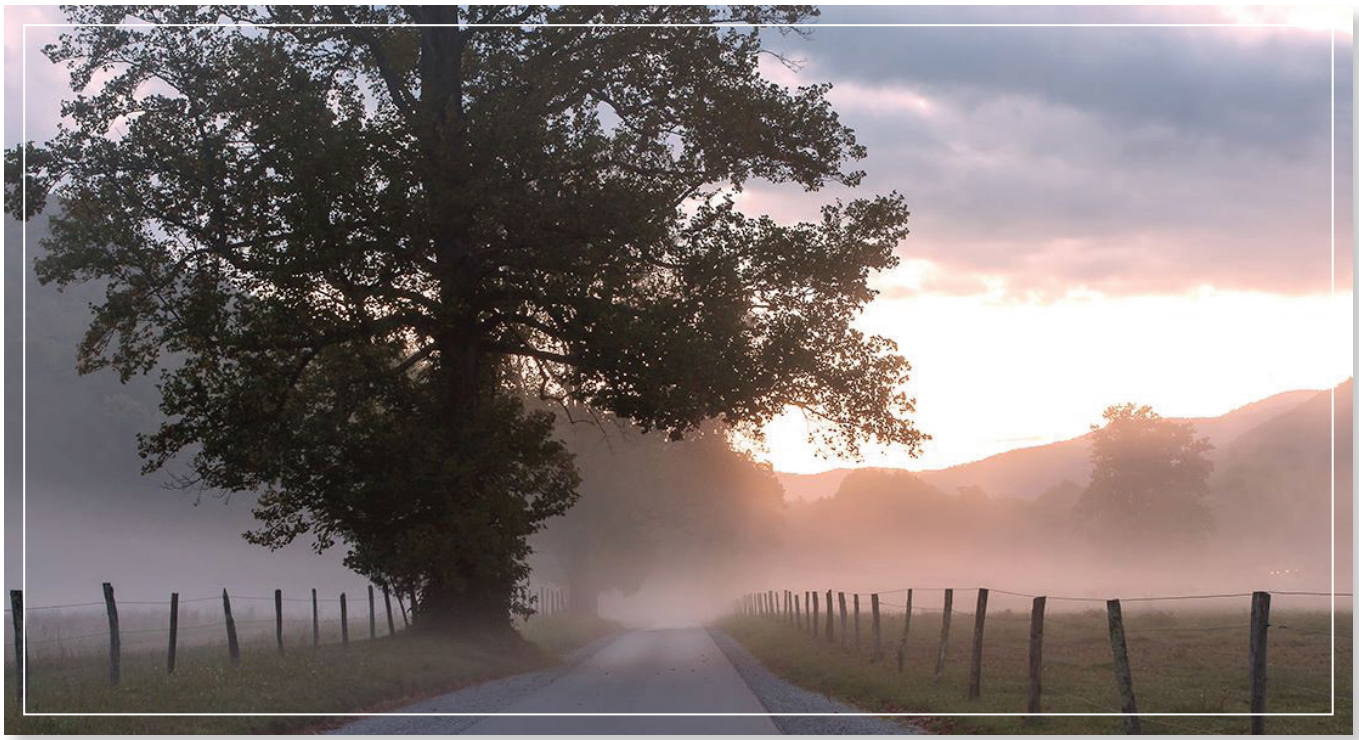
Fundamental Resource or Value	Connections
Current Conditions and Trends	**Conditions** • Many unique opportunities to experience world class natural and cultural resources exist. • Both commercial and noncommercial opportunities for recreation are available in the park. • The park provides ample access to a well-developed and diverse trail system that provides visitors of all skill levels a variety of recreational opportunities. • Specific areas of the park are more popular for visitation than others and receive the bulk of all recreational visits. • Traditional outdoor recreational opportunities are abundant, but contemporary opportunities, such as web-based applications and social networking, are limited due to lack of infrastructure, development, and availability. • Visitors tend to be of a similar demographic with little variance in age and diversity. **Trends** • Traditional recreational use continues to increase. • New and emerging recreational opportunities, both commercial and noncommercial, are regularly introduced or proposed to the park. • The number of visitors reached with educational programs has decreased over time. • Visitation tends to favor specific areas or attractions with other park areas seeing much less use. • Repeat visitors are common with many individuals and family groups continuing to visit the park year after year. • The expectation of a higher level of technological and internet accessibility while in the park has increased amongst park visitors.
Threats and Opportunities	**Threats** • Concentration of visitors in high use areas often degrades and prevents positive visitor experiences and creates additional impacts on natural and cultural resources. Climate change may also increase this deterioration. • Some traditional recreation experiences may degrade park resources and values. • Overcrowding may degrade park resources and the quality of the visitor experience. • New and emerging recreational options are often not in alignment with the NPS mission. • Contemporary opportunities often battle traditional thinking and policies of park management. • Park recreational opportunities are not commonly used/accessed beyond the standard user base. • Outside influences and misinformation affects visitor perception of acceptable recreation within the park. • A lack of knowledge and use of less-visited areas of the park limits public engagement and interest. **Opportunities** • Develop engaging educational opportunities internally and with park partners to expand the user base and provide new experiences to repeat visitors. • Expand and promote popular recreational activities in other areas of the park that have lower visitation. • The park may highlight and promote specific park areas and seasons of the year that traditionally have lower visitation numbers. • Use urban interface parks in larger cities to provide visitor feedback and knowledge of the interest in Great Smoky Mountains National Park to engage new audiences. • Reevaluate appropriateness of nontraditional or proposed recreational opportunities based on current societal norms and changes in public expectations. • Advance technological and web-based programs that highlight the park to expand and improve generational diversity.

Fundamental Resource or Value	Connections
Data and/or GIS Needs	• Determine additional revenue opportunities. • Evaluate the effectiveness of the park's efforts to connect with new/diverse audiences. • Research on African American history in the park and other groups that have a historic connection to the park. • Trail counts and use data. • Visitor use survey.
Planning Needs	• Commercial services strategy. • Search and rescue plan. • Transportation plan. • Targeted accessibility improvement plan. • Visitor use management plan for Cades Cove.
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 • Architectural Barriers Act • Federal Lands Recreation Enhancement Act • National Park Service Concessions Management Improvement Act • Noise Control Act • Outdoor Recreation Act • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • "Nondiscrimination on the Basis of Disability by Public Accommodations and in Commercial Facilities" (28 CFR 36) • "Resource Protection, Public Use, and Recreation" (36 CFR 2) • "Vehicles and Traffic Safety" (36 CFR 4) • "Commercial and Private Operations" (36 CFR 5) • "Concession Contracts" (36 CFR 51) • "Nondiscrimination in Federally Assisted Programs of the Department of the Interior," (43 CFR 17) Subpart B: "Nondiscrimination on the Basis of Handicap" • "Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines" (36 CFR 1191) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • Director's Order 17: *National Park Service Tourism* • Director's Order 28: *Cultural Resource Management* • "NPS-28, Cultural Resource Management Guideline" • Director's Order 42: *Accessibility for Visitors with Disabilities in National Park Service Programs and Services* • Director's Order 47: *Soundscape Preservation and Noise Management* • *NPS-75 Natural Resources Inventory and Monitoring Guideline* • Director's Order 75A: *Civic Engagement and Public Involvement* • NPS *Natural Resource Management Reference Manual 77* • NPS *Transportation Planning Guidebook* • *Park Road Standards*

Fundamental Resource or Value	Enduring Cultural Ties to the Land
Related Significance Statements	• **Vestiges of Human History.** Humans have lived in and around the park for more than 9,000 years. The park preserves a significant number of archeological sites, historic structures, and other vestiges of human interaction with the land. The time periods represented by these resources include American Indian, Appalachian mountain settlement, and early National Park Service / Civilian Conservation Corps eras. • **Philanthropy and Stewardship.** The park was established through the efforts of private philanthropists, local residents, and community leaders. The park was stitched together through the sacrifices of families from North Carolina and Tennessee whose private lands were acquired to create a new kind of "National Park in the East." Their connections to the land endure and are demonstrated by strong advocacy and stewardship of the park today.
Current Conditions and Trends	**Conditions** • The condition of the park's cultural resources range from good to poor. • The condition of the park's archeological resources range from good to poor. Many areas are yet to be surveyed. • The park has a good oral history collection, but otherwise little documentation or understanding of ethnographic resources. • The park has an extensive museum collection but with gaps. There is a need for artifact conservation and to address the cataloging backlog (both natural and cultural). Park archives also reflect gaps as a result of inconsistent park record management. The extent of the park collections are not easily communicated to potential researchers. • Only a fraction of the park's resources considered potentially eligible for the National Register of Historic Places have been nominated. • The park has inadequate interpretation of the Cherokee story, African American story, and prehistoric resources in resource education programs and literature. **Trends** • Cultural resource research, inventory, and documentation are primarily driven by project compliance needs. • The total for deferred maintenance has continued to grow. • Aging Mission 66-era park facilities are becoming potentially eligible for listing in the National Register of Historic Places while they also require significant modification in order to continue to meet visitor needs or support park operations. • Loss of knowledge of historic trades. • Museum collection storage conditions to improve with new facility. • Increasing museum collection size and growing backlog in cataloging natural, cultural, and archival collections. • More researchers are looking for easy, remote access to collection resources. • Increasingly park records and data, including photographs, are in electronic form. However, legacy data are not and need to be properly stored and maintained. • Park is using other organizations to make information available digitally (e.g., Open Parks Network and Western North Carolina University). • Visitor education programs with a hands-on approach versus a talk format. • An education focus on training teachers and reaching students. • Working with descendent groups and the Eastern Band of Cherokee Indians to better incorporate the story of these groups and the Cherokee into interpretation media.

Fundamental Resource or Value	Enduring Cultural Ties to the Land
Threats and Opportunities	**Threats** • Constant deterioration of structures, archeology sites, and landscapes as a result of environmental factors, forest succession, plant mortality, insect damage, and visitor impacts including vandalism. • Incomplete baseline inventory and resource documentation impacting ability to make informed management and maintenance decisions. • Loss of information either because it is solely in electronic form or because legacy data are not integrated into electronic databases or GIS layers. • Inability to access the park archives and collections because of backlog in cataloging (i.e., do not know it is there or where it physically is). • Potential public dispersal of sensitive information. **Opportunities** • Use of visitor education programs to convey the preservation philosophy. • Establish overarching guidance for the long-term management, preservation, and interpretation of the cemeteries in the park. • Development of curriculum-based education programs to share cultural resource aspects of the park on both the teacher and student levels. • A recently prepared historic resource study and "Multiple Property Nomination Form" improves inventory information and potentially the National Park Service's ability to complete additional nomination for park structures. • Build on community interest to increase volunteer and funding support. • Broadening existing and building new partnerships to promote research, resource study, and information sharing. • Recruit and train additional volunteers to complete routine monitoring work and projects to improve resource condition; expand upon existing volunteer programs such as Adopt a Cabin. • Use of cultural resource GIS layers to inform park law enforcement staff of the presence of resources to improve resource protection. • Use of the NPS GIS Portal, NPS web catalog, NPS DataStore to widely share resource documentation and information with researchers and the public. • Work with the Cherokees to tell their stories throughout the park and improve our understanding of the significance of Cherokee cultural properties throughout park. • Develop sustainable maintenance practices. • Staff training to expand/improve skills and to build cultural resource awareness of all park staff. • Greater researcher accessibility to museum collections with new joint facility and current archive cataloging project work. • Compete for NPS project funds and outside grants to fund cultural resource projects. • Seek out researchers to complete cultural resource-related projects in the park.
Data and/or GIS Needs	• Cultural resource stewardship assessment. • Ethnographic overview and assessment. • Historic structure reports. • Systematic archeology survey of high probability areas to support development of archeology overview. • Updated museum protocols to guide management of new facility. • Update the cultural landscape inventory to reflect the recommendations of the historic structure reports.

