

STATE
OF THE
PARKS®

May 2009

TENNESSEE'S CIVIL WAR
NATIONAL PARKS

A Resource Assessment



National Parks Conservation Association®
Protecting Our National Parks for Future Generations®

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Center for State of the Parks®

More than a century ago, Congress established Yellowstone as the world's first national park. That single act was the beginning of a remarkable and ongoing effort to protect this nation's natural, historical, and cultural heritage.

Today, Americans are learning that national park designation alone cannot provide full resource protection. Many parks are compromised by development of adjacent lands, air- and water pollution, invasive plants and animals, and rapid increases in motorized recreation. Park officials often lack adequate information on the condition of critical resources.

The National Parks Conservation Association initiated the State of the Parks program in 2000 to assess the condition of natural and cultural resources and to determine how well equipped the National Park Service is to protect the parks—its stewardship capacity. The goal is to provide information that will help policy-makers, the public, and the National Park Service improve conditions in national parks, celebrate successes as models for other parks, and ensure a lasting legacy for future generations.

For more information about the methodology and research used in preparing this report, or to learn more about the Center for State of the Parks, visit www.npca.org/stateoftheparks or contact: NPCA, Center for State of the Parks, P.O. Box 737, Fort Collins, CO 80522; phone: 970.493.2545; email: stateoftheparks@npca.org.

Since 1919, the National Parks Conservation Association has been the leading voice of the American people in protecting and enhancing our National Park System. NPCA, its members, and partners work together to protect the park system and preserve our nation's natural, historical, and cultural heritage for generations to come.

- * More than 325,000 members
- * Twenty-four regional and field offices
- * More than 120,000 activists

A special note of appreciation goes to those whose generous grants and donations made this report possible: Ben and Ruth Hammett, Lee and Marty Talbot, and anonymous donors.

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Cover photo: Volunteers dressed as Union soldiers commemorate the anniversary of the Battle of Fort Donelson. Photo courtesy of the National Park Service.



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Monuments, such as the Minnesota Monument in Shiloh National Military Park, commemorate the soldiers who fought during the Civil War.



TENNESSEE'S CIVIL WAR NATIONAL PARKS



The National Park Service protects four Civil War battle sites in Tennessee: Fort Donelson National Battlefield, Shiloh National Military Park (above), Stones River National Battlefield, and Chickamauga and Chattanooga National Military Park.

FOUR SITES A TESTAMENT TO THE "WAR BETWEEN THE STATES"

The American Civil War, fought from 1861 to 1865, was the deadliest war in United States history, resulting in more than 620,000 deaths. Today, this important part of our history is protected by the efforts of various federal, state, and local agencies. Dozens of battlefields and other sites from this era are protected, serving as important historic resources as well as places for

solemn reflection. Four significant battle sites in the state of Tennessee are under the stewardship of the National Park Service: Fort Donelson National Battlefield, Shiloh National Military Park (part of park lies in Mississippi), Stones River National Battlefield, and Chickamauga and Chattanooga National Military Park (part of park lies in Georgia). In addition, the entire state of Tennessee is included within the Tennessee Civil War National Heritage Area

(TCWNHA), a federal, state, and local partnership managed by the Center for Historic Preservation at Middle Tennessee State University. The heritage area was established to preserve and interpret the Civil War and Reconstruction periods in Tennessee.

Tennessee in 1860 was primarily a rural, agricultural state; its more densely populated cities included Memphis, Nashville, Chattanooga, and Knoxville. When Tennessee finally seceded, following a vote by residents, on June 8, 1861, it was the last of the 11 states to join the Confederacy. A mere eight months later, it was the first Confederate state to fall to Federal troops.

Because of Tennessee's strategic location, both the North and the South coveted it during the Civil War. Its geographic position served as a link to campaigns already occurring in the Eastern Theater, and control of its strategic river and rail routes was essential for ultimate victory. By the war's end, approximately 2,900 military engagements were fought on Tennessee soil; only the state of Virginia saw more armed conflicts.

BATTLEFIELDS GAIN FEDERAL PROTECTION

The American Civil War began in April 1861. Soon thereafter, Union commanders grew eager to infiltrate the Deep South, which included operations targeting Confederate forces in Tennessee. Early in February 1862, Union army and naval forces quickly captured Forts Henry, Heiman, and Donelson on the Tennessee and Cumberland Rivers, a decisive operation that claimed more than 16,500 casualties on both sides, among them 12,000 Confederate prisoners of war. Because these successes left the capital of Nashville vulnerable, Confederate forces elected to abandon the city. On April 6 and 7, 1862, although initially taken by surprise by a Confederate attack, Federal forces won the bitterly contested Battle of Shiloh at Pittsburg Landing, where a combined total of 23,746

men were killed, wounded, or declared missing. This victory enabled Union forces to capture the strategic railroad crossing in Corinth, Mississippi, 22 miles to the southwest, on May 30, after Confederate forces retreated further south into Mississippi. This shift in fortunes assisted in the subsequent capture of Memphis following the decisive naval victory achieved there by the Union river flotilla on June 6. Little more than two weeks after a devastating Union loss on December 13, 1862, at Fredericksburg, Virginia, and days following the reversal of Major General Ulysses S. Grant's first thrust to capture Vicksburg, Mississippi, the Battle of Stones River occurred near Murfreesboro, Tennessee. A narrow Federal victory, which claimed another 24,645 combined casualties, forced the Confederates to retire, allowing Union forces to retain possession of a large portion of Middle Tennessee. They took this opportunity to erect a formidable earthen fortress outside Murfreesboro—Fortress Rosecrans—which served as a vital supply depot and command post until the end of the war.

Three of Tennessee's Civil War national parks include national cemeteries: Fort Donelson (below), Shiloh, and Stones River.



NATIONAL PARK SERVICE



Tennessee's strategic location made it an important state during the Civil War. By the war's end, about 2,900 military engagements had been fought on Tennessee soil. The state is home to four national parks established for the significant Civil War battles that took place there.

The bloodiest battle of the Civil War occurred July 1–3, 1863, at Gettysburg, Pennsylvania, where the Union Army achieved victory. In this infamous clash, more than 51,000 soldiers were killed, wounded, or declared missing. A few months later in September, Confederates were victorious in the Battle of Chickamauga, the second bloodiest battle of the Civil War (34,000 total casualties). While this battle occurred on Georgia soil, its proximity to the strategically important city of Chattanooga, Tennessee, will forever tie it to a related conflict, the Battles for Chattanooga. Subsequent to their victory at Chickamauga (the last great Confederate victory of the Civil War), Confederates lay siege to nearby Chattanooga, where Federal troops had fled.

Ultimately, the siege failed, and the Battles for Chattanooga were fought and won by Union forces in November 1863.

After the Civil War ended in 1865, the United States War Department began formally recognizing and protecting special places that had seen intense conflict. Today the National Park Service manages four such sites in Tennessee. In 1890, Chickamauga and Chattanooga was set aside as the first national military park. In 1894, President Grover Cleveland signed into law an act to establish Shiloh National Military Park (congressional legislation enacted in 1996, 2000, and 2007 established and added a significant unit at Corinth, Mississippi, to the park). In 1927, Congress officially recognized the significance

of the events that transpired during the Battle of Stones River, with the creation of Stones River National Military Park (redesignated a national battlefield in 1960). Fort Donelson National Military Park was established in 1928 (redesignated a national battlefield in 1985). While each of the Park Service's Tennessee battlefields tells a slightly different story, all commemorate and recognize the ultimate sacrifice made by so many on Tennessee soil (64,333 Confederates and 58,521 Union soldiers perished there). Still more died in related battles in Georgia (Chickamauga) and Corinth, Mississippi. These parks educate the public about actual battles and military strategies, and they also interpret the commemorative post-war period that led to the creation of these memorials as examples of the nation's collective memory of the Civil War.

In addition to interpreting and protecting resources associated with historic events, Tennessee's four Civil War national parks contain important natural resources. They offer areas of vital and vanishing habitat for wildlife and native plants, as well as oases of calm for human visitors.

In recognition of the important historical events that Fort Donelson National Battlefield, Shiloh National Military Park, Stones River National Battlefield, and Chickamauga and Chattanooga National Military Park commemorate and interpret, the National Parks Conservation Association's Center for State of the Parks conducted assessments to determine the current conditions of the parks' cultural and natural resources. This report details the findings of those assessments, with each of the four parks highlighted in its own chapter and presented chronologically in order of each battle's occurrence.

TIMELINE OF CONFLICTS AT FORT DONELSON, SHILOH, STONES RIVER, AND CHICKAMAUGA AND CHATTANOOGA

April 1861 Confederate artillery opened fire on Union soldiers at Fort Sumter, South Carolina. American Civil War begins.

February 1862 Union captures Forts Henry, Donelson, and Heiman.

April 1862 Union is victorious at the Battle of Shiloh.

May 1862 Victory at Shiloh enables the Union to capture an important railroad crossing at Corinth, Mississippi.

December 1862 Union narrowly wins battle at Stones River.

September 1863 Confederates are victorious at Chickamauga, Georgia, and lay siege to Chattanooga.

November 1863 Union is victorious at Battles for Chattanooga.

April 1865 General Robert E. Lee surrenders to Lieutenant General Ulysses S. Grant at Appomattox Court House, Virginia. American Civil War ends in May.



Volunteers and staff in period costumes provide living history programs at all four Tennessee Civil War national parks. Participants in the Federal living history program at Shiloh are pictured here.

Hundreds of markers, cannons, and monuments stand throughout all four of Tennessee's Civil War national parks, marking important battle locations and paying tribute to soldiers who fought during the battles. Caring for these historic structures and objects is a challenge due to staffing and funding shortfalls.

COMMON CHALLENGES

NPCA's assessment of Tennessee's four Civil War national parks brought to light shared challenges, several of which are outlined here and expanded upon throughout this report.

Staffing shortfalls affect resource protection and visitor services: Critical staff positions remain vacant, and securing funds to support new and important staff positions is difficult. At Fort Donelson, maintenance positions are vacant due to lack of funds, which puts added strain on existing staff as they are forced to fill multiple roles. The park does not have staff specifically allocated to natural or cultural resource stewardship and management and has requested funding for an integrated resource management position. An additional law enforcement position is needed to protect newly acquired property that is located 20 miles from the main park unit. Because five of 15 permanent positions in the Interpretation & Resource Management Division are vacant, staff at Shiloh also take on additional responsibilities to provide visitor services and protect resources. Stones River needs a full-time cultural resources manager, two more law enforcement and interpretive rangers, and a maintenance worker. These additional positions would allow the park to provide visitor programs on weekdays, engage in more resource protection and

monitoring, and better protect resources from poachers. At Chickamauga and Chattanooga, nine permanent positions are vacant, and additional staff such as an archaeologist, natural resource manager, interpreters, and law enforcement officers are needed. All four parks have few or no natural resource staff, which limits the work that can be done to care for and protect natural resources. However, the parks are part of the Cumberland Piedmont Network—one of 32 networks nationwide included in the National Park Service's Inventory and Monitoring Program—and monitoring (air and water quality) and inventories (plant and animal species) conducted through this network have contributed to the natural resources knowledge base at the parks. Future monitoring through the network is expected to provide information on vegetation communities, non-native plants, forest pests, and landscape dynamics.

Adjacent development looms: Each of the four Tennessee Civil War national parks is threatened by adjacent development that would mar historical and scenic viewsapes that are essential to Park Service efforts to interpret historic events and to enhance the visitor experience. Visualizing troop movements across the landscape is helpful for understanding the battles that took place there; urban and suburban development can make visualization of the 19th-century landscape difficult. Development and associated traffic are also noisy, and can disrupt interpretive programs and detract from the contemplative atmosphere that allows visitors to consider historic events and pay respect to the lives lost on the parks' hallowed grounds. Increased air pollution and water pollution are other detrimental by-products of nearby development.

Fort Donelson—except for the new Fort Heiman unit located in Kentucky, 20 miles away from the main park unit—is within the city limits of Dover, and development (mostly resi-

NATIONAL PARK SERVICE



PARK STATISTICS	Fort Donelson National Battlefield	Shiloh National Military Park	Stones River National Battlefield	Chickamauga and Chattanooga National Military Park
Park location	Dover, TN	Shiloh, TN; Corinth, MS	Murfreesboro, TN	Chattanooga, TN; Fort Ogelthorpe, GA
Park establishment	1928	1894	1927	1890
Park size (acres)	2,000 acres authorized (two units)	More than 7,000 acres authorized (two units; Corinth unit is composed of 13 separate locations)	712 acres authorized (six units)	8,932 (18 units)
Annual number of recreational and non-recreational visitors (2008)	689,771	530,738	197,899	3,328,966
Additional information	Fort Donelson was initially established as a national military park. It was redesignated as a national battlefield in 1985. It includes Fort Donelson National Cemetery. Lake Barkley, created in 1966 with the impoundment of the Cumberland River, borders the park on two sides.	The park is home to the Shiloh National Cemetery. More than 950 acres in Corinth, Mississippi, were authorized for addition to the park in 2007.	Stones River was initially established as a national military park. It was redesignated a national battlefield in 1960. The park includes the Stones River National Cemetery, which was authorized in 1864.	Chickamauga and Chattanooga was the first national military park ever created. Moccasin Bend Archeological District was added to the park in 2003.

dential) occurs along the park's boundaries. Stones River faces similar challenges due to its location in Murfreesboro; it also faces issues because the park is composed of six small noncontiguous sites. While Shiloh benefits from a relatively isolated setting, development just outside park borders goes unregulated, and local commuters use park roads as a route between neighboring communities; a satellite park site in Corinth, Mississippi, is within that city's boundaries. Chickamauga and Chattanooga is comprised of 18 units and the areas surrounding the park are filling with bedroom communities for both Chattanooga (immediately adjacent) and Atlanta (about 110 miles away). Suburban sprawl is encroaching, and there are strip malls and housing developments just outside the park. Some portions of the park are actually tiny islands of protected land within residential or urban neighborhoods.

Preserving historic earthworks presents challenges: Tennessee's four Civil War national parks contain earthworks that played critical roles in the battles fought there. Earthworks are any sort of temporary wall or permanent fortification built primarily from earth for the purposes of attack or defense. They may be considered historic structures, archaeological resources, or cultural landscapes (or any combination of these resource categories). Being composed of such fragile building material, earthworks are susceptible to erosion that can wash away the structures themselves, as well as any artifacts they may contain. Trees growing out of the earthworks can hasten erosion as their roots churn the soil; and when trees fall due to disease, old age, or wind, they may expose soils to further erosion by wind and rain. Staff at Fort Donelson National Battlefield, Shiloh National Military Park, Stones River National Battlefield, and Chickamauga and Chattanooga National Military Park work to preserve the parks' historic earthworks and protect them from these threats.

Connections with traditionally associated groups of people need further study: None of the four parks have established ethnography programs to study various cultures associated with park resources, even though the parks contain important artifacts and areas of cultural significance to ancient peoples, American Indians, and African Americans who were enslaved prior to the events of the mid-1860s. However, at Shiloh, which includes significant prehistoric Indian mounds, park staff consult with members of the Chickasaw Nation, now located in Oklahoma. They represent the only group in existence today that shares any commonalities with the mound builders who once lived at the site. In general, a lack of funds for basic studies such as ethnographic overviews and assessments hampers efforts to identify and explore connections between park resources and traditionally associated peoples.

Complicated vegetation management: All four parks strive to interpret historical events and protect related resources, but changes in vegetation that have occurred since the end of the Civil War often complicate these efforts. Fort Donelson and Chickamauga and Chattanooga both lack any natural resource staff to oversee projects. At Shiloh, park staff are trying to restore the historically significant landscape, a balance between open fields and forested areas, and keep in mind the needs of local wildlife. Mowing fields too short or mowing while birds are nesting can detract from the park's value as wildlife habitat in an increasingly urban area. Staff at Chickamauga and Chattanooga also contend with the challenges associated with developing a mowing schedule that allows for cultural landscape preservation and wildlife protection. Landscape restoration efforts—to benefit ecosystems and preserve historic settings—are a primary part of natural and cultural resource management at Stones River. Another aspect of vegetation management and resource protection is the removal of invasive non-native species. At all four parks, this work is often limited by a lack of funds and staff.



FORT DONELSON NATIONAL BATTLEFIELD



REPORT SUMMARY

By the end of 1861, it was apparent to both Union and Confederate forces that control of the South's river systems—main arteries into the Confederacy that were relied on heavily for mass transportation and shipping—was necessary for victory. To attain control of the Cumberland and Tennessee Rivers, Union forces were intent on gaining control of the Confederate “trilogy of forts” (Fort Henry, Fort

Heiman, and Fort Donelson) that had been built to ensure that these rivers would remain secure from Union control.

After capturing Fort Henry and Fort Heiman on February 6, 1862, Brigadier General Ulysses S. Grant advanced his Union Army cross-country 12 miles east to Fort Donelson, where on February 13, Federal troops attacked the Confederates' outer defenses. On February 14, Confederate battery

The Battle of Fort Donelson was the Union's first major victory. It forced the South to give up southern Kentucky and much of Middle and West Tennessee, and it allowed Northern forces to advance along the Tennessee and Cumberland Rivers.



cannons disabled the Union flotilla of four ironclad and two timberclad gunboats during fighting on the Cumberland River. Despite the heavy damage they inflicted on the Federal fleet, Confederate forces were unable to break through Grant's lines, and on February 16, the fort's remaining 12,000-man garrison surrendered unconditionally.

The Battle of Fort Donelson was a major victory for Grant and a catastrophe for the South. It was the Union's first major victory, it forced the South to give up southern Kentucky and much of Middle and West Tennessee, and it allowed Northern forces to advance along the Tennessee and Cumberland Rivers.

Established first as Fort Donelson National Military Park in 1928, the park was redesignated a national battlefield in 1985. The battlefield protects about 559 acres surrounding the

fort near Dover, Tennessee, and includes the earthen fort itself, upper and lower batteries, the Dover Hotel (site of Confederate surrender), and two miles of outer earthworks (earthen fortifications). The park is also home to the 15-acre Fort Donelson National Cemetery, final resting place for 670 Union soldiers from the Civil War and 806 others who served in the military, as well as some spouses and family members. In 2006, 164 acres at nearby Fort Heiman (Kentucky) were added to Fort Donelson National Battlefield; park staff are working to integrate Fort Heiman into interpretation at the battlefield.

In addition to its historic structures, Fort Donelson protects a topographically diverse landscape replete with plants and wildlife. While oaks and other hardwood trees cover most of the park, steep slopes, rock outcrop-

pings, ravines, and intermittent streams may be seen along 5.7 miles of hiking trails.

Threats to the cultural and natural resources at Fort Donelson are both natural and human-caused. According to NPCA's assessment, the spread of non-native plants is the most immediate threat to ecological systems in the park. Many non-natives, such as privet and Japanese honeysuckle, were planted around original homesteads and have become aggressive invaders that displace native communities. Erosion threatens the historic earthworks, which make up most of the battlefield at Fort Donelson. And adjacent land development, primarily residential, detracts from the 19th-century atmosphere the park strives to preserve for visitors.

RATINGS

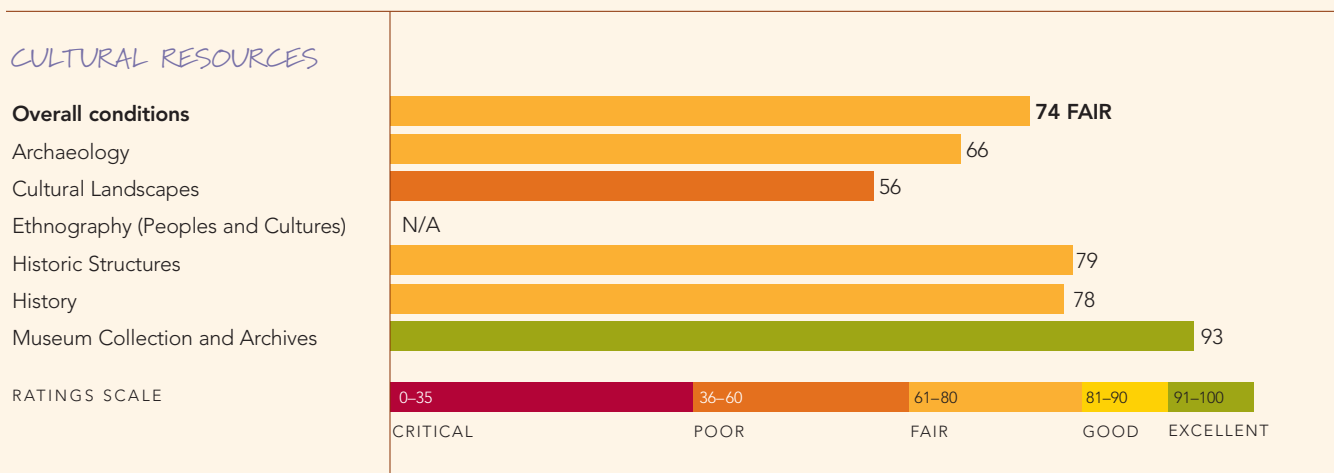
Current overall conditions of the known **cultural resources** at Fort Donelson rated 74 out of a possible 100, indicating "fair" conditions. The scores for cultural resources are based on the results of indicator questions that reflect the National Park Service's own *Cultural Resource Management Guideline* and other policies related to cultural and historical resources.

Efforts in 2007 to reorganize the park's archives included rehabilitating a garage for reuse as an archival storage space. The space exceeds the necessary Park Service museum standards. Though the museum and archival collections in the park are well managed, other projects require attention. For example, vital reports that guide management of cultural resources remain unwritten at Fort Donelson due to budgetary shortfalls, and visitor center

Note: When interpreting the scores for resource conditions, recognize that critical information upon which the ratings are based is not always available. This limits data interpretation to some extent. For Fort Donelson, 100 percent of the cultural resources information was available and 47 percent of the natural resources information was available (insufficient for rating).

RESOURCE CATEGORY

CURRENT



The findings in this report do not necessarily reflect past or current park management. Many factors that affect resource conditions are a result of both human and natural influences over long periods of time, in many cases before a park was established. The intent of the Center for State of the Parks is not to evaluate Park Service staff performance, but to document the present status of park resources and determine which actions can be taken to protect them into the future.



Efforts are under way by the Civil War Preservation Trust to donate this 173-acre property to the Park Service.

RESOURCE MANAGEMENT HIGHLIGHTS

- **New land acquired.** In 2006, 164 acres at Fort Heiman were added to Fort Donelson National Battlefield. As of 2008, the Civil War Preservation Trust has acquired approximately 350 acres of core battlefield property adjacent to the park. Efforts are under way for the trust to donate land to the Park Service.
- **Archives moved to new facility.** In 2007, all of Fort Donelson's archival materials were relocated to a refurbished maintenance building that features new, climate-controlled storage and a space-saving, movable cabinet system. The new facility exceeds Park Service standards for protection of priceless historic documents, photographs, and maps.
- **New wayside exhibits installed.** Fort Donelson, in cooperation with the Park Service's Harpers Ferry Center, recently researched, designed, and installed new wayside exhibits that focus on the groundbreaking river battle; the freedmen's camp for former slaves; involvement of African Americans after the battle; Confederate prisoners of war; and related military campaigns at Forts Henry and Heiman.

exhibits are outdated and need to be replaced.

The park has no ethnography program, though the site has strong historical ties to African Americans due to the role the fort played as a refuge for newly freed slaves. The park requested and received a small grant in 2002 from the Park Service's National Underground Railroad Network to Freedom Program to produce a freestanding exhibit interpreting the "Freedman State" and camps that grew up around the fort area during the U.S. Army occupation from 1862 to 1865. This exhibit has expanded interpretation of the park's history beyond primary themes. Additional research and interpretation could further explore African-American ties to the fort.

This assessment did not rate the overall conditions of Fort Donelson's natural resources, because only 47 percent of the information required by the Center for State of the Parks assessment methodology was available. Based on the available information, the main threats to the park's natural resources are non-native plants, which are outcompeting native plant species for sunlight, water, nutrients, and space.

LAND USE HISTORY AND PARK ESTABLISHMENT

Before the Civil War, various groups of people lived on and used the resources of the land that is now part of Fort Donelson National Battlefield. The Shawnee tribe inhabited the Fort Donelson area prior to the arrival of the first Euro-American settlers roughly 200 years ago. At the time of the Civil War battle, the Fort Donelson area was only sparsely settled. The primary historical crops grown in the area were tobacco and hay. Farming continued on lands now within the park until the 1930s, and today the Park Service pays a contractor to mow and remove hay on 12 acres, to help maintain the historical landscape.

Built in 1861, Fort Donelson was named in honor of Daniel S. Donelson, the Tennessee attorney general and the senior military advisor

to the survey team at the fort. Confederate soldiers and enslaved African Americans built the 15-acre earthen fort in seven months.

In the Battle of Fort Donelson, the Union suffered nearly 5,000 casualties. Accurate numbers of Confederate troops defending Fort Donelson have been lost, but it is believed that there were nearly 21,000 troops at the time of the battle. More than 12,000 surrendered, approximately 1,500 were killed or wounded, and the remainder escaped. Following the defeat of the Confederates, the fort became a haven for slaves seeking safety within the Union lines.

The capture of Fort Donelson gave the Union forces their first major victory in the Civil War. Congress established Fort Donelson National Military Park in 1928 to commemorate the Union's capture of the fort as well as the history of the Confederates' stand. The War Department managed the park and the adjacent Fort Donelson National Cemetery until 1933, when the National Park Service assumed management of both.

In 1960, Congress added more property to the military park, including the Dover Hotel and the landing on the Cumberland River where supplies were transported and captured Confederates were shipped off to Northern prisoner-of-war camps. The Dover Hotel, or Surrender House, is the last original standing structure in which a Civil War surrender took place. In 1966, the park was listed in the National Register of Historic Places.

On August 16, 1985, Congress redesignated Fort Donelson as a national battlefield and in 2004, Congress increased the park's authorized boundary to 2,000 acres. The park recently acquired 164 acres at Fort Heiman, and about 350 acres near the park currently held by the Civil War Preservation Trust and may be added to the park in the future. Currently, about 20 percent of the principal fighting ground associated with the Civil War battle at Fort Donelson is protected (primarily the Confederate earthworks).

FORT DONELSON NATIONAL BATTLEFIELD AT A GLANCE

- **Trilogy of forts:** Fort Henry, Fort Donelson, and Fort Heiman were built by Confederates to defend against Federal incursions on the Tennessee and Cumberland Rivers. Fort Donelson was built overlooking the Cumberland River, while Fort Henry was built 12 miles to the west, on low ground on the east bank of the Tennessee River. After Confederate Brigadier General Lloyd Tilghman realized that Fort Henry was indefensible, a site on a high bluff on the west bank of the Tennessee River in Kentucky (featuring a commanding view of the river) was chosen for construction of a new fort, Fort Heiman. The new fort was still under construction when it fell to the Union during the Battle of Fort Henry. With enabling legislation passed in 2006, Fort Heiman and 164 surrounding acres are now protected as part of Fort Donelson National Battlefield. Fort Henry was fully submerged in the 1940s with the damming of the Tennessee River to create Kentucky Lake. The land where the fort was located is currently protected as part of the Land Between the Lakes National Recreation Area managed by the U.S. Forest Service.
- **African-American history:** Enslaved African Americans played a major role at Fort Donelson. Indeed, African Americans were some of the fort's primary builders. The Second Confiscation Act of July 1862 provided that any slave who passed into Union territory, which included refuge within Union camps, would be emancipated. This led to the creation of a freedmen's camp near Fort Donelson in 1863, where former slaves built their own homes and planted gardens. (See the "Ethnography" section on page 24 for more information about the historical connections between African Americans and Fort Donelson.) Fort Donelson National Battlefield has also been designated as part of the Park Service's National Underground Railroad Network to Freedom, a diverse collection of historic sites, facilities, and programs that have a verifiable association to the Underground Railroad. Through partnerships with leaders of other local, state, and federal agencies, as well as interested organizations and individuals, the National Park Service plans to work to commemorate, preserve the resources of, and educate the public about the Underground Railroad.
- **Protected forests:** Old-growth oak forest habitat is protected at Fort Donelson. These forests, habitat for a multitude of wildlife species, are being lost throughout the Eastern United States to development, timber harvesting, and disease.

KEY FINDINGS

- With the addition of Fort Heiman and pending land donations by the Civil War Preservation Trust, additional staff are needed to preserve historic structures and conduct cyclical maintenance. Two permanent positions currently vacant in the park's maintenance division are for first-line supervisors, and two additional seasonal maintenance positions are also unfilled. One permanent position, retired in 2008, remains vacant in the Ranger Activities Division (includes Interpretation and Education). The park has not received increases in its base budget to offset rising costs for mandatory expenditures such as retirement plans, nor does the park have the necessary funds and staff to cover expanded operations at Fort Heiman or costs associated with natural and cultural resource management. According to the park's 2007 business plan, the park needs the following funds and staff to optimally serve visitors and protect resources: \$1.39 million increase in base funding for resource management, program development, and visitor services, as well as staff that include one law enforcement ranger, two maintenance workers, one equipment operator, one budget analyst, three park guides, and one integrated resource management specialist.
- Currently, no natural resource management program exists at Fort Donelson. The park would like to hire an integrated resource management specialist to help meet the need to understand park ecosystems, but the base budget increase needed to support this position has not been funded.
- Several important management documents require updates; some documents have not yet been written. The park's general management plan, an overarching management document, was prepared in 1983. Updating the plan is necessary to address issues that have arisen in the last 26 years, as well as the acquisition of new lands to the park. The park secured funds in fiscal year 2008 to update the general management plan, and the planning process is slated to begin in fiscal year 2009. Baseline documents such as a cultural landscape report and inventory, historic resource study, archaeological overview and assessment, ethnographic overview and assessment, and an update to the administrative history are needed to document resources and guide management of them. The park has submitted requests for funds to complete more than a dozen plans, inventories, studies, and reports, but none have been funded as of this printing.
- Falling trees and erosion threaten the historic earthworks that comprise most of the battlefield. When trees are felled by wind or disease, they leave behind holes in the earthworks that are susceptible to erosion from wind and rain. The park's staff is currently removing small trees and heavy vegetation and planting native grasses to mitigate these threats, but funds are needed to continue this work. Currently, the park requires additional, recurring funding to prune or remove hazardous trees and has requested \$67,000 for the next treatment phase.
- Due to its location within the city limits of Dover, adjacent land use is one of the largest threats to aesthetics and the landscape at Fort Donelson. Development, mostly residential, continues to occur

along the park's boundaries, marring the viewshed and compromising the 19th-century atmosphere the park is trying to replicate. Tennessee Highway 79 from Clarksville through Dover is currently being widened. Clarksville is rapidly growing (4th largest growth rate in state) and completion of the highway project will connect Clarksville to Memphis via a four-lane divided highway. Growth from Fort Campbell (101st Airborne Army Post) and Clarksville is expected to continue toward Dover.