Fundamental Resource or Value	Enduring Cultural Ties to the Land
Planning Needs	• Cultural landscape reports. • Field and meadow management plan for historic landscapes.
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** • Antiquities Act • Archaeological Resources Protection Act • Archeological and Historic Preservation Act • Historic Sites Act • National Cemeteries Act • National Historic Preservation Act, as amended • Museum Properties Management Act, as amended • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13287, "Preserve America" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • "Curation of Federally-Owned and Administered Archaeological Collections" (36 CFR 79) • "Protection of Historic Properties" (36 CFR 800) • "Preservation of American Antiquities" (43 CFR 3) • "Protection of Archaeological Resources" (43 CFR 7) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • Director's Order 14: *Resource Damage Assessment and Restoration* • NPS *Damage Assessment and Restoration Handbook* • Director's Order 24: *NPS Museum Collections Management* • NPS *Museum Handbook*, parts I, II, and III • NPS *Management Policies 2006* (chapter 5) "Cultural Resource Management" • Director's Order 28: *Cultural Resource Management* • "NPS-28, Cultural Resource Management Guideline" • Director's Order 28A: *Archeology* • Director's Order 64: *Commemorative Works and Plaques* • *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*



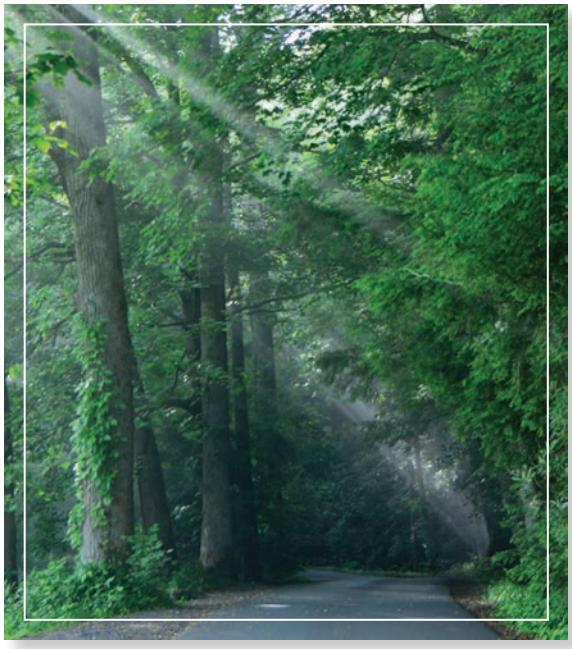
Fundamental Resource or Value	Journeys
Related Significance Statements	• **Close to Home.** Great Smoky Mountains National Park is the largest mountainous park east of the Mississippi River and is one of the most visited national park units. The park lies within a day's drive of more than half the U.S. population and thus offers the opportunity for tens of millions of people to have a national park experience close to home while also drawing visitors from around the world. • **Scenic Qualities.** The Great Smoky Mountains exhibit the finest example of the ruggedness, magnitude, height, and scenic grandeur of the southern Appalachian Mountains, including 16 peaks over 6,000 feet. Visitors are drawn to a variety of park features including waterfalls, historic landscapes, panoramic mountain vistas, and the changing of the seasons. • **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system. • **Vestiges of Human History.** Humans have lived in and around the park for more than 9,000 years. The park preserves a significant number of archeological sites, historic structures, and other vestiges of human interaction with the land. The time periods represented by these resources include American Indian, Appalachian mountain settlement, and early National Park Service / Civilian Conservation Corps eras. • **Philanthropy and Stewardship.** The park was established through the efforts of private philanthropists, local residents, and community leaders. The park was stitched together through the sacrifices of families from North Carolina and Tennessee whose private lands were acquired to create a new kind of "National Park in the East." Their connections to the land endure and are demonstrated by strong advocacy and stewardship of the park today.

Fundamental Resource or Value	Journeys
Current Conditions and Trends	**Conditions** • The park has 4 visitor centers, 11 campgrounds, 384 miles of roads, and approximately 800 miles of trails. • Many of the facilities are aging, having considerable deferred maintenance. • Roads, trails, and campsites are generally in good condition, but are in continual need of maintenance. • There is limited parking in developed areas (i.e., Chimneys/Alum Cave/Laurel Falls Trails parking areas, Cades Cove Loop Road) leading to off-road parking that damages resources and contributes to visitor frustration. • Visitors often use road shoulders to view wildlife. A lack of adequate, safe turnouts/ overlooks causes off-road parking and safety concerns. • Backcountry facilities (bridges) at risk for damage due to declining forest health (age, pests). • Conflict between pedestrians and vehicles creates safety concerns in some developed areas such as at Sugarlands, Oconaluftee, Cable Mill, and Cades Cove. • Visitor satisfaction is generally high based on current surveys. • Goals for visitor accessibility have not yet been fully developed or met. • There are safety concerns associated with visitor-wildlife interactions. • The park maintains high-quality interpretive and educational opportunities (e.g., programs, exhibits, publications, videos/films, website, social media) to meet visitor needs. • The park engages in outreach to distant audiences through the Internet as well as gateway and regional communities to increase people's connection to Great Smoky Mountains National Park. • The park strives to provide effective messaging and education services and products. • Signage is generally in good condition. • Park building security measures have not yet been fully developed or met. • Historic fencing needs maintenance; security fencing is needed around utilities, communication sites, and old fire towers. • Natural deterioration of rock formations and trees along roadway create visitor and employee safety concerns. **Trends** • Visitation is generally increasing, resulting in additional pressures on facilities, roads, and resources. • Increase in noise pollution, particularly near roadways. • Patterns of visitation are changing; more people are visiting the park in the spring and fall than in the past. • Within the last 5 to 10 years, more people are undertaking overnight and multinight backcountry camping activities. • The park continues to increase accessible opportunities for visitors at the park. • Many historic structures and sites are deteriorating and need significant preservation and restoration. • Graffiti on tunnels, walls, and boulders is increasing at an alarming rate. • Partners continue to support park operations and functions through endowments and volunteerism.

Fundamental Resource or Value	Journeys
Threats and Opportunities	**Threats** • Congestion occurs throughout the park during the spring, summer, and fall affecting commercial services, campgrounds, parking areas, traffic, etc. • Human-wildlife interactions result in traffic congestion and safety concerns, trail safety concerns, conflicts along roadsides, off-road parking due to wildlife watching, and safety concerns during elk rut and calving at Cataloochee and Oconaluftee. • Encroachment and development outside the park impacts visitor experience (e.g., major park entrances). Protection of the viewshed outside the park is not controlled by the park. • Park infrastructure is aging and may fail, including historic resources. This failure has the potential to impact natural and/or cultural resources. Temporary fixes can be relatively expensive, but are often the only option until scarce/limited funding can be secured for more permanent rehabilitation or replacement. Climate change may accelerate infrastructure deterioration. • Volume of litter and commercial/household trash dumped along roadsides (Cades Cove, Laurel Falls, etc.). • Air pollution can impact human health, limiting activities and jeopardizing the park experience when it reaches unhealthy levels. • Climate change may influence visitation patterns and activities, affecting park operations and budgets (storm damage, frequency, intensity, age and health of forest). • Impact of increased number of historic structures (the list now includes Mission 66 structures). • Vandalism and graffiti on tunnels, walls, and boulders is increasing. • Resource degradation is visible along road shoulders and parking areas especially at popular visitation destinations. Utilities electrical/underground located along road shoulders make maintenance, rehabilitation, or replacement challenging. • Managing increasing restroom demand with antiquated sewage systems is putting the public and employee health at risk. **Opportunities** • Trail classification for maintenance, visitor expectations, user condition, trail and parking lot capacity (Laurel Falls, Alum Cave), shoulder parking (related to resource degradation); identification of locations that will no longer be maintained trails, horse trail conditions, cost of rehab, routine maintenance, tool use. • Improve/enhance vehicular circulation, parking, and pedestrian opportunities. • Improve features and enhance pedestrian and vehicular circulation. • Provide for accessibility and universal design in park facilities. • Improve communication of research results to educate the public. • Collect and use social science data to address key visitor experience concerns. • Improve visitor safety and appropriate management, while providing a desired visitor experience and protect resources. • Reach and educate more audiences via ranger-led programs including residential and other youth programs, the park website, social media, and park publications. • Visitor education on new and evolving conditions associated with a changing climate in the park. • Trails will continue to provide excellent youth experiences, increased opportunities for volunteers, produce high-quality work products, and improve trail conditions at key (popular) visitor locations. • Complete Foothills Parkway (current section) – efforts are currently underway to secure funding to pave the 16-mile section of Foothills Parkway. If successful, it could be open to the public by the end of 2018. • Define desired conditions of resources and facilities using visitor input and management criteria. Select indicators and identify thresholds. Develop monitoring and management strategies.