- Fort Donelson's visitor center exhibits, installed in 1962, fall below minimum Park Service standards and require upgrades and replacement. In addition to outdated exhibits, the building itself needs to be redesigned to make it accessible to handicapped visitors. The park has requested and received funding to plan new visitor center exhibits, but requests for funds to address the building itself have not yet been received.
- Fort Donelson National Battlefield has been designated as part of the Park Service's National Underground Railroad Network to Freedom and includes a freedmen's camp, but the park has not surveyed or assessed associated areas, and the park does not have an ethnography program to document and interpret ties to African Americans. The park has requested \$48,000 in funds to conduct an ethnographic overview and assessment, but monies have not been granted yet.
- Managers at Fort Donelson National Battlefield recognize the need to incorporate Forts Heiman and Henry into interpretation at the park. These forts were surrendered to the Union shortly before the Battle of Fort Donelson, and understanding the chronology of events and history of all three forts is necessary to appreciate the significance of the unconditional surrender of Fort Donelson. The park plans to work with the U.S. Forest Service, which manages the land where Fort Henry was located, to explore that fort's historical importance.
- Bald eagles, American icons that were protected under the Endangered Species Act until their recovery resulted in delisting in 2007, perch in and otherwise use trees growing on historic earthworks at the park. To restore the cultural landscape of the battlefield to resemble its 1860s appearance would require removal of some of the trees used by the eagles within the fort proper. The park has requested funding to complete an environmental assessment to provide options for cultural landscape management and earthwork preservation.
- Non-native plants threaten the ecological health of Fort Donelson National Battlefield. According to the Park Service's Cumberland Piedmont Network, 153 non-native plant species are known to occur in the park. Based on rating criteria developed by NatureServe, a nonprofit conservation organization, 25 of these species have been determined to represent a severe threat to native species and ecological communities. The park does not have the resources to eradicate these harmful species, which have the potential to displace native communities, especially in riparian areas.



Earthworks—fortifications comprised chiefly of earth—provided soldiers with shelter from attack. Falling trees and erosion threaten Fort Donelson's historic earthworks.



THE FORT DONELSON NATIONAL BATTLEFIELD ASSESSMENT



Volunteers dressed as Union soldiers fire muskets as part of a living history demonstration on the anniversary of the Battle of Fort Donelson.

CULTURAL RESOURCES—PARK PLANNING DOCUMENTS NEEDED

Fort Donelson National Battlefield scored an overall 74 out of 100 for the condition of its cultural resources, which include archaeology, cultural landscapes, history, historic structures, and museum collection and archives. This score indicates that the resources are in “fair” condition.

Cultural resources at Fort Donelson include the Confederate earthworks, the historic Dover Hotel, and an impressive museum collection and archives containing, among other items, a variety of Civil War artifacts and documents. Recent collaborative efforts with the Park Service’s Southeast Archeological Center resulted in a newly organized, state-of-the-art archival storage facility.

Threats to resources include tree falls in the

earthworks area and small-scale looting of Civil War artifacts. The park lacks important management documents for interpreting history, evaluating cultural landscapes, and protecting historic structures. And despite strong historical ties to enslaved African Americans who sought refuge at the fort, an ethnography program is not in place in the park. Research, such as an ethnographic overview and assessment, is needed in order to establish a program.

HISTORY—IMPORTANT MANAGEMENT DOCUMENTS NEEDED

Interpretation at Fort Donelson National Battlefield focuses on construction of the fort by the Confederates to protect the Cumberland River; the battle between Confederate and Union soldiers; the unconditional surrender of Fort Donelson to Union Brigadier General Ulysses S. Grant by Confederate Brigadier General Simon B. Buckner at the Dover Hotel; and life at the fort after the battle, for both Union soldiers and freed slaves.

The park uses wayside exhibits, both on the park's auto tour route and along hiking trails, as a primary means to interpret history for visitors. In 2003, wayside signs were evaluated and found to rank below minimum standards for physical condition, display uniformity, and relevant content. With recent project funding, Fort Donelson, in cooperation with the Park Service's Harpers Ferry Center, researched, designed, and installed new wayside exhibits that focus on the groundbreaking river battle; the freedmen's camp for former slaves; involvement of African Americans after the battle; Confederate prisoners of war; and related military campaigns at Forts Henry and Heiman.

Fort Donelson recently added a new visitor center film detailing the campaign that also includes information on the friendship between General Grant and General Buckner, as well as facts about the fort's importance to slaves seeking freedom. The park also offers a variety of educational audio presentations on its

website, which may be listened to on a computer or downloaded and played on a personal digital audio player.

The park's staff includes a historian who also serves as the historic weapons supervisor, front-line interpreter, and museum curator. This staff member engages in a variety of duties that include producing and presenting weapons demonstrations; developing formal interpretive programs; managing visitor center operations; and coordinating off-site programs presented to community and professional organizations. The park's historian also has law enforcement duties that include patrolling the park, writing citations, and enforcing laws and park policies. All of these additional duties and responsibilities take time away from historical research. Other park staff contribute to available historical research in the park. Interpretive ranger Susan Hawkins wrote *Forts Henry, Heiman, and Donelson: The African-American Experience*. Additionally, historians not affiliated with the park have produced extensive historical research on Forts Donelson and Heiman, which park managers reference.



The United Daughters of the Confederacy erected this monument in 1933 to commemorate fallen Confederate soldiers.

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Two documents—a historic resource study and an administrative history—are important primary tools parks use to guide management decisions. A historic resource study provides a historical overview, identifying and evaluating cultural resources within a historic context; it also identifies the need for any special studies and makes recommendations for resource management and interpretation. Fort Donelson has never conducted a historic resource study, though funding has been requested to complete one. An administrative history describes a park's conception and establishment—and its management to the present day—as well as its legislative history, planning, land acquisition, development, public relations, and ongoing management concerns. Fort Donelson's administrative history, completed in 1968, is outdated. At this time, undertaking an administrative history update would be daunting, as the park's resource management papers have not been cataloged and are not accessible through a finding aid.

ARCHAEOLOGY—OVERVIEW AND ASSESSMENT OF PARK NEEDED

The Park Service has identified ten archaeological sites at Fort Donelson: the battlefield; the Dover Hotel; historic roads; two house sites; the picnic area; the freedmen's camp; the Winds Ferry Road Community; the lock complex; and the national cemetery complex. All ten are included in the National Register of Historic Places under the umbrella designation of Fort Donelson National Battlefield. As of 2005, all sites were listed in "good" condition.

The Park Service's Southeast Archeological Center has conducted various research projects at Fort Donelson, including excavation of the upper and lower river batteries and remote sensing of the national cemetery. In 2005, the center assessed the condition of the ten known archaeological sites in the park and identified threats that warrant further monitoring. The largest and most immediate threat to earth-

works on the battlefield is tree falls (see "Caring for Historic Earthworks Is a Challenge" on page 21). In addition to falling trees, archaeological resources in the park are threatened by looters—illegal collectors of artifacts. Not only is looting illegal and punishable by fine or imprisonment, it also permanently removes the Park Service's ability to preserve history. Evidence of looters using metal detectors and digging for relics has been found in the park, but the extent of illegal collecting is unknown. In 2003, the park underwent a law enforcement needs assessment that identified the need for a total of four law enforcement commissioned rangers on staff to adequately protect the health and safety of visitors and to adequately protect park resources. The park has submitted operational funding requests to recruit and hire at least one additional law enforcement ranger.

In its 2005 report, the Southeast Archeological Center noted that archaeological surveys and testing should be conducted inside the earthworks to locate remains of the roughly 400 soldier huts that once stood there. A survey for prehistoric sites was also suggested. Finally, the center recommended that historic maps and documents be inventoried and surveyed to identify potential locations of post-Civil War residences, farmsteads, and communities. Ideally, this study would include research into the lock system that was in place around the batteries on the Cumberland River. Fort Donelson staff are aware of the locations of the lock master's house and associated cistern, the lock house, and the storage shed. All of these cultural resources would contribute to the interpretation of the park by illustrating the continued use of the land beyond the battle that occurred there.

Additional archaeological work is needed throughout the park, including newly acquired properties, to supplement work completed by the Southeast Archeological Center. Park staff would like to complete an archaeological overview and assessment to identify and docu-



The Park Service has restored part of the Dover Hotel, where Confederate surrender of Fort Donelson took place, to resemble a typical 1860s hotel lobby. Another part of the structure contains space for viewing an audio-visual program.

ment sites, but there are currently no funds to support this project. Significant archaeological resources yet to be evaluated in the park include possible mass graves of Confederate soldiers and the remains of Confederate cabins inside the fort, Underground Railroad camps, freedmen's camps near the fort, and Fort Heiman.

Fort Donelson's historian coordinates maintenance of the park's archaeological sites, but no funding exists for permanent archaeology staff at the park level. Instead, archaeologists from the U.S. Forest Service or the Southeast Archeological Center assist with research and planning. To accomplish further archaeological research, the park is considering a partnership with Murray State University in Kentucky.

HISTORIC STRUCTURES—MORE MAINTENANCE STAFF NEEDED FOR PRESERVATION

Fort Donelson National Battlefield protects 29 historic structures. Three are buildings (the Dover Hotel, the cemetery carriage house, and the cemetery lodge) and the remaining consist of earthworks, river batteries, and other specific historic features on the landscape. Of the 29 historic structures, 17 are in "good" condition, while 12 rated "fair." However, condition information for 11 of the structures is outdated (1995 or 1998), while information for the other 18 structures is recent, compiled in 2005. All of the park's historic structures are listed in the National Register of Historic Places under the umbrella designation for the park as a whole.

During the Civil War, all but four buildings burned in the town of Dover; one of the surviving buildings was the Dover Hotel. The hotel, where the fort's surrender took place, is located at a river landing where supplies were trans-



This cabin, an interpretive exhibit within the fort, represents the more than 200 cabins that housed Confederate soldiers at Fort Donelson in 1861-62.

ported and captured Confederates were shipped off to Northern prisoner-of-war camps. When Fort Donelson was still held by the Confederates, the hotel served as General Simon Buckner's headquarters; following the surrender, the Union converted the hotel to a hospital. In the 1970s, the Park Service restored the Dover Hotel for adaptive re-use. Approximately 20 percent of the structure is original, including the foundation, the chimneys, and most of the frame. While the interior layout at the time of the fort's surrender is not known, one front room is now decorated in a style typical of an 1860s hotel lobby and the other front room contains open space for public viewing of an audio-visual program. Park managers received funds in fiscal year 2009 to develop a plan for an exhibit installation at the Dover Hotel.

Park managers are interested in re-evaluating the current use of the cemetery lodge and the cemetery carriage house, two historic structures at Fort Donelson that are currently being used as

administrative offices and storage. Restoring the interior of the carriage house and interpreting the site (and the national cemetery as a whole) is part of the park's centennial strategy and is a goal for the Civil War sesquicentennial. The park's priority would be to rehabilitate the historic structures for visitor use and services, including exhibits, and to move all offices to the visitor center, if and when funding is provided to rehabilitate the building or construct a new one.

Threats to the park's historic structures include erosion, trees, humans (foot traffic, climbing on structures), animals (burrowing and nesting), and challenges associated with procuring funding to properly maintain them. As discussed in "Caring for Historic Earthworks Is a Challenge," erosion threatens the longevity of the remnant earthworks on the battlefield. Trees growing within earthworks contribute to erosion, and the trees can damage earthworks when blown down by wind. Few documents offer guidance for protection of historic structures. In fact, only the Dover Hotel and the upper and lower river batteries have been evaluated through historic structure reports.

While the park does not employ a historical architect, staff from the Park Service's Southeast Regional Office assist the park when needed. Four maintenance positions (two permanent, two seasonal) at Fort Donelson remain vacant, limiting the work that can be done on historic structures. As the new site at Fort Heiman is developed, maintained, and opened for visitor use, the current number of park staff cannot maintain the same degree of preservation and service throughout the park as a whole. Hours of operation may be reduced, mowing and landscape maintenance will be curtailed, visitor services will be limited, masonry work on structures and walls will be reduced to respond to emergency conditions, and health and safety will take priority over programs and education.

CARING FOR HISTORIC EARTHWORKS IS A CHALLENGE

For soldiers on both sides in the American Civil War, fighting behind a parapet (a low protective wall) was naturally more desirable than fighting out in the open. Though many natural features such as boulders or outcroppings served as parapets, Civil War soldiers also became experts at building field fortifications, such as the earthworks at Fort Donelson. (Earthworks are also preserved at the other three Tennessee Civil War national parks.)

Earthwork refers to any construction—whether a temporary wall or a permanent fortification—that is used for attack or defense and made chiefly of earth. Fort Donelson itself is an earthen fort. While some military earthworks were hastily constructed in response to attacks, others such as Fort Donelson were highly engineered, carefully constructed fortifications designed for longevity.

Earthworks surviving today range from low mounds to massive, well-preserved forms with clearly defined features. The battlefield at Fort Donelson is composed primarily of the earthworks, but erosion—the wearing away of the earth's surface by any natural process—poses a threat to their permanence. At Fort Donelson, park staff manage native grasses in an effort to minimize erosion and have requested funds to create plans and develop treatments for preserving the earthworks.

Trees growing out of the historic earthworks on the battlefield threaten this resource, as they disturb soil and hasten the process of erosion. Trees in the earthworks area—which are not shielded by neighboring trees—are susceptible to being blown down by wind, and when a tree falls, the roots are generally exposed, leaving a hole in the earthwork. Staff fill the depressions

and slope their contours to match the existing landscape, but the integrity of the earthworks is nonetheless compromised.

Archaeologists from the Park Service's Southeast Archeological Center recommend monitoring all trees around the Fort Donelson earthworks and removing old or dead trees that are not significant habitats for wildlife. Complicating this suggested strategy is the fact that a pair of bald eagles (*Haliaeetus leucocephalus*) has nested in the park since 2004. Although they have brought publicity and enthusiastic visitors to Fort Donelson, maintenance of the historic earthworks has become more complicated because eagles—which are protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act—use the trees that are threatening the earthworks. And even when removing a tree is acceptable, cutting it from the earthworks is not a simple process—the trees must be felled as “lightly” as possible onto the landscape and stumps mechanically ground to soil level. The park is currently in the process of clearing woody vegetation from the park's earthworks through a small-scale project that removes a handful of hazardous trees each year. While the trees are cut at ground level to prevent holes, depressions caused by rotting stumps and roots must be filled with soil and can become an issue several years after removal.

The battlefield at Fort Donelson is comprised chiefly of earthworks, which are susceptible to being worn away by erosion.



CULTURAL LANDSCAPES—ESSENTIAL REPORT AND INVENTORY NEEDED

At Fort Donelson, interpretation of cultural landscapes focuses on the importance of the Tennessee and Cumberland Rivers during the Civil War, and how the struggle for control of these rivers resulted in battles fought at Fort Heiman, Fort Henry, and Fort Donelson. Visitors gain an understanding of how the landscape was used to defend the forts, as well the Union's use of the forts and river systems as a gateway into the South.

Fort Donelson National Battlefield is composed of five cultural landscapes: the fort itself, the river batteries, the national cemetery, the Dover Hotel, and newly acquired Fort Heiman. They are interpreted for visitors through wayside exhibits, guided tours, and auto tours. Park staff are currently developing interpretive messages for the Fort Heiman cultural landscape and an updated interpretive plan for Fort Donelson to address the significance of its relationship to Forts Henry and Heiman. Future plans include developing a strategy for interpre-

Cannons in place on the battlefield help visitors understand and envision the historic Battle of Fort Donelson.



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tation and use of the Dover Hotel, and increasing thematic program offerings and interpretation near the national cemetery.

Currently, the park lacks a cultural landscape report, essential to management and planning for cultural landscapes, but phase one of this crucial project is scheduled to begin in fiscal year 2009. It will cover the area around the fort. Additional phases that have not yet been funded would cover the Dover Hotel and outer earthworks, the national cemetery, and Fort Heiman. Cultural landscape reports evaluate and define landscape characteristics and their associated features, assess threats, provide management direction, and propose treatment of cultural landscapes. They also guide decisions regarding maintenance, interpretation, and visitor services. In addition to the cultural landscape report, Fort Donelson requires a cultural landscape inventory to identify cultural landscape conditions.

While the park currently lacks a historic landscape maintenance plan, it does conduct cyclic routine maintenance of cultural landscapes. Maintenance personnel at Fort Donelson have attended specific, formal training sessions (such as cultural landscape arborist training), but the park's workforce is limited, both in size (three full-time maintenance workers) and expertise. Therefore, Fort Donelson uses outside resources to ensure the health of park landscapes, such as U.S. Forest Service archaeologists who assist in evaluating any archaeological work that would affect cultural landscapes within the park.

MUSEUM COLLECTION AND ARCHIVES—NEW STORAGE FACILITY EXCEEDS STANDARDS

A Confederate captain's coat, an original Medal of Honor won at the campaign of Fort Donelson, a Brennan cannon, a Noble Brothers twelve-pound Howitzer, a Confederate kepi, and a Union flag flown at the fort during battle—these are just a few of the notable items



Exhibits in the park's visitor center are outdated. This one was fabricated and installed in 1962. The park has received funds to plan new exhibits.

within the museum collection at Fort Donelson National Battlefield. In sum, the park cares for 843 archaeological artifacts, 866 historical artifacts, and 694 biological specimens. The park's archives include 103,892 items. Fort Donelson's historian also acts as museum curator.

Fort Donelson's 2005 collection management plan guides collection documentation and record keeping; planning, programming, and staffing for the collection; preservation guidelines and storage; and museum collection security and fire protection. A 2006 collections report listed 40 percent of the museum collections as cataloged. The 64,580 items that remained uncataloged are part of the park's collections held at the Southeast Archeological Center.

Storage for the park's museum collection and archives has vastly improved in the last three years. According to the 2006 *Checklist for the Preservation and Protection of Museum Collections*, the conditions of Fort Donelson's visitor center exhibits and archives fell below several

minimum standards for National Park Service museum conditions. Since then, the park has requested and received project funds and assistance to address the problem. In 2007, park staff worked with curatorial staff from the Southeast Archeological Center to process remaining backlogged archival items held at Fort Donelson. All archival materials were relocated to a new, climate-controlled storage facility. The relocation process included storing oversized maps, drawings, and plans in flat-file map cabinets; placing photographic prints in acid-free archival sleeves; and inserting archival paper between acidic documents and between photographic prints.

While Fort Donelson's storage facility exceeds standards for protection, the park's visitor center exhibits are outdated. Exhibits are essential for display of museum and archival objects, and those in the visitor center were installed in 1962. The park has requested and received funding for planning of new visitor

center exhibits, but requests for funds to address the building itself have not yet been received. In fiscal year 2009, the park is scheduled to begin plans for an exhibit at the Dover Hotel.

ETHNOGRAPHY (PEOPLE AND CULTURES)—PARK LACKS PROGRAM, DESPITE POTENTIAL

Enslaved African Americans who fled to Fort Donelson after the Union victory in February 1862 played a major role in the historic significance of the area. Some were held as laborers by the Union Army, serving as cooks, hospital aides, laundresses, teamsters, and personal servants. Later in the year, with passage of the Second Confiscation Act in July 1862, the North declared that any slave who passed into Union territory would be emancipated. This led to the creation of a freedmen's camp near Fort Donelson in 1863, where former slaves built their own homes and planted gardens. Benevolent societies, such as the Western Freedmen's Aid Society, provided clothing and teachers to the camp. Also that year, several

freed slaves fought on the side of the Union Army against a Confederate assault at the Battle of Dover. In November 1863, the fort became a recruiting station for African-American soldiers. During a conflict in 1864, the 119th United States Colored Troops (U.S.C.T.) and the Fourth Colored Artillery fought against Confederates and were praised for their bravery. In 1867, Union soldiers and 14 soldiers from the U.S.C.T. were buried in what is now Fort Donelson National Cemetery.

Though African Americans played an important role at Fort Donelson, the park has not completed enough research to establish an ethnography program. Funding for an ethnographic overview and assessment has been requested but not received, so the work has not been completed. The park does have one ethnographical study, *Forts Henry, Heiman, and Donelson: the African-American Experience*, which details topics that include slaves' associations with the Union Army at Fort Donelson, freedmen's support in the war effort, and freedmen's new lives in camps around the fort. In 2002, the park requested and received a small grant from the National Underground Railroad Network to Freedom Program to produce a freestanding exhibit interpreting the "Freedman State" and camps that grew up around the fort area during the United States Army occupation from 1862 to 1865. In addition, special events, publications, exhibits, the park's website, curriculum-based educational programming, and other educational materials assist in presenting the compelling stories of African Americans at Fort Donelson.

The park's lack of an ethnographic overview and assessment and formal ethnography program are the reasons why the condition of ethnographic resources has not been rated in this assessment. Conducting an ethnographic overview and assessment in the park is a critical first step toward developing an ethnography program.

In 2002, the park received a small grant from the National Underground Railroad Network to Freedom Program to produce a freestanding exhibit interpreting the "Freedman State" and camps that grew up around the fort area during the United States Army occupation from 1862 to 1865.





NATURAL RESOURCES—PARK LACKS NATURAL RESOURCES PROGRAM

The assessment did not rate the overall condition of natural resources at Fort Donelson National Battlefield, because only 47 percent of the information required by the Center for State of the Parks assessment methodology was available. Sufficient information on ecosystem functions and environmental quality indicators such as air quality and water quality were lacking. Based on available information, non-native plants pose the most immediate threat to natural ecosystems in the park. In addition, the park lacks any staff allocated to natural resource

management, but has requested a base budget increase to support an integrated resource management specialist.

PLANT COMMUNITIES—OLD-GROWTH FOREST PROTECTED

The vegetation of Fort Donelson has changed dramatically since the battle in 1862. Current vegetation is much thicker than historic cover, primarily due to the lack of fire as a natural disturbance. The absence of fire has also led to the loss of forest gaps as forests have closed in, which has in turn led to the loss of species dependent on these open woodland areas.

A 2004 vascular plant inventory conducted

The Cumberland River (pictured here) and Tennessee River were strategically important transportation routes during the Civil War. The Confederates built Fort Donelson, Fort Heiman, and Fort Henry to defend the rivers from Union incursions. Cannon batteries are shown here. The rivers are still important transportation routes for moving commercial goods.

at Fort Donelson National Battlefield recorded 363 species. Significant resources in the park include a population of federally listed threatened Price's potato bean (*Apios priceana*), found on bluffs overlooking the Cumberland River. Price's potato bean, a vine-like perennial belonging to the pea family, prefers lightly disturbed areas and can be found along shoreline areas and forest edges. Like Price's potato bean, the Michigan lily (*Lilium michiganense*), a state-listed threatened species found at Fort Donelson, is disappearing as surrounding forests close in and open habitat is lost. Ginseng (*Panax quinquefolius*) is a state species of special concern found in the park. Populations of this commercially exploited, medicinal plant have declined in Tennessee, as more and more plants have been collected. According to Fort Donelson staff, ginseng is difficult to find in the park. While ginseng poaching in the park is suspected, it has not been confirmed. The status of populations of rare flora in the park is unknown; a detailed survey to locate these populations and determine their conditions, as well as ongoing monitoring, is needed.

Forests cover 80 percent of the landscape at Fort Donelson and are composed of ten different community types, including loblolly pine (*Pinus taeda*), red cedar (*Juniperus virginiana*), tuliptree (*Liriodendron tulipifera*), maple (*Acer* spp.), and oak (*Quercus* spp.) mixes. Due to more than a century of disturbance from logging, farming, and grazing, most of these forests are relatively young and in a transitional—or successional—phase. But old-growth forests—those mature ecosystems that feature old trees more or less uninfluenced by human activity—are protected in the park. Because old-growth forests are becoming rare in the Eastern United States, due to development and timber harvesting, park protection of these habitats is even more significant.

WILDLIFE—SMALL PARK HARBORS MANY SPECIES

While small in size, Fort Donelson protects habitat that supports many mammal, bird, reptile, amphibian, and fish species. Based on the results of a 2007 inventory report, the park houses 30 mammal species, including commonly seen white-tailed deer (*Odocoileus virginianus*) and eastern cottontail (*Sylvilagus floridanus*). Mammal predators in the park include bobcat (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), and red fox (*Vulpes vulpes*). Tree-roosting bat species, such as the eastern red bat (*Lasiurus borealis*), depend on Fort Donelson's mature forests for roosting habitat. The Cumberland River, with its steady supply of insects, provides important foraging habitat for the federally listed endangered gray bat (*Myotis grisescens*), which is also known to use the park.

Birds are the most visible wildlife at Fort Donelson, with 177 species recorded in a 2003–2005 inventory. Fort Donelson's protected forest habitat supports many species, such as woodpeckers (*Picoides* spp.), Acadian flycatcher (*Empidonax virescens*), and wood thrush (*Hylocichla mustelina*). The Cumberland River is a natural migration corridor for many avian species, and Cross Creeks National Wildlife Refuge, a large waterfowl management area, is located across the river from Fort Donelson. Bird of prey species found at Fort Donelson include barred owl (*Strix varia*), osprey (*Pandion haliaetus*), bald eagle (*Haliaeetus leucocephalus*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), broad-winged hawk (*Buteo platypterus*), and red-tailed hawk (*Buteo jamaicensis*). Since 2004, a year-round resident pair of bald eagles has raised more than eight chicks at Fort Donelson. Publicity surrounding the eagles has drawn bird-watchers and wildlife enthusiasts to the park, with some negative results. Visitors feed the eagles, which have become used to landing on picnic tables for handouts—or to steal meals. While the park has posted signs



Non-native species such as privet, which lines this roadway, are the primary threat to the ecological health of Fort Donelson National Battlefield.

warning visitors to refrain from feeding the bald eagles, the birds are already habituated to human food.

While the park harbors many bird species, those that depend on grassland habitat are faring poorly. Northern bobwhite (*Colinus virginianus*), field sparrow (*Spizella pusilla*), and grasshopper sparrow (*Ammodramus savannarum*)—all expected at Fort Donelson—are either absent or present in very low numbers. Possible explanations for the limited numbers of some bird species within the park include noise from road and barge traffic, urban development up to park boundaries, and mowing to the river's edge (preventing weedy habitat growth). High water during migration periods is also a factor. For example, due to the damming of the Cumberland River (by the U.S. Army Corps of Engineers in the 1960s), which reduces mudflat habitat, few shorebirds are found when creeks are flooded.

Fort Donelson supports 17 amphibian

species (seven salamanders, eight frogs, and two toads) and 20 reptile species (two turtles, four lizards, and 14 snakes). Only one venomous snake, copperhead (*Agkistrodon contortrix*), is found within the park. Indian Creek in the park supports small fish, including fringed darter (*Etheostoma crossopterygum*), creek chub (*Semotilus atromaculatus*), rainbow darter (*Etheostoma caeruleum*), and largescale stoneroller (*Campestris oligolepis*).

NON-NATIVE PLANTS AND DISEASE— PRIMARY THREATS TO PARK ECOSYSTEMS

Non-native plants are a concern at Fort Donelson National Battlefield. The park has identified 153 non-native species; of these, 25 species are aggressively invasive and pose a severe or significant threat to natural communities and native plants. These species are the single largest threat to the ecological health of the park.

Many non-native plants, which have outcompeted native species at Fort Donelson, cover park fields and river banks and include crown vetch (*Coronilla varia*), Johnsongrass (*Sorghum halepense*), nodding thistle (*Carduus nutans*), Queen Anne's lace (*Daucus carota*), goosegrass (*Eleusine indica*), and common mullein (*Verbascum thaspos*). Other species, such as mimosa (*Albizia julibrissin*), English ivy (*Hedera helix*), sweet autumn clematis (*Clematis terniflora*), and princess tree (*Paulownia tomentosa*), take advantage of any light gaps in the interior of forests, threatening to displace native species and communities. Some of the non-natives, such as privet (*Ligustrum sinense*) and Japanese honeysuckle (*Lonicera japonica*), were planted as ornamentals around original homesteads in the area. The forested wetlands of Fort Donelson are especially susceptible to invasion by Japanese stiltgrass (*Microstegium vimineum*) and privet.

Removing invasive species would greatly benefit the ecological health of vegetative communities within the park, but non-native plant control has been somewhat limited, in part, because the park does not have any natural resource staff and competes to receive assistance from a Park Service exotic plant management team. The park's seasonal maintenance crew currently works to eliminate approximately a half acre of privet, mimosa, and multiflora rose (*Rosa multiflora*) each year by mechanical cutting and herbicide application. Efforts to control mimosa have been successful; this non-native is now difficult to find in the park.

In addition to invasive, non-native plants, park ecosystems may be threatened by sudden oak death, a disease caused by a fungus (*Phytophthora ramorum*), resulting in leaf spot, leaf and twig dieback, and bleeding cankers on the stems of infected trees. While it has not been officially confirmed, sudden oak death may be present at Fort Donelson, and park staff suspect it may be responsible for a recent die-off of oaks. To confirm the presence of sudden oak death at Fort Donelson, laboratory tests must be

conducted, but the park has neither the staff nor funds to conduct the tests.

AIR AND WATER QUALITY—MORE MONITORING NEEDED

Little is known of Fort Donelson's air quality, as there are no monitoring stations within the park, and stations outside the park are generally either too far away or too new for data to be useful. Fort Donelson is susceptible to pollution from a variety of sources, including coal-fired power plants. It is located within 20 miles of the largest fossil-fuel-burning, electricity-generating plant in the United States at Cumberland City, Tennessee.

Ground-level ozone, which is formed when nitrogen oxides and volatile organic compounds react in the presence of sunlight, is harmful to people, wildlife, and plants, and it is the primary component of smog. While ozone is not monitored in the park, two ozone-monitoring sites exist within 30 miles of Fort Donelson. According to a Park Service report, it is likely that ozone levels in the park sometimes exceed the human health-based 8-hour National Ambient Air Quality Standard. Ozone levels are also suspected to be high enough to cause foliar (leaf) injury to ozone-sensitive plants. The Cumberland Piedmont Network is scheduled to monitor leaves for ozone damage in 2009.

The Cumberland Piedmont Network began water-quality monitoring at Fort Donelson in 2003. Water quality in the park is very good; water temperatures and dissolved oxygen levels are within the range to support native aquatic life. Waters in the park are generally clear, with slight-to-moderate turbidity. Fecal coliform levels—which vary from extremely low to moderately high—reflect variation in river flow conditions; increased flows result in increased levels of fecal coliform as bacteria is washed into streams.



STEWARDSHIP CAPACITY

FUNDING AND STAFFING—ADDITIONS NEEDED TO PROTECT RESOURCES

Stewardship capacity details how well equipped the Park Service is to protect the parks. The most significant factor affecting the park's ability to protect its resources is the funding a park receives from Congress. The operational budget for Fort Donelson National Battlefield is \$1.13 million in fiscal year 2009, a decrease of nearly \$11,000 from fiscal year 2008.

Many natural and cultural resource projects are unfunded at Fort Donelson. The park's top ten unfunded projects are rehabilitating new

lands at Fort Heiman, repairing the national cemetery comfort station, installing a fire suppression system in the museum storage area, preparing the park for the 150th anniversary of the battle, restoring historic structures, straightening headstones in the national cemetery, maintaining bronze monuments, developing a structural fire plan, repairing lower river battery parapet walls, and developing a resource stewardship strategy.

In addition to project funds, Fort Donelson needs more staff to help protect its resources. Positions remain vacant at the park, due to lack of funding, including two permanent and two seasonal positions in the maintenance division.

Reenactments of important historical events are an engaging way for visitors to learn about the park's history.

In 2007, about one-third of visitors (approximately 76,000 people) took part in interpretive programs in the park, such as ranger-led tours. According to its 2007 business plan, the park needs three more guides to optimally serve visitors.