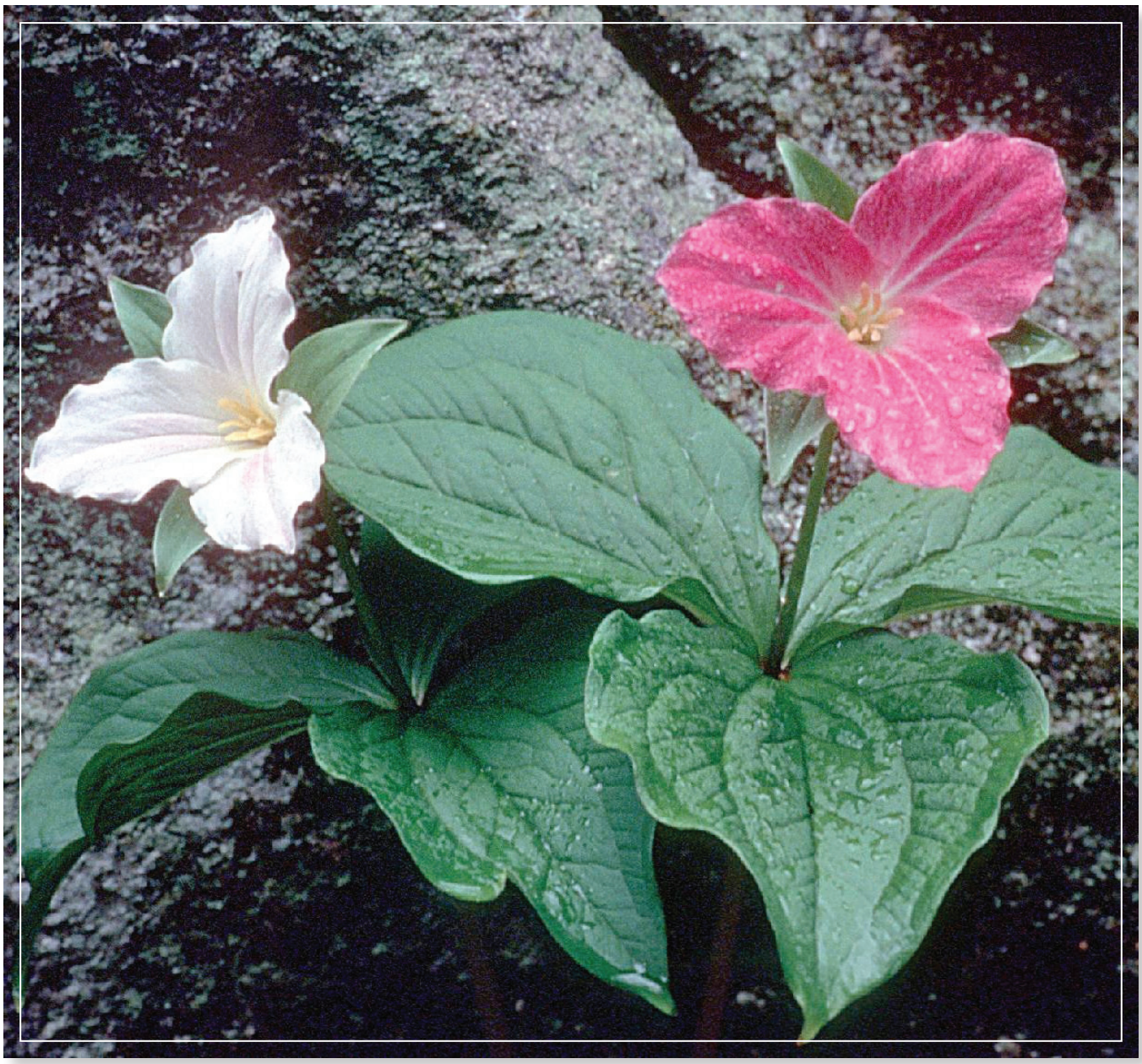
Fundamental Resource or Value	Journeys
Threats and Opportunities	**Opportunities (continued)** • Redistribution of visitors at key frontcountry sites to ease congestion. • Explore/evaluate allowing mountain biking trails along park roads (e.g., administrative road sections, concession trail sections, etc.). • Use social media to encourage better distribution of visitors / ease congestion. • Educate local businesses about other locations to spread the word (such as letter from superintendent in hotel rooms, hotel TV channel with park message). • Evaluate all types of messaging (i.e., Internet, print, etc.) for effectiveness.
Data and/or GIS Needs	• Analyze intelligent transportation systems infrastructure and capacity. • Identify areas along roads for visitor/wildlife improvements. • Identify capacity of existing services and facilities in developed areas and destinations / points of interest. • Parkwide landslide hazard analysis, focus on areas along and near roads (underway). • Study to identify high accident areas and traffic near-misses. • Visitor impact studies.
Planning Needs	• Climate change adaptation plan. • Development concept plans for developed areas (or revise out-of-date plans). • Emergency operations plan (flood, weather events, fire, etc.) (underway). • Hazard tree management plan. • Park asset management plan update. • Parkwide visitor use management plan. • Road improvement / parkwide transportation plan. • Soundscape management plan. • Newfound Gap Road corridor management plan (underway). • Visitor use and transportation plan for Cataloochee. • Wildlife and visitor 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** • Noise Control Act • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13287, "Preserve America" • Executive Order 13327, "Federal Real Property Asset Management" • Executive Order 13352, "Facilitation of Cooperative Conservation" • Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" • Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • "Resource Protection, Public Use, and Recreation" (36 CFR 2) • "Vehicles and Traffic Safety" (36 CFR 4) • "Commercial and Private Operations" (36 CFR 5)

Fundamental Resource or Value	Journeys
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)** • Director's Order 14: *Resource Damage Assessment and Restoration* • NPS *Damage Assessment and Restoration Handbook* • Director's Order 17: *National Park Service Tourism* • Director's Order 28: *Cultural Resource Management* • "NPS-28, Cultural Resource Management Guideline" • Director's Order 32: *Cooperating Associations* • Director's Order 47: *Soundscape Preservation and Noise Management* • Director's Order 52C: *Park Signs* • Director's Order 75A: *Civic Engagement and Public Involvement* • Director's Order 80: *Real Property Asset Management* • NPS *Transportation Planning Guidebook* • *Park Road Standards* • *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes*



Fundamental Resource or Value	Partnerships, Volunteerism, and Stewardship
Related Significance Statements	• **Philanthropy and Stewardship.** The park was established through the efforts of private philanthropists, local residents, and community leaders. The park was stitched together through the sacrifices of families from North Carolina and Tennessee whose private lands were acquired to create a new kind of "National Park in the East." Their connections to the land endure and are demonstrated by strong advocacy and stewardship of the park today.
Current Conditions and Trends	**Conditions** • The park has strong relationships with traditional support groups. • The park collaborates with many agencies, partners, and organizations through agreements and dynamic cooperative relationships enabling it to address complex issues. • The park has a robust volunteer program in which a large number of people find connections to park resources. • The volunteer program provides active, recreational opportunities and rewarding experiences through service. • The park has historically had a strong base of financial donations. • Community relationships are generally strong. **Trends** • Increased mean age of volunteers and major donors. • Increased reliance on volunteers for operational support. • Increased reliance on partners to help the park achieve agency goals. • Flat park budgets have increased reliance on financial support. • Increasing membership in partnership organizations provides a way for people to connect with park operations.
Threats and Opportunities	**Threats** • Neighboring communities tend to be focused on area-based issues, rather than parkwide issues. • Community-based decisions affect partnerships and relationships. • Increased visitation places elevated demands on funding and staffing. • Reliance on the same park and partner funding sources. • Ineffective recruitment of the next generation of park users, supporters, and advocates. • NPS web-based platforms restrict park ability to use new technologies to effectively share messages. **Opportunities** • Expand and diversify the base of philanthropic supporters, regionally and nationally. • Innovative recruitment and retention of the next generation of park users, supporters, and advocates. • Increase community engagement and educational opportunities. • Increase engagement through use of new technologies including social media. • Increase awareness of park, programs, recreational, and volunteer opportunities in local communities. • Develop creative approaches to volunteer management.
Data and/or GIS Needs	• Evaluate the effectiveness of the park's efforts to connect with new/diverse audiences. • Visitor use survey.
Planning Needs	• Update the comprehensive resource education plan.

Fundamental Resource or Value	Partnerships, Volunteerism, and Stewardship
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** • Volunteers in the Parks Act • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13287, "Preserve America" • Executive Order 13352," Facilitation of Cooperative Conservation" • "Resource Protection, Public Use, and Recreation" (36 CFR 2) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • Director's Order 7: *Volunteers in Parks* • Director's Order 17: *National Park Service Tourism* • Director's Order 32: *Cooperating Associations* • Director's Order 75A: *Civic Engagement and Public Involvement*



Fundamental Resource or Value	Scenic Beauty
Related Significance Statements	• **Close to Home.** Great Smoky Mountains National Park is the largest mountainous park east of the Mississippi River and is one of the most visited national park units. The park lies within a day's drive of more than half the U.S. population and thus offers the opportunity for tens of millions of people to have a national park experience close to home while also drawing visitors from around the world. • **Scenic Qualities.** The Great Smoky Mountains exhibit the finest example of the ruggedness, magnitude, height, and scenic grandeur of the southern Appalachian Mountains, including 16 peaks over 6,000 feet. Visitors are drawn to a variety of park features including waterfalls, historic landscapes, panoramic mountain vistas, and the changing of the seasons. • **Biodiversity and Science.** The Great Smoky Mountains are world-renowned for the diversity of plant and animal species found in the park due to the variety of elevations, landforms, climates, and vegetation communities—representing forest types such as those that exist from North Georgia to Maine. Old growth, ancient forests, outstanding natural waters, and rare species found only in the park are some of the unique natural attributes of the park. This makes it an exemplary outdoor laboratory for the study of and education about the ecosystem processes of the southern Appalachian Mountains. And consequently, the park is one of the most researched in the national park system.
Current Conditions and Trends	**Conditions** • Four distinct seasons encourage year-round visitation. • The park has abundant viewsheds. Many are in natural condition; others are degraded by adjacent development. • The park offers a wide variety of scenic experiences across 500,000 acres. Views and features include summits, cascades, waterfalls, streams, forests. • Forest diseases have degraded scenic beauty in some areas (e.g., dead hemlocks/firs). • The park actively maintains some highly visited landscapes (e.g., Cades Cove, Cataloochee, Balds). • The park is a popular destination for wildlife viewing. • The park offers outstanding night sky viewing opportunities, which are increasingly difficult to find in the region. • Vehicle and loud motorcycle noise exists along and near roads. Road noise can be heard in some backcountry areas of the park. • Haze (both natural and man-made) impacts views. • Congestion inside and outside of the park detracts from scenic beauty. **Trends** • Increase in the number of severe storms that change the landscape. • Improved efforts with gateway communities to encourage responsible boundary development. • Visitation continues to increase in all seasons. • The park has increased efforts to maintain manicured vistas along the road corridor. • The elk population has increased. • Increased loss of tree species/diversity and abundance. • Loss of dark night sky due to adjacent development. • High visitation has caused impacts on vegetation, including trampling and more denuded areas. • Air quality has improved, leading to less haze, which provides more opportunities for expansive views.

Fundamental Resource or Value	Scenic Beauty
Threats and Opportunities	**Threats** • Nonnative plant and animal species and diseases may degrade scenic qualities. • Air, sound, and light pollution may degrade scenic views and natural setting. • Graffiti and vandalism. • Climate change may alter scenic qualities. • Impacts due to increasing visitation (e.g., social trails, competition for park facilities, denuded areas, lack of parking, litter, etc.). • External development (e.g., cell towers, mountain top development) may degrade scenic beauty. **Opportunities** • Outreach to local communities to protect viewsheds along the boundaries. • Explore "green"/scenic options, for things like transportation and utilities, both in the park and outside park boundaries. • Address visitor capacity and crowding issues (day and overnight use). • Educate visitors on stewardship, Leave-No-Trace principles. • Define desired conditions of resources and facilities using visitor input and management criteria. Select indicators and identify thresholds. Develop monitoring and management strategies.
Data and/or GIS Needs	• Phenology plots/monitoring (underway). • Visual resource inventory.
Planning Needs	• Field and meadow management plan for historic landscapes. • Night sky 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 • Executive Order 11593, "Protection and Enhancement of the Cultural Environment" • Executive Order 13287, "Preserve America" • Executive Order 13352, "Facilitation of Cooperative Conservation" • Executive Order 13423, "Strengthening Federal Environmental, Energy, and Transportation Management" • Executive Order 13514, "Federal Leadership in Environmental, Energy, and Economic Performance" • Secretarial Order 3289, "Addressing the Impacts of Climate Change on America's Water, Land, and Other Natural and Cultural Resources" • "Resource Protection, Public Use, and Recreation" (36 CFR 2) **NPS Policy-level Guidance (NPS *Management Policies 2006* and Director's Orders)** • NPS *Management Policies 2006* (§1.4.6) "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* (§4.10) "Lightscape Management" • Director's Order 25: *Land Protection* • Director's Order 28: *Cultural Resource Management* • "NPS-28, Cultural Resource Management Guideline" • Director's Order 32: *Cooperating Associations* • Director's Order 75A: *Civic Engagement and Public Involvement* • NPS *Natural Resource Management Reference Manual 77*

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 resources and values. For example, a key issue may pertain to the potential for a fundamental 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 that 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.

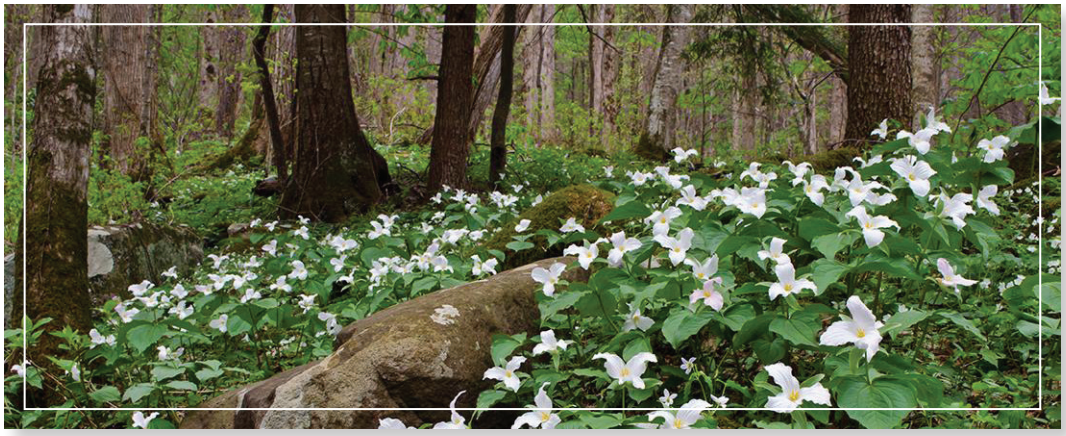
The following are key issues for Great Smoky Mountains National Park and the associated planning and data needs to address them:

- **Congestion and Crowding.** Park visitation has grown for the last several years, and is now at approximately 11 million visitors per year—up from approximately 9 million annual visitors for most of the last decade. Crowding and congestion are issues, especially during summer and fall, and in popular areas such as Cades Cove and Clingmans Dome. Crowding results in negative impacts on the visitor experience. For instance, visitors are waiting in long lines for parking and for basic services such as restrooms. Opportunities for solitude and immersion in nature are becoming more difficult to find. Crowding has also resulted in operational challenges, such as increased wear and tear on park facilities. The continued increase in visitation is also having natural and cultural resource impacts, such as an increase in social trails, denuded campgrounds, and an increase in disturbed areas along roadsides.

    - *Associated planning and data needs:* Visitor use management plan (parkwide); visitor use management plan for Cades Cove; visitor use survey; visitation impact studies; trail counts and use data

- **Threats to Forest Health.** A number of pests and diseases are weakening the health of the forests in Great Smoky Mountains National Park. The pests of greatest concern include hemlock wooly adelgid, balsom wooly adelgid, and emerald ash borer. Some forest diseases and pests are not currently in the park, but are present in the surrounding region, and will probably enter the park in the future. Several other factors contribute to the health of park forests and their susceptibility to disease including lack of a natural fire regime as well as continued air pollution, and the resultant acid and nitrogen deposition. The impacts of climate change, including increased severity of storms and changes in precipitation patterns, may further weaken forest health.

    - *Associated planning and data needs:* Research on climate change impacts on specific forest ecosystems; best practices study of effective bio-controls for forest pests; forestry-level LiDAR; assess future forest insect diseases



- **Infrastructure Stability.** Much of the park's infrastructure is nearing the end of its life span. This creates health and safety issues for park visitors and staff. For instance, the stability and condition of tunnels and retaining walls along mountain roads is difficult to continuously monitor. The increase in visitation has also contributed to wear and tear on park infrastructure. In many areas, the infrastructure supporting drinking water supply and wastewater removal is at maximum capacity. Furthermore, budgets and staff have remained flat, while crowds and maintenance costs have increased, resulting in growing strain on park operations.

    - *Associated planning and data needs:* Park asset management plan update; targeted accessibility improvement plan; foot bridge replacement plan; parkwide visitor use management plan

- **Relevancy and Inclusion.** The park has long relied on dedicated volunteers and supporters. These dedicated people have been instrumental in the park's history and are vital to current operations and programs. However, the cadre of park volunteers and supporters is aging. The park needs to find the next generation of advocates, volunteers, and future employees. The park has increased its outreach to millennials and youth in surrounding communities, but much work remains to be done. The park would also like to focus more energy on recruiting a diverse workforce of park staff and volunteers. Part of this effort will involve refining interpretive and educational programs to ensure the best chance of connecting with diverse audiences.

    - *Associated planning and data needs:* Update the comprehensive resource education plan; visitor use survey; research on African American history in the park and other groups that have a historic connection to the park; evaluate the effectiveness of the park's efforts to connect with new/diverse audiences

- **Fiscal Sustainability.** The park is deed restricted from charging entrance fees and therefore has limited ability to take advantage of this funding source to offset park operational and maintenance costs. As a result, the park must continue to seek new and creative funding opportunities to address needs.

    - *Associated planning and data needs:* Park asset management plan update; determine additional revenue opportunities; commercial services strategy

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.

Key for Priority Setting.

- 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 seven years as funding allows.
- Low priority items are those that the park intends to initiate in seven or more years as funding allows.

Planning Needs – Where A Decision-making Process Is Needed			
Related to an FRV or Key Issue?	**Planning Needs**	**Priority (H, M, L)**	**Notes**
FRV	Wildlife and visitor management plan	H	To reduce conflicts between visitors and wildlife and to improve opportunities for visitors to safely view wildlife.
FRV, Key Issue	Visitor use management plan for Cades Cove	H	To address crowding and congestion in this popular area.
FRV, Key Issue	Update the comprehensive resource education plan	H	Original plan was finished in 2001.
FRV	Soundscape management plan	H	To address growing threats to the soundscape in the park; particularly those associated with growing visitation and noise along the road corridors.
FRV	Night sky management plan	H	To address night sky viewing opportunities in the park.
FRV	Climate change adaptation plan	H	To identify park-specific climate change adaptation strategies and management actions.
FRV	Hazard tree management plan	H	Needed for visitor health and safety and to address threats to facilities.
FRV	Search and rescue plan	H	Needed for visitor health and safety.
FRV, Key Issue	Foot bridge replacement plan	H	Would inform the backcountry and park asset management plans.
FRV	Restoration plan for pH-impaired streams in the park	H	Based on regulations in the Clean Water Act. "Impairment" as defined under the Clean Water Act, not the 1916 NPS Organic Act.
FRV	Resource stewardship strategy	M	
FRV	Wilderness/ backcountry management plan	M	
FRV	Parkwide visitor use management plan	M	This would be sequenced to first allow for data collection on visitor use (See Data Needs section). The scope and scale of the effort could also be modified based on experiences in Cades Cove visitor use planning.
FRV	Road improvement / parkwide transportation plan	M	

Planning Needs – Where A Decision-making Process Is Needed			
Related to an FRV or Key Issue?	**Planning Needs**	**Priority (H, M, L)**	**Notes**
FRV	Landscape level planning	M	The Nature Conservancy is the lead. This is a collaborative effort with the U.S. Forest Service, tribes, and other large landowners near the park.
FRV, Key Issue	Targeted accessibility improvement plan	M	
FRV	Field and meadow management plan for historic landscapes	M	Highest priority areas are Cades Cove, Oconaluftee, and Cataloochee.
FRV	Trail maintenance / management classification	M	Would inform the wilderness/ backcountry management plan and park asset management plan.
FRV, Key Issue	Park asset management plan update	M	
FRV	Cultural landscape reports	M	High priority for Cades Cove and Cataloochee; medium for everything else.
Key Issue	Commercial services strategy	L	
FRV	Visitor use and transportation plan for Cataloochee	L	
FRV	Development concept plans for developed areas (or revise out-of-date plans)	L	Would follow visitor use management plans. The development concept plans would look at administrative and visitor use facilities and assess needs, where facilities could be improved, and where facilities could be combined with other agencies/organizations.

In addition to the planning needs listed above, the park has a number of ongoing planning projects. Some of the efforts to which park staff and financial resources are currently being dedicated are:

- Newfound Gap Road corridor management plan
- Emergency operations plan (flood, weather events, fire, etc.)
- Data management plan
- Physical security plan
- Housing management plan
- Parkwide landslide hazard analysis

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or Key Issue?	**Data and GIS Needs**	**Priority (H, M, L)**	**Notes, Including Which Planning Need This Data Need Relates To**
FRV	Develop critical loads for pH-impaired streams in the park	H	Needed for restoration plans. "Impairment" as defined under the Clean Water Act, not the 1916 NPS Organic Act.
FRV	Long term monitoring data on air, water, vegetation, soil, aquatic life and climate	H	Would inform other resource management plans.
FRV	Maps showing forest health along the trail system and overnight sites, location of cultural resources in the backcountry, as well as locations of bridges and trail signage	H	Needed for wilderness/backcountry management plans.
FRV	Updated vegetation map	H	In process, will need additional funding to complete.
FRV, Key Issue	Research on climate change impacts on specific forest ecosystems	H	To inform resource management decisions.
FRV	Studies to determine the feasibility and utility of using new genetic inventory and monitoring techniques	H	To inform resource management decisions.
FRV, Key Issue	Visitation impact studies	H	Should include impacts on road shoulders and turnouts, as well as impacts on visitor experience. The overall goal is to determine the degree of alteration and impacts on both sensitive and nonsensitive habitats and strategies to protect park resources.
FRV, Key Issue	Visitor use survey	H	This survey could also be distributed to volunteers. It would cover visitor demographics; country/state/city of origin; frequency and length of visit; reason for visit; how do visitors get park information and does it meet their needs?
FRV, Key Issue	Trail counts and use data	H	This is related to visitor use issues and would also help with trail classifications.