NATIONAL PARK SERVICE

Due to the two permanent-position vacancies—for first-line supervisors—the park’s facility manager must directly supervise the other maintenance workers, effectively performing two separate jobs. Inventory and monitoring efforts currently are limited by what can be supported by the Cumberland Piedmont Network staff, because the park itself does not have any resource management staff. The park has increased in size with the addition of Fort Heiman and may increase by an additional 350 acres pending transfer of Civil War Preservation Trust properties. According to the park’s 2007 business plan, the park needs the following additional staff to optimally serve visitors and protect resources: one law enforcement ranger, two maintenance workers, one equipment operator, one budget analyst, three park guides, and one integrated resource management specialist.

PLANNING—IMPORTANT PLANS OUTDATED

To guide management of diverse resources, parks depend on a variety of plans. The primary, overarching document at most parks is the general management plan (GMP). Fort Donelson National Battlefield expects to begin the process of developing a new GMP in fiscal year 2009 to replace the last plan that was written in 1983. Several other key management plans require updates, including the park’s land protection plan (1987) and its resource management plan (1991). Land protection plans guide land acquisition priorities. Resource management plans provide general information on the status of natural and cultural resources in the park; they also discuss threats to the area. The Park Service has initiated a service-wide move to replace resource management plans with resource stewardship strategies. In fiscal year 2008, the park requested funds to create a resource stew-

ardship strategy, but monies have not been received for this project.

Due to funding shortfalls, key cultural resource planning documents are missing at Fort Donelson. These include an archaeological overview and assessment, a cultural landscapes report, and an ethnographic overview and assessment. Plans to guide earthworks management, integrated pest management, museum storage, and exhibit design and installation are also needed. With properly trained staff, some plans could be produced in-house, but at this time, staff do not possess the necessary expertise.

RESOURCE EDUCATION AND OUTREACH—VISITOR SERVICES RATE HIGHLY

The visitor center at Fort Donelson, an integral part of the educational experience and a starting point for most guests to the battlefield, is in need of updates. Exhibits do not reflect current scholarship, and some are deteriorating from age. The building itself requires modification. The visitor center information desk is located on the top (third) level of the facility; the museum is on the middle floor; the restrooms and ranger offices are on the first. No ramps or public elevators exist between floors. A wheelchair elevator was installed in 2006, but when it is in use, the stairways between the second and third floor cannot be used. Furthermore, there is not enough space available in the building for guest workers, meetings, or additional storage. Park staff feel that the facility requires either a complete redesign or replacement.

Despite problems with the current visitor center, visitor services at Fort Donelson are top-notch. A 2008 survey indicated that 100 percent of visitors felt satisfied with the park and 93 percent left with an appreciation of the park's resources. In 2007, about one-third of visitors (approximately 76,000 people) took part in interpretive programs in the park, which included such topics as the campaign for and battle of Fort Donelson, ironclads and innova-

tions, life at Fort Donelson, the National Underground Railroad Network to Freedom at Fort Donelson, and others. New wayside exhibits have been produced for Fort Donelson that tell the stories of the groundbreaking river battle; the freedmen's camp for former slaves; involvement of African Americans after the battle; Confederate prisoners of war; and related military campaigns at Forts Henry and Heiman. And volunteers guide tours to educate the public about the nesting bald eagles in the park. The park will complete a new long-range interpretive plan in fiscal year 2009.

Fort Donelson offers a variety of ways for students to learn about the park's history. The Parks As Classrooms program is an interdisciplinary, hands-on, curriculum-based approach to learning at the park. More than 15,000 students participated in a program on-site in fiscal year 2008. Fort Donelson also offers off-site educational experiences for students. The park loans out, free of charge, "traveling trunks"—assortments of multisensory materials, activity suggestions, and reproduction clothing—offering teachers five different themes for interpretation. Traveling trunks can be shipped anywhere in the

Traveling trunks filled with educational materials focusing on various interpretive themes are available to teachers throughout the country.



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United States. Local schools can schedule ranger visits. Known as Parks in Classrooms, these interactive programs are tailored for different grade levels (kindergarten through 8th grade).

In 2007, Fort Donelson installed a new visitor center film that includes information on the friendship between General Grant and General Buckner, as well as facts about the fort's importance to slaves seeking freedom. The park also has a new audiovisual program that was designed to use with the Parks As Classrooms program. The film, *Fort Donelson: A Place for Heroes*, presents the park's story through a teenage narrator. It won an Emmy in the Children's Programming Category at the 22nd annual Mid-South Regional Awards in Nashville, Tennessee, in 2006. The film also earned the National Park Service Southeast Region's 2006 Keeper of the Light Interpretive Award.

Staff at Fort Donelson maintain an excellent relationship with surrounding communities, getting involved with various organizations, such as Kiwanis and the Dover Chamber of Commerce. The park partners with the town of Dover to celebrate Eagle Fest each Memorial Day weekend, which includes the lighting of more than 1,500 luminaries in the national cemetery in remembrance of the nation's veterans.

Volunteers assist park staff with a host of resource protection projects. Here volunteers are cleaning metal tablets that provide information about battle events.

NATIONAL PARK SERVICE



EXTERNAL SUPPORT—VOLUNTEERS AND PARTNERS PROVIDE NEEDED SERVICES

The concept of partnership is deeply embedded in the management philosophy of Fort Donelson National Battlefield. As a result, the park has developed effective partnerships with organizations in the region. The park is a member of the Middle Tennessee Tourism Council, a 13-county organization promoting unique historical buildings, artifacts, and sites in the region. The Friends of the Campaign for Fort Henry and Donelson is a nonprofit group of interested citizens, formed to support and promote the Fort Donelson National Battlefield. This friends group raises funds to preserve, restore, and enhance the park's natural and cultural resources; provides improved services and facilities for visitors; increases public awareness and support of the park; and works to enhance educational and interpretive activities.

Eastern National, the park's cooperating association, operates retail outlets in more than 130 national parks and other public trusts, including Fort Donelson, where the association administers the bookstore. Since 1947, Eastern National has donated more than \$89 million from sales to the National Park Service.

Fort Donelson benefits from a dedicated, enthusiastic volunteer workforce, which takes on a wide variety of tasks. In 2007, 275 volunteers worked independently and alongside park employees, donating approximately 2,400 hours of service. Volunteers provide visitors with a number of formal and informal interpretive programs that the park is unable to provide due to staff limitations. For example, without the support of volunteers, the Dover Hotel could not be opened seasonally on weekends. The park has also been fortunate to attract volunteers who monitor the nesting bald eagles in the park and provide information to visitors. In addition, volunteers assist in maintaining the earthworks by removing trees and planting native grasses. They also repair park trails, paths, and buildings.



SHILOH NATIONAL MILITARY PARK



NATIONAL PARK SERVICE

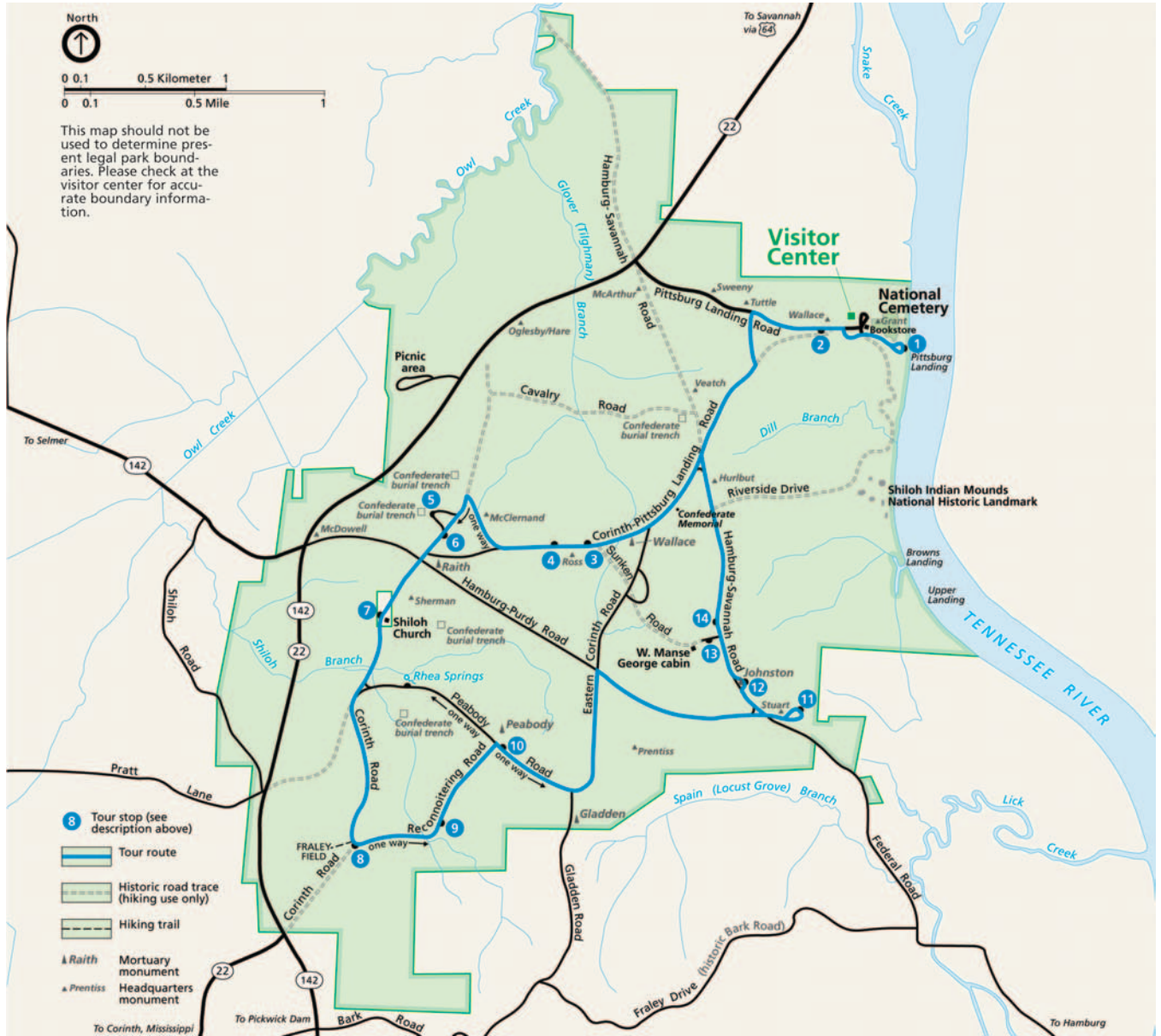
REPORT SUMMARY

On April 6–7, 1862, Union and Confederate forces clashed in what many consider to be the first major battle of the American Civil War. At dawn on April 6, Confederate soldiers surprised Union forces encamped on the banks of the Tennessee River at Pittsburg Landing. The Battle of Shiloh, as it came to be known, was named for Shiloh Meeting House, a log church in the area of the fighting. When the battle ended, the

loss of life was staggering: 23,746 soldiers had been killed, wounded, or were listed as missing. Fighting in May at nearby Corinth added nearly 6,000 more casualties, and the two-day Battle of Corinth, fought October 3–4, 1862, increased the carnage by 7,200 more soldiers either killed, wounded, missing, or captured. Americans on both sides of the conflict realized the war would not end quickly, and would claim more lives than anyone had imagined.

On April 6-7, 1862, Confederate and Union forces fought each other at Pittsburg Landing in what came to be known as the Battle of Shiloh.

North
 0 0.1 0.5 Kilometer 1
 0 0.1 0.5 Mile 1
 This map should not be used to determine present legal park boundaries. Please check at the visitor center for accurate boundary information.



Often referred to as the most secluded and best-preserved battlefield in the United States, Shiloh National Military Park was established in 1894. It lies on the western bank of the Tennessee River near the unincorporated community of Shiloh, Tennessee, protecting the lands where Union and Confederate forces fought April 6–7, 1862. Located approximately 110 miles east of Memphis, the park includes Shiloh National Cemetery as well as the new Corinth unit, in Mississippi, which includes the

Corinth Civil War Interpretive Center, 23 miles southwest of Pittsburg Landing. Currently, more than 4,100 acres within the park's authorized boundary (which exceeds 7,000 acres) are federally owned. The Park Service, with the assistance of the Civil War Preservation Trust, is pursuing negotiations to acquire 1,000 or more acres of the remaining nonfederal acres held within its legislated, authorized boundary at Shiloh battlefield. Another 800 or more acres currently owned by the Friends of the Siege and Battle of

Corinth are authorized to be donated to the Corinth unit (fee simple) sometime in 2009. In addition, another 130 acres of authorized lands at Corinth are under negotiation for future addition to the park.

Hundreds of monuments, markers, and cannons commemorate the soldiers who fell at Shiloh. Shiloh National Cemetery, as well as mass Confederate burial trenches, serve as final resting places for thousands killed in the Civil War battle. The cemetery also contains the bodies of soldiers of later wars and their spouses. The cemetery and mass Confederate graves are not the only hallowed ground here; the park also protects the Shiloh Indian Mounds National Historic Landmark, containing a burial mound and extant cultural resources of a Mississippian culture that thrived on the riverbank 1,000 years ago.

The interpretive center located in Corinth, Mississippi, is the most recent addition to the park. This state-of-the-art facility, opened in 2004, is the recommended orientation point for visitors to Shiloh and includes interactive exhibits, a multimedia presentation on the Battle of Shiloh, and a video on the subsequent Siege and Battle of Corinth. In contrast, the aging facilities and infrastructure of the Shiloh Battlefield Visitor Center in Shiloh, Tennessee, struggle to meet visitor needs.

In addition to a wealth of cultural treasures, the park also protects six ecosystems that harbor hundreds of mammal, bird, fish, reptile, and amphibian species. Lichen species in the park number more than 500, including a rare species for the region. The woodlands of the park are threatened primarily by natural events, such as ice storms in winter. Biologists suggest that mowing practices on the battlefield at Shiloh require re-examination because they could be reducing habitat for birds, reptiles, and amphibians, and potentially injuring some species.

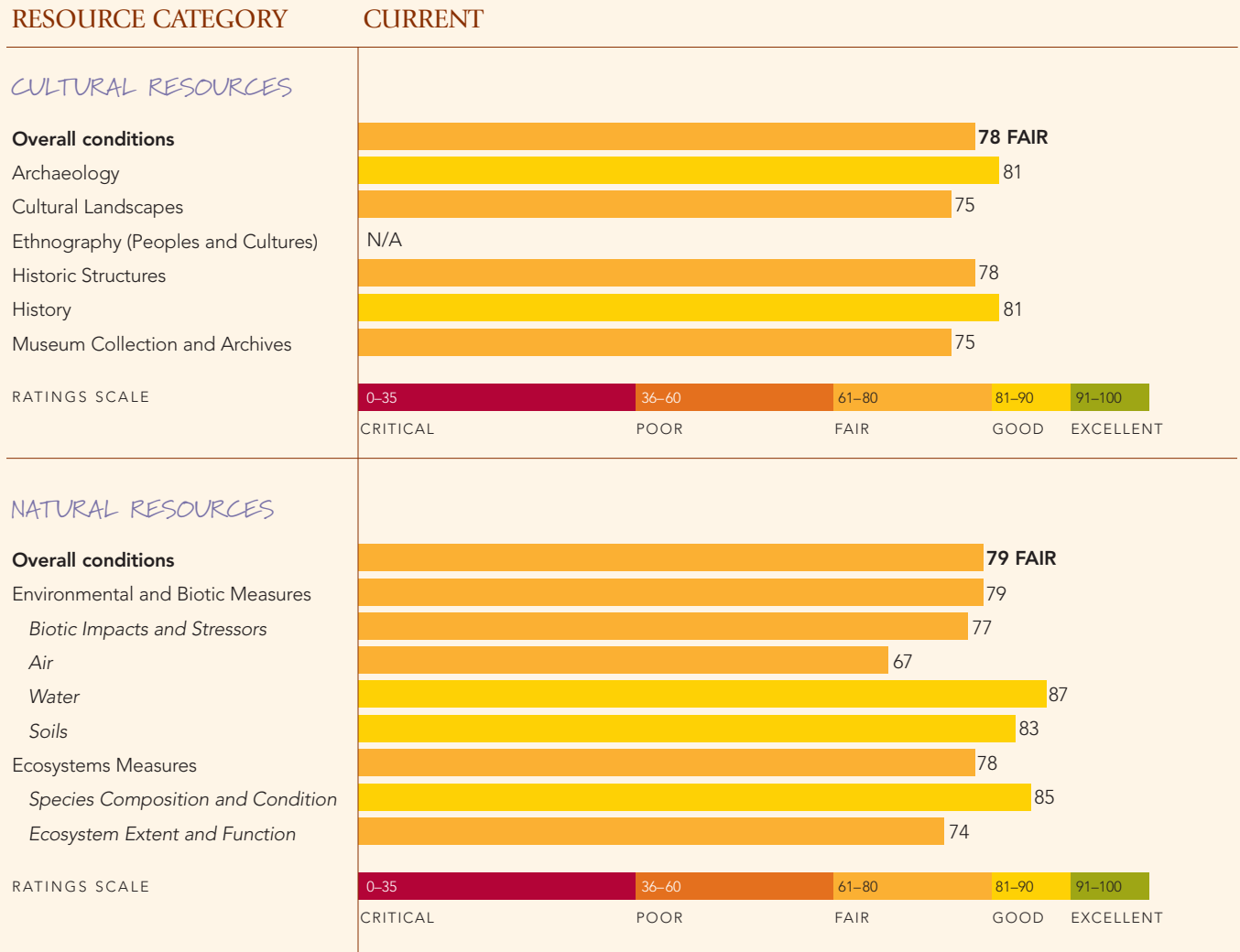
While the park benefits from a relatively isolated setting, development just outside the borders of Shiloh goes unregulated, and local

SHILOH NATIONAL MILITARY PARK

AT A GLANCE

- **Historical markers:** More than 800 monuments and markers, 4,000 headstones, and 227 cannons are sobering reminders of the historic events that occurred on the lands within Shiloh National Military Park.
- **Shiloh Meeting House:** The battlefield is named for a simple log church, known as the Shiloh Meeting House, which was located here in 1862. While the original church was destroyed during the war, it was later rebuilt. Four acres on which the church sits are privately owned by the Shiloh United Methodist Church and Cemetery. The church continues to serve an active congregation.
- **Shiloh Indian Mounds:** Designated a national historic landmark in 1989, the prehistoric Mississippian village and temple mounds are archaeological evidence of a chiefdom that thrived on the banks of the Tennessee River 1,000 years ago. One of the finest effigy pipe artifacts in existence was unearthed here. The landmark is unique on account of its pristine condition, having been protected by establishment of the national military park in 1894. It remains the only location in the world with an intact Mississippian village. The physical remains of more than seven dozen collapsed prehistoric wattle and daub houses are clearly visible within the site. Along with six ceremonial or temple mounds, evidence of a defensive palisade, and a burial mound, the site remains the finest representative resource in the nation to interpret and preserve the remnants of a prehistoric culture long deceased.
- **Forests:** Since the 1960s, the park has allowed approximately 600 acres of land to return to native forest conditions. About 200 acres of virgin bottomland oak/hickory forest (rare in western Tennessee) remain in the park's Owl Creek watershed. These old-growth oak trees represent the last remnants of the original forest cover from the time of the battle.

Note: When interpreting the scores for resource conditions, recognize that critical information upon which the ratings are based is not always available. This limits data interpretation to some extent. For Shiloh, 97 percent of the cultural resources information was available and 63 percent of the natural resources information was available.



The findings in this report do not necessarily reflect past or current park management. Many factors that affect resource conditions are a result of both human and natural influences over long periods of time, in many cases before a park was established. The intent of the Center for State of the Parks is not to evaluate Park Service staff performance, but to document the present status of park resources and determine which actions can be taken to protect them into the future.



To better interpret historical events and serve visitors, staff would like to renovate the existing visitor center at the Shiloh battlefield (exhibit shown here) or construct a new facility.

commuters heavily use park roads as a route between neighboring communities. Managers at Shiloh have made acquiring privately held lands within the park's boundary a high priority, to protect them from development.

RATINGS

Current overall conditions of the known **cultural resources** at Shiloh National Military Park rated 78 out of a possible 100, indicating "fair" conditions. The scores for cultural resources are based on the results of indicator questions that reflect the National Park Service's own *Cultural Resource Management Guideline* and other policies related to cultural and historical resources. Funding shortfalls mean that current staff must juggle a variety of roles, at the expense of interpretation, protection, and maintenance of cultural treasures.

Overall conditions of the park's known **natural resources** rated a "fair" score of 79 out of 100. Ratings were assigned through an evaluation of park research and monitoring data using NPCA's Center for State of the Parks

comprehensive assessment methodology (see "Appendix"). Unregulated development of adjacent lands has prompted the park to make land acquisition a high priority, and local residents' use of park roads as thoroughfares put natural systems at risk. There are also concerns about the use of commercial grass seed and mowing to maintain the historic landscape.

ADJACENT LAND USE AFFECTS PARK

The lands bordering Shiloh National Military Park are privately owned and mostly devoted to agriculture, forestry, or residential use. Development on these lands has accelerated over the last decade, most noticeably along the northern boundary of the park near State Route 22, as well as along the southern boundary near the Tennessee River. Because there are no county zoning regulations in place to control development in Hardin County, where the park is located, some of the development that has occurred on adjacent land and along roads within the park's authorized boundary is ill-suited to the quiet, reflective tone of a

battlefield park. Examples include a one-time amusement park (now gone, and the Park Service has acquired the property), taverns (with one currently being operated on a location adjacent to State Route 22 directly north of the main park entrance), and several trash dumps. Residential development is increasing along the Tennessee River to the south of the park and along the southwestern boundary in the Shiloh community.

In addition to undesirable development, logging activities associated with the local Counce Paper and Pulp Mill, in Counce, Tennessee, occur within a mile of Shiloh. And recreational and commercial boats travel the waters of Kentucky Lake (i.e., Tennessee River) along the sector bordering Shiloh battlefield; recreational boaters can access the park at Pittsburg Landing.

Shiloh's enabling legislation originally provided for a park of around 6,000 acres. With the addition of the Corinth unit, the park's authorized size now exceeds 7,000 acres. To date, more than 4,100 acres within this authorized boundary are federally owned. To serve as a buffer between the park and surrounding development, park managers actively work to acquire the remaining land as is allowed under the enabling legislation, with lack of funding and securing willing sellers presenting the challenges. The park has acquired nearly 350 acres within the authorized boundary since 1990, and with the assistance of the Civil War Preservation Trust, is pursuing negotiations for more than 1,000 acres of the remaining acres of private land that occur within the park's authorized boundary. Maintaining a ready source of funds for land acquisition is critical, because the properties are in private hands, and the opportunity to purchase could occur at any time.

The use of roads leading in and out of Shiloh by adjacent communities creates problems for the park. Because local residents and travelers have traditionally used roads within the park's authorized boundary to access neighboring

towns and local residential areas, the park has no formal gate system with which to close the facility at night and thus limit local traffic to day use only. The Shiloh United Methodist Church and cemetery, located on private land within the park, has an active membership that also necessitates open access to the park. Hamburg-Savannah and Hamburg-Purdy Roads are the primary park roads used for thoroughfare and meet to form the traditional heavy-use major northern entryway into the Hamburg community southeast of the park. During periods of flooding the park's roads offer the only access to the small hamlet known as the Bowden community, bordering the southeast corner of the current Shiloh battlefield park boundary, because Lick Creek south of this community floods and closes the Hamburg Road. Park management has considered plans to reconfigure park access and add gates, which would limit opening this road only during periods of high water (approximately five to ten days per year); the park has also considered issuing gate access cards or keys to the area residents. When these ideas were presented publicly in the early 1990s, it was evident political support was lacking, and issues of emergency services, mail deliveries, etc., blocked further attempts to implement closing off night access to Shiloh battlefield. Until solutions are found, managers face challenges from increased road traffic, auto accidents, wildlife-vehicle collisions, opportunistic wildlife poaching from park roads, vandalism, theft, overnight parking, noise, and pollution.

LAND USE HISTORY AND PARK ESTABLISHMENT

Since native peoples first set canoes in its waters, the Tennessee River has been an important travel route, and early societies thrived along its riverbanks. The Shiloh Indian Mounds National Historic Landmark area of the park was once the center of a Mississippian culture that occupied a 20-mile-long stretch of the Tennessee River

Valley. Artifacts found at the mounds suggest that human settlement occurred as early as A.D. 300–400. The mound builders at Shiloh were farmers, although hunting, fishing, and gathering still provided a considerable amount of their subsistence, and corn (maize) was their most important food crop. Archaeologists believe that the mound builders abandoned the area by A.D. 1400. The Chickasaw, now located in Oklahoma, and other southeastern indigenous peoples may be descended from the mound-building culture at Shiloh.

Euro-American settlers arrived in Hardin County, Tennessee—the area of present-day Shiloh—in the early 19th century. By 1840 approximately 8,000 people, mostly immigrants from Virginia and North Carolina, earned a living farming and logging there.

The Battle of Shiloh occurred in early April 1862. By 1865, the war had ended, and in 1866, Congress passed legislation establishing national cemeteries on several Civil War battlefields; Shiloh's cemetery, then officially established as Pittsburg Landing National Cemetery, was located on top of the bluff overlooking

historic Pittsburg Landing and the river valley. Work began immediately to locate the remains of the Union soldiers scattered across the more than 6,000-acre site, as well as locations along the Tennessee River as far south as the foot of the shoals near Gravelly Springs, Alabama, and northward to Fort Heiman, Kentucky, and Fort Henry in Tennessee. By 1869, 3,584 bodies had been reinterred from no fewer than 565 localities. The mass graves containing the remains of the Confederate dead buried by the victorious Union Army in 1862, and originally numbering perhaps nine to ten such sites, with only five having been located and identified to date, are located elsewhere within the battlefield.

As more Shiloh veterans returned to recall the battle and visit the new cemetery, desire to preserve the battlefield increased. While the establishment of a park would preserve the site as a gathering place for those who fought there, it would also serve future generations as a quiet place for reflection and commemoration. On December 27, 1894, President Grover Cleveland signed into law an act to establish Shiloh National Military Park.

The national cemetery at Pittsburg Landing was established in 1866 for the reburial of Union dead from the Battle of Shiloh and additional Union war dead initially buried at more than 500 different locations along the Tennessee River. The cemetery also serves as the final resting place for several hundred American service men and women from more recent conflicts.

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KEY FINDINGS

- The primary threats to the park's rural and secluded nature are encroaching development and adjacent land uses that are not compatible with the park's goals of interpreting the battle that took place at Shiloh and preserving the associated resources. Due to a lack of county zoning ordinances, businesses that may be viewed as incongruous with the landscape exist nearby. The Park Service is working to acquire key parcels within the park's 1894 authorized boundary, in order to create a natural topographic border along Shiloh Hill. These properties are currently privately held and could be sold (and perhaps developed) at any time.
- The orientation film shown to visitors at the Shiloh Battlefield Visitor Center was created in 1956 and is the oldest film of this type within the Park Service. A new orientation film and rehabilitation of the auditorium at the existing Shiloh Battlefield Visitor Center will cost an estimated \$750,000.
- The Park Service recognizes the need for an updated general management plan (the current general management plan was written in 1980) to take into account additional lands and resources that have been added to Shiloh National Military Park in recent years. Completion of the updated plan will depend on Park Service prioritization and funding. The park's administrative history, written in 1954, is in need of updates covering the years since then. An updated historic resource study is currently under development.
- The park recently completed drafting its long-range interpretive plan, and it is being prepared for publication. The plan details the work now proceeding to construct an orientation shelter, a mile-long interpretive trail, and several wayside exhibits at the Shiloh Indian Mounds. In addition, it recommends development of interpretive programs focusing on participation of women in the Civil War, children and the Civil War, 19th-century farm life, and the impacts of the battle and war on the local rural population, using the historic William Manse George Cabin as a primary component of these programs. The plan also includes a proposal for a renovated or new visitor center at the Shiloh battlefield.
- Interpretation of the Shiloh Indian Mounds has been lacking, due to road closures necessitated by riverbank erosion. A long-term, multimillion dollar riverbank stabilization and highway construction project was completed in 2008, reopening visitor access to the mounds using the park auto tour route. Construction of a one-mile-long interpretive trail through the national historic landmark site has begun, with targeted completion in fiscal year 2009.
- The park uses commercial grass seed on historic fields instead of the natural varieties that would provide better forage and cover for native animal species. In addition, biologists suggest Shiloh's mowing regime on some of these fields may be damaging to bird, reptile, and amphibian species. If grass is cut too short, if it is cut at certain times of the year, or if it is cut in areas near wetlands and without natural transitions, wildlife suffer from lack of or degraded habitat. The park is cognizant of the wildlife impacts associated with current management techniques, but is also attempting to provide visitor access and an expected visitor experience (i.e., manicured landscapes), which requires such maintenance.

nance. There is a desire to address the topic of preservation maintenance and wildlife when the park next updates its general management plan.

- Staffing shortfalls affect visitor services and resource protection at Shiloh. The park has only seven permanent frontline interpretation employees, insufficient to provide daily, on-site programs to the public at two park units in separate states from September through May. The park needs an additional four full-time equivalent staff (two at each unit) to address this need. Staff must take on additional duties because of the lack of personnel. For example, the park's chief of interpretation and resource management also serves as park historian, cultural resource specialist, volunteer coordinator, and a law enforcement officer because positions are vacant. Because park roads remain open to use by commuters beyond normal business hours, Shiloh remains at risk for vandalism, looting, wildlife poaching, and vehicular damage. In addition, the geography of the Corinth unit places the majority of parkland there within the city limits, and thus at risk for the same types of resource protection problems. At this time, only two of three law enforcement positions have been filled, and recent law enforcement needs assessments indicate that Shiloh requires three additional full-time equivalent law enforcement positions to effectively protect visitors and resources. The park has identified the need for an additional 2.4 full-time equivalent maintenance staff to care for and repair the park's thousands of headstones, markers, monuments, and cannon carriages.



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Work on Brown's Landing Road and Riverside Drive was completed in 2008, restoring automobile access to the Shiloh Indian Mounds and Dill Branch ravine. The top photo shows Riverside Drive before construction; the bottom one shows the road now.

RESOURCE MANAGEMENT HIGHLIGHTS

- **Riverbanks stabilized.** When the Tennessee Valley Authority impounded the Tennessee River to create Kentucky and Pickwick Lakes in the 1930s and '40s, portions of the park's shoreline suffered severe erosion, blowouts, and landslides. After landslides in 1997, the U.S. Army Corps of Engineers proposed a new bank stabilization project, which finally received much needed congressional approval and agency action. The final stabilization phase was completed in 2008. The entire 1.75 miles of the park's eastern boundary/shoreline is now protected from erosion by rock riprap.
- **Archaeological mitigation and excavations completed.** In conjunction with the riverbank stabilization project, the park and the Southeast Archeological Center recently completed a \$1.6 million archaeological mitigation of a prehistoric Mississippian period (A.D. 800–1200) temple mound threatened by erosion along the bank of the Tennessee River. This five-year project constitutes the largest and most significant archaeological research at the park since the 1930s. These excavations are now complete, with the volume of information recovered contributing greatly to the understanding of prehistoric Mississippian culture.
- **William Manse George Cabin restored.** The only remaining building from the period of battle, the William Manse George Cabin is a prime interpretive resource for the park. Restoration work, completed in 2004, included installation of a new chimney and roof. The park has used the cabin to support interpretive programs on civilian life, particularly in regards to women and children, subsistence farming, and impacts the war had on the surrounding rural community.
- **Visitor center at Corinth opened.** The \$9.5 million Corinth Civil War Interpretive Center opened in Corinth, Mississippi, in 2004. Critically acclaimed for its exhibits on slavery, secession, and the nationally significant Civil War events that unfolded in the region, it is the suggested first stop for visitors to Shiloh National Military Park. The 15,000-square-foot center also features two audio-visual movie productions.
- **Battlefield monuments repaired and replaced.** Since 2003, more than 30 troop position markers, missing from the park for several decades due to theft or vandalism, have been recast and erected at their proper locations on the Shiloh battlefield. An additional 50 missing markers are currently under contract for casting. Also, all historic cast-iron markers (more than 650 of them) are repainted on a three-year cyclic program. Shiloh acquired 47 new ductile iron cannon carriages to begin the task of eventually replacing all of the nearly 200 cast iron carriages, which are more than a century old and have fallen into disrepair. At an average (and ever-increasing) cost of \$13,500 per new carriage, this is a sizable financial undertaking that will take many years to accomplish. In addition, all aerial electrical transmission lines located on the battlefield were removed and returned to underground transmission, enhancing the scenic and historical viewshed in the park.