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or Key Issue?	**Data and GIS Needs**	**Priority (H, M, L)**	**Notes, Including Which Planning Need This Data Need Relates To**
FRV	Identify capacity of existing services and facilities in developed areas and destinations / points of interest.	H	High priority for Cades Cove; medium priority for everywhere else in the park. This data would inform visitor use management decisions (study should include parking lot counts; parking lot turnover; and parking available along road shoulders).
FRV, Key Issue	Evaluate effectiveness of the park's efforts to connect with new/ diverse audiences	H	Should evaluate educational programs (interpretation and curriculum based).
FRV, Key Issue	Research on African American history in the park and other groups that have a historic connection to the park	H	Purpose would be to help broaden park interpretation and outreach.
FRV, Key Issue	Determine additional revenue opportunities	H	Needed for financial sustainability.
FRV	Study to identify high accident areas and traffic near-misses	H	Should include bike, pedestrians, and vehicles.
FRV	Identify areas along roads for visitor/wildlife improvements	H	To improve wildlife viewing opportunities and traffic management.
FRV	Analyze Intelligence Transportation Systems infrastructure and capacity	H	High priority for Cades Cove; medium priority for other park locations.
FRV	Ethnographic overview and assessment	H	Needed for interpretive programs, outreach, and other management decisions.
FRV	Systematic archeology survey of high probability areas to support development of archeology overview	H	To support cultural resource management.
FRV	Updated museum protocols to guide management of new facility	H	For management of park collections.
FRV	Cultural resource stewardship assessment	H	Needed to support the resource stewardship strategy.
FRV, Key Issue	Best practices study of effective bio-controls for forest pests	M	Needed to support natural resource management.

Data Needs – Where Information Is Needed Before Decisions Can Be Made			
Related to an FRV or Key Issue?	**Data and GIS Needs**	**Priority (H, M, L)**	**Notes, Including Which Planning Need This Data Need Relates To**
FRV	Study – biotic effects of air pollution on terrestrial species	M	During design of the study, determine which species. There has been more research on aquatic species, but much less is known about terrestrial species.
Key Issue	Forestry-level LiDAR	M	For natural resource management.
FRV	High resolution meteorological models to predict climate change impacts	M	For natural resource management.
FRV	Studies to determine the extent and impacts of introduced nonnative species	M	For natural resource management.
FRV, Key Issue	Assess future forest insect diseases	M	For natural resource management.
FRV	Visual resource inventory	M	To address growing urban development near the park.
FRV	Historic structure reports	M	High priority for Cades Cove and Cataloochee; medium for everything else.
FRV	Update the cultural landscape inventory to reflect the recommendations of the historic structure reports	M	For cultural resource management.

Note: the list above covers only high and medium priority needs.

In addition to the data and study needs listed above, the park has a number of data collection efforts, studies, and research projects underway. Some of the efforts to which park staff and financial resources are currently being dedicated are:

- Phenology plots and monitoring
- Natural resource condition assessment
- Baseline data collection and assessments for soundscapes in developed, backcountry, and wilderness areas
- Baseline data/assessments for night sky in developed, backcountry, and wilderness areas
- Create species distribution models for all known park biota
- Condition assessment of backcountry infrastructure trail surface and bridges (includes primitive foot logs)
- Condition assessment of signage and bear cables
- Update the park boundary line in GIS
- Determinations of eligibility for historic structures

Part 3: Contributors

Great Smoky Mountains National Park

Brian Bergsma, Deputy Chief of Facility Management
Rachel Brady, Outdoor Recreation Planner
Teresa Cantrell, Facility Management Division - Program Manager
Cassius Cash, Superintendent
Charlie Daniels, Safety Officer
Elizabeth Dupree, Chief of Resource Education
Dianne Flaugh, Cultural Resource Program Manager
Christine Hoyer, Backcountry Management Specialist
Clayton Jordan, Deputy Superintendent
Steve Kloster, Chief of Resource and Visitor Protection
Helen McNutt, Staff Park Ranger
Dawn O'Sickey, Chief of Administration
Tom Remaley, Inventory and Monitoring Coordinator
Jim Renfro, Air Quality Specialist
Susan Sachs, Education Specialist
Molly Schroer, Concession Specialist
Dana Soehn, Management Assistant / Park Spokesperson
Alan Sumeriski, Chief of Facility Management
Stephanie Sutton, Acting Chief of Resource Education
Jeff Troutman, Chief of Resource Management and Science

NPS Southeast Region

Jami Hammond, Regional Environmental Coordinator and Regional Liaison
Ben West, Chief, Planning and Compliance Division

NPS WASO Park Planning and Special Studies

Pam Holtman, Quality Assurance Coordinator

NPS Denver Service Center – Planning Division

Jim Bacon, Project Manager (former)
Chris Church, Branch Chief
Tatiana Márquez, Environmental Economist
Ray McPadden, Project Manager and Community Planner
Ken Bingenheimer, Editor
Nancy Shock, Foundations Coordinator
John Paul Jones, Visual Information Specialist
Melody Bentfield, Foundations Program Librarian

Photo Credits

A special thank-you to the photographers who have generously provided permission for use of their work of Great Smoky Mountains National Park.

Cover © Bob Carr. Used by permission.

Appendixes

Appendix A: Enabling Legislation for Great Smoky Mountains National Park

May 22, 1926.
[S. 4073.]
[Public, No. 268.]

CHAP. 363.—An Act To provide for the establishment of the Shenandoah National Park in the State of Virginia and the Great Smoky Mountain National Park in the States of North Carolina and Tennessee, and for other purposes.

National parks. Shenandoah, Va., and Great Smoky Mountains, N. C. and Tenn., set apart as, when lands therefor vested in United States.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That when title to lands within the areas hereinafter referred to shall have been vested in the United States in fee simple there shall be, and are hereby, established, dedicated, and set apart as public parks for the benefit and enjoyment of the people, the tract of land in the Blue Ridge, in the State of Virginia, being approximately five hundred and twenty-one thousand acres recommended by the Secretary of the Interior in his report of April 14, 1926, which area, or any part or parts thereof as may be accepted on behalf of the United States in accordance with the provisions hereof, shall be known as the Shenandoah National Park; and the tract of land in the Great Smoky Mountains in the States of North Carolina and Tennessee being approximately seven hundred and four thousand acres, recommended by the Secretary of the Interior in his report of April 14, 1926, which area, or any part or parts thereof as may be accepted on behalf of the United States in accordance with the provisions hereof, shall be known as the Great Smoky Mountains National Park: *Provided*, That the United States shall not purchase by appropriation of public moneys any land within the aforesaid areas, but that such lands shall be secured by the United States only by public or private donation.

Tract in the Blue Ridge, Va.

In the Great Smoky Mountains, N. C. and Tenn.

Proviso. Lands to be secured only by donation. *Post*, p. 966.

Acceptance of title of lands in Shenandoah Park area in Virginia.

SEC. 2. The Secretary of the Interior is hereby authorized, in his discretion, to accept as hereinafter provided on behalf of the United States title to the lands referred to in the previous section hereof and to be purchased with the $1,200,000 which has been subscribed by the State of Virginia and the Shenandoah National Park Association of Virginia and with other contributions for the purchase of lands in the Shenandoah National Park area, and with the $1,066,693 which has been subscribed by the State of Tennessee and the Great Smoky Mountains Conservation Association and by the Great Smoky Mountains (Incorporated) (North Carolina) and with other contributions for the purchase of lands in the Great Smoky Mountains National Park area.

In Smoky Mountain Park area in Tennessee and North Carolina.

National Park Service to administer, etc.

SEC. 3. That the administration, protection, and development of the aforesaid parks 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 25, 1916, entitled "An Act to establish a National Park Service, and for other purposes," as amended: *Provided*, That the provisions of the Act approved June 10, 1920, known as the Federal Water Power Act, shall not apply to these parks: *And provided further*, That the minimum area to be administered and protected by the National Park Service shall be for the Shenandoah National Park area two hundred and fifty thousand acres and for the Great Smoky Mountains National Park area one hundred and fifty thousand acres: *Provided further*, That no general development of either of these areas shall be undertaken until a major portion of the remainder in such area shall have been accepted by said Secretary.

Vol. 39, p. 535.

Provisos. Water power Act not applicable. Vol. 41, p. 1063. Minimum area specified.

SEC. 4. The Secretary of the Interior may for the purpose of carrying out the provisions of this Act employ the commission authorized by the Act approved February 21, 1925.

Approved, May 22, 1926.

69TH CONGRESS } SENATE { REPORT
1st Session } { No. 824

SHENANDOAH AND GREAT SMOKY MOUNTAIN NATIONAL PARKS

MAY 10 (calendar day, MAY 13), 1926 —Ordered to be printed

Mr. STANFIELD, from the Committee on Public Lands and Surveys, submitted the following

REPORT

[To accompany S. 4073]

The Committee on Public Lands and Surveys, to whom was referred the bill (S. 4073) to provide for the establishment of the Shenandoah National Park in the State of Virginina and the Great Smoky Mountain National Park in the States of North Carolina and Tennessee, and for other purposes, having fully and carefully considered the same, report favorably thereon with the recommendation that the bill do pass with the following amendment:

On page 3, line 18, after the word "area," strike out the words "three hundred" and insert in lieu thereof the words "one hundred and fifty."

As recited in the letter from the Secretary of the Interior to the President of the Senate, dated April 14, 1926, the bill herewith reported is the result of investigations carried on by the Secretary of the Interior in pursuance of directions given him by an act of Congress approved February 21, 1925.

Previous to that time the Secretary of the Interior, carrying out suggestions made on several occasions by the Director of the Park Service, undertook by means of a committee of five men to investigate various regions in the southern Appalachian Mountains with a view of determining what could be done in these mountains to establish a national park or parks comparable in size and in scenic qualities with the national parks west of the Mississippi. With the exception of Lafayette National Park on Mount Desert Island, off the coast of Maine, there is no national park east of the Mississippi, while there are 16 in continental United States west of that river. The bulk of the population is in the area in which there is no national park. The committee appointed two years ago recommended, and the Secretary of the Interior approved, the selection of the two parks now included in this bill. Following this approval Congress passed the act of February 21, 1925, directing the Secretary of the Interior to determine the boundaries and areas of such parts of these two areas as he might recommend on further investigation to be acquired and administered as national parks. The Secretary was authorized to make use of a commission in this work of investigation. The commission thus authorized was appointed, and its report to the Secretary of the Interior is dated April 8, 1926. The Secretary's letter recommending that the proposals of the commission be enacted into law was sent to the President of the Senate under date of April 14, 1926.