The preserved William Manse George Cabin, the only surviving structure of the nearly 70 buildings present on the Shiloh battlefield during the battle, has undergone several restorations since the park was established.





THE SHILOH NATIONAL MILITARY PARK ASSESSMENT



CULTURAL RESOURCES— BATTLEFIELD MARKERS AND MONUMENTS HONOR THE FALLEN

Shiloh National Military Park scored an overall 76 out of 100 for the condition of its cultural resources, which include archaeology, cultural landscapes, history, historic structures, and museum collection and archives. This score indicates that the resources are in “fair” condition.

Cultural resources at Shiloh include extensive, relatively undisturbed archaeological resources preserving the history of the battle on the ground where it was fought, hundreds of monuments and markers on the battlefields, historic cannon tubes, original Civil War diaries and letters in the park’s archives, and the features and archaeological resources associated with the Shiloh Indian mound and village site. Threats to the battlefield archaeology and

Monuments throughout the park, such as the Minnesota Monument shown here, commemorate soldiers from various states who fought in the Battle of Shiloh. The park needs additional staff to care for its thousands of headstones, markers, monuments, and cannon carriages.

markers and monuments in the park include vandalism and looting of artifacts, as well as natural effects of weather and time.

Between 1991 and 2008, vehicle access to and through the mounds site was closed to visitors due to riverbank stabilization issues, which involved closing a section of the tour route north of the site. Threats to the mounds include looting of artifacts, natural disturbances (damage from falling trees during severe storms and high winds), and the extremely low possibility of future stream bank erosion, which from routine monitoring by the park and the U.S. Army Corps of Engineers, appears to have been successfully checked by the recent stabilization measures taken along the base of the bluffs along the river. The stabilization measures enacted have halted further catastrophic blowouts at the base river level; however, given the elevation extremes found at Shiloh, the stabilization work does not eliminate the natural repose of the bluff line above the riprap level, areas which will slowly recede westward, with soils slipping down the bluff until the formations attain the equilibrium dynamics representative of a natural river shoreline.

HISTORY—HISTORIC RESOURCE DOCUMENTS NEED UPDATING

The events that occurred at Pittsburg Landing, Tennessee, during the Battle of Shiloh have been documented and explored at length. Detailed accounts from officers and soldiers who participated in the battle exist, among them reports by Maj. Gen. Ulysses S. Grant and other high-ranking Union and Confederate officers. Journals, kept by women who assisted in makeshift hospitals in Corinth, have also been preserved. These memoirs, published regimental histories, soldier diaries, scholarly works, historic maps, objects in the park's museum collection, and documents in the archives help the park staff interpret historical events by providing firsthand accounts of the grueling conflict and its aftermath.

Historic resource studies, which provide a historical overview of a park and identify and evaluate cultural resources within historic contexts, also identify the need for any special studies and make recommendations for resource management and interpretation. Shiloh completed a historic resource study in 1993 that evaluated historic buildings, structures, and objects. An updated historic resource study has been funded and is currently being developed, with a targeted completion date of fiscal year 2010. Shiloh's administrative history was written in 1954 and covers development of the park from the 1890s to 1954. A considerable amount of the history focuses on the period prior to 1933, the year when management of the park passed from the Department of War to the National Park Service. Research is needed to update documentation of park management since 1933.

The most recent historical research in the park involved development of interpretive exhibits for the Corinth Civil War Interpretive Center. The park collaborated with a multitude of professionals, partner agencies, organizations, community planners, business leaders, and stakeholders to develop state-of-the-art exhibits that interpret Civil War issues through relevant and provocative national, regional, and local war events and experiences. The 15,000-square-foot interpretive center also includes 175 commemorative features (monuments and bronzes), reproductions of earthworks, two multimedia audio-visual productions, and interactive multimedia exhibits.

Shiloh's chief of interpretation and resource management also serves as park historian, cultural resource specialist, and volunteer coordinator (overseeing the work of 500 to 600 volunteers annually); supervises and coordinates all compliance, research, and science; and coordinates with the park's cooperating association. This staff member also continues to perform the duties of a field law enforcement officer because a number of positions responsi-

ble for performing these functions have been vacant for years due to funding shortfalls. He has written and published numerous articles and essays detailing the battles at Shiloh and Corinth, and he has produced a visitor's guide to the Battle of Shiloh and an audio tour for the Shiloh Battlefield that is available on CD. The park superintendent and the historian worked together to prepare an informative guide to the Corinth Civil War Interpretive Center. Recently, a former staff member published a book titled *This Great Battlefield of Shiloh: History, Memory, and the Establishment of a Civil War National Military Park*.

The park has an extensive living history program and also offers a variety of interpretive bulletins dealing with topics such as women in the Civil War, slavery and the causes of the Civil War, slaves as soldiers, Mexican Americans as soldiers, and battle fortifications.

ARCHAEOLOGY—SHILOH INDIAN MOUNDS SITE TO REOPEN

Shiloh National Military Park's premier archaeological resources are the preserved Civil War battlefields and earthwork features comprising the sites protected at Shiloh and Corinth, as well as the Shiloh Indian Mounds National Historic Landmark, evidence of a prehistoric Mississippian culture. The mounds are also listed in the National Register of Historic Places.

The mounds represent what is left of a town—known as a chiefdom, due to the presence of a political and spiritual leader—that occupied the high Tennessee River bluff at the eastern edge of the Shiloh plateau 1,000 years ago. Six of these mounds, rectangular in shape and flat-topped, probably served as foundations for important buildings, which may have included a council house, religious buildings, and residences of town leaders. The southernmost mound is an oval, round-topped mound in which important people were buried.

The first archaeological excavation at Shiloh took place in 1899, when the site's most famous

artifact, a large stone pipe carved in the shape of a kneeling man, was found at "Mound C." Now on display in the Tennessee River Museum in Savannah, Tennessee, this effigy pipe is made of the same distinctive red stone and is carved in the same style as a number of human statuettes from the Cahokia chiefdom, located near East St. Louis, Illinois.

Survey work in the winter of 1933–34 revealed numerous small, round mounds at the Shiloh site, the remains of wattle and daub houses. These structures featured vertical post walls interlaced with branches (wattle), which were then coated with a thick layer of clay (daub). A palisade wall, also made of wattle and daub, protected the site. Because the land containing the mounds has been protected within the park for more than a century, and because the Shiloh site has never been disturbed by the plow, the daub of collapsed walls still stands. Shiloh is one of only a handful of sites in the Eastern United States where remains of prehistoric houses are still visible on the ground's surface.

Located along the Tennessee River, the site has suffered from extreme erosion. Since 1991, both riverbank stabilization and road construction needs led to closure of the road to Shiloh Indian Mounds. In 2008, the park completed a

From 2001 to 2006, the Park Service and a host of partners excavated "Mound A," a temple mound threatened by erosion. Data gathered through this work continue to enhance understandings of the park's prehistoric Indian mounds.



joint riverbank stabilization and road construction project for the 1.3 miles of the park auto tour roadway connecting Shiloh Indian Mounds National Historic Landmark to the visitor center area. The site is again part of the park auto tour, augmented with an interpretive trailhead shelter and mile-long interpretive hiking trail scheduled for completion in 2009.

In conjunction with the riverbank stabilization project, the park and the Southeast Archeological Center (SEAC) also recently completed a \$1.6 million archaeological mitigation of "Mound A," one of the temple mounds threatened by erosion. The project team included SEAC employees, contracted technicians, university students, and volunteers. This five-year project (2001–2006) involved extensive consultation with tribal leaders of the Chickasaw Nation and others. Considered one of the largest archaeological field projects ever conducted by the Park Service, the excavations are now complete, but study continues on the data recovered in this important mitigation investigation.

In addition to the Indian mounds, the park contains pristine historic archaeological sites that relate to the period of the Civil War. Of the more than 70 buildings known to have existed on the battlefield in 1862, only one remains—the William Manse George Cabin, which has been restored and is maintained where it was relocated shortly after the battle. All of the remaining building sites save five have yet to be positively identified and are unmarked on the battlefield.

Funding is currently unavailable for further archaeological research at Shiloh. Important projects—identification of missing Confederate mass graves and other war burial sites, an archaeological condition assessment of new lands associated with the Corinth unit, and further investigation to locate the unmarked period home sites—remain undone. The park does not employ a full-time archaeologist. According to resource managers, SEAC provides

sufficient support for the park's archaeological needs, given the lack of funding for projects.

Night-time looting threatens archaeological artifacts at the battlefield, particularly metal artifacts representing the Civil War period, with three dozen reported incidents from 1998 to 2008. Only one attempted looting incident within the area comprising Shiloh Indian Mounds National Historic Landmark has been documented, and this occurred in the mid-1990s, involving a temple mound previously excavated and completely restored during the Frank H. H. Roberts civil works investigation of 1934. Thus, the damage from this one incident only affected backfill material used to rebuild the mound at the conclusion of the earlier civil works excavation. Resources within Shiloh are at particular risk because the grounds are not secured with gates at the close of park hours. Although the park staff maintains an aggressive attitude in enforcing the Archaeological Resources Protection Act of 1979 and protecting the park, managers know looting is a constant threat, with some incidents likely going undiscovered and unreported. To address the problem, the park has requested an operational funding increase to add three more full-time law enforcement rangers that would increase patrol coverage by a minimum of 4,000 hours annually. However, the request remains unfunded.

Shiloh staff have gone to great lengths to mitigate the threat of looting. By working with the Southeast Archeological Center, and by including local and regional metal-detecting clubs in organized archaeological investigations conducted in the park, managers involve the community and members of the public in archaeology projects while educating participants about resource protection. Besides teaching sound stewardship principles, inviting metal-detecting enthusiasts to participate as park volunteers in events monitored by Shiloh and the Southeast Archeological Center permits the park to conduct significant research at minimal cost.



The War Department built this cemetery lodge in 1911 to replace a structure destroyed by a tornado 1909. It was built to house and provide an office for the cemetery's superintendent. Today this historic structure serves as the park's administrative headquarters.

HISTORIC STRUCTURES—MONUMENTS THREATENED BY VANDALS, WEATHER, AND NEGLECT

Shiloh's List of Classified Structures (LCS), an inventory of prehistoric and historic structures, totals 226 and includes the prehistoric Indian mounds, three original structures dating to the time of the battle, park roads, structures that have been erected at the park since the battle, including many associated with the national cemetery: the cemetery house, constructed by the War Department in 1911, the cemetery wall, headstones, a metal gate, and stairs. Of the park's 226 historic structures, 191 are in "good" condition, 34 are in "fair" condition, and one structure's condition is rated "poor." The structure listed in "poor" condition was actually documented and removed from the park in 1996, though it still persists on the list of classified structures. The park was placed in the National Register of Historic Places in 1966, and boasts 186 individual historic structure listings in the register.

While the landscape at Shiloh today closely resembles conditions at the time of the battle, virtually all of the structures that existed in April 1862 were destroyed during the battle. Three structures related to the battle remain: a farm road known as the Sunken Road, which defines a line of battle occupied by Union troops; General Grant's Last Line, which contains the only surviving earthwork erected during the battle; and the William Manse George Cabin. The cabin was moved from its original location in Perry field at the northern end of the battlefield to its current site a short time after the battle, to replace the cabin the George family lived in prior to the battle (which was burned during the battle). The park's long-range interpretive plan recommends that the cabin be used as part of an interpretive program on rural civilian life, focusing particularly on women and children, farming, and the impacts the battle had on the surrounding community. Evidence of additional home sites and structures (i.e., underground features and associated artifacts)

The United Daughters of the Confederacy provided funds that allowed the park to recast and replace missing bronze features on the Confederate Monument.



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dating to the antebellum period also exists, but at present, except for five of the more than 70 cited to be on the battlefield in 1862, the remaining sites and structures have neither been identified nor authenticated.

The most prevalent historic structures at Shiloh (162 of the total listed) are the many monuments that commemorate states and significant individuals who participated in the battle. These monuments not only memorialize the Battle of Shiloh, but also represent the period prior to World War I when state-sponsored commissions and veterans worked together to erect such monuments throughout the nation. The park's bookstores, operated by Eastern National, offer visitors a map that details the locations of 156 monuments and 650-plus markers that interpret the battle, and all monument details and locations are also organized in a computerized, searchable database.

All monuments requiring joint and point work have received this treatment in the past

five years, and 12 have undergone major restoration, repair, and rehabilitation actions since 2000, including the Sherman, Peabody, Prentiss, Stuart, and Tuttle headquarters monuments; Gladden, Johnston, Raith, Wallace, and Peabody mortuary monuments; the Iowa State Memorial; and the Confederate Monument. In the case of the Iowa State Memorial, the park received funding from the Iowa legislature to recast and replace missing bronze features; the United Daughters of the Confederacy funded a similar action for the Confederate Monument. A number of monuments have missing features that were broken or stolen decades ago. Some of these missing features have been recovered in recent years: One of the two granite cannon tubes from the 14th Ohio Battery Monument were found buried in a barnyard 50 miles from the park, and the inscribed iron brigade headquarters star from the Tuttle monument was discovered north of Nashville and has been restored to the Tuttle headquarters structure.

Although none of the park's structures have been documented through historic structures reports due to the costs associated with producing these reports, staff use myriad other resources to guide the treatment and use of historic structures. These reference materials include the Southeast Cultural Resources Preservation Center's document titled *Preservation of Division, Brigade, and Mortuary Monuments, the Shiloh National Battlefield Park Historic Monument Survey Report* prepared by Middle Tennessee State University, and a 2004 preservation plan for the William Manse George Cabin, as well as other materials prepared by the Park Service and university graduate students. To further supplement reference materials, the park recently submitted a request for funds to inventory and document historic structures.

Because the grounds are not secured with gates at the close of park hours, Shiloh is at particular risk for vandalism or theft of cultural resources. In the past vandals have painted or marked (using blunt or sharp objects) graffiti on monuments, torn down traffic and park information signs, damaged or destroyed picnic-area bathroom facilities, and purposely shattered the glass on the front door to the visitor center. This type of behavior has also occurred, although on a far limited scale, at Corinth, where vandals scarred monuments in the Corinth center courtyard by climbing over the wall after hours to ride skateboards in the closed area. As for theft of resources, Shiloh has experienced several incidents, including stolen position markers; bronze tablets and features removed from monuments; cannon balls removed from the Confederate mass graves and the headquarters monuments; and on two occasions the actual theft of cannon tubes from their carriages. One of these thefts was completed at night and the gun was recovered through investigation, but only after the violators had ground off the cannon's important foundry numbers and inspection stamps. The other cannon theft incident occurred during a winter afternoon

and involved an unsuccessful attempt to remove a tube from the carriage onto a pickup bed.

Local residents use roads within the park (including busy State Highway 22) to access the rural communities surrounding Shiloh. Two nearby drinking establishments add to the problem, as customers drive to and from these businesses by passing through the park. In addition to vandalism, incidents of damage from vehicular collision with monuments have occurred.

Park visitors on foot can also damage resources, although much of the damage is unintended. For example, careless leaning on or stepping on a monument may cause it to break. The park works to educate the public about resource stewardship, but more rangers are needed to stem intentional and unintentional damage to monuments and markers. Three law enforcement and four interpretive rangers (two for each unit) would permit an aggressive public contact program across the park.

The passage of time and the effects of weather also threaten monuments. Bronze monuments and markers require annual cleaning and cold wax treatments; masonry on state monuments requires regular care; and plaques should be repainted every three years. The park has had a difficult time implementing a regular maintenance program, in light of its small staff and lack of a sufficient cultural resource maintenance budget. Given the other responsibilities associated with park operations, the park has been unable to devote any personnel solely to care for monuments, markers, and cannons. Instead, the park uses trained rangers, maintenance staff, and, in some instances, volunteers to maintain the monuments. Contractors complete major preservation and rehabilitation projects. Using contractors is often expensive, as evidenced by the \$50,000 recently spent to paint all of the park's historic markers. The park has requested an additional 2.4 full-time equivalent employees to boost its ability to care for monuments, markers, and cannons.

CULTURAL LANDSCAPES—ADJACENT
LAND USE THREATENS LANDSCAPE
CHARACTER

Cultural landscapes encompass natural and human-made features, illustrating the ways people have altered and adapted to their surroundings through time. Park staff, with assistance from the Park Service's Southeast Regional Office, are in the process of preparing a cultural landscape inventory for Shiloh National Military Park. Eight landscapes have been identified so far.

The national cemetery is one of the park's most visited and visible cultural landscapes. Established in 1866 for the burial of Union dead from the Battle of Shiloh, it contains 3,572 graves of Union soldiers (identities of 2,370 are unknown), as well as interments from recent military engagements, such as the Vietnam War. Park staff help family members locate ancestors buried at the cemetery.

The cemetery, while honoring the dead, also evokes a sense of sacrifice and tragedy, as do the mass Confederate graves in the park. The cruel realities of war are particularly evident here; the

men buried in these trenches remain nameless, as swift disposal of the overwhelming number of bodies took precedence over identification. The trenches are marked by a simple row of cannonballs.

The Shiloh Indian Mounds are another of the park's prominent cultural landscapes. They are a group of nearly eight dozen prehistoric Indian mounds and houses identified as some of the most significant physical remains of pre-Columbian culture in existence. Evidence shows that the mounds date beyond 600 years ago, before the inhabitants of the area had contact with European trade goods.

Due to the park's isolated location and the surrounding low population density, there has been little disturbance to the landscape. Park staff work to maintain undisturbed areas and restore those that have been altered by farming, construction that is incompatible with the historic viewscape, or neglect. But outside the park, incompatible use of adjacent private property threatens the character of the cultural landscapes at Shiloh. (See "Adjacent Land Use Affects Park.")

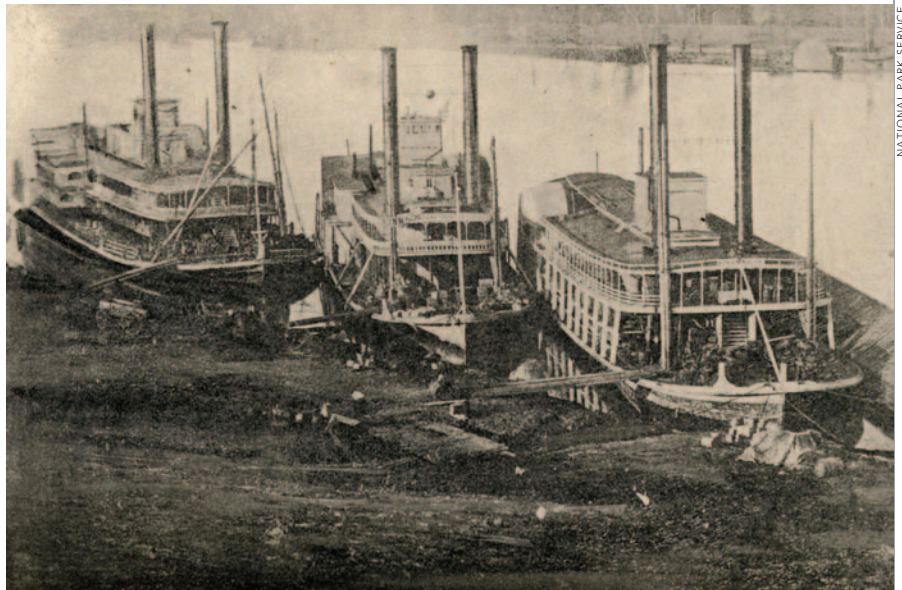
The remains of more than eight dozen houses, six large temple mounds, and one burial mound are evidence of a pre-Columbian culture that once inhabited the Shiloh plateau.



None of the cultural landscapes at Shiloh have been evaluated through cultural landscape reports, the primary guides for treatment and use of cultural landscapes, though as with historic structures, the park uses a host of other reference materials to guide landscape preservation and use. Cultural landscape reports cannot be done until the ongoing cultural landscape inventory is finished. The park has established landscape rehabilitation goals that include restoring damaged or missing battlefield markers and monuments; replacing defective replica artillery carriages; re-establishing historic roads, fields, and orchards; and removing non-native vegetation. Funding for all of these projects has been requested. In the case of markers, three separate castings have been funded during the past six years, with the first completed, the second in progress, and the third awarded. These three projects will place seven dozen markers back in the park (replacing original markers lost to theft or simply damaged beyond repair by human activity, such as vehicle accidents), as well as cast and erect a handful of markers the original park battlefield commission was unable to develop on account of funding constraints.

In addition to replacement of missing markers, all of the historic cast-iron markers have been repainted (twice) since 2005. Shiloh acquired 47 new ductile iron cannon carriages to begin the task of replacing the roughly 200 brittle, century-old, cast-iron carriages, which have decayed over time. And in 2002, all aerial electrical transmission lines on the battlefield were removed and replaced underground, enhancing the historic and scenic character of the battlefield.

While no historic architect is employed by Shiloh, the park receives assistance from staff at the Park Service's Southeast Regional Office. As the park is still in the process of formally identifying cultural landscapes, assistance from regional staff meets the park's needs at this time.



MUSEUM COLLECTION AND ARCHIVES—PARK PROTECTS MORE THAN 477,700 ITEMS

Shiloh's museum collections are varied, and include archaeological objects and field records, as well as hundreds of items related to the 1862 Shiloh Battle, such as pocketknives, belt buckles, combs, pipes, firearms, and a Civil War artillery collection. Natural history items such as an herbarium, insect specimens, and mammal skins are also part of the collections. The park is also fortunate to have an extensive collection of documents, such as letters and diaries, written by those involved in the battle. The Southeast Archeological Center (SEAC) manages the majority of the park's archaeological items. In sum, Shiloh's collections exceed 477,700 items.

The exhibit quality at the park has been greatly enhanced with the addition of the new (2004) Corinth Civil War Interpretive Center. Though both visitor centers (Shiloh and Corinth) include displays of museum objects, the careful attention that has been given to the planning of the Corinth unit has resulted in a far superior storytelling experience. Currently, Corinth is the recommended orientation point for visiting Shiloh. The park's long-range interpretive plan includes a proposal for a new

This historic photo shows steamboats tied up at Pittsburg Landing a few days after the Battle of Shiloh. The boat in the center is the *Tigress*, which served as General Ulysses S. Grant's floating headquarters.

This coat and gloves worn by Captain Daniel Matson, who served in an Iowa infantry regiment at the Battle of Shiloh, represent his later war service commanding a battery in the Fourth U.S. Colored Heavy Artillery. They are part of the park's museum collection.



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visitor center or rehabilitation of the existing facility at Shiloh, which would allow the park to better interpret the significance of the battle in the overall context of the war and display more objects from its museum collections.

The park has met 97 percent of applicable standards in the Park Service's *Checklist for the Preservation and Protection of Museum Collections*, but deficiencies remain. The park lacks a collection storage plan and an integrated pest management plan for museum and archival objects. Exhibit cases also show security and preservation vulnerabilities, such as deteriorating seals that permit small insects to enter the interior of the cases. The park's primary collection storage facility lacks a fire-suppression system.

Shiloh's Automated National Catalog System database is well on its way to being up-to-date, with 62 percent of the collection cataloged and entered into the system. The majority of items that are entered in the database are in "good" or "excellent" condition. Most of the material remaining to be cataloged is stored off site at SEAC, and constitutes the remainder of the artifacts, soil and carbon samples, and records and archives related to the recent Mound A investigation.

The park's 1995 collection management plan recommends updating Shiloh's scope of collections statement (SOCS). (The current SOCS, dated 1985, was prepared in a format no longer used by the park system.) The plan also places a priority on inclusion of the Indian Mounds in the SOCS.

About 20 percent of the park's 168,381 total archival items have not been cataloged. Most of the backlogged items are stored at SEAC and are field records and reports associated with the Mound A excavation, as well as some park administrative documents representing early Park Service interpretive efforts and resource management of the park. SEAC staff will catalog these items as the facility's schedule and other responsibilities allow. Any existing documents

at SEAC or at the park that chronicle the initial Park Service administrative period at Shiloh would help to fill in gaps in its administrative history. Cataloging these documents is imperative for their ultimate use in this regard.

While Shiloh does not employ a curator, due to lack of funding and personnel, its versatile staff step in as needed to serve as museum technicians.

ETHNOGRAPHY (PEOPLE AND CULTURES)—PARK CONSULTS WITH CHICKASAW NATION

Historic records do not indicate that any American Indian people inhabited the Shiloh area when European and American settlers arrived; thus, the park does not have an ethnography program. Due to the lack of an ethnography program, the Center for State of the Parks did not assess or rate this cultural resource category.

The Chickasaw Nation, now completely located in Oklahoma, represent one of the primary groups in existence today that share commonalities with the mound builders who once lived at Shiloh. For this reason and because the land upon which the park sits was ceded by the Chickasaw Nation through treaty, the park has maintained a relationship with the Chickasaw Nation and continues to consult with them on matters relating to the mounds, especially archaeological projects. The park has established a memorandum of understanding—one of the first of its kind within the Park Service—with the Chickasaw council of elders that guides the handling of any human remains discovered at the mounds site. The park also presented the tribe with a replica of the remarkably intact effigy pipe discovered at Shiloh in 1899.



NATURAL RESOURCES—FORESTS AND FIELDS HARBOR MANY SPECIES

The assessment rated the overall condition of natural resources at Shiloh National Military Park a 79 out of 100, which ranks park resources in “fair” condition. (The Corinth unit of the park was not included in the natural resources assessment, due to its urban location.)

The battlefield is located in a rural setting, bordered by four small, unincorporated communities totaling fewer than 125 people. Although the population density is low, public access to park roads contributes pollution,

noise, and the risk of collisions between wildlife (e.g., deer) and vehicles.

The park supports a diverse array of plant and animal species, and habitat conditions are better than at times in the past. Even so, researchers conducting surveys have noted that certain field maintenance practices negatively affect some wildlife. These practices may be limiting the size of populations of species living in the park, and they may also be limiting the use of the park by additional wildlife species.

The Shiloh battlefield is located in a rural setting. Part of the battlefield is composed of historic agricultural fields present in 1862, roughly half of which are currently managed through an agricultural hay lease program using local farmers.

Staff plant trees in one of the park's historic orchards, important features of the cultural landscape present in April 1862 when the momentous battle was fought here.



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PLANTS AND LICHENS—NATIVE SPECIES DOMINATE MOST COMMUNITIES

Shiloh National Military Park is composed of mixed hardwood forest and historic agricultural fields. A 2004 vascular plant inventory identified 27 separate plant communities within these two broad vegetative types. Only one of these 27 plant communities is dominated by non-native species.

While no federally listed threatened or endangered plant species are found at Shiloh, five plant communities identified in the 2004 study warrant special attention, due to NatureServe Global Conservation Status rankings for some of their species. A G2 ranking defines a species as “imperiled”—at high risk for extinction due to restricted range, few populations (often 20 or fewer), steep declines, or other factors. A G3 ranking defines a species as

“vulnerable”—at moderate risk of extinction. The five communities at Shiloh classified as G2 or G3 are: White Oak/Red Oak Dry-Mesic Acid Forest; Southern Red Oak Flatwoods Forest; Upper East Gulf Coastal Plain Chinquapin Oak/Mixed Oak/Hickory Forest; Central Interior-Upland-Cherrybark Oak Forest; and Interior Forested Acid Seep.

Park uplands are dominated by oaks—white (*Quercus alba*), willow (*Quercus phellos*), southern red (*Quercus falcata*), post (*Quercus stellata*), and blackjack (*Quercus marilandica*)—as well as shagbark hickory (*Carya ovata*), American elm (*Ulmus americana*), eastern red cedar (*Juniperus virginiana*), shortleaf pine (*Pinus echinata*), and black walnut (*Juglans nigra*). Ravines in the park are dominated by sweetgum (*Liquidambar styraciflua*), American sycamore (*Platanus occidentalis*), tuliptree (*Liriodendron tulipifera*), and

American basswood (*Tilia americana* var. *heterophylla*). The park's bottomlands are dominated by cherrybark oak (*Quercus pagoda*), sweetgum, and river birch (*Betula nigra*).

Virtually all forest currently growing on the battlefield dates to the years after the battle itself due to land use practices predating park establishment, park management policies, and natural forest succession. Only a handful of old-growth trees that actually date to the battle period (primarily oak and hickory) remain in the Owl Creek bottomland, in approximately 200 acres of Virgin Bottomland Oak/Hickory Forest (a plant community rare in western Tennessee). These old-growth trees represent the last remnants of the original forest cover (i.e., trees that were present at the time of battle) at Shiloh.

The remainder of the park includes 24 historic fields, maintained as part of the battlefield landscape. Although row crops are no longer cultivated in the fields, due to risk of soil erosion and the need for pesticides, the park leases 270 acres of fields to local farmers who grow hay and millet crops. Park staff and farmers who hold leases mow fields and other grassy areas to maintain the landscape as it appeared at the time of the 1862 battle. Mowing grass very short, mowing in wetlands, and mowing to the forest edge without a buffer zone all alter bird habitat, and biologists conducting inventories at Shiloh believe these practices contribute to the low occurrence of grassland and shrub-scrub bird species in the park. A 2006 study of reptiles and amphibians in the park also identified mowing practices as hazardous to these species (see the "Wildlife" section for details).

Some fields managed by the park are seeded with non-native tall fescue (*Schedonorus phoenix*) or fescue species (*Festuca* spp.) and Bermudagrass (*Cynodon dactylon*). The park's use of commercial, non-native grass seed is also thought to contribute to the dearth of certain bird species; in contrast, native grasses such as

broomsedge (*Andropogon virginicus*) provide food and habitat for grassland birds, and benefit both game and non-game wildlife species.

Since 1862, the park's landscape has changed: About 160 acres of open fields have disappeared as a result of advancing forest or agricultural use, while other fields increased in size, between 1862 and 1894, due to additional forest clearing by residents. The original park commission began the process of restoring the landscape to conditions at the time of the battle, by restoring the roads, woodlots, and defining the original field boundaries. This work has continued with brief interruptions throughout the park's history. In an effort to return the landscape to its original battlefield appearance, beginning in the 1960s, approximately 600 acres of cleared areas have been allowed to return to native forest conditions. Since 1992, two historic fields (Stacy and Larkin Bell Fields), which had been completely encroached on by forest, have been cleared. To rehabilitate the historic fields, park staff used heavy equipment, chain saws, and hand tools to physically remove trees, tree stumps, and brush. Only the most mature hickory and oak trees were preserved as part of the effort to re-create historic conditions; the trees also benefit wildlife.