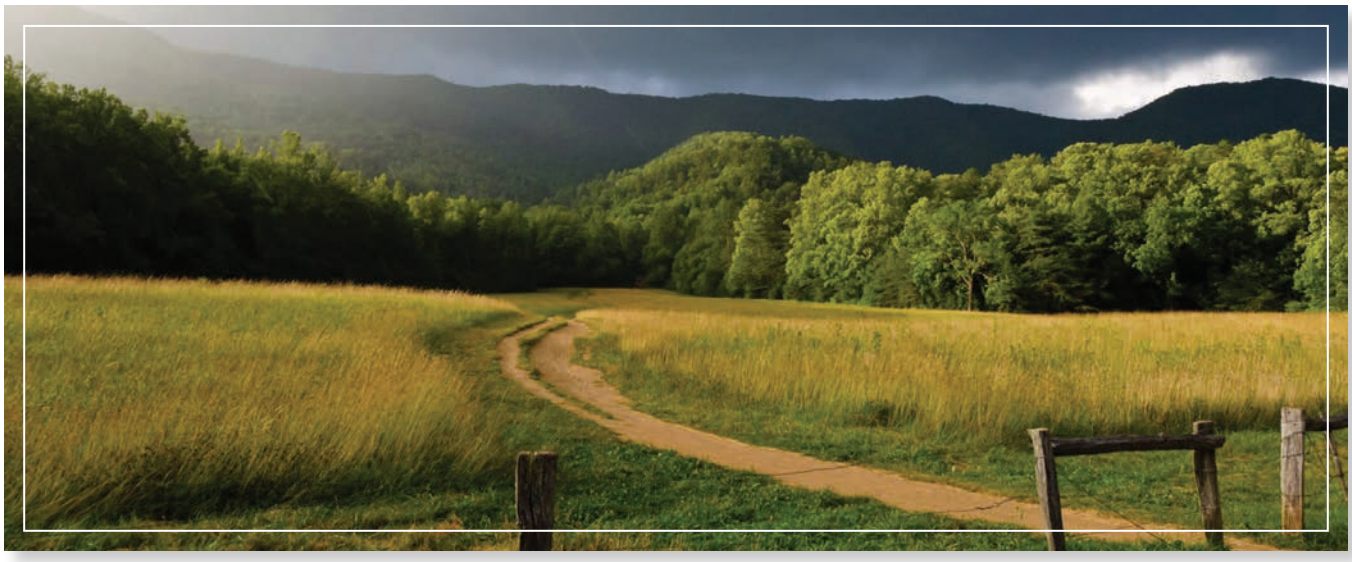
The recommendation of the Secretary of the Interior on this bill (S. 4073) is appended hereto and made a part of this report.

The letter of the Secretary of the Interior to the President of the Senate and the report of the Secretary's commission are also appended hereto and made a part of this report.

Appendix B: Inventory of Administrative Commitments

Title / Agency / Organization	Agreement Type	Date	Purpose
Law enforcement, emergency medical services, and fire	Memorandum of understanding	2016 – 2021	Provides law enforcement and supplemental emergency services to the park. Fire memorandums of understanding implemented and expired in different years.
North Shore Road	Memorandum of agreement	2010	Memorandum of agreement dated February 6, 2010, relating to nonconstruction of North Shore Road between Tennessee Valley Authority and Great Smoky Mountains National Park.
Alcoa Power Generating Inc. (APGI) land transfer	Land easement	2005	Land easement dated January 13, 2005. APGI conveyed a tract of land in Blount County, TN (along or in the vicinity of U.S. Highway 129) to the National Park Service. APGI still retains the right to use the NPS tracts for access to the Reserved Tract and the Tabcat Tract. The National Park Service has law enforcement and resource management control over these tracts.
Lands in Swain County	Memorandum of agreement	1948	Memorandum of agreement of March 31, 1948, between the Department of the Interior and the Tennessee Valley Authority, relating to transfer of lands in Swain County, North Carolina, for use as part of Great Smoky Mountains National Park.
Lands in Fontana Dam area	Memorandum of agreement	1943	Memorandum of agreement on October 8, 1943, between the Department of the Interior and the Tennessee Valley Authority relating to the acquisition and transfer of certain lands in Fontana Dam area for use as part of Great Smoky Mountains National Park.
Gatlinburg Spur agreement	General agreement	1951	An agreement between the National Park Service and the State of Tennessee outlining the conveyance of title and jurisdiction of the Gatlinburg Spur along both sides of the West Prong of the Little Pigeon River between the corporate limits of Gatlinburg and Caney Creek. The state agreed, following the transfer of lands to the United States, to preserve the existing special features of the parkway such as control of access and frontage rights, width right-of-way, scenic protection and other provisions incorporated in the deeds of May 9, 1951, and November 16, 1956, transferring title to the United States.
Special use permits	Special use permit		The park currently has approximately 80 special use permits in effect. They are broken down into the following categories: agriculture (13), resource monitoring stations (14), utilities (36), radio repeater installations (4), roads (4), water (6), and miscellaneous (7). Many of the utility permits are in need of conversion to rights-of-way as they involve long-term use of park land. The majority of the agriculture and utility permits also relate to Foothills Parkway which, by its nature, necessitates numerous utility line crossings. Two agricultural permits currently exist.
Appalachian National Scenic Trail	Memorandum of understanding		Pertains to the understanding and working relationships for protection and management of the Appalachian National Scenic Trail within Great Smoky Mountains National Park.
Appalachian Trail maintenance	General agreement		Agreement between Great Smoky Mountains National Park and the Smoky Mountains Hiking Club for maintenance of the Appalachian Trail from Davenport Gap to Fontana Dam. This general agreement describes the Appalachian Trail resources within Great Smoky Mountains National Park, defines organizational responsibilities, identifies applicable laws and regulations pertinent to the cooperative management of the Appalachian Trail within Great Smoky Mountains National Park, and defines basic trail maintenance activities.

Title / Agency / Organization	Agreement Type	Date	Purpose
Benton Mackaye Trail	Memorandum of understanding		Establishes and defines a partnership between the National Park Service and the Benton Mackaye Trail Association for the purpose of managing the recreational use and maintenance of the Benton Mackaye Trail within the Great Smoky Mountains National Park in accordance with the Great Smoky Mountains National Park backcountry management plan.
Discover Live in America	Memorandum of understanding		Providing research.
Friends of the Smokies	Memorandum of understanding		Philanthropic partner.
Great Smoky Mountains Association	Memorandum of understanding		Cooperating association for general education programs and sales of books and other items.
Great Smoky Mountains Institute	Memorandum of understanding		Residential youth camp for environmental education purposes.
JobCorps Center	Memorandum of understanding		For operational support.
Mountains to Sea Trail	Memorandum of understanding		Memorandum of understanding between U.S. Forest Service, Department of Agriculture, National Park Service, Department of the Interior, and the State of North Carolina, Division of Parks and Recreation, Department of Environment and Natural Resources concerning the Mountains to Sea Trail. The memorandum of understanding refers to the cooperation and coordination in planning, construction, maintenance, administration and use of the Mountains to Sea Trail.
Tennessee and North Carolina state historic preservation officers	Memorandums of understanding		For historic preservation and cultural resource management support.



Appendix C: Basics for Wilderness Stewardship

Wilderness Background Information

No congressionally designated wilderness presently exists at Great Smoky Mountains National Park. There have been a number of wilderness proposals for the park over the years, but none has been enacted into law. The National Park Service currently manages 464,544 acres as wilderness pending action by Congress. This area represents about 89% of the park's 522,000 acres.

Wilderness Legislation and Legislative History

The Wilderness Act, signed into law in 1964, created the national wilderness preservation system to ensure an enduring resource of wilderness for future generations. The act provides that wilderness areas are to possess the following characteristics:

- The earth and its community of life are untrammeled by humans, where humans are visitors and do not remain.
- The area is undeveloped and retains its primeval character and influence without permanent improvements or human habitation.
- The area generally appears to have been affected primarily by the forces of nature, with the imprint of humans' work substantially unnoticeable.
- The area is protected and managed so as to preserve its natural conditions.
- The area offers outstanding opportunities for solitude or a primitive and unconfined type of recreation.

The National Park Service completed a wilderness proposal for Great Smoky Mountains National Park in 1966. This proposal, covering approximately 48% of the park, was not acted on. In succeeding decades, the National Park Service and various members of Congress developed a series of alternative wilderness proposals for the park. The history of these proposals is summarized below:

- **1974 Wilderness Recommendation: 390,900 acres.** The National Park Service completed a new wilderness study for the park in 1974. As a result of this study, the Department of the Interior recommended that Congress designate 390,500 acres of the park as wilderness. An additional 400 acres in the vicinity of LeConte Lodge was recommended for designation as potential wilderness. (At the time, the lodge and its associated structures were planned for removal.)
- **1978 Wilderness Proposal: 464,544 acres.** The 1974 recommendation was revised in January 1978. The revised proposal, as depicted in the "Proposed Management Zoning" map of the 1982 general management plan, called for the designation of a total of 464,544 acres as wilderness and potential wilderness. Approximately 418,031 acres were proposed for wilderness designation, and 46,513 acres for potential wilderness. The majority of the latter acreage, 44,170 acres, consisted of land on the southwest side of the park that had been acquired from the Tennessee Valley Authority (TVA) and was subject to outstanding private rights. This land had been acquired as part of an agreement whereby the TVA tract would be added to the park and in return a road would be built along the north shore of Fontana Lake to replace a road that was flooded by the construction of the Fontana Dam and Reservoir. The Mt. Le Conte area was no longer included in proposed wilderness because the National Park Service had decided to retain it. The LeConte Lodge remains in place today. Note: This NPS proposal was never adopted by the Department of Interior as a formal wilderness recommendation to the president and Congress.

- **1984 Wilderness Legislation: 467,000 acres**. Congress took up wilderness legislation for Great Smoky Mountains National Park in the 98th Congress (1983–1984). HB 4246 passed the House of Representatives in 1984, but companion legislation failed in the Senate.

  HB 4246 called for the immediate designation of 467,000 acres as full wilderness, with no land identified as potential wilderness. The National Park Service opposed this legislation, primarily because of the existing encumbrances on the 44,170 acres of former TVA land. The National Park Service proposed that Congress designate only 390,500 acres of wilderness, in line with the Department of Interior's original recommendation from 1974.

- **1987 Wilderness Proposal: 464,700 acres.** New wilderness legislation for the park was introduced in the 100th Congress (1987–1988). In response, the park notified the regional office by memo dated April 22, 1987, that the "Proposed Management Zoning" map from the 1982 general management plan needed to be modified before it could be used "as the base map for pending wilderness legislation." The letter set out a list of proposed additions and deletions to the wilderness map for Great Smoky Mountains National Park. These changes, which mostly involved utility corridors and cemetery access routes, were subsequently reflected in a NPS Denver Service Center drawing entitled "Wilderness Plan, Great Smoky Mountains National Park" (DSC Drawing No. 133/20,003L, dated August 1987). The drawing embodies a proposal that 464,700 acres be designated as wilderness, as follows: 418,200 acres (designated), plus 46,500 acres (potential – the TVA tract and related lands). Total: 464,700 acres. The National Park Service opposed "instant" wilderness designation for the 46,500-acre area because of outstanding rights, which could potentially conflict with wilderness management.

  The House of Representatives passed a bill in late 1987 or early 1988 designating 465,000 acres as wilderness (divided as follows: 419,000 acres designated; 46,000 acres potential). The Senate Committee on Energy and Natural Resources passed a modified version of this same bill in 1988, but the bill never came up for a vote before the full Senate.