A vegetation study, begun in 2006, is under way to characterize and map the vegetation of all park units in the Cumberland Piedmont Network (CUPN), of which Shiloh is a part. This project will result in a comprehensive vegetation database providing spatial data and mapping capabilities for individual parks, including Shiloh. Shiloh's vegetation map is expected to be completed this year (2009). Another CUPN project identified and documented the park's wetlands.

Peach blossoms bring color to the battlefield landscape. The trees must be carefully managed because they are prone to damage from insects and pathogens. Recently the orchard has suffered only minor damage from these threats.



NATURAL AND HUMAN-CAUSED DISTURBANCE AT SHILOH

Shiloh National Military Park's ecosystems are susceptible to change from a variety of disturbances. While some are considered natural, others are human-caused or human-accelerated.

Natural Events. Flooding in the park occurs at least once every three years in low-lying areas near the Tennessee River, as well as in the Owl Creek watershed. In 1954 heavy rains washed away more than 20,000 cubic yards of Tennessee riverbank soil, sloughing away vegetation and large trees. The historic Pittsburg Landing site along the river was destroyed at that time. Some flooding has been human-caused—park staff believe that the channelization of Owl Creek in 1975 (off-site) has increased flooding events in wetlands in the park.

Two major ice storms in 1951 and 1994 downed many trees at Shiloh. Hundreds of trees were destroyed and thousands were damaged by the 1951 storm; in the 1994 storm, 8,100 trees were killed or heavily damaged. Areas damaged from the ice storms have since recovered.

Pathogens and Pests. Some pathogens and pests are associated with the non-native peach trees in the park's small peach orchard, which is a historical part of the battlefield landscape. The orchard patch consists of approximately eight acres of trees of varying ages. The trees are prone to damage from insects, such as the peachtree borer (*Synanthedon exitiosa*), and pathogens such as bacterial leaf spot (*Xanthomonas campestris* pv. *pruni*), and fungal peach canker (*Cytospora leucostoma* and *C. cincta*), but recently the orchard has suffered only minor damage due to these threats.

Fire. Human-caused fire has played a central role in shaping the landscape at Shiloh. According to historical records, much of the forested area in the park was open range maintained by 19th-century settlers through fire and livestock grazing. During the War Department's administration of the area from 1894 to 1933, fire was used extensively to maintain open areas and pastures. Prescribed burning ended in 1933 when the Park Service took over administration.

Lightning-induced or human-caused fires are of concern, as they are considered a threat to the park's historic forest landscape and Civil War resources. The current fire policy is immediate suppression. Fuel loads have increased significantly since controlled burning ended in 1933. For years, park staff have used mechanical fuel reduction activities to reduce accumulated fuel loads near cultural resources and along the park's urban interface with adjoining private lands and residential areas. The park maintains a fire-break along the full extent of its exterior boundaries. Controlled burns to reduce Chinese privet and Japanese honeysuckle and maintain open wooded areas for battlefield interpretation are also being considered, but removal of these species remains mechanical and with topical treatments, using the Southeast Exotic Plant Management Team.

Fragmentation. Twenty-three miles of roads (paved and unpaved) and 18 miles of hiking trails fragment the park's forest cover (see map on page 34). Maintaining the park's cultural landscape requires modification of some roads to resemble the historic road system present during the battle of Shiloh. Planning is ongoing to realign some

historic roads, remove asphalt from nonhistoric roads, asphalt some gravel roads, and reconstruct the Brown's Landing/Dill Branch Road damaged by erosion of the Tennessee River. The improvements are expected to have short-term impacts, such as disturbing soil and vegetation, and temporarily displacing some wildlife. In the long term, the modifications will improve natural conditions, resulting in additional cover and habitat.

Dams and Riverbank Alteration. The Shiloh Riverbank Stabilization Project has been a high priority in the park for nearly four decades. When the Tennessee Valley Authority impounded the Tennessee River to create Kentucky and Pickwick Lakes in the 1930s and '40s, portions of the park's shoreline (as well as areas outside the park) suffered severe erosion, due to increased water currents, the rise and fall of the river, and the removal of shoreline vegetation to eliminate obstructions to navigation; major landslides occurred in 1973 at the Shiloh Indian Mounds. Since 1984, the U.S. Army Corps of Engineers (COE), in cooperation with the Park Service, has developed and initiated several stream bank protection and restoration plans at Shiloh. After additional landslides in 1997, the COE proposed a new bank stabilization project to halt further erosion on 5,700 feet of shoreline. The final stabilization phase was completed in 2008, resulting in a new causeway to replace the existing Browns Landing Road/Dill Branch Road causeway, as well as improvements to a box culvert in the Dill Branch that drains into the Tennessee River. The entire 1.75 miles of the park's eastern boundary/shoreline is now protected from erosion by rock riprap.



Visitor Impacts. Visitor impacts to natural resources at Shiloh are limited to soil erosion and soil compaction along hiking trails, at driving tour stops, and existing road pull-off areas.

Poaching. Wildlife poaching occurs at park edges year-round. White-tailed deer are most often targeted, but other animals such as wild turkey (*Meleagris gallopavo*) are also poached. To counter this activity, the park has initiated a public awareness and education program, stepped up its limited law enforcement capacity, and works cooperatively with area Tennessee Wildlife Resources Agency officers to monitor the park and protect wildlife from poaching.

Flooding and erosion along the Tennessee River have been a problem at the park for decades. This picture shows flooding at Pittsburg Landing in 2001. The Shiloh Riverbank Stabilization Project was completed in 2008, measures that should protect the park's riverbank from further catastrophic erosion.



The park is home to 186 species of birds. Some of them make their homes in unusual places, such as this cannon tube.

WILDLIFE—WIDE VARIETY OF ANIMALS FIND SANCTUARY

Shiloh National Military Park is home to 37 mammal, 186 bird, 51 fish, and 41 reptile and amphibian species. A survey conducted in 2007 suggests that overall mammal populations are abundant at Shiloh, with no significant changes observed since a previous study in 1984. However, some populations of animals such as beaver (*Castor canadensis*) and river otter (*Lontra canadensis*) have increased. Top-level mammal predators at Shiloh include bobcat (*Lynx rufus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and gray fox (*Urocyon cinereoargenteus*). The most common large herbivores in the park are white-tailed deer (*Odocoileus virginianus*), whose regional populations have increased; park staff have noted spikes in deer populations, which are believed to be due to development pressures on adjacent land, as well as natural climatic events such as flooding or drought that force deer to seek temporary food and shelter at Shiloh.

Shiloh provides suitable habitat for at least seven species of bats. One species, the gray bat (*Myotis grisescens*), is federally listed as endangered. Permanent water bodies in the park, such as the Owl Creek wetlands and Bloody Pond, as

well as the open water of the Tennessee River, provide important foraging habitat for bats.

A 2003–2004 bird inventory detected a total of 186 species, representing only 59 percent of the 315 species that might be expected to occur in the area. The numbers and diversity of grassland bird species was less than expected for Shiloh, leaving researchers to speculate that the park's mowing practices could affect available habitat. A historic field near Corinth and Reconnoitering Road, one that includes a mix of native grasses and is mown less frequently than other fields, was found to contain the most field-obligate species—birds that depend on open fields, such as grasshopper sparrows (*Ammodramus saviarum*). The study noted that important bird and amphibian habitat also exists in the beaver ponds paralleling the Tennessee River near Riverside Drive (Browns Ferry Road). This wetland area provides nesting habitat for some birds and attracts a multitude of migrants in spring and fall; waterfowl may be viewed here in winter. Several breeding pairs of bald eagle (*Haliaeetus leucocephalus*) hunt in the park, and the first successful bald eagle nesting on record in the park occurred in early 2008.

Reptiles and amphibians are important components of the park's terrestrial and aquatic ecosystems. A 2006 inventory identified Shiloh's mowing practices as hazardous to reptile and amphibian species, and suggested that some species of snakes and turtles were being maimed and killed by mowing machinery. Additionally, mowing into the marshy areas of ponds creates turbidity in the water and reduces canopy over these wetlands, causing more rapid evaporation due to exposure to direct sunlight.

A baseline study of fish species conducted from 1995 to 1997 along Shiloh's small spring-fed streams found 51 species. All were native, with the exception of one species—yellow perch (*Perca flavescens*). The study concluded that the streams originating within Shiloh are biologically diverse and have intact ecosystems.

NON-NATIVES SPECIES—SOME PLANTS AND ANIMALS ARE OUT OF PLACE AT SHILOH

Eighty-eight species of non-native, invasive plants occur in the park; 16 have been singled out as posing the greatest threats to native species and ecological communities. These species are considered aggressive due to their ability to outcompete and replace native species.

Invasive plant management is a priority at Shiloh. The park recently partnered with the Southeast Exotic Plant Management Team, headquartered at Blue Ridge Parkway. In 2006, the team treated wisteria (*Wisteria frutescens*), Chinese privet (*Ligustrum sinense*), mimosa (*Albizia julibrissin*), crepe myrtle (*Hagerstroemia indica*), and Japanese honeysuckle (*Lonicera japonica*) at four separate locations in the park.

In addition to treating non-native plants, the park addresses concerns relating to nine-banded armadillos (*Dasypus novemcinctus*), feral dogs (*Canis familiaris*), and stinging fire ants (*Solenopsis wagneri*).

Nine-banded armadillo populations, first recorded in 1975, are increasing in the park. Sometime in the 19th century, populations of this animal began to move north from Mexico, through natural range expansion. The animals root and burrow, which has park managers concerned that they will disturb cultural landscapes and archaeological sites.

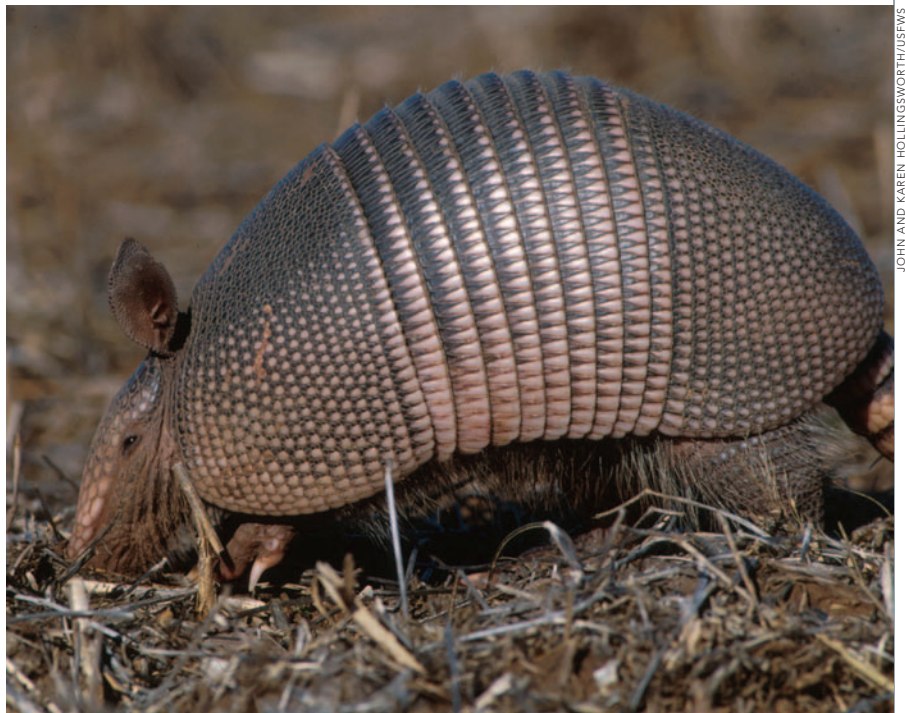
Staff routinely report both feral dogs and cats in the park. Feral dogs have been known to travel in packs that pose threats to park visitors and wildlife. Hardin County does not operate an animal shelter, so park staff adopt feral animals themselves or, if the animals pose a threat, the law enforcement rangers shoot individual animals or entire packs.

Stinging fire ants are considered a public safety concern and a possible threat to terrestrial wildlife in the park. The ants sting people, sometimes eliciting allergic reactions, and they can kill native ground-nesting birds and amphibians and reptiles. Fire ant populations

in high impact/heavily used visitor areas are treated with poison bait, but they are less easily controlled in the park's natural areas, where treatment is applied to nests located along roads and inside the open fields, particularly the edges, where this species prefers to build its habitations.

After Bloody Pond was pumped completely dry for maintenance in 1989, it was stocked with fish—yellow perch, bluegill (*Lepomis macrochirus*), dollar sunfish (*Lepomis marginatus*), largemouth bass (*Micropterus salmoides*), and grass carp or white amur (*Tenopharyngodon idella*)—to consume aquatic vegetation and pond debris, and to control undesirable insects. Bluegills and sunfish were stocked specifically to control mosquito larvae; largemouth bass were stocked to control the sunfish population, and white amur were introduced to consume the vegetation in and around the perimeter of the pond. Yellow perch appear to have been in with the other stocked species. Biologists believe that the introduced fish species are negatively affecting the pond's amphibian population through predation. Eliminating all but the white amur could be a solution, as only the amur are important for their role in preventing the pond—an important cultural resource—from being overgrown by vegetation.

Nine-banded armadillos were first recorded at Shiloh in 1975. Park managers are concerned the animals could disturb cultural landscapes and archaeological sites by burrowing and rooting.



Permanent water bodies in the park, such as the Owl Creek wetlands and Bloody Pond (shown here), as well as the open water of the Tennessee River, provide important foraging habitat for bats.



NATIONAL PARK SERVICE

AIR AND WATER QUALITY—OZONE LEVELS PUT PLANTS AT RISK

The Park Service does not directly monitor air quality at Shiloh; instead, data from monitoring sites in other national parks that are part of the Park Service's 14-park Cumberland Piedmont Network, as well as data from other federal and state-operated sites, are used to extrapolate air quality at Shiloh. Regional air quality is also monitored under the Clean Air Status and Trends Network (CASTNet) and through the Interagency Monitoring of Protected Visual Environments (IMPROVE) program, both funded through the Environmental Protection Agency (EPA) and other agencies. According to analyses of data from these sources, long-term trends indicate pollution is decreasing and visibility is improving, although ozone remains an issue.

While relatively isolated from population centers, Shiloh is affected by emissions from a pulp and paper mill in nearby Counce, Tennessee. While emissions from the pulp mill are considered low and are no longer monitored by EPA, odor from the mill is sometimes noticeable in the park. Agricultural operations, motor vehicles, commercial shipping, and recreational boating in the region also contribute pollution to the airshed.

A study conducted by the Cumberland Piedmont Network in 2004 found that ozone levels at Shiloh put plants at high risk of leaf damage. Currently, 13 ozone-sensitive species occur in the park—six of these plants serve as bioindicators (species indicative of ecosystem health): redbud (*Cercis canadensis*), white ash (*Fraxinus americana*), tuliptree (*Liriodendron tulipifera*), American sycamore, black cherry (*Prunus serotina*), and American elder (*Sambucus canadensis*). Plants at Shiloh will be monitored for foliar ozone damage this year (2009), through the Cumberland Piedmont Network's Vital Signs Monitoring Program.

In addition to the Owl Creek watershed and Bloody Pond, water resources at Shiloh include

the Tennessee River on its eastern boundary (to low-water mark), and other smaller tributaries and streams, many of which are in excellent condition. Staff from the Cumberland Piedmont Network sampled water from 2004 to 2006 at eight sites in the park, as part of a long-term water-quality monitoring program. Water temperature, pH, specific conductance, dissolved oxygen, acid-neutralizing capacity, and fecal coliform (*E. coli*) tests were performed. The main parameter of concern was the low level of dissolved oxygen found at the Glover (Tilghman) Branch watershed. The dissolved oxygen at the Glover Branch site dropped below state standards on several occasions. While the exact causative agent has not been fully identified, researchers consider this to be a natural condition.

RESEARCH AND MONITORING—MANY SURVEYS UNDER WAY

Shiloh is one of 14 parks participating in the Cumberland Piedmont Network (CUPN) Vital Signs Monitoring Program. Ongoing CUPN studies at Shiloh include a vegetation classification and mapping survey, a wetland delineation study, and the creation of geo-referenced databases for mapping purposes. Future monitoring through the network is expected to provide information on vegetation communities, non-native plants, forest pests, and landscape dynamics. The University of Memphis and the University of Arkansas are conducting baseline research on macroinvertebrates and mycetozoans (slime molds). A report on the park's aquatic insects, conducted by the U.S. Geological Survey, will be completed in 2009. And through cooperation with the University of Memphis, a new mammal survey has been completed.



STEWARDSHIP CAPACITY

FUNDING AND STAFFING—SHORTFALLS HINDER RESOURCE PROTECTION

Stewardship capacity details how well equipped the Park Service is to protect the parks. The most significant factor affecting the park's ability to protect its resources is the funding a park receives from Congress. The operational budget for Shiloh National Military Park was \$2.19 million in fiscal year 2008, an increase of \$360,000 from 2007. While the park's budget has increased slightly each year, the park has grown in size and complexity with the acquisition of the Corinth unit, and budget increases

do not cover all costs. Important projects remain undone at Shiloh, due to funding shortfalls. A new orientation film and rehabilitation of the auditorium at the Shiloh Battlefield Visitor Center will cost an estimated \$750,000; \$2 million is required to construct a maintenance facility to support the Corinth unit. In addition, the park needs funds to acquire the remaining acreage authorized by Congress.

Because of staffing vacancies and shortfalls, current employees at Shiloh have taken on additional responsibilities to provide services and protect resources. Five of 15 permanent positions in the Interpretation and Resource Management Division, commonly referred to as

Volunteers dressed in period clothing teach park visitors about rural farm life during the Civil War era.



Costumed interpreters provide programs for park visitors. But with only seven permanent interpretation rangers, the park is unable to provide the same range of programs from September through May as it is able to provide with the help of seasonal staff from May through August.

the Ranger Division, are vacant. Four of the positions have been vacant for more than two years; one of them (the park historian) has been unfilled for seven years. In addition, the facility manager position was recently vacated due to a retirement and took six months to fill. During the time positions are vacant, remaining staff must take on additional duties. Recent vacancies in law enforcement resulted in the park's chief ranger being forced to work two separate two-month periods without any days off. At this time, only two of three law enforcement positions have been filled, and recent law enforce-

ment needs assessments indicate that Shiloh needs three additional full-time equivalent law enforcement positions to effectively protect visitors and resources.

Because they are saddled with other duties beyond interpretation, the staff of seven permanent interpretation rangers is able to meet the demand for special programs for school groups and history organizations from September through May, but is unable to give the general public the same range of day-to-day programs that are provided from May through August when temporary personnel beef up the interpretive division. The park needs an additional four full-time equivalent staff (two at each unit) to address this need.

The park has also identified the need for 2.4 full-time equivalent staff to care for and repair its thousands of monuments, markers, and cannons.

Recently, a new organizational format was approved for the park. It includes the addition of three supervisory personnel—one for law enforcement and two for interpretation (one each for the Shiloh and Corinth units). These new positions will lighten the supervisory responsibilities for the park's chief ranger, allowing him to focus on strategic planning and program management. Funds are needed to hire these approved positions.

PLANNING—KEY DOCUMENTS NEED REVISION

Several key management plans guide protection of resources at Shiloh; some of these are seriously out-of-date. Because of the recent legislation expanding the park to include land resources in Mississippi, updating plans is extremely important. Shiloh's general management plan (GMP) was written in 1981. The park has documented the need for a new plan, but must wait its turn on the Park Service-wide GMP priority schedule. Shiloh's resource management plan, last updated in 1999, describes the status of the park's natural, cultural, and historical

resources, discusses threats to its resources, and provides recommendations for corrective action. The Park Service is phasing out resource management plans in favor of resource stewardship strategies. The park is awaiting permission and funds to begin a resource stewardship strategy.

Shiloh's land protection plan (2002) is more current, and describes how the park intends to protect the resources within its authorized boundaries, laying out management priorities, needs, and means to acquire additional lands for this purpose.

The park's fire management plan (2003) outlines Shiloh's fire management activities. Shiloh's current fire policy calls for immediate fire suppression, but the park is considering limited use of prescribed fire as a management tool to reduce the risk of wildland fires and manage non-native and invasive species.

Finally, three workshops were held from

2002 to 2005 to explore the development of a long-range interpretive plan for Shiloh. The resulting plan has been completed and is undergoing final preparations for publication.

RESOURCE EDUCATION—MORE STAFF, NEW ORIENTATION FILM NEEDED

Interpretive staff at Shiloh present numerous formal interpretive walks, talks, and demonstrations throughout the year—intermittently from September through May (off-season), and daily from Memorial Day through mid-August. In addition, the park offers special events (22 in 2007), many involving group-sponsored living history programs and demonstrations depicting various aspects of Civil War history. In 2007, 833 formal interpretive programs were delivered to 33,609 visitors, both on-site and at other locations such as schools. Another 27,244 people were reached through informal interactions.

NATIONAL PARK SERVICE



Students gather next to an interpretive water feature at the Corinth Civil War Interpretive Center to participate in a ranger-led education program on the causes and consequences of the Civil War.

The Shiloh Battle story is the primary theme interpreted in the park. Subordinate themes include the Indian mounds story and the environmental story. Natural resources themes interpreted focus on birding, wildlife, and foliage.

Interpretation at the park is also carried out at the two visitor centers. The Corinth facility in Mississippi is a shining example of a modern National Park Service visitor center. It includes the Battle of Shiloh walk-in mini-theater, which offers a compelling audio-visual reenactment presentation of the two-day battle, which was actually filmed on the historic Tennessee battlefield. The walk-in Corinth mini-theater provides interpretation of the 1862 siege and battle of Corinth, told from a modern perspective that relates the story of the military events portrayed against a backdrop of modern views of the existing cultural resources (landscapes, buildings, etc.), with the use of historic photos, maps, and graphics. In addition to traditional exhibits, the Corinth center provides visitors with the opportunity to explore and learn more about the people of the region and the war events they experienced through the use of interactive multimedia programming. A commemorative courtyard with the thematic "Stream of American

Volunteers help park staff accomplish a host of projects. In 2007, 582 volunteers provided 7,364 service hours to the park.

History" water feature punctuates the stories told in the center exhibits, and provides visitors with the opportunity to reflect upon the importance of the Civil War and the significance that local events had on the history of the nation. The courtyard also provides a contemplative atmosphere for visitors to come to an understanding of the war's issues, consequences, meaning, and significance to their lives.

In contrast to the Corinth facility, the Shiloh Battlefield Visitor Center in Tennessee could use some improvements. For example, the educational film shown to visitors dates to 1956. A new film and rehabilitation of the auditorium would cost \$750,000. The park's long-range interpretive plan includes a proposal for renovating the existing visitor center or building a new visitor center at Shiloh.

EXTERNAL SUPPORT—VOLUNTEERS AND PARTNERS HELP PROTECT RESOURCES

For the past decade, Shiloh has been able to meet management goals through a steady and dedicated volunteer work force. Volunteers assist staff with interpretation, especially through living history programs. They also contribute hours on resources management projects (both natural and cultural), staff visitor service information stations, and assist with crowd and traffic control during special events. In 2007, 582 volunteers provided 7,364 service hours to the park. While the park does not employ a volunteer coordinator, the chief of interpretation and resources management has taken on this additional responsibility.

Strong partnerships with other agencies and organizations benefit the park. Eastern National, Friends of the Siege and Battle of Corinth, Friends of Shiloh Battlefield, the Tennessee Civil War Preservation Association, and the Civil War Preservation Trust are among the groups that have served enthusiastically as advocates for resource protection, contributing money, land, and volunteer services to Shiloh.

NATIONAL PARK SERVICE





SHILOH NATIONAL MILITARY PARK

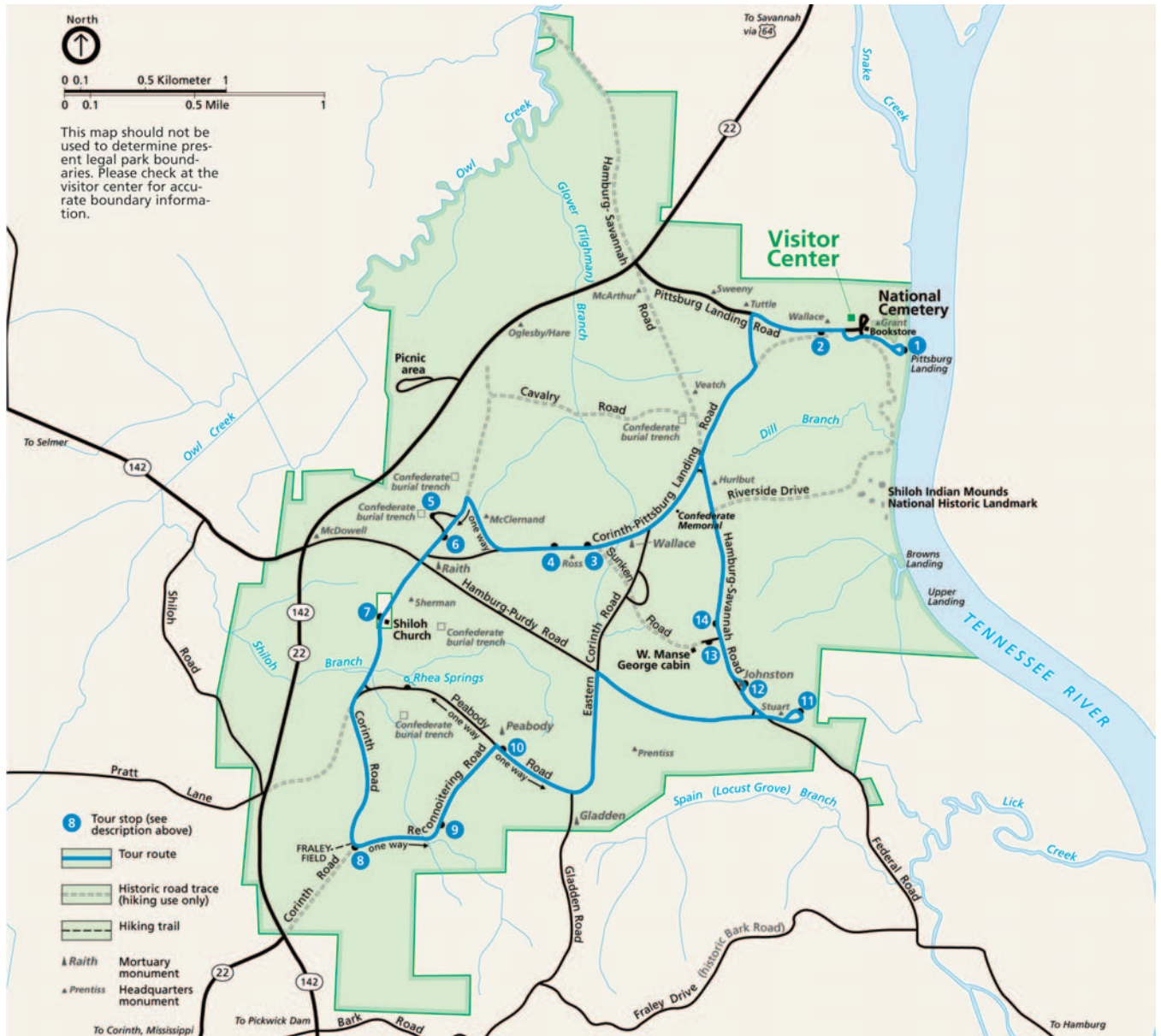


REPORT SUMMARY

On April 6–7, 1862, Union and Confederate forces clashed in what many consider to be the first major battle of the American Civil War. At dawn on April 6, Confederate soldiers surprised Union forces encamped on the banks of the Tennessee River at Pittsburg Landing. The Battle of Shiloh, as it came to be known, was named for Shiloh Meeting House, a log church in the area of the fighting. When the battle ended, the

loss of life was staggering: 23,746 soldiers had been killed, wounded, or were listed as missing. Fighting in May at nearby Corinth added nearly 6,000 more casualties, and the two-day Battle of Corinth, fought October 3–4, 1862, increased the carnage by 7,200 more soldiers either killed, wounded, missing, or captured. Americans on both sides of the conflict realized the war would not end quickly, and would claim more lives than anyone had imagined.

On April 6-7, 1862, Confederate and Union forces fought each other at Pittsburg Landing in what came to be known as the Battle of Shiloh.



Often referred to as the most secluded and best-preserved battlefield in the United States, Shiloh National Military Park was established in 1894. It lies on the western bank of the Tennessee River near the unincorporated community of Shiloh, Tennessee, protecting the lands where Union and Confederate forces fought April 6–7, 1862. Located approximately 110 miles east of Memphis, the park includes Shiloh National Cemetery as well as the new Corinth unit, in Mississippi, which includes the

Corinth Civil War Interpretive Center, 23 miles southwest of Pittsburg Landing. Currently, more than 4,100 acres within the park's authorized boundary (which exceeds 7,000 acres) are federally owned. The Park Service, with the assistance of the Civil War Preservation Trust, is pursuing negotiations to acquire 1,000 or more acres of the remaining nonfederal acres held within its legislated, authorized boundary at Shiloh battlefield. Another 800 or more acres currently owned by the Friends of the Siege and Battle of

Corinth are authorized to be donated to the Corinth unit (fee simple) sometime in 2009. In addition, another 130 acres of authorized lands at Corinth are under negotiation for future addition to the park.

Hundreds of monuments, markers, and cannons commemorate the soldiers who fell at Shiloh. Shiloh National Cemetery, as well as mass Confederate burial trenches, serve as final resting places for thousands killed in the Civil War battle. The cemetery also contains the bodies of soldiers of later wars and their spouses. The cemetery and mass Confederate graves are not the only hallowed ground here; the park also protects the Shiloh Indian Mounds National Historic Landmark, containing a burial mound and extant cultural resources of a Mississippian culture that thrived on the riverbank 1,000 years ago.

The interpretive center located in Corinth, Mississippi, is the most recent addition to the park. This state-of-the-art facility, opened in 2004, is the recommended orientation point for visitors to Shiloh and includes interactive exhibits, a multimedia presentation on the Battle of Shiloh, and a video on the subsequent Siege and Battle of Corinth. In contrast, the aging facilities and infrastructure of the Shiloh Battlefield Visitor Center in Shiloh, Tennessee, struggle to meet visitor needs.

In addition to a wealth of cultural treasures, the park also protects six ecosystems that harbor hundreds of mammal, bird, fish, reptile, and amphibian species. Lichen species in the park number more than 500, including a rare species for the region. The woodlands of the park are threatened primarily by natural events, such as ice storms in winter. Biologists suggest that mowing practices on the battlefield at Shiloh require re-examination because they could be reducing habitat for birds, reptiles, and amphibians, and potentially injuring some species.