Current Land Status and Boundary Descriptions

In 1999, Great Smoky Mountains National Park was included in a package of wilderness proposals for 17 national park units prepared by the National Park Service and approved by the Department of Interior. However, due to the outdated compliance document associated with the Great Smoky Mountains proposal, the Council on Environmental Quality was unwilling to retransmit the proposal to Congress.

Today, the National Park Service manages a total of 464,544 acres in the park as recommended and proposed wilderness (broken down as follows: 418,031 acres recommended, 46,513 acres proposed). This acreage is the area shown in the 1982 general management plan zoning map as "Natural Environment – Type 1."

By policy, the National Park Service manages recommended and proposed wilderness areas in such a way as to preserve their wilderness character until Congress decides whether or not to designate them as wilderness. See NPS *Management Policies 2006* §6.3.1.

Relationship of Wilderness to Planning

Management of the recommended and proposed wilderness at Great Smoky Mountains National Park is principally governed by the park's general management plan (1982) and backcountry management plan (2002). The general management plan establishes various management zones and subzones in the park, including the "Natural Environment Type I Subzone," which covers almost 89% of the park area. This subzone is coextensive with the areas of recommended and proposed wilderness in the park. The backcountry management plan sets forth specifics of how the "Natural Environment Type I Subzone" is to be managed. Topics addressed include backcountry permit system and campsite reservations; campsite and shelter management; sanitation; wood fires; horse use; signs; trail maintenance; Appalachian Trail maintenance and management; and backcountry structures for administrative use. The plan does not identify visitor capacities, and includes only limited monitoring indicators and thresholds regarding closure and relocation of campsites.

Wilderness Character Narrative

Introduction

A wilderness character narrative is intended to be a qualitative description and positive affirmation of the unique attributes of a wilderness area. Representatives from each of the four wilderness managing agencies developed a national framework to monitor wilderness character using five qualities: natural, untrammeled, undeveloped, opportunities for solitude or primitive and unconfined recreation, and other features. These qualities are defined in brief as follows:

- **Natural:** Wilderness maintains ecological systems that are substantially free from the effects of modern civilization.
- **Undeveloped:** Wilderness retains its primeval character and influence, and is essentially without permanent improvements or modern human occupation.
- **Untrammeled:** Wilderness is essentially unhindered and free from modern human control or manipulation.
- **Solitude or Primitive and Unconfined Recreation:** Wilderness provides outstanding opportunities for solitude or a primitive and unconfined type of recreation.

The National Park Service has defined a fifth quality, "other features," to capture elements that are not included in the other four qualities—other ecological, geological, or other features of scientific, educational, scenic, or historical value. This quality, if present, is unique to an individual wilderness based on the features that are inside that wilderness. These features typically occur only in specific locations within a wilderness.

The following wilderness character narrative is intended to familiarize readers with the tangible and intangible resources and values that combine to create the recommended and proposed wilderness at Great Smoky Mountains National Park. The narrative was created through collaboration by NPS staff and is a record of the shared understanding of wilderness character exemplified by Great Smoky Mountains National Park.

This narrative serves as a framework for a wilderness stewardship plan, fosters integration among different staff and program areas that need to function together to effectively preserve wilderness character, and serves as a starting point for discussion with the public about the current and future state of the wilderness. Other more analytical documents, such as wilderness character baseline and wilderness character monitoring measures, may be derived from the qualitative description and threats to wilderness character identified by this wilderness character narrative.

Overview of Recommended and Proposed Wilderness at Great Smoky Mountains National Park

The recommended and proposed wilderness at Great Smoky Mountains National Park covers an area of approximately 464,544 acres on the border of North Carolina and Tennessee. It is one of the largest wild sanctuaries in the eastern United States, an 800-square-mile area in the Southern Appalachians dominated by ancient mountains cloaked in a vast expanse of mixed hardwood and coniferous forest. Characterized as it is by a large variety of elevations, landforms, climates, and vegetation communities—representing forest types existing from North Georgia to Maine—the Great Smoky Mountains wilderness constitutes one of the most biologically diverse areas in the national park system. The wilderness encompasses 16 peaks over 6,000 feet, together with many miles of stream, numerous waterfalls, and panoramic mountain vistas. Just to the south and almost contiguous to the park are 30,000 acres of designated wilderness managed by the U.S. Forest Service.

The long history of mountain building and weathering in the wilderness has produced an area of very rugged and steep terrain. Flat areas within the mountain fastness are relatively rare. Nevertheless, the wilderness has experienced a long history of human use and occupation, ranging from the subsistence and small farming practices of the Cherokee Indians and their forbears, to the more extensive land clearing and logging activities of the European Americans who came later. Large parts of the wilderness were heavily impacted by these activities, especially by industrial-scale logging in the late 19th and early 20th centuries. Since that time forest cover has rebounded dramatically, such that the remaining signs of human occupation in the wilderness are receding rapidly into the past.

Visitors come to the Great Smoky Mountains wilderness year round to experience its remote mountain terrain, lush vegetation, and varied wildlife. Visitor use within the wilderness consists primarily of day hiking, backpacking, and camping. The park has 150 trails that extend for approximately 800 miles. Most of these trails are located in the park's recommended and proposed wilderness. Among the most heavily used is the Appalachian Trail, which traverses the entire length of the park along the crest of the Southern Appalachians. Heaviest visitation occurs during the spring and fall, when temperatures and rainfall amounts are moderate. Visitation is light away from the trail system, and substantial opportunities exist for exploration, challenge, and solitude.

Natural

Definition: Wilderness maintains ecological systems that are substantially free from the effects of modern civilization.

Areas of recommended and proposed wilderness at Great Smoky Mountains National Park protect a diverse array of natural habitats, plants, and animals that are substantially free from the effects of modern civilization. Elevations in the wilderness extend from 850 feet in the low-lying foothills to over 6,000 feet near Clingmans Dome. These differences in land forma and elevation, together with climatic conditions that vary with height above sea level, drive the diverse ecology of the area.

The Great Smoky Mountains are one of the oldest mountain ranges in North America, and they exhibit the biological diversity that comes with age. The wilderness is a refuge for more than 70 vegetation communities, including about 75% of the nation's Fraser fir forests. Unique communities include grassy balds, heath balds, beech gap forests, cove hardwood forests, caves and karst, and rare mountain wetlands. More than 2,900 miles of streams support native populations of flora and fauna, including southern Appalachian brook trout. Approximately 38% of the forests within the wilderness (around 175,000 acres) are old growth, with as much as 60,000 acres being contiguous. Old-growth areas in the western, east-central, and far-eastern parts of the wilderness make up one of the largest concentrations of old-growth forest east of the Mississippi River.

More than 19,000 species have been documented in the park, and most occur in the wilderness. The park as a whole includes 2,177 plant species, 67 mammal species, 77 fish species, 44 amphibians species, more than 2,800 fungal species, and more than 11,000 invertebrate species. More than 19,000 species have been documented in the park to date via the All Taxa Biodiversity Inventory, a number that will continue to grow as research proceeds. Of these, 970 species are new to science and not previously described, and 37 species are currently known to exist only within the park. No other area of equal size in a temperate climate can match the diversity of plants, animals, and invertebrates found in the Great Smoky Mountains wilderness.

Although wolves have been extirpated from the wilderness, black bears remain abundant. Elk were reintroduced into the park in 2001, and some individuals spend part of their life cycle in wilderness. All told, the wilderness harbors approximately 31 special status species; that is, plants and animals listed as endangered, threatened, or of special concern by the U.S. Fish and Wildlife Service. Special status species of particular note include the Indiana bat, the Carolina northern flying squirrel, Citico darter, and smoky madtom. The biological richness of the wilderness has led to the designation of Great Smoky Mountains National Park as a UNESCO World Heritage Site and an International Biosphere Reserve.

While the number of known species in the wilderness is increasing, and natural processes generally prevail, human activities have altered some aspects of the area's natural character. The most visible impacts have been caused by nonnative species. A number of nonnative species have been introduced to parts of the wilderness, resulting in fundamental changes in ecosystem function in some areas. For example, feral hogs are present in many parts of the wilderness, and their rooting behaviors are negatively impacting sensitive communities (e.g., wetlands) despite intensive efforts to control their numbers going back decades. Similarly, the presence of nonnative plants continues to degrade the functioning of a number of natural vegetative communities in wilderness, and in some instances has led to the decline of endemic species due to habitat loss.

The number of nonnative species is increasing in the wilderness as populations of invasive species increase outside the park. Of particular concern is the effect that introduced pests and diseases have had and are having on the health of the wilderness forests. The once-common chestnut tree has long since been virtually extirpated from the wilderness by nonnative chestnut blight. Other forest species and communities (e.g., Fraser fir, hemlock, southern yellow pine, and the beech gap community) are currently in poor condition due to introduced insects and diseases. The pests of greatest concern include the hemlock wooly adelgid, the balsam wooly adelgid, and the emerald ash borer. Some forest diseases and pests, although present in the surrounding region, are not currently in the park but will probably enter the park in the future.

Overall biodiversity in the wilderness is decreasing due to a pervasive and prolonged disruption of the natural disturbance regime. Specifically, alteration of the natural fire regime is creating uncharacteristically dense forests or converting existing, more xeric communities to mixed mesophytic community types. High elevation grasslands are likewise declining due to natural succession and the encroachment of surrounding forests. Restoration of some semblance of natural fire regimes would help to maintain the ecological integrity of fire-adapted habitats and associated wildlife species, while enhancing the diversity of vegetation in the wilderness.

Air and water quality play a major role in the ecological health of the wilderness' flora and fauna, but both have been compromised in recent decades by pollution. The park is a center of diversity for several groups susceptible to air and water pollution, including salamanders, lichens, tardigrades, and flowering plants. Enormous strides in reducing air pollution have been made in recent years, but deposition of acid and nitrogen in park soils and waters continues to be a significant problem. Parkwide water quality is generally declining in high elevation streams (>3,000 feet) and stable to improving in low elevation streams (<3,000 feet). High and mid-elevation streams are impaired under the Clean Water Act for low pH, thereby altering stream fauna. Twelve streams on the Tennessee side of the park are listed as impaired under section 303(d) of the Clean Water Act. Mercury deposition continues to increase, posing a significant threat to the food web of aquatic and terrestrial resources. Improving air and water quality in and around the park is critical to maintaining and protecting diversity in the wilderness.

The impacts of climate change, including increased severity of storms and changes in precipitation patterns, may further weaken forest health. In addition, climate change may reduce the range and distribution of some vegetation communities in the wilderness. An emerging concern is the possibility that climate change is disrupting the historic synchronization of wildlife migration patterns with the emergence of food and habitat elements. While impacts are largely uncertain, over the last fifty years there has been a general warming trend in which earlier spring warming has been coupled with later frost.