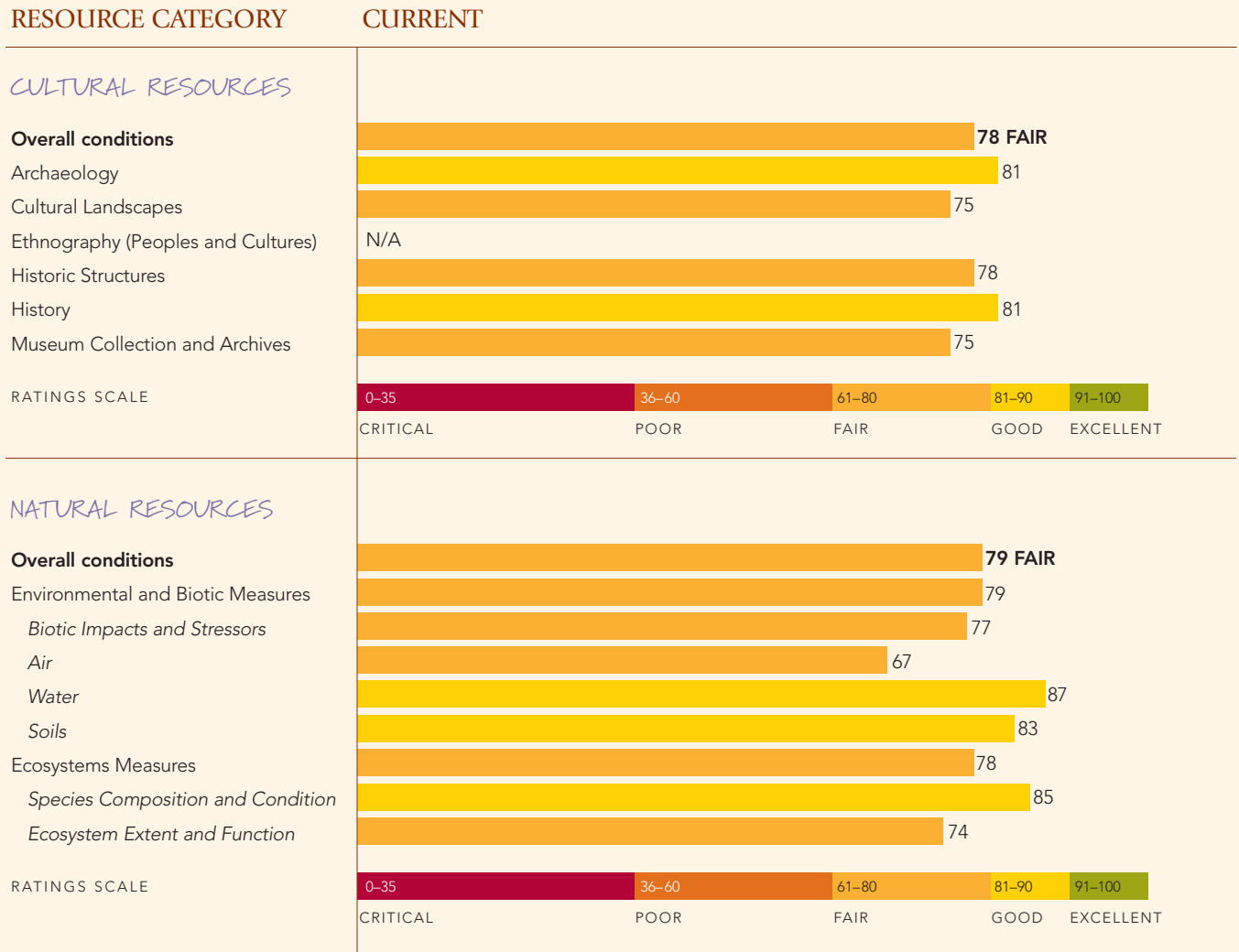
While the park benefits from a relatively isolated setting, development just outside the borders of Shiloh goes unregulated, and local

SHILOH NATIONAL MILITARY PARK

AT A GLANCE

- **Historical markers:** More than 800 monuments and markers, 4,000 headstones, and 227 cannons are sobering reminders of the historic events that occurred on the lands within Shiloh National Military Park.
- **Shiloh Meeting House:** The battlefield is named for a simple log church, known as the Shiloh Meeting House, which was located here in 1862. While the original church was destroyed during the war, it was later rebuilt. Four acres on which the church sits are privately owned by the Shiloh United Methodist Church and Cemetery. The church continues to serve an active congregation.
- **Shiloh Indian Mounds:** Designated a national historic landmark in 1989, the prehistoric Mississippian village and temple mounds are archaeological evidence of a chiefdom that thrived on the banks of the Tennessee River 1,000 years ago. One of the finest effigy pipe artifacts in existence was unearthed here. The landmark is unique on account of its pristine condition, having been protected by establishment of the national military park in 1894. It remains the only location in the world with an intact Mississippian village. The physical remains of more than seven dozen collapsed prehistoric wattle and daub houses are clearly visible within the site. Along with six ceremonial or temple mounds, evidence of a defensive palisade, and a burial mound, the site remains the finest representative resource in the nation to interpret and preserve the remnants of a prehistoric culture long deceased.
- **Forests:** Since the 1960s, the park has allowed approximately 600 acres of land to return to native forest conditions. About 200 acres of virgin bottomland oak/hickory forest (rare in western Tennessee) remain in the park's Owl Creek watershed. These old-growth oak trees represent the last remnants of the original forest cover from the time of the battle.

Note: When interpreting the scores for resource conditions, recognize that critical information upon which the ratings are based is not always available. This limits data interpretation to some extent. For Shiloh, 97 percent of the cultural resources information was available and 63 percent of the natural resources information was available.



The findings in this report do not necessarily reflect past or current park management. Many factors that affect resource conditions are a result of both human and natural influences over long periods of time, in many cases before a park was established. The intent of the Center for State of the Parks is not to evaluate Park Service staff performance, but to document the present status of park resources and determine which actions can be taken to protect them into the future.



To better interpret historical events and serve visitors, staff would like to renovate the existing visitor center at the Shiloh battlefield (exhibit shown here) or construct a new facility.

commuters heavily use park roads as a route between neighboring communities. Managers at Shiloh have made acquiring privately held lands within the park's boundary a high priority, to protect them from development.

RATINGS

Current overall conditions of the known **cultural resources** at Shiloh National Military Park rated 78 out of a possible 100, indicating "fair" conditions. The scores for cultural resources are based on the results of indicator questions that reflect the National Park Service's own *Cultural Resource Management Guideline* and other policies related to cultural and historical resources. Funding shortfalls mean that current staff must juggle a variety of roles, at the expense of interpretation, protection, and maintenance of cultural treasures.

Overall conditions of the park's known **natural resources** rated a "fair" score of 79 out of 100. Ratings were assigned through an evaluation of park research and monitoring data using NPCA's Center for State of the Parks

comprehensive assessment methodology (see "Appendix"). Unregulated development of adjacent lands has prompted the park to make land acquisition a high priority, and local residents' use of park roads as thoroughfares put natural systems at risk. There are also concerns about the use of commercial grass seed and mowing to maintain the historic landscape.

ADJACENT LAND USE AFFECTS PARK

The lands bordering Shiloh National Military Park are privately owned and mostly devoted to agriculture, forestry, or residential use. Development on these lands has accelerated over the last decade, most noticeably along the northern boundary of the park near State Route 22, as well as along the southern boundary near the Tennessee River. Because there are no county zoning regulations in place to control development in Hardin County, where the park is located, some of the development that has occurred on adjacent land and along roads within the park's authorized boundary is ill-suited to the quiet, reflective tone of a

battlefield park. Examples include a one-time amusement park (now gone, and the Park Service has acquired the property), taverns (with one currently being operated on a location adjacent to State Route 22 directly north of the main park entrance), and several trash dumps. Residential development is increasing along the Tennessee River to the south of the park and along the southwestern boundary in the Shiloh community.

In addition to undesirable development, logging activities associated with the local Counce Paper and Pulp Mill, in Counce, Tennessee, occur within a mile of Shiloh. And recreational and commercial boats travel the waters of Kentucky Lake (i.e., Tennessee River) along the sector bordering Shiloh battlefield; recreational boaters can access the park at Pittsburg Landing.

Shiloh's enabling legislation originally provided for a park of around 6,000 acres. With the addition of the Corinth unit, the park's authorized size now exceeds 7,000 acres. To date, more than 4,100 acres within this authorized boundary are federally owned. To serve as a buffer between the park and surrounding development, park managers actively work to acquire the remaining land as is allowed under the enabling legislation, with lack of funding and securing willing sellers presenting the challenges. The park has acquired nearly 350 acres within the authorized boundary since 1990, and with the assistance of the Civil War Preservation Trust, is pursuing negotiations for more than 1,000 acres of the remaining acres of private land that occur within the park's authorized boundary. Maintaining a ready source of funds for land acquisition is critical, because the properties are in private hands, and the opportunity to purchase could occur at any time.

The use of roads leading in and out of Shiloh by adjacent communities creates problems for the park. Because local residents and travelers have traditionally used roads within the park's authorized boundary to access neighboring

towns and local residential areas, the park has no formal gate system with which to close the facility at night and thus limit local traffic to day use only. The Shiloh United Methodist Church and cemetery, located on private land within the park, has an active membership that also necessitates open access to the park. Hamburg-Savannah and Hamburg-Purdy Roads are the primary park roads used for thoroughfare and meet to form the traditional heavy-use major northern entryway into the Hamburg community southeast of the park. During periods of flooding the park's roads offer the only access to the small hamlet known as the Bowden community, bordering the southeast corner of the current Shiloh battlefield park boundary, because Lick Creek south of this community floods and closes the Hamburg Road. Park management has considered plans to reconfigure park access and add gates, which would limit opening this road only during periods of high water (approximately five to ten days per year); the park has also considered issuing gate access cards or keys to the area residents. When these ideas were presented publicly in the early 1990s, it was evident political support was lacking, and issues of emergency services, mail deliveries, etc., blocked further attempts to implement closing off night access to Shiloh battlefield. Until solutions are found, managers face challenges from increased road traffic, auto accidents, wildlife-vehicle collisions, opportunistic wildlife poaching from park roads, vandalism, theft, overnight parking, noise, and pollution.

LAND USE HISTORY AND PARK ESTABLISHMENT

Since native peoples first set canoes in its waters, the Tennessee River has been an important travel route, and early societies thrived along its riverbanks. The Shiloh Indian Mounds National Historic Landmark area of the park was once the center of a Mississippian culture that occupied a 20-mile-long stretch of the Tennessee River

Valley. Artifacts found at the mounds suggest that human settlement occurred as early as A.D. 300–400. The mound builders at Shiloh were farmers, although hunting, fishing, and gathering still provided a considerable amount of their subsistence, and corn (maize) was their most important food crop. Archaeologists believe that the mound builders abandoned the area by A.D. 1400. The Chickasaw, now located in Oklahoma, and other southeastern indigenous peoples may be descended from the mound-building culture at Shiloh.

Euro-American settlers arrived in Hardin County, Tennessee—the area of present-day Shiloh—in the early 19th century. By 1840 approximately 8,000 people, mostly immigrants from Virginia and North Carolina, earned a living farming and logging there.

The Battle of Shiloh occurred in early April 1862. By 1865, the war had ended, and in 1866, Congress passed legislation establishing national cemeteries on several Civil War battlefields; Shiloh's cemetery, then officially established as Pittsburg Landing National Cemetery, was located on top of the bluff overlooking

historic Pittsburg Landing and the river valley. Work began immediately to locate the remains of the Union soldiers scattered across the more than 6,000-acre site, as well as locations along the Tennessee River as far south as the foot of the shoals near Gravelly Springs, Alabama, and northward to Fort Heiman, Kentucky, and Fort Henry in Tennessee. By 1869, 3,584 bodies had been reinterred from no fewer than 565 localities. The mass graves containing the remains of the Confederate dead buried by the victorious Union Army in 1862, and originally numbering perhaps nine to ten such sites, with only five having been located and identified to date, are located elsewhere within the battlefield.

As more Shiloh veterans returned to recall the battle and visit the new cemetery, desire to preserve the battlefield increased. While the establishment of a park would preserve the site as a gathering place for those who fought there, it would also serve future generations as a quiet place for reflection and commemoration. On December 27, 1894, President Grover Cleveland signed into law an act to establish Shiloh National Military Park.

The national cemetery at Pittsburg Landing was established in 1866 for the reburial of Union dead from the Battle of Shiloh and additional Union war dead initially buried at more than 500 different locations along the Tennessee River. The cemetery also serves as the final resting place for several hundred American service men and women from more recent conflicts.

NATIONAL PARK SERVICE



KEY FINDINGS

- The primary threats to the park's rural and secluded nature are encroaching development and adjacent land uses that are not compatible with the park's goals of interpreting the battle that took place at Shiloh and preserving the associated resources. Due to a lack of county zoning ordinances, businesses that may be viewed as incongruous with the landscape exist nearby. The Park Service is working to acquire key parcels within the park's 1894 authorized boundary, in order to create a natural topographic border along Shiloh Hill. These properties are currently privately held and could be sold (and perhaps developed) at any time.
- The orientation film shown to visitors at the Shiloh Battlefield Visitor Center was created in 1956 and is the oldest film of this type within the Park Service. A new orientation film and rehabilitation of the auditorium at the existing Shiloh Battlefield Visitor Center will cost an estimated \$750,000.
- The Park Service recognizes the need for an updated general management plan (the current general management plan was written in 1980) to take into account additional lands and resources that have been added to Shiloh National Military Park in recent years. Completion of the updated plan will depend on Park Service prioritization and funding. The park's administrative history, written in 1954, is in need of updates covering the years since then. An updated historic resource study is currently under development.
- The park recently completed drafting its long-range interpretive plan, and it is being prepared for publication. The plan details the work now proceeding to construct an orientation shelter, a mile-long interpretive trail, and several wayside exhibits at the Shiloh Indian Mounds. In addition, it recommends development of interpretive programs focusing on participation of women in the Civil War, children and the Civil War, 19th-century farm life, and the impacts of the battle and war on the local rural population, using the historic William Manse George Cabin as a primary component of these programs. The plan also includes a proposal for a renovated or new visitor center at the Shiloh battlefield.
- Interpretation of the Shiloh Indian Mounds has been lacking, due to road closures necessitated by riverbank erosion. A long-term, multimillion dollar riverbank stabilization and highway construction project was completed in 2008, reopening visitor access to the mounds using the park auto tour route. Construction of a one-mile-long interpretive trail through the national historic landmark site has begun, with targeted completion in fiscal year 2009.
- The park uses commercial grass seed on historic fields instead of the natural varieties that would provide better forage and cover for native animal species. In addition, biologists suggest Shiloh's mowing regime on some of these fields may be damaging to bird, reptile, and amphibian species. If grass is cut too short, if it is cut at certain times of the year, or if it is cut in areas near wetlands and without natural transitions, wildlife suffer from lack of or degraded habitat. The park is cognizant of the wildlife impacts associated with current management techniques, but is also attempting to provide visitor access and an expected visitor experience (i.e., manicured landscapes), which requires such maintenance.

nance. There is a desire to address the topic of preservation maintenance and wildlife when the park next updates its general management plan.

- Staffing shortfalls affect visitor services and resource protection at Shiloh. The park has only seven permanent frontline interpretation employees, insufficient to provide daily, on-site programs to the public at two park units in separate states from September through May. The park needs an additional four full-time equivalent staff (two at each unit) to address this need. Staff must take on additional duties because of the lack of personnel. For example, the park's chief of interpretation and resource management also serves as park historian, cultural resource specialist, volunteer coordinator, and a law enforcement officer because positions are vacant. Because park roads remain open to use by commuters beyond normal business hours, Shiloh remains at risk for vandalism, looting, wildlife poaching, and vehicular damage. In addition, the geography of the Corinth unit places the majority of parkland there within the city limits, and thus at risk for the same types of resource protection problems. At this time, only two of three law enforcement positions have been filled, and recent law enforcement needs assessments indicate that Shiloh requires three additional full-time equivalent law enforcement positions to effectively protect visitors and resources. The park has identified the need for an additional 2.4 full-time equivalent maintenance staff to care for and repair the park's thousands of headstones, markers, monuments, and cannon carriages.



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Work on Brown's Landing Road and Riverside Drive was completed in 2008, restoring automobile access to the Shiloh Indian Mounds and Dill Branch ravine. The top photo shows Riverside Drive before construction; the bottom one shows the road now.

RESOURCE MANAGEMENT HIGHLIGHTS

- **Riverbanks stabilized.** When the Tennessee Valley Authority impounded the Tennessee River to create Kentucky and Pickwick Lakes in the 1930s and '40s, portions of the park's shoreline suffered severe erosion, blowouts, and landslides. After landslides in 1997, the U.S. Army Corps of Engineers proposed a new bank stabilization project, which finally received much needed congressional approval and agency action. The final stabilization phase was completed in 2008. The entire 1.75 miles of the park's eastern boundary/shoreline is now protected from erosion by rock riprap.
- **Archaeological mitigation and excavations completed.** In conjunction with the riverbank stabilization project, the park and the Southeast Archeological Center recently completed a \$1.6 million archaeological mitigation of a prehistoric Mississippian period (A.D. 800–1200) temple mound threatened by erosion along the bank of the Tennessee River. This five-year project constitutes the largest and most significant archaeological research at the park since the 1930s. These excavations are now complete, with the volume of information recovered contributing greatly to the understanding of prehistoric Mississippian culture.
- **William Manse George Cabin restored.** The only remaining building from the period of battle, the William Manse George Cabin is a prime interpretive resource for the park. Restoration work, completed in 2004, included installation of a new chimney and roof. The park has used the cabin to support interpretive programs on civilian life, particularly in regards to women and children, subsistence farming, and impacts the war had on the surrounding rural community.
- **Visitor center at Corinth opened.** The \$9.5 million Corinth Civil War Interpretive Center opened in Corinth, Mississippi, in 2004. Critically acclaimed for its exhibits on slavery, secession, and the nationally significant Civil War events that unfolded in the region, it is the suggested first stop for visitors to Shiloh National Military Park. The 15,000-square-foot center also features two audio-visual movie productions.
- **Battlefield monuments repaired and replaced.** Since 2003, more than 30 troop position markers, missing from the park for several decades due to theft or vandalism, have been recast and erected at their proper locations on the Shiloh battlefield. An additional 50 missing markers are currently under contract for casting. Also, all historic cast-iron markers (more than 650 of them) are repainted on a three-year cyclic program. Shiloh acquired 47 new ductile iron cannon carriages to begin the task of eventually replacing all of the nearly 200 cast iron carriages, which are more than a century old and have fallen into disrepair. At an average (and ever-increasing) cost of \$13,500 per new carriage, this is a sizable financial undertaking that will take many years to accomplish. In addition, all aerial electrical transmission lines located on the battlefield were removed and returned to underground transmission, enhancing the scenic and historical viewshed in the park.

The preserved William Manse George Cabin, the only surviving structure of the nearly 70 buildings present on the Shiloh battlefield during the battle, has undergone several restorations since the park was established.





THE SHILOH NATIONAL MILITARY PARK ASSESSMENT



CULTURAL RESOURCES— BATTLEFIELD MARKERS AND MONUMENTS HONOR THE FALLEN

Shiloh National Military Park scored an overall 76 out of 100 for the condition of its cultural resources, which include archaeology, cultural landscapes, history, historic structures, and museum collection and archives. This score indicates that the resources are in “fair” condition.

Cultural resources at Shiloh include extensive, relatively undisturbed archaeological resources preserving the history of the battle on the ground where it was fought, hundreds of monuments and markers on the battlefields, historic cannon tubes, original Civil War diaries and letters in the park’s archives, and the features and archaeological resources associated with the Shiloh Indian mound and village site. Threats to the battlefield archaeology and

Monuments throughout the park, such as the Minnesota Monument shown here, commemorate soldiers from various states who fought in the Battle of Shiloh. The park needs additional staff to care for its thousands of headstones, markers, monuments, and cannon carriages.

markers and monuments in the park include vandalism and looting of artifacts, as well as natural effects of weather and time.

Between 1991 and 2008, vehicle access to and through the mounds site was closed to visitors due to riverbank stabilization issues, which involved closing a section of the tour route north of the site. Threats to the mounds include looting of artifacts, natural disturbances (damage from falling trees during severe storms and high winds), and the extremely low possibility of future stream bank erosion, which from routine monitoring by the park and the U.S. Army Corps of Engineers, appears to have been successfully checked by the recent stabilization measures taken along the base of the bluffs along the river. The stabilization measures enacted have halted further catastrophic blowouts at the base river level; however, given the elevation extremes found at Shiloh, the stabilization work does not eliminate the natural repose of the bluff line above the riprap level, areas which will slowly recede westward, with soils slipping down the bluff until the formations attain the equilibrium dynamics representative of a natural river shoreline.

HISTORY—HISTORIC RESOURCE DOCUMENTS NEED UPDATING

The events that occurred at Pittsburg Landing, Tennessee, during the Battle of Shiloh have been documented and explored at length. Detailed accounts from officers and soldiers who participated in the battle exist, among them reports by Maj. Gen. Ulysses S. Grant and other high-ranking Union and Confederate officers. Journals, kept by women who assisted in makeshift hospitals in Corinth, have also been preserved. These memoirs, published regimental histories, soldier diaries, scholarly works, historic maps, objects in the park's museum collection, and documents in the archives help the park staff interpret historical events by providing firsthand accounts of the grueling conflict and its aftermath.

Historic resource studies, which provide a historical overview of a park and identify and evaluate cultural resources within historic contexts, also identify the need for any special studies and make recommendations for resource management and interpretation. Shiloh completed a historic resource study in 1993 that evaluated historic buildings, structures, and objects. An updated historic resource study has been funded and is currently being developed, with a targeted completion date of fiscal year 2010. Shiloh's administrative history was written in 1954 and covers development of the park from the 1890s to 1954. A considerable amount of the history focuses on the period prior to 1933, the year when management of the park passed from the Department of War to the National Park Service. Research is needed to update documentation of park management since 1933.

The most recent historical research in the park involved development of interpretive exhibits for the Corinth Civil War Interpretive Center. The park collaborated with a multitude of professionals, partner agencies, organizations, community planners, business leaders, and stakeholders to develop state-of-the-art exhibits that interpret Civil War issues through relevant and provocative national, regional, and local war events and experiences. The 15,000-square-foot interpretive center also includes 175 commemorative features (monuments and bronzes), reproductions of earthworks, two multimedia audio-visual productions, and interactive multimedia exhibits.

Shiloh's chief of interpretation and resource management also serves as park historian, cultural resource specialist, and volunteer coordinator (overseeing the work of 500 to 600 volunteers annually); supervises and coordinates all compliance, research, and science; and coordinates with the park's cooperating association. This staff member also continues to perform the duties of a field law enforcement officer because a number of positions responsi-

ble for performing these functions have been vacant for years due to funding shortfalls. He has written and published numerous articles and essays detailing the battles at Shiloh and Corinth, and he has produced a visitor's guide to the Battle of Shiloh and an audio tour for the Shiloh Battlefield that is available on CD. The park superintendent and the historian worked together to prepare an informative guide to the Corinth Civil War Interpretive Center. Recently, a former staff member published a book titled *This Great Battlefield of Shiloh: History, Memory, and the Establishment of a Civil War National Military Park*.

The park has an extensive living history program and also offers a variety of interpretive bulletins dealing with topics such as women in the Civil War, slavery and the causes of the Civil War, slaves as soldiers, Mexican Americans as soldiers, and battle fortifications.

ARCHAEOLOGY—SHILOH INDIAN MOUNDS SITE TO REOPEN

Shiloh National Military Park's premier archaeological resources are the preserved Civil War battlefields and earthwork features comprising the sites protected at Shiloh and Corinth, as well as the Shiloh Indian Mounds National Historic Landmark, evidence of a prehistoric Mississippian culture. The mounds are also listed in the National Register of Historic Places.

The mounds represent what is left of a town—known as a chiefdom, due to the presence of a political and spiritual leader—that occupied the high Tennessee River bluff at the eastern edge of the Shiloh plateau 1,000 years ago. Six of these mounds, rectangular in shape and flat-topped, probably served as foundations for important buildings, which may have included a council house, religious buildings, and residences of town leaders. The southernmost mound is an oval, round-topped mound in which important people were buried.

The first archaeological excavation at Shiloh took place in 1899, when the site's most famous

artifact, a large stone pipe carved in the shape of a kneeling man, was found at "Mound C." Now on display in the Tennessee River Museum in Savannah, Tennessee, this effigy pipe is made of the same distinctive red stone and is carved in the same style as a number of human statuettes from the Cahokia chiefdom, located near East St. Louis, Illinois.

Survey work in the winter of 1933–34 revealed numerous small, round mounds at the Shiloh site, the remains of wattle and daub houses. These structures featured vertical post walls interlaced with branches (wattle), which were then coated with a thick layer of clay (daub). A palisade wall, also made of wattle and daub, protected the site. Because the land containing the mounds has been protected within the park for more than a century, and because the Shiloh site has never been disturbed by the plow, the daub of collapsed walls still stands. Shiloh is one of only a handful of sites in the Eastern United States where remains of prehistoric houses are still visible on the ground's surface.

Located along the Tennessee River, the site has suffered from extreme erosion. Since 1991, both riverbank stabilization and road construction needs led to closure of the road to Shiloh Indian Mounds. In 2008, the park completed a

From 2001 to 2006, the Park Service and a host of partners excavated "Mound A," a temple mound threatened by erosion. Data gathered through this work continue to enhance understandings of the park's prehistoric Indian mounds.



joint riverbank stabilization and road construction project for the 1.3 miles of the park auto tour roadway connecting Shiloh Indian Mounds National Historic Landmark to the visitor center area. The site is again part of the park auto tour, augmented with an interpretive trailhead shelter and mile-long interpretive hiking trail scheduled for completion in 2009.

In conjunction with the riverbank stabilization project, the park and the Southeast Archeological Center (SEAC) also recently completed a \$1.6 million archaeological mitigation of "Mound A," one of the temple mounds threatened by erosion. The project team included SEAC employees, contracted technicians, university students, and volunteers. This five-year project (2001–2006) involved extensive consultation with tribal leaders of the Chickasaw Nation and others. Considered one of the largest archaeological field projects ever conducted by the Park Service, the excavations are now complete, but study continues on the data recovered in this important mitigation investigation.

In addition to the Indian mounds, the park contains pristine historic archaeological sites that relate to the period of the Civil War. Of the more than 70 buildings known to have existed on the battlefield in 1862, only one remains—the William Manse George Cabin, which has been restored and is maintained where it was relocated shortly after the battle. All of the remaining building sites save five have yet to be positively identified and are unmarked on the battlefield.

Funding is currently unavailable for further archaeological research at Shiloh. Important projects—identification of missing Confederate mass graves and other war burial sites, an archaeological condition assessment of new lands associated with the Corinth unit, and further investigation to locate the unmarked period home sites—remain undone. The park does not employ a full-time archaeologist. According to resource managers, SEAC provides

sufficient support for the park's archaeological needs, given the lack of funding for projects.

Night-time looting threatens archaeological artifacts at the battlefield, particularly metal artifacts representing the Civil War period, with three dozen reported incidents from 1998 to 2008. Only one attempted looting incident within the area comprising Shiloh Indian Mounds National Historic Landmark has been documented, and this occurred in the mid-1990s, involving a temple mound previously excavated and completely restored during the Frank H. H. Roberts civil works investigation of 1934. Thus, the damage from this one incident only affected backfill material used to rebuild the mound at the conclusion of the earlier civil works excavation. Resources within Shiloh are at particular risk because the grounds are not secured with gates at the close of park hours. Although the park staff maintains an aggressive attitude in enforcing the Archaeological Resources Protection Act of 1979 and protecting the park, managers know looting is a constant threat, with some incidents likely going undiscovered and unreported. To address the problem, the park has requested an operational funding increase to add three more full-time law enforcement rangers that would increase patrol coverage by a minimum of 4,000 hours annually. However, the request remains unfunded.

Shiloh staff have gone to great lengths to mitigate the threat of looting. By working with the Southeast Archeological Center, and by including local and regional metal-detecting clubs in organized archaeological investigations conducted in the park, managers involve the community and members of the public in archaeology projects while educating participants about resource protection. Besides teaching sound stewardship principles, inviting metal-detecting enthusiasts to participate as park volunteers in events monitored by Shiloh and the Southeast Archeological Center permits the park to conduct significant research at minimal cost.



The War Department built this cemetery lodge in 1911 to replace a structure destroyed by a tornado 1909. It was built to house and provide an office for the cemetery's superintendent. Today this historic structure serves as the park's administrative headquarters.

HISTORIC STRUCTURES—MONUMENTS THREATENED BY VANDALS, WEATHER, AND NEGLIGENCE

Shiloh's List of Classified Structures (LCS), an inventory of prehistoric and historic structures, totals 226 and includes the prehistoric Indian mounds, three original structures dating to the time of the battle, park roads, structures that have been erected at the park since the battle, including many associated with the national cemetery: the cemetery house, constructed by the War Department in 1911, the cemetery wall, headstones, a metal gate, and stairs. Of the park's 226 historic structures, 191 are in "good" condition, 34 are in "fair" condition, and one structure's condition is rated "poor." The structure listed in "poor" condition was actually documented and removed from the park in 1996, though it still persists on the list of classified structures. The park was placed in the National Register of Historic Places in 1966, and boasts 186 individual historic structure listings in the register.

While the landscape at Shiloh today closely resembles conditions at the time of the battle, virtually all of the structures that existed in April 1862 were destroyed during the battle. Three structures related to the battle remain: a farm road known as the Sunken Road, which defines a line of battle occupied by Union troops; General Grant's Last Line, which contains the only surviving earthwork erected during the battle; and the William Manse George Cabin. The cabin was moved from its original location in Perry field at the northern end of the battlefield to its current site a short time after the battle, to replace the cabin the George family lived in prior to the battle (which was burned during the battle). The park's long-range interpretive plan recommends that the cabin be used as part of an interpretive program on rural civilian life, focusing particularly on women and children, farming, and the impacts the battle had on the surrounding community. Evidence of additional home sites and structures (i.e., underground features and associated artifacts)

The United Daughters of the Confederacy provided funds that allowed the park to recast and replace missing bronze features on the Confederate Monument.



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dating to the antebellum period also exists, but at present, except for five of the more than 70 cited to be on the battlefield in 1862, the remaining sites and structures have neither been identified nor authenticated.

The most prevalent historic structures at Shiloh (162 of the total listed) are the many monuments that commemorate states and significant individuals who participated in the battle. These monuments not only memorialize the Battle of Shiloh, but also represent the period prior to World War I when state-sponsored commissions and veterans worked together to erect such monuments throughout the nation. The park's bookstores, operated by Eastern National, offer visitors a map that details the locations of 156 monuments and 650-plus markers that interpret the battle, and all monument details and locations are also organized in a computerized, searchable database.

All monuments requiring joint and point work have received this treatment in the past

five years, and 12 have undergone major restoration, repair, and rehabilitation actions since 2000, including the Sherman, Peabody, Prentiss, Stuart, and Tuttle headquarters monuments; Gladden, Johnston, Raith, Wallace, and Peabody mortuary monuments; the Iowa State Memorial; and the Confederate Monument. In the case of the Iowa State Memorial, the park received funding from the Iowa legislature to recast and replace missing bronze features; the United Daughters of the Confederacy funded a similar action for the Confederate Monument. A number of monuments have missing features that were broken or stolen decades ago. Some of these missing features have been recovered in recent years: One of the two granite cannon tubes from the 14th Ohio Battery Monument were found buried in a barnyard 50 miles from the park, and the inscribed iron brigade headquarters star from the Tuttle monument was discovered north of Nashville and has been restored to the Tuttle headquarters structure.

Although none of the park's structures have been documented through historic structures reports due to the costs associated with producing these reports, staff use myriad other resources to guide the treatment and use of historic structures. These reference materials include the Southeast Cultural Resources Preservation Center's document titled *Preservation of Division, Brigade, and Mortuary Monuments, the Shiloh National Battlefield Park Historic Monument Survey Report* prepared by Middle Tennessee State University, and a 2004 preservation plan for the William Manse George Cabin, as well as other materials prepared by the Park Service and university graduate students. To further supplement reference materials, the park recently submitted a request for funds to inventory and document historic structures.