Untrammeled

Definition: Wilderness is essentially unhindered and free from modern human control or manipulation. This quality represents the "wild," in "wilderness." Any intentional or unintentional, authorized or unauthorized treatment or action that manipulates the wilderness degrades this quality. Perpetuating the untrammeled quality requires managers to restrain themselves, rather than restraining the wilderness. Often, upholding the untrammeled quality can detract from another wilderness quality, such as "naturalness," or vice-versa. For example, nonnative species may be removed in order to attain natural species composition, which would in turn be a manipulation of the current wilderness.

Most of the park's wilderness lands are natural and are allowed to function essentially unhindered and free from modern human control or manipulation. Such trammeling as does occur principally involves short term management actions intended to improve the natural quality of wilderness character. Foremost among these is the lighting of prescribed fire to more closely mimic the natural fire regime and help restore fire-adapted species and communities to their former place and function in the landscape. Historically, wildland fire has been actively suppressed throughout the wilderness, a management approach that itself represents a form of trammeling. Today park staff has the option of managing wildfires to meet resource objectives when specified conditions are met.

Other management actions that manipulate the landscape include removing nonnative plants and animals, introducing biocontrol agents to combat nonnative pests, and manipulating habitat for the benefit of special status species. Some representative activities include trapping feral hogs, introducing predatory beetles to control hemlock and balsam wooly adelgids, and restoring habitat in mountain bald communities. These activities, though they degrade the untrammeled quality of wilderness, are authorized by NPS policy and are only taken when determined necessary for the administration and preservation of the wilderness resource.

Some parts of the wilderness were subject to historic manipulation in the not too distant past. The most common activities included farming, commercial logging, grazing, and intensive hunting. Natural processes continue to be trammeled in some places by the vestiges of past development. For instance, some old roadbeds and abandoned agricultural features (e.g., roadbeds, ditches) have altered the hydrology of localized areas. In addition, plant and animal poaching continues to occur in some locations. In recent decades the wilderness has rebounded substantially from past trammeling actions, but natural systems continue to be influenced by the legacy of past human disturbance, and it will be many years before large parts of the wilderness exhibit the characteristics of old-growth forest.

Other management activities that affect the untrammeled quality include clearing the fallen trees and other maintenance activities along the park trail system. Sometimes these activities involve the use of motorized vehicles to reach work sites and/or the use of helicopter airlifts to transport supplies and equipment. Mechanized/motorized tool use of any kind within the wilderness boundaries is governed by a minimum requirements determination signed by the park superintendent.

More trammeling of the wilderness is likely in the future due to continuing park management operations in wilderness, and to forces at work outside the park. The most important external force is global climate change, which will probably alter the wilderness for decades to come, in ways not currently foreseen.

Undeveloped

Definition: Wilderness retains its primeval character and influence, and is essentially without permanent improvements or modern human occupation.

Most of the recommended and proposed wilderness at Great Smoky Mountains National Park is entirely undeveloped. While much of the natural landscape has been affected by historic logging and other activities, these lands have substantially recovered over time, and there are expansive areas in the wilderness that have retained their primeval character and where the footprint of humans is substantially unnoticeable.

Some of the flatter areas in the foothills have a history of farming and grazing, but most evidence of past agricultural activities has long since vanished. Today, only residual historic development exists within the wilderness boundary, including elements of old homesteads, chimney falls, abandoned roadbeds, and grave sites.

Other remnant developments are associated with the period of commercial logging during the late 19th and early 20th centuries. These principally consist of old rail beds for the narrow gauge railroads that snaked through valleys and up mountain sides to reach logging sites. Today some of these old tram roads have been repurposed as hiking trails. Old tram roads are wider and have a more developed feel than traditional hiking trails, and hikers may occasionally come across an exposed crosstie in the trail bed. Still, the number of tram roads converted to hiking trails is limited, and most of the wilderness is undeveloped and accessible only by footpath or off-trail exploration.

A few other structures are maintained in wilderness for administrative use. These include the Pecks Corner/Hughes Ridge bunkhouse (used by trail crews, park rangers, and Appalachian Trail volunteers), the Shuckstack tower (radio repeater), the Cove Mountain tower (radio repeater), the Mount Sterling tower (radio repeater), and the historic lookout at Mt. Cammerer. These structures are reviewed on an as-needed basis to ascertain whether their intrusion in wilderness continues to be justified.

In places the undeveloped quality of the wilderness is degraded by structures built to facilitate scientific research. Structures include long-term scientific monitoring equipment, plot marking tags on trees, and remote sensing equipment and cameras. Park staff also makes occasional use of vehicles to get research equipment to necessary locations. Transport and installation of equipment in wilderness degrades the undeveloped quality of wilderness character, but only occurs after completion and approval of a minimum requirements analysis.

The park staff makes every effort to ensure that scientific installations and equipment are removed from wilderness when projects are complete. Before the National Park Service will approve a research project or request for scientific installation in wilderness, the requesting party must execute contract(s) and obtain relevant permits to ensure that all project management tasks and time constraints are clearly defined, understood by all parties, and acceptable to the National Park Service.

The undeveloped quality is also degraded in those instances in which park personnel are authorized to use motorized equipment (e.g., vehicles, chainsaws, etc.). Such usage occurs either during emergency incidents or is authorized via a minimum requirements analysis as the minimum tool to implement planned management activities. Off-road vehicle use can introduce noise, fumes, and visual intrusions to the wilderness. Visual intrusions include vehicle tracks on trails, which remain long after the vehicles themselves are gone and diminish the undeveloped feel of the wilderness.

Over most of its area, the Great Smoky Mountains wilderness retains its primeval character and influence. The entire wilderness is heavily forested, and, except for certain areas along the wilderness edge, views from within the wilderness are generally uninterrupted by sightings of development outside it.

Opportunities for Solitude or Primitive and Unconfined Recreation

Definition: Wilderness provides outstanding opportunities for solitude or a primitive and unconfined type of recreation. This quality is primarily about the opportunity for people to experience wilderness, and is influenced by settings that affect these opportunities.

The remoteness and lack of development in the recommended and proposed wilderness can engender a strong sense of solitude in visitors and allow ample opportunities for a primitive type of recreation. Visitors can experience adventure and challenge while exploring 848 miles of maintained trail, including 70 miles of the Appalachian National Scenic Trail. The size of the wilderness is such that visitors can plan long trips through rugged terrain and experience some of the most remote areas in the eastern United States. Areas of old-growth forest give a glimpse of the Southern Appalachians as they were before the time of European settlement, while high elevation vantage points at places like Mt. Le Conte, Mt. Cammerer, Charlies Bunion, and Mt. Sterling afford sweeping vistas of a wild and uninhabited landscape.

Limiting the opportunities for solitude and unconfined recreation is the fact that the Smokies are a very popular backcountry destination. Overnight backcountry use is increasing, and forest health issues are increasing the need for management actions at certain trails and designated backcountry sites. To manage use and protect resources, reservations and permits are now required for all overnight stays, and camping is permitted only at designated backcountry campsites and shelters. As a result, visitors are somewhat restricted in their ability to be flexible and spontaneous. Unconfined recreation is still available in the form of off-trail exploration and camping, but the steep, rugged terrain of the wilderness means that this type of recreation generally attracts only the most physically fit and adventurous hikers.

High visitation impacts the level of solitude by forcing visitors to interact with others at levels some may not find desirable. More than 100 overnight use sites have been designated throughout the wilderness, including 15 shelters that were initially constructed during the era of the Civilian Conservation Corps. The initial designation of these sites and the requirement that users use these locations when camping in the backcountry were intended to concentrate the human impact in the wilderness. High usage of the Appalachian Trail corridor results in overflow situations at shelters during the thru-hiker season. A growing number of organized events attracts large groups of users to the backcountry, with corresponding impacts on solitude. On trails where both horseback riding and hiking occurs, conflicting expectations can result in a diminished feeling of solitude for some visitors.

Resource impacts also have an effect on solitude. Although the condition of the backcountry trails and campsites varies according to level of use, high visitation has led to overuse and trampling in a number of areas, and consequent degradation of habitat quality. The visibility of these impacts can degrade the sense of solitude for many visitors. Steps taken to reduce resource impacts can likewise affect both solitude and opportunities for unconfined recreation. Various visitor use developments are present at campsites, including developed fire rings and cable systems for hanging food. Campfires are allowed in designated locations only.

Solitude is affected during certain periods by the use of motorized equipment for trail maintenance, bridge repair, and similar activities. The backcountry management plan authorizes the park trail crew to use handheld motorized equipment during normal working hours on Monday through Thursday of each week. In addition, the plan establishes a time period each spring during which certified trail volunteers may use chainsaws for trail clearing. Other uses of motorized equipment may be approved on a case by case basis using the minimum requirements analysis.

Opportunities for solitude are also affected by noise and light pollution. The sound of motorcycle traffic on the park roads can be heard a considerable distance into the wilderness. Even well back in the mountains, noise intrudes from periodic aircraft overflights. Low-level overflights by air-tour helicopters have been a persistent issue for a number of years. Noise from trail crews can also impinge on feelings of solitude from time to time. Urban development outside the park has increased for decades, particularly on the Tennessee side. This development degrades historic viewsheds and soundscapes, and at night diminishes opportunities for visitors to experience dark night skies.

Other Features

> ***Definition:*** This quality covers those values and features that are not fully covered in the other four qualities, including ecological, geological, scientific, educational, scenic, or historical value. This feature is unique to an individual wilderness based on the features that are inside that wilderness.

The mountains have supported human communities for thousands of years and remnant cultural features in the wilderness reflect the evolving agricultural, commercial, and social practices of people over time. Cherokee and other American Indian tribes maintain close ties to the land. Their history in the landscape is also shown in well preserved archeological sites in the wilderness. The wilderness also preserves a significant number of other archeological sites, as well as historic structures and related vestiges of human interaction with the land. The time periods represented by these resources include American Indian, Appalachian mountain settlement, and early National Park Service / Civilian Conservation Corps eras.

The park as a whole contains one of the largest collections of 19th century remnants, including cemeteries, stone walls, and roads. These are testament to the rich southern Appalachian folk history of the area. In the 1930s, the Public Works Administration and Civilian Conservation Corps operated 22 camps in the park. The skilled workforce built roads, bridges, and trails, some of which are still in use within wilderness.

The condition of cultural resources in the recommended and proposed wilderness is generally fair to good. However, the integrity of these resources has been compromised by incidental vegetation overgrowth, erosion from periodic floods, unlawful looting activity, and rooting by feral hogs.

Issues for Wilderness Planning

Please see the discussion of key park issues in "Identification of Key Issues and Associated Planning and Data Needs." Because the park is approximately 89% wilderness, many of the key issues facing Great Smoky Mountains National Park also relate to proposed and eligible wilderness at the park. The foundation document includes a detailed assessment of planning and data needs prepared by the Southeast Region and Great Smoky Mountains National Park.

Southeast Region Foundation Document Recommendation
Great Smoky Mountains National Park

October 2016

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

10/24/16

RECOMMENDED
Cassius Cash, Superintendent, Great Smoky Mountains National Park **Date**

10/28/16

APPROVED
Stan Austin, Regional Director, Southeast 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.

GRSM 133/134152
October 2016

Foundation Document • Great Smoky Mountains National Park

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