Because the grounds are not secured with gates at the close of park hours, Shiloh is at particular risk for vandalism or theft of cultural resources. In the past vandals have painted or marked (using blunt or sharp objects) graffiti on monuments, torn down traffic and park information signs, damaged or destroyed picnic-area bathroom facilities, and purposely shattered the glass on the front door to the visitor center. This type of behavior has also occurred, although on a far limited scale, at Corinth, where vandals scarred monuments in the Corinth center courtyard by climbing over the wall after hours to ride skateboards in the closed area. As for theft of resources, Shiloh has experienced several incidents, including stolen position markers; bronze tablets and features removed from monuments; cannon balls removed from the Confederate mass graves and the headquarters monuments; and on two occasions the actual theft of cannon tubes from their carriages. One of these thefts was completed at night and the gun was recovered through investigation, but only after the violators had ground off the cannon's important foundry numbers and inspection stamps. The other cannon theft incident occurred during a winter afternoon

and involved an unsuccessful attempt to remove a tube from the carriage onto a pickup bed.

Local residents use roads within the park (including busy State Highway 22) to access the rural communities surrounding Shiloh. Two nearby drinking establishments add to the problem, as customers drive to and from these businesses by passing through the park. In addition to vandalism, incidents of damage from vehicular collision with monuments have occurred.

Park visitors on foot can also damage resources, although much of the damage is unintended. For example, careless leaning on or stepping on a monument may cause it to break. The park works to educate the public about resource stewardship, but more rangers are needed to stem intentional and unintentional damage to monuments and markers. Three law enforcement and four interpretive rangers (two for each unit) would permit an aggressive public contact program across the park.

The passage of time and the effects of weather also threaten monuments. Bronze monuments and markers require annual cleaning and cold wax treatments; masonry on state monuments requires regular care; and plaques should be repainted every three years. The park has had a difficult time implementing a regular maintenance program, in light of its small staff and lack of a sufficient cultural resource maintenance budget. Given the other responsibilities associated with park operations, the park has been unable to devote any personnel solely to care for monuments, markers, and cannons. Instead, the park uses trained rangers, maintenance staff, and, in some instances, volunteers to maintain the monuments. Contractors complete major preservation and rehabilitation projects. Using contractors is often expensive, as evidenced by the \$50,000 recently spent to paint all of the park's historic markers. The park has requested an additional 2.4 full-time equivalent employees to boost its ability to care for monuments, markers, and cannons.

CULTURAL LANDSCAPES—ADJACENT
LAND USE THREATENS LANDSCAPE
CHARACTER

Cultural landscapes encompass natural and human-made features, illustrating the ways people have altered and adapted to their surroundings through time. Park staff, with assistance from the Park Service's Southeast Regional Office, are in the process of preparing a cultural landscape inventory for Shiloh National Military Park. Eight landscapes have been identified so far.

The national cemetery is one of the park's most visited and visible cultural landscapes. Established in 1866 for the burial of Union dead from the Battle of Shiloh, it contains 3,572 graves of Union soldiers (identities of 2,370 are unknown), as well as interments from recent military engagements, such as the Vietnam War. Park staff help family members locate ancestors buried at the cemetery.

The cemetery, while honoring the dead, also evokes a sense of sacrifice and tragedy, as do the mass Confederate graves in the park. The cruel realities of war are particularly evident here; the

men buried in these trenches remain nameless, as swift disposal of the overwhelming number of bodies took precedence over identification. The trenches are marked by a simple row of cannonballs.

The Shiloh Indian Mounds are another of the park's prominent cultural landscapes. They are a group of nearly eight dozen prehistoric Indian mounds and houses identified as some of the most significant physical remains of pre-Columbian culture in existence. Evidence shows that the mounds date beyond 600 years ago, before the inhabitants of the area had contact with European trade goods.

Due to the park's isolated location and the surrounding low population density, there has been little disturbance to the landscape. Park staff work to maintain undisturbed areas and restore those that have been altered by farming, construction that is incompatible with the historic viewscape, or neglect. But outside the park, incompatible use of adjacent private property threatens the character of the cultural landscapes at Shiloh. (See "Adjacent Land Use Affects Park.")

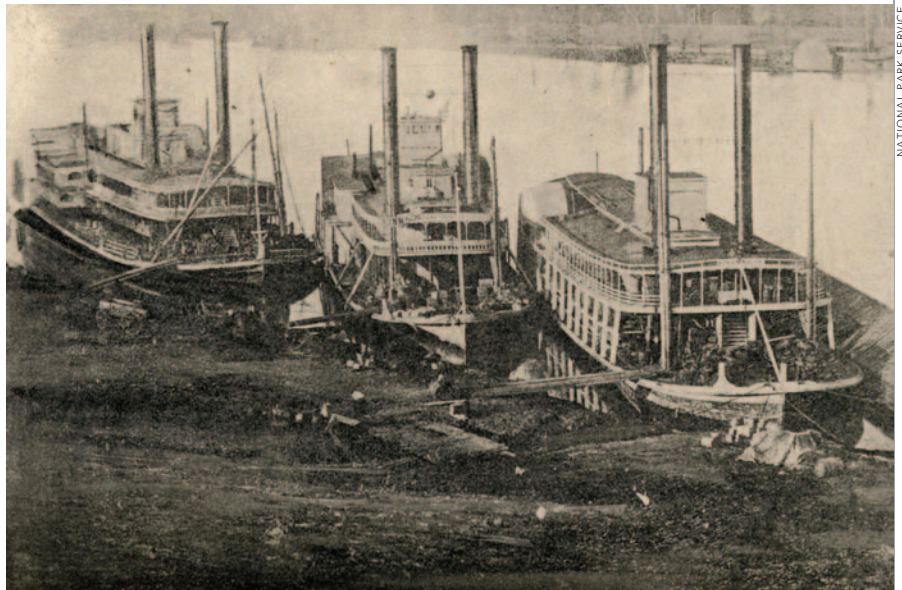
The remains of more than eight dozen houses, six large temple mounds, and one burial mound are evidence of a pre-Columbian culture that once inhabited the Shiloh plateau.



None of the cultural landscapes at Shiloh have been evaluated through cultural landscape reports, the primary guides for treatment and use of cultural landscapes, though as with historic structures, the park uses a host of other reference materials to guide landscape preservation and use. Cultural landscape reports cannot be done until the ongoing cultural landscape inventory is finished. The park has established landscape rehabilitation goals that include restoring damaged or missing battlefield markers and monuments; replacing defective replica artillery carriages; re-establishing historic roads, fields, and orchards; and removing non-native vegetation. Funding for all of these projects has been requested. In the case of markers, three separate castings have been funded during the past six years, with the first completed, the second in progress, and the third awarded. These three projects will place seven dozen markers back in the park (replacing original markers lost to theft or simply damaged beyond repair by human activity, such as vehicle accidents), as well as cast and erect a handful of markers the original park battlefield commission was unable to develop on account of funding constraints.

In addition to replacement of missing markers, all of the historic cast-iron markers have been repainted (twice) since 2005. Shiloh acquired 47 new ductile iron cannon carriages to begin the task of replacing the roughly 200 brittle, century-old, cast-iron carriages, which have decayed over time. And in 2002, all aerial electrical transmission lines on the battlefield were removed and replaced underground, enhancing the historic and scenic character of the battlefield.

While no historic architect is employed by Shiloh, the park receives assistance from staff at the Park Service's Southeast Regional Office. As the park is still in the process of formally identifying cultural landscapes, assistance from regional staff meets the park's needs at this time.



MUSEUM COLLECTION AND ARCHIVES—PARK PROTECTS MORE THAN 477,700 ITEMS

Shiloh's museum collections are varied, and include archaeological objects and field records, as well as hundreds of items related to the 1862 Shiloh Battle, such as pocketknives, belt buckles, combs, pipes, firearms, and a Civil War artillery collection. Natural history items such as an herbarium, insect specimens, and mammal skins are also part of the collections. The park is also fortunate to have an extensive collection of documents, such as letters and diaries, written by those involved in the battle. The Southeast Archeological Center (SEAC) manages the majority of the park's archaeological items. In sum, Shiloh's collections exceed 477,700 items.

The exhibit quality at the park has been greatly enhanced with the addition of the new (2004) Corinth Civil War Interpretive Center. Though both visitor centers (Shiloh and Corinth) include displays of museum objects, the careful attention that has been given to the planning of the Corinth unit has resulted in a far superior storytelling experience. Currently, Corinth is the recommended orientation point for visiting Shiloh. The park's long-range interpretive plan includes a proposal for a new

This historic photo shows steamboats tied up at Pittsburg Landing a few days after the Battle of Shiloh. The boat in the center is the *Tigress*, which served as General Ulysses S. Grant's floating headquarters.

This coat and gloves worn by Captain Daniel Matson, who served in an Iowa infantry regiment at the Battle of Shiloh, represent his later war service commanding a battery in the Fourth U.S. Colored Heavy Artillery. They are part of the park's museum collection.



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visitor center or rehabilitation of the existing facility at Shiloh, which would allow the park to better interpret the significance of the battle in the overall context of the war and display more objects from its museum collections.

The park has met 97 percent of applicable standards in the Park Service's *Checklist for the Preservation and Protection of Museum Collections*, but deficiencies remain. The park lacks a collection storage plan and an integrated pest management plan for museum and archival objects. Exhibit cases also show security and preservation vulnerabilities, such as deteriorating seals that permit small insects to enter the interior of the cases. The park's primary collection storage facility lacks a fire-suppression system.

Shiloh's Automated National Catalog System database is well on its way to being up-to-date, with 62 percent of the collection cataloged and entered into the system. The majority of items that are entered in the database are in "good" or "excellent" condition. Most of the material remaining to be cataloged is stored off site at SEAC, and constitutes the remainder of the artifacts, soil and carbon samples, and records and archives related to the recent Mound A investigation.

The park's 1995 collection management plan recommends updating Shiloh's scope of collections statement (SOCS). (The current SOCS, dated 1985, was prepared in a format no longer used by the park system.) The plan also places a priority on inclusion of the Indian Mounds in the SOCS.

About 20 percent of the park's 168,381 total archival items have not been cataloged. Most of the backlogged items are stored at SEAC and are field records and reports associated with the Mound A excavation, as well as some park administrative documents representing early Park Service interpretive efforts and resource management of the park. SEAC staff will catalog these items as the facility's schedule and other responsibilities allow. Any existing documents

at SEAC or at the park that chronicle the initial Park Service administrative period at Shiloh would help to fill in gaps in its administrative history. Cataloging these documents is imperative for their ultimate use in this regard.

While Shiloh does not employ a curator, due to lack of funding and personnel, its versatile staff step in as needed to serve as museum technicians.

ETHNOGRAPHY (PEOPLE AND CULTURES)—PARK CONSULTS WITH CHICKASAW NATION

Historic records do not indicate that any American Indian people inhabited the Shiloh area when European and American settlers arrived; thus, the park does not have an ethnography program. Due to the lack of an ethnography program, the Center for State of the Parks did not assess or rate this cultural resource category.

The Chickasaw Nation, now completely located in Oklahoma, represent one of the primary groups in existence today that share commonalities with the mound builders who once lived at Shiloh. For this reason and because the land upon which the park sits was ceded by the Chickasaw Nation through treaty, the park has maintained a relationship with the Chickasaw Nation and continues to consult with them on matters relating to the mounds, especially archaeological projects. The park has established a memorandum of understanding—one of the first of its kind within the Park Service—with the Chickasaw council of elders that guides the handling of any human remains discovered at the mounds site. The park also presented the tribe with a replica of the remarkably intact effigy pipe discovered at Shiloh in 1899.



NATURAL RESOURCES—FORESTS AND FIELDS HARBOR MANY SPECIES

The assessment rated the overall condition of natural resources at Shiloh National Military Park a 79 out of 100, which ranks park resources in “fair” condition. (The Corinth unit of the park was not included in the natural resources assessment, due to its urban location.)

The battlefield is located in a rural setting, bordered by four small, unincorporated communities totaling fewer than 125 people. Although the population density is low, public access to park roads contributes pollution,

noise, and the risk of collisions between wildlife (e.g., deer) and vehicles.

The park supports a diverse array of plant and animal species, and habitat conditions are better than at times in the past. Even so, researchers conducting surveys have noted that certain field maintenance practices negatively affect some wildlife. These practices may be limiting the size of populations of species living in the park, and they may also be limiting the use of the park by additional wildlife species.

The Shiloh battlefield is located in a rural setting. Part of the battlefield is composed of historic agricultural fields present in 1862, roughly half of which are currently managed through an agricultural hay lease program using local farmers.

Staff plant trees in one of the park's historic orchards, important features of the cultural landscape present in April 1862 when the momentous battle was fought here.



NATIONAL PARK SERVICE

PLANTS AND LICHENS—NATIVE SPECIES DOMINATE MOST COMMUNITIES

Shiloh National Military Park is composed of mixed hardwood forest and historic agricultural fields. A 2004 vascular plant inventory identified 27 separate plant communities within these two broad vegetative types. Only one of these 27 plant communities is dominated by non-native species.

While no federally listed threatened or endangered plant species are found at Shiloh, five plant communities identified in the 2004 study warrant special attention, due to NatureServe Global Conservation Status rankings for some of their species. A G2 ranking defines a species as “imperiled”—at high risk for extinction due to restricted range, few populations (often 20 or fewer), steep declines, or other factors. A G3 ranking defines a species as

“vulnerable”—at moderate risk of extinction. The five communities at Shiloh classified as G2 or G3 are: White Oak/Red Oak Dry-Mesic Acid Forest; Southern Red Oak Flatwoods Forest; Upper East Gulf Coastal Plain Chinquapin Oak/Mixed Oak/Hickory Forest; Central Interior-Upland-Cherrybark Oak Forest; and Interior Forested Acid Seep.

Park uplands are dominated by oaks—white (*Quercus alba*), willow (*Quercus phellos*), southern red (*Quercus falcata*), post (*Quercus stellata*), and blackjack (*Quercus marilandica*)—as well as shagbark hickory (*Carya ovata*), American elm (*Ulmus americana*), eastern red cedar (*Juniperus virginiana*), shortleaf pine (*Pinus echinata*), and black walnut (*Juglans nigra*). Ravines in the park are dominated by sweetgum (*Liquidambar styraciflua*), American sycamore (*Platanus occidentalis*), tuliptree (*Liriodendron tulipifera*), and

American basswood (*Tilia americana* var. *heterophylla*). The park's bottomlands are dominated by cherrybark oak (*Quercus pagoda*), sweetgum, and river birch (*Betula nigra*).

Virtually all forest currently growing on the battlefield dates to the years after the battle itself due to land use practices predating park establishment, park management policies, and natural forest succession. Only a handful of old-growth trees that actually date to the battle period (primarily oak and hickory) remain in the Owl Creek bottomland, in approximately 200 acres of Virgin Bottomland Oak/Hickory Forest (a plant community rare in western Tennessee). These old-growth trees represent the last remnants of the original forest cover (i.e., trees that were present at the time of battle) at Shiloh.

The remainder of the park includes 24 historic fields, maintained as part of the battlefield landscape. Although row crops are no longer cultivated in the fields, due to risk of soil erosion and the need for pesticides, the park leases 270 acres of fields to local farmers who grow hay and millet crops. Park staff and farmers who hold leases mow fields and other grassy areas to maintain the landscape as it appeared at the time of the 1862 battle. Mowing grass very short, mowing in wetlands, and mowing to the forest edge without a buffer zone all alter bird habitat, and biologists conducting inventories at Shiloh believe these practices contribute to the low occurrence of grassland and shrub-scrub bird species in the park. A 2006 study of reptiles and amphibians in the park also identified mowing practices as hazardous to these species (see the "Wildlife" section for details).

Some fields managed by the park are seeded with non-native tall fescue (*Schedonorus phoenix*) or fescue species (*Festuca* spp.) and Bermudagrass (*Cynodon dactylon*). The park's use of commercial, non-native grass seed is also thought to contribute to the dearth of certain bird species; in contrast, native grasses such as

broomsedge (*Andropogon virginicus*) provide food and habitat for grassland birds, and benefit both game and non-game wildlife species.

Since 1862, the park's landscape has changed: About 160 acres of open fields have disappeared as a result of advancing forest or agricultural use, while other fields increased in size, between 1862 and 1894, due to additional forest clearing by residents. The original park commission began the process of restoring the landscape to conditions at the time of the battle, by restoring the roads, woodlots, and defining the original field boundaries. This work has continued with brief interruptions throughout the park's history. In an effort to return the landscape to its original battlefield appearance, beginning in the 1960s, approximately 600 acres of cleared areas have been allowed to return to native forest conditions. Since 1992, two historic fields (Stacy and Larkin Bell Fields), which had been completely encroached on by forest, have been cleared. To rehabilitate the historic fields, park staff used heavy equipment, chain saws, and hand tools to physically remove trees, tree stumps, and brush. Only the most mature hickory and oak trees were preserved as part of the effort to re-create historic conditions; the trees also benefit wildlife.

A vegetation study, begun in 2006, is under way to characterize and map the vegetation of all park units in the Cumberland Piedmont Network (CUPN), of which Shiloh is a part. This project will result in a comprehensive vegetation database providing spatial data and mapping capabilities for individual parks, including Shiloh. Shiloh's vegetation map is expected to be completed this year (2009). Another CUPN project identified and documented the park's wetlands.

Peach blossoms bring color to the battlefield landscape. The trees must be carefully managed because they are prone to damage from insects and pathogens. Recently the orchard has suffered only minor damage from these threats.



NATURAL AND HUMAN-CAUSED DISTURBANCE AT SHILOH

Shiloh National Military Park's ecosystems are susceptible to change from a variety of disturbances. While some are considered natural, others are human-caused or human-accelerated.

Natural Events. Flooding in the park occurs at least once every three years in low-lying areas near the Tennessee River, as well as in the Owl Creek watershed. In 1954 heavy rains washed away more than 20,000 cubic yards of Tennessee riverbank soil, sloughing away vegetation and large trees. The historic Pittsburg Landing site along the river was destroyed at that time. Some flooding has been human-caused—park staff believe that the channelization of Owl Creek in 1975 (off-site) has increased flooding events in wetlands in the park.

Two major ice storms in 1951 and 1994 downed many trees at Shiloh. Hundreds of trees were destroyed and thousands were damaged by the 1951 storm; in the 1994 storm, 8,100 trees were killed or heavily damaged. Areas damaged from the ice storms have since recovered.

Pathogens and Pests. Some pathogens and pests are associated with the non-native peach trees in the park's small peach orchard, which is a historical part of the battlefield landscape. The orchard patch consists of approximately eight acres of trees of varying ages. The trees are prone to damage from insects, such as the peachtree borer (*Synanthedon exitiosa*), and pathogens such as bacterial leaf spot (*Xanthomonas campestris* pv. *pruni*), and fungal peach canker (*Cytospora leucostoma* and *C. cincta*), but recently the orchard has suffered only minor damage due to these threats.

Fire. Human-caused fire has played a central role in shaping the landscape at Shiloh. According to historical records, much of the forested area in the park was open range maintained by 19th-century settlers through fire and livestock grazing. During the War Department's administration of the area from 1894 to 1933, fire was used extensively to maintain open areas and pastures. Prescribed burning ended in 1933 when the Park Service took over administration.

Lightning-induced or human-caused fires are of concern, as they are considered a threat to the park's historic forest landscape and Civil War resources. The current fire policy is immediate suppression. Fuel loads have increased significantly since controlled burning ended in 1933. For years, park staff have used mechanical fuel reduction activities to reduce accumulated fuel loads near cultural resources and along the park's urban interface with adjoining private lands and residential areas. The park maintains a fire-break along the full extent of its exterior boundaries. Controlled burns to reduce Chinese privet and Japanese honeysuckle and maintain open wooded areas for battlefield interpretation are also being considered, but removal of these species remains mechanical and with topical treatments, using the Southeast Exotic Plant Management Team.

Fragmentation. Twenty-three miles of roads (paved and unpaved) and 18 miles of hiking trails fragment the park's forest cover (see map on page 34). Maintaining the park's cultural landscape requires modification of some roads to resemble the historic road system present during the battle of Shiloh. Planning is ongoing to realign some

historic roads, remove asphalt from nonhistoric roads, asphalt some gravel roads, and reconstruct the Brown's Landing/Dill Branch Road damaged by erosion of the Tennessee River. The improvements are expected to have short-term impacts, such as disturbing soil and vegetation, and temporarily displacing some wildlife. In the long term, the modifications will improve natural conditions, resulting in additional cover and habitat.

Dams and Riverbank Alteration. The Shiloh Riverbank Stabilization Project has been a high priority in the park for nearly four decades. When the Tennessee Valley Authority impounded the Tennessee River to create Kentucky and Pickwick Lakes in the 1930s and '40s, portions of the park's shoreline (as well as areas outside the park) suffered severe erosion, due to increased water currents, the rise and fall of the river, and the removal of shoreline vegetation to eliminate obstructions to navigation; major landslides occurred in 1973 at the Shiloh Indian Mounds. Since 1984, the U.S. Army Corps of Engineers (COE), in cooperation with the Park Service, has developed and initiated several stream bank protection and restoration plans at Shiloh. After additional landslides in 1997, the COE proposed a new bank stabilization project to halt further erosion on 5,700 feet of shoreline. The final stabilization phase was completed in 2008, resulting in a new causeway to replace the existing Browns Landing Road/Dill Branch Road causeway, as well as improvements to a box culvert in the Dill Branch that drains into the Tennessee River. The entire 1.75 miles of the park's eastern boundary/shoreline is now protected from erosion by rock riprap.



Visitor Impacts. Visitor impacts to natural resources at Shiloh are limited to soil erosion and soil compaction along hiking trails, at driving tour stops, and existing road pull-off areas.

Poaching. Wildlife poaching occurs at park edges year-round. White-tailed deer are most often targeted, but other animals such as wild turkey (*Meleagris gallopavo*) are also poached. To counter this activity, the park has initiated a public awareness and education program, stepped up its limited law enforcement capacity, and works cooperatively with area Tennessee Wildlife Resources Agency officers to monitor the park and protect wildlife from poaching.

Flooding and erosion along the Tennessee River have been a problem at the park for decades. This picture shows flooding at Pittsburg Landing in 2001. The Shiloh Riverbank Stabilization Project was completed in 2008, measures that should protect the park's riverbank from further catastrophic erosion.



The park is home to 186 species of birds. Some of them make their homes in unusual places, such as this cannon tube.

WILDLIFE—WIDE VARIETY OF ANIMALS FIND SANCTUARY

Shiloh National Military Park is home to 37 mammal, 186 bird, 51 fish, and 41 reptile and amphibian species. A survey conducted in 2007 suggests that overall mammal populations are abundant at Shiloh, with no significant changes observed since a previous study in 1984. However, some populations of animals such as beaver (*Castor canadensis*) and river otter (*Lontra canadensis*) have increased. Top-level mammal predators at Shiloh include bobcat (*Lynx rufus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), and gray fox (*Urocyon cinereoargenteus*). The most common large herbivores in the park are white-tailed deer (*Odocoileus virginianus*), whose regional populations have increased; park staff have noted spikes in deer populations, which are believed to be due to development pressures on adjacent land, as well as natural climatic events such as flooding or drought that force deer to seek temporary food and shelter at Shiloh.

Shiloh provides suitable habitat for at least seven species of bats. One species, the gray bat (*Myotis grisescens*), is federally listed as endangered. Permanent water bodies in the park, such as the Owl Creek wetlands and Bloody Pond, as

well as the open water of the Tennessee River, provide important foraging habitat for bats.

A 2003–2004 bird inventory detected a total of 186 species, representing only 59 percent of the 315 species that might be expected to occur in the area. The numbers and diversity of grassland bird species was less than expected for Shiloh, leaving researchers to speculate that the park's mowing practices could affect available habitat. A historic field near Corinth and Reconnoitering Road, one that includes a mix of native grasses and is mown less frequently than other fields, was found to contain the most field-obligate species—birds that depend on open fields, such as grasshopper sparrows (*Ammodramus saviarum*). The study noted that important bird and amphibian habitat also exists in the beaver ponds paralleling the Tennessee River near Riverside Drive (Browns Ferry Road). This wetland area provides nesting habitat for some birds and attracts a multitude of migrants in spring and fall; waterfowl may be viewed here in winter. Several breeding pairs of bald eagle (*Haliaeetus leucocephalus*) hunt in the park, and the first successful bald eagle nesting on record in the park occurred in early 2008.

Reptiles and amphibians are important components of the park's terrestrial and aquatic ecosystems. A 2006 inventory identified Shiloh's mowing practices as hazardous to reptile and amphibian species, and suggested that some species of snakes and turtles were being maimed and killed by mowing machinery. Additionally, mowing into the marshy areas of ponds creates turbidity in the water and reduces canopy over these wetlands, causing more rapid evaporation due to exposure to direct sunlight.

A baseline study of fish species conducted from 1995 to 1997 along Shiloh's small spring-fed streams found 51 species. All were native, with the exception of one species—yellow perch (*Perca flavescens*). The study concluded that the streams originating within Shiloh are biologically diverse and have intact ecosystems.

NON-NATIVES SPECIES—SOME PLANTS AND ANIMALS ARE OUT OF PLACE AT SHILOH

Eighty-eight species of non-native, invasive plants occur in the park; 16 have been singled out as posing the greatest threats to native species and ecological communities. These species are considered aggressive due to their ability to outcompete and replace native species.

Invasive plant management is a priority at Shiloh. The park recently partnered with the Southeast Exotic Plant Management Team, headquartered at Blue Ridge Parkway. In 2006, the team treated wisteria (*Wisteria frutescens*), Chinese privet (*Ligustrum sinense*), mimosa (*Albizia julibrissin*), crepe myrtle (*Hagerstroemia indica*), and Japanese honeysuckle (*Lonicera japonica*) at four separate locations in the park.

In addition to treating non-native plants, the park addresses concerns relating to nine-banded armadillos (*Dasypus novemcinctus*), feral dogs (*Canis familiaris*), and stinging fire ants (*Solenopsis wagneri*).

Nine-banded armadillo populations, first recorded in 1975, are increasing in the park. Sometime in the 19th century, populations of this animal began to move north from Mexico, through natural range expansion. The animals root and burrow, which has park managers concerned that they will disturb cultural landscapes and archaeological sites.

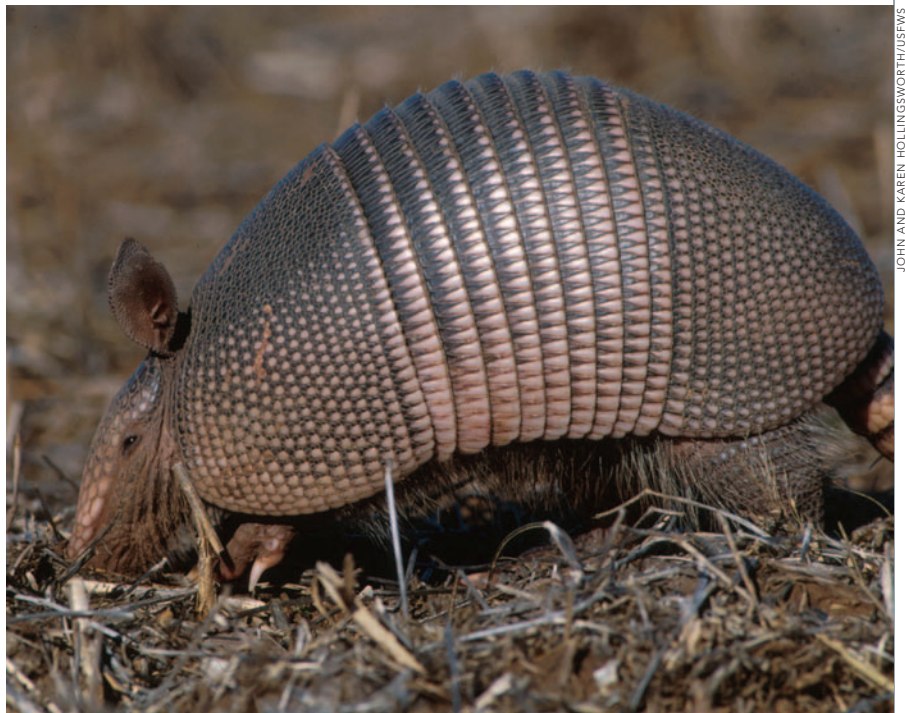
Staff routinely report both feral dogs and cats in the park. Feral dogs have been known to travel in packs that pose threats to park visitors and wildlife. Hardin County does not operate an animal shelter, so park staff adopt feral animals themselves or, if the animals pose a threat, the law enforcement rangers shoot individual animals or entire packs.

Stinging fire ants are considered a public safety concern and a possible threat to terrestrial wildlife in the park. The ants sting people, sometimes eliciting allergic reactions, and they can kill native ground-nesting birds and amphibians and reptiles. Fire ant populations

in high impact/heavily used visitor areas are treated with poison bait, but they are less easily controlled in the park's natural areas, where treatment is applied to nests located along roads and inside the open fields, particularly the edges, where this species prefers to build its habitations.

After Bloody Pond was pumped completely dry for maintenance in 1989, it was stocked with fish—yellow perch, bluegill (*Lepomis macrochirus*), dollar sunfish (*Lepomis marginatus*), largemouth bass (*Micropterus salmoides*), and grass carp or white amur (*Tenopharyngodon idella*)—to consume aquatic vegetation and pond debris, and to control undesirable insects. Bluegills and sunfish were stocked specifically to control mosquito larvae; largemouth bass were stocked to control the sunfish population, and white amur were introduced to consume the vegetation in and around the perimeter of the pond. Yellow perch appear to have been in with the other stocked species. Biologists believe that the introduced fish species are negatively affecting the pond's amphibian population through predation. Eliminating all but the white amur could be a solution, as only the amur are important for their role in preventing the pond—an important cultural resource—from being overgrown by vegetation.

Nine-banded armadillos were first recorded at Shiloh in 1975. Park managers are concerned the animals could disturb cultural landscapes and archaeological sites by burrowing and rooting.



Permanent water bodies in the park, such as the Owl Creek wetlands and Bloody Pond (shown here), as well as the open water of the Tennessee River, provide important foraging habitat for bats.



NATIONAL PARK SERVICE

AIR AND WATER QUALITY—OZONE LEVELS PUT PLANTS AT RISK

The Park Service does not directly monitor air quality at Shiloh; instead, data from monitoring sites in other national parks that are part of the Park Service's 14-park Cumberland Piedmont Network, as well as data from other federal and state-operated sites, are used to extrapolate air quality at Shiloh. Regional air quality is also monitored under the Clean Air Status and Trends Network (CASTNet) and through the Interagency Monitoring of Protected Visual Environments (IMPROVE) program, both funded through the Environmental Protection Agency (EPA) and other agencies. According to analyses of data from these sources, long-term trends indicate pollution is decreasing and visibility is improving, although ozone remains an issue.

While relatively isolated from population centers, Shiloh is affected by emissions from a pulp and paper mill in nearby Counce, Tennessee. While emissions from the pulp mill are considered low and are no longer monitored by EPA, odor from the mill is sometimes noticeable in the park. Agricultural operations, motor vehicles, commercial shipping, and recreational boating in the region also contribute pollution to the airshed.

A study conducted by the Cumberland Piedmont Network in 2004 found that ozone levels at Shiloh put plants at high risk of leaf damage. Currently, 13 ozone-sensitive species occur in the park—six of these plants serve as bioindicators (species indicative of ecosystem health): redbud (*Cercis canadensis*), white ash (*Fraxinus americana*), tuliptree (*Liriodendron tulipifera*), American sycamore, black cherry (*Prunus serotina*), and American elder (*Sambucus canadensis*). Plants at Shiloh will be monitored for foliar ozone damage this year (2009), through the Cumberland Piedmont Network's Vital Signs Monitoring Program.

In addition to the Owl Creek watershed and Bloody Pond, water resources at Shiloh include

the Tennessee River on its eastern boundary (to low-water mark), and other smaller tributaries and streams, many of which are in excellent condition. Staff from the Cumberland Piedmont Network sampled water from 2004 to 2006 at eight sites in the park, as part of a long-term water-quality monitoring program. Water temperature, pH, specific conductance, dissolved oxygen, acid-neutralizing capacity, and fecal coliform (*E. coli*) tests were performed. The main parameter of concern was the low level of dissolved oxygen found at the Glover (Tilghman) Branch watershed. The dissolved oxygen at the Glover Branch site dropped below state standards on several occasions. While the exact causative agent has not been fully identified, researchers consider this to be a natural condition.

RESEARCH AND MONITORING—MANY SURVEYS UNDER WAY

Shiloh is one of 14 parks participating in the Cumberland Piedmont Network (CUPN) Vital Signs Monitoring Program. Ongoing CUPN studies at Shiloh include a vegetation classification and mapping survey, a wetland delineation study, and the creation of geo-referenced databases for mapping purposes. Future monitoring through the network is expected to provide information on vegetation communities, non-native plants, forest pests, and landscape dynamics. The University of Memphis and the University of Arkansas are conducting baseline research on macroinvertebrates and mycetozoans (slime molds). A report on the park's aquatic insects, conducted by the U.S. Geological Survey, will be completed in 2009. And through cooperation with the University of Memphis, a new mammal survey has been completed.



STEWARDSHIP CAPACITY

FUNDING AND STAFFING—SHORTFALLS HINDER RESOURCE PROTECTION

Stewardship capacity details how well equipped the Park Service is to protect the parks. The most significant factor affecting the park's ability to protect its resources is the funding a park receives from Congress. The operational budget for Shiloh National Military Park was \$2.19 million in fiscal year 2008, an increase of \$360,000 from 2007. While the park's budget has increased slightly each year, the park has grown in size and complexity with the acquisition of the Corinth unit, and budget increases

do not cover all costs. Important projects remain undone at Shiloh, due to funding shortfalls. A new orientation film and rehabilitation of the auditorium at the Shiloh Battlefield Visitor Center will cost an estimated \$750,000; \$2 million is required to construct a maintenance facility to support the Corinth unit. In addition, the park needs funds to acquire the remaining acreage authorized by Congress.

Because of staffing vacancies and shortfalls, current employees at Shiloh have taken on additional responsibilities to provide services and protect resources. Five of 15 permanent positions in the Interpretation and Resource Management Division, commonly referred to as

Volunteers dressed in period clothing teach park visitors about rural farm life during the Civil War era.



Costumed interpreters provide programs for park visitors. But with only seven permanent interpretation rangers, the park is unable to provide the same range of programs from September through May as it is able to provide with the help of seasonal staff from May through August.

the Ranger Division, are vacant. Four of the positions have been vacant for more than two years; one of them (the park historian) has been unfilled for seven years. In addition, the facility manager position was recently vacated due to a retirement and took six months to fill. During the time positions are vacant, remaining staff must take on additional duties. Recent vacancies in law enforcement resulted in the park's chief ranger being forced to work two separate two-month periods without any days off. At this time, only two of three law enforcement positions have been filled, and recent law enforce-

ment needs assessments indicate that Shiloh needs three additional full-time equivalent law enforcement positions to effectively protect visitors and resources.

Because they are saddled with other duties beyond interpretation, the staff of seven permanent interpretation rangers is able to meet the demand for special programs for school groups and history organizations from September through May, but is unable to give the general public the same range of day-to-day programs that are provided from May through August when temporary personnel beef up the interpretive division. The park needs an additional four full-time equivalent staff (two at each unit) to address this need.

The park has also identified the need for 2.4 full-time equivalent staff to care for and repair its thousands of monuments, markers, and cannons.

Recently, a new organizational format was approved for the park. It includes the addition of three supervisory personnel—one for law enforcement and two for interpretation (one each for the Shiloh and Corinth units). These new positions will lighten the supervisory responsibilities for the park's chief ranger, allowing him to focus on strategic planning and program management. Funds are needed to hire these approved positions.

PLANNING—KEY DOCUMENTS NEED REVISION

Several key management plans guide protection of resources at Shiloh; some of these are seriously out-of-date. Because of the recent legislation expanding the park to include land resources in Mississippi, updating plans is extremely important. Shiloh's general management plan (GMP) was written in 1981. The park has documented the need for a new plan, but must wait its turn on the Park Service-wide GMP priority schedule. Shiloh's resource management plan, last updated in 1999, describes the status of the park's natural, cultural, and historical

resources, discusses threats to its resources, and provides recommendations for corrective action. The Park Service is phasing out resource management plans in favor of resource stewardship strategies. The park is awaiting permission and funds to begin a resource stewardship strategy.

Shiloh's land protection plan (2002) is more current, and describes how the park intends to protect the resources within its authorized boundaries, laying out management priorities, needs, and means to acquire additional lands for this purpose.

The park's fire management plan (2003) outlines Shiloh's fire management activities. Shiloh's current fire policy calls for immediate fire suppression, but the park is considering limited use of prescribed fire as a management tool to reduce the risk of wildland fires and manage non-native and invasive species.

Finally, three workshops were held from

2002 to 2005 to explore the development of a long-range interpretive plan for Shiloh. The resulting plan has been completed and is undergoing final preparations for publication.

RESOURCE EDUCATION—MORE STAFF, NEW ORIENTATION FILM NEEDED

Interpretive staff at Shiloh present numerous formal interpretive walks, talks, and demonstrations throughout the year—intermittently from September through May (off-season), and daily from Memorial Day through mid-August. In addition, the park offers special events (22 in 2007), many involving group-sponsored living history programs and demonstrations depicting various aspects of Civil War history. In 2007, 833 formal interpretive programs were delivered to 33,609 visitors, both on-site and at other locations such as schools. Another 27,244 people were reached through informal interactions.

NATIONAL PARK SERVICE



Students gather next to an interpretive water feature at the Corinth Civil War Interpretive Center to participate in a ranger-led education program on the causes and consequences of the Civil War.

The Shiloh Battle story is the primary theme interpreted in the park. Subordinate themes include the Indian mounds story and the environmental story. Natural resources themes interpreted focus on birding, wildlife, and foliage.

Interpretation at the park is also carried out at the two visitor centers. The Corinth facility in Mississippi is a shining example of a modern National Park Service visitor center. It includes the Battle of Shiloh walk-in mini-theater, which offers a compelling audio-visual reenactment presentation of the two-day battle, which was actually filmed on the historic Tennessee battlefield. The walk-in Corinth mini-theater provides interpretation of the 1862 siege and battle of Corinth, told from a modern perspective that relates the story of the military events portrayed against a backdrop of modern views of the existing cultural resources (landscapes, buildings, etc.), with the use of historic photos, maps, and graphics. In addition to traditional exhibits, the Corinth center provides visitors with the opportunity to explore and learn more about the people of the region and the war events they experienced through the use of interactive multimedia programming. A commemorative courtyard with the thematic "Stream of American

Volunteers help park staff accomplish a host of projects. In 2007, 582 volunteers provided 7,364 service hours to the park.

History" water feature punctuates the stories told in the center exhibits, and provides visitors with the opportunity to reflect upon the importance of the Civil War and the significance that local events had on the history of the nation. The courtyard also provides a contemplative atmosphere for visitors to come to an understanding of the war's issues, consequences, meaning, and significance to their lives.

In contrast to the Corinth facility, the Shiloh Battlefield Visitor Center in Tennessee could use some improvements. For example, the educational film shown to visitors dates to 1956. A new film and rehabilitation of the auditorium would cost \$750,000. The park's long-range interpretive plan includes a proposal for renovating the existing visitor center or building a new visitor center at Shiloh.

EXTERNAL SUPPORT—VOLUNTEERS AND PARTNERS HELP PROTECT RESOURCES

For the past decade, Shiloh has been able to meet management goals through a steady and dedicated volunteer work force. Volunteers assist staff with interpretation, especially through living history programs. They also contribute hours on resources management projects (both natural and cultural), staff visitor service information stations, and assist with crowd and traffic control during special events. In 2007, 582 volunteers provided 7,364 service hours to the park. While the park does not employ a volunteer coordinator, the chief of interpretation and resources management has taken on this additional responsibility.

Strong partnerships with other agencies and organizations benefit the park. Eastern National, Friends of the Siege and Battle of Corinth, Friends of Shiloh Battlefield, the Tennessee Civil War Preservation Association, and the Civil War Preservation Trust are among the groups that have served enthusiastically as advocates for resource protection, contributing money, land, and volunteer services to Shiloh.

NATIONAL PARK SERVICE





CHICKAMAUGIA AND CHATTANOOGIA NATIONAL MILITARY PARK



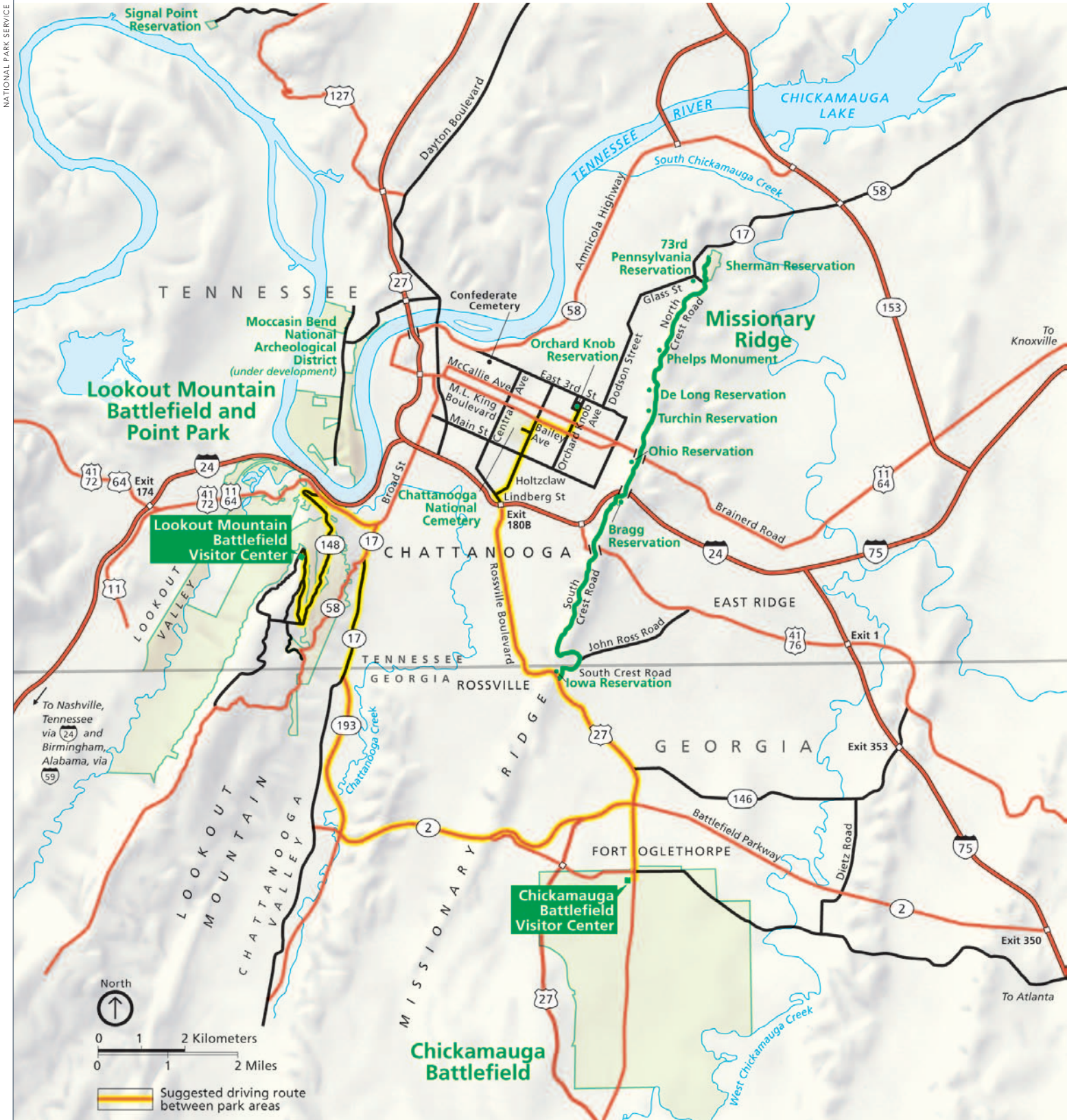
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REPORT SUMMARY

For two days in September 1863, a formidable piece of Georgia woodland became the site of the second-bloodiest battle of the American Civil War—the Battle of Chickamauga. Here, along Chickamauga Creek, Union and Confederate armies clashed over the possession of Chattanooga, a key rail center in nearby Tennessee and the gateway into the heart of the Confederacy. Thirty-four thousand men were

either killed or injured at Chickamauga, less than three months after the 43,000 casualties suffered at Gettysburg. Unlike the Gettysburg battle, the South claimed victory here and forced the retreat of Union soldiers. Just two months after the Battle of Chickamauga, however, Union forces claimed victories at nearby Missionary Ridge and Lookout Mountain in the Battles for Chattanooga, November 23–25, 1863. By successfully pushing the Confederates back into

Confederate forces prevailed at the Battle of Chickamauga, but Union forces claimed victories in the Battles for Chattanooga. Cannon tubes are on permanent display in the park to mark the locations of artillery batteries during the battles.



NATIONAL PARK SERVICE

Georgia, Federals ultimately won control of Chattanooga and nearly all of Tennessee. In the spring of 1864, Union General William Tecumseh Sherman used Chattanooga for his base as he set out on his famous march to Atlanta and the sea.

Chickamauga and Chattanooga National Military Park—established in 1890 and straddling two states, Georgia and Tennessee—is the nation’s oldest and largest military park. Among towering oaks, more than 600 monuments and markers invite visitors to pause and reflect on the costly battles waged here. In addition to cannons, monuments, and markers, the park’s historic cabins, living history program, and extensive museum collection all serve to transport visitors back in time.

The park also encompasses about 755 acres at Moccasin Bend National Archeological District. Located just across the Tennessee River from the Lookout Mountain section of the park, Moccasin Bend has been inhabited by people for at least 10,000 years.

Located in the lowest ranges of the Appalachian Valley, Chickamauga and Chattanooga National Military Park contains special biological and geological features, including rare cedar glades harboring sensitive ecosystems and karst geology that is responsible for the extensive cave system in the park— seen in the rock outcroppings of Lookout Mountain. Hundreds of animal species make their home in this park, from tiny salamanders to songbirds to deer. In spite of these rare and interesting natural resources, the park does not have any staff specifically dedicated to their care.

Managers are working to integrate the newly acquired landscape at Moccasin Bend, which was added in 2003, into the existing park. While interpretation on the battlefields is largely focused on the Civil War, new interpretive themes—those of aboriginal peoples and their lifeways—will need to be developed for Moccasin Bend. This area is replete with archaeological sites, but the park does not currently



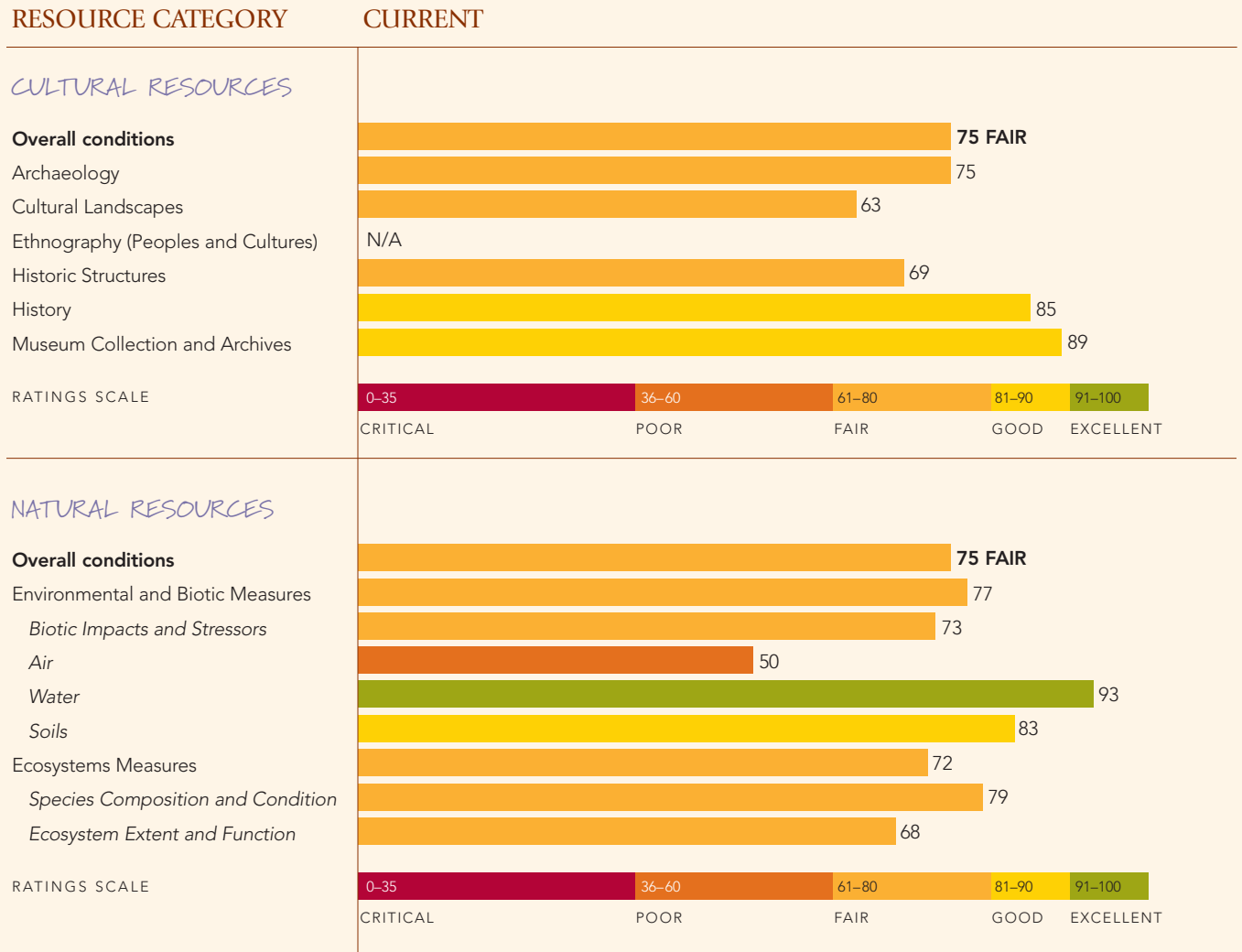
have an archaeologist on staff. Acquiring funding to support a full-time archaeologist is necessary to ensure these resources receive the care they require.

Both human and natural forces threaten the resources of Chickamauga and Chattanooga National Military Park: vandals deface monuments; monuments and historic structures are vulnerable to weather and overgrown vegetation; and non-native plants quickly spread at the expense of native species.

Nearly a million people visit Chickamauga and Chattanooga every year, making it one of the most popular parks in the National Park System. Current funding for the park is not sufficient for the protection and management of its resources. Additional staff are needed, especially for resource management, law enforcement, and interpretation at Moccasin Bend.

Monuments throughout the park commemorate the soldiers from various states who fought at the Battles of Chickamauga and Chattanooga. These historic structures are vulnerable to damage from exposure to the elements, as well as damage from vandals. A few monuments have even been involved in motor vehicle accidents.

Note: When interpreting the scores for resource conditions, recognize that critical information upon which the ratings are based is not always available. This limits data interpretation to some extent. For Chickamauga and Chattanooga, 100 percent of the cultural resources information was available and 61 percent of the natural resources information was available.



The findings in this report do not necessarily reflect past or current park management. Many factors that affect resource conditions are a result of both human and natural influences over long periods of time, in many cases before a park was established. The intent of the Center for State of the Parks is not to evaluate Park Service staff performance, but to document the present status of park resources and determine which actions can be taken to protect them into the future.

RATINGS

Overall conditions of the park's known **cultural resources** rated 75 out of a possible 100, indicating "fair" conditions. The scores for cultural resources are based on the results of indicator questions that reflect the National Park Service's own *Cultural Resource Management Guideline* and other policies related to cultural and historical resources. Chickamauga and Chattanooga's cultural resources warrant further documentation, including a cultural landscape report and a historic resource study for Moccasin Bend, and cultural landscape reports for Lookout Mountain and Missionary Ridge.

Current overall conditions of the known **natural resources** in Chickamauga and Chattanooga National Military Park also rated a "fair" score of 75 out of 100. Ratings were assigned through an evaluation of park research and monitoring data using NPCA's Center for State of the Parks comprehensive assessment methodology (see "Appendix"). Non-native plant species are a significant threat to ecosystems in the park, as they compete with native species for resources. In addition, air quality is poor—sensitive plant species are vulnerable to high ozone levels and scenic views are often obscured by haze.

LAND USE HISTORY AND PARK ESTABLISHMENT

For at least 10,000 years, human beings have lived on and farmed the fertile land known as the Tennessee Valley. Two American Indian tribes, the Koasati and the Tuskegee, once inhabited areas now included within Chickamauga and Chattanooga National Military Park. Eventually, some members of the Koasati migrated south; still others joined the Creek tribe and moved west when France ceded its lands to Great Britain in 1763. Little is known about the Tuskegee, who are thought to have been absorbed into the predominant tribe of the region, the Cherokees.

Cherokee tribesmen played a major role in

early Indian-European regional trade. One group of Cherokees—who called themselves Chickamauga—fought on the side of the British during the Revolutionary War. The Chickamauga settled on Lookout Mountain as they fought against colonial Americans and, at times, their own people. After the Revolutionary War, the Chickamauga were forced out of the area and their villages were destroyed.

Euro-American expansion into the Tennessee-Georgia hinterland grew rapidly following the War of 1812. An influx of farmers, who claimed lands formerly held by native peoples, settled along the Tennessee River. Corn, cotton, and other cash crops were cultivated, as were peach, pear, and apple orchards. Immigration increased during the 1820s and '30s, as demand for farm products grew. In the late 1830s, under Andrew Jackson's administration, the remaining Cherokee in the southeastern United States were forcibly relocated by the government under the Indian Removal Act of 1830. The Trail of Tears refers to the forced relocation of the Cherokee Nation from their lands in Georgia to the Indian Territory (present-day Oklahoma) in the Western United States. Thousands perished during the journey and as a result of the relocation.

With Indians forcibly removed, more Euro-Americans settled the region. By 1860, Chattanooga and Atlanta had become thriving cities with significant commercial influence. At the onset of the Civil War, Chattanooga—with a modest population of only 2,500—served as the principal Southern rail hub.

In September and November of 1863, the region became important in the Civil War's Western Theater. The Battle of Chickamauga and the Battles for Chattanooga were fought on the lands that now are partially encompassed by Chickamauga and Chattanooga National Military Park. Immediately after establishment of the park in 1890, efforts were begun to restore the landscape to 1863 conditions.

Until 1933, when it was transferred to the

RESOURCE MANAGEMENT HIGHLIGHTS

- **Battlefield landscapes rehabilitated.** In 2007, five acres of woods between the Kelly Farm and Battle Line Road were rehabilitated. Crews removed non-native plants, dead trees, and other unwanted vegetation.
- **Minnesota Monuments restored.** Four monuments commemorating Minnesota soldiers, erected on the Chickamauga Battlefield in 1893 and 1894, were restored in 2007. Bronze state seals had been stolen from the monuments. The seals were recast and installed.
- **“March for the Park” a continued success.** March for the Park, an annual 3-mile walk through Chickamauga and Chattanooga National Military Park, raises money to recast missing historic tablets that serve as interpretive markers on the battlefields. Students from Graysville and West Side Elementary Schools raised about \$3,000 for tablet restoration in 2008.
- **New general management plan in progress.** To guide natural and cultural resource protection at Chickamauga and Chattanooga, the park is in the process of developing a new general management plan. This plan is especially necessary

Elementary school students participating in the annual “March for the Parks” raised about \$3,000 for the park in 2008.

given the addition of Moccasin Bend in 2003, which brings unique archaeological and ethnographical needs. An archaeological overview and assessment for Moccasin Bend was recently completed.

- **Historic battlefield acquired.** In April 2008, 382 acres of historic battlefield near Lookout Mountain were added to Chickamauga and Chattanooga National Military Park. The land, acquired from the CSX Railroad Company, is the site of Union advancement to drive out Confederates from the mountain on November 24, 1863. Federal funding for the acquisition was secured through the efforts of Sen. Lamar Alexander (R-TN) and Rep. Zachary Wamp (R-TN). Assistance from The Trust for Public Land, a national private nonprofit conservation organization, was instrumental in the land acquisition and transfer process.
- **Natural resources inventories and monitoring completed.** Chickamauga and Chattanooga National Military Park does not have any staff specifically dedicated to the care of natural resources, but the park has worked with the Cumberland Piedmont Network of the National Park Service’s Inventory and Monitoring Program to complete park species inventories for fish, reptiles, amphibians, birds, mammals and vascular plants. In addition, baseline water-quality monitoring and air-quality monitoring have also been completed, and so have an inventory of wetlands and a vegetation map. Future monitoring through the network is expected to provide additional information on vegetation communities, as well as information on non-native plants, forest pests, and landscape dynamics.

NATIONAL PARK SERVICE





Costumed re-enactors present a program as part of a ceremony celebrating the recent acquisition of 382 acres near Lookout Mountain. The importance of permanently protecting additional battlegrounds as part of the park is underscored by the views of encroaching development that can be seen in the background.

Department of the Interior (under the National Park Service), the park was administered by the War Department, which used the Chickamauga Battlefield as an encampment and training ground from the onset of the Spanish-American War in 1898 through World War I. More than 72,000 troops camped and trained on the Chickamauga Battlefield during the Spanish-American War. Trees were cut for firewood, grassy areas were denuded by grazing horses, and landscapes were altered for building construction. Even after its transfer into Park Service hands, the Chickamauga Battlefield was used for military purposes up to and during World War II, when 50,000 Women's Army Corps (WAC) soldiers were trained there, marking the first time women were officially allowed to join the ranks of the U.S. Army. In 1947, all military activity in the park was suspended.

Today, areas surrounding most of Chickamauga and Chattanooga National Military Park compose the bedroom communities of Chattanooga and possibly even Atlanta

(though it is more than 100 miles away). To the southeast of Chickamauga Battlefield, agricultural lands create a buffer zone along the park border. To the west, the Route 27 Bypass skirts the battlefield; previously Route 27 had bisected it. Directly north is historic Fort Oglethorpe, formerly an army post. It was closed after World War II, and the lands were sold and are now a residential area.

Suburban sprawl is encroaching on the Chickamauga Battlefield area where buffers do not exist—strip malls and housing developments have sprung up just outside the park. The Lookout Mountain unit is located in a mix of tourist attractions and single-family homes, minimally buffered by the Reflection Riding Botanical Area, Chattanooga Nature Center, and Lookout Creek to the west. The small units on Missionary Ridge and at Orchard Knob exist as tiny islands of protected land within populated neighborhoods, while Moccasin Bend shares its peninsula with a mental hospital, a golf course, and a water treatment plant.

FOUR PARK AREAS ENCOMPASS IMPORTANT HISTORIC AND PREHISTORIC FEATURES

Like the campaigns whose battles are commemorated there, Chickamauga and Chattanooga National Military Park covers land in two states—southeastern Tennessee and northern Georgia. The 8,932-acre park comprises 18 units in four distinct areas, separated from one another by urban and suburban development: Chickamauga Battlefield (Georgia); Lookout Mountain Battlefield and Point Park (Tennessee); Missionary Ridge, Crest Road, and Reservations (primarily Tennessee); and Moccasin Bend National Archeological District (Tennessee) (see the map on page 92).

Chickamauga Battlefield. The Chickamauga Battlefield includes the Union and Confederate battle lines of September 19–20, 1863. A visitor center located at the northern part of the battlefield houses a museum, interpretive exhibits, and an extensive Civil War library. There is a 7-mile auto tour loop with eight stops that help interpret the battle.

Lookout Mountain Battlefield and Point Park. Located to the northwest of the Chickamauga Battlefield, this part of the park, along with the rest of the portion of the park located in Tennessee, lies in what is now the Chattanooga metropolitan area.

At 2,100 feet in elevation, Point Park features expansive views of the Tennessee River Valley below and includes the newly renovated Lookout Mountain Battlefield Visitor Center, the Ochs Museum, and a bookstore. The main hiking trail leading to Cravens House begins near the museum. Cravens House was used by Confederate forces as headquarters for their fortifications on Lookout Mountain until they were pushed out on November 24 during The Battle Above The Clouds. Private homes and tourist attractions unrelated to the battle bring additional traffic to the mountain.

In April 2008, 382 acres of historic battlefield acquired from the CSX Railroad Company were added to Chickamauga and Chattanooga National Military Park. The

In 2008 the Lookout Mountain Visitor Center was renovated with new and improved exhibits.



land, located in Lookout Valley west of Lookout Mountain, is the site of Union troop advancement to drive Confederates from Lookout Mountain.

Missionary Ridge, Crest Road, and Reservations. Areas related to the first and third parts of the Chattanooga battle—the Union capture of Orchard Knob (November 23, 1863) and the subsequent charge up Missionary Ridge (November 25, 1863)—are more difficult to visit than the Chickamauga Battlefield and Lookout Mountain; no large areas have been preserved. Missionary Ridge is essentially a 20-mile, 400-foot high land barrier situated to the east of the city of Chattanooga. What remains of the Missionary Ridge battlefield are nine “reservations”—small parcels of parkland surrounded by residential neighborhoods. The seven-mile battle line can be visited via the two-lane Crest Road, which begins in the south at the Iowa Reservation and ends at the Sherman Reservation. Crest Road is heavily trafficked and some city driving is necessary to reach the area. Monuments and historical markers dot both sides of Crest Road, and in some cases, monuments and cannons are located in residential front yards.

Moccasin Bend. While most of Moccasin Bend holds no Civil War significance (though it does contain Union earthworks used during the siege of Chattanooga), the area has a 10,000-year history of human habitation and contains tribal burial grounds and archaeological ruins. The acquisition of Moccasin Bend represents an exciting new addition to the park, but its significance lies well outside of the Civil War-related interpretive themes currently in place. Moccasin Bend will need a visitor center and additional staff before it can be fully opened to the public; funds are needed for both the visitor center and staff.



The park preserves 256 historic cannon tubes.

CHICKAMAUGA AND CHATTANOOGA NATIONAL MILITARY PARK AT A GLANCE

- **Moccasin Bend National Archeological District:** Located across the Tennessee River just north of Lookout Mountain, Moccasin Bend contains traces of settlements from 10,000 years of human habitation. This 755-acre expanse also includes part of the Trail of Tears National Historic Trail and Union earthworks (soil fortification) used during the Battles for Chattanooga.
- **Karst geology:** The Chickamauga and Chattanooga area is famous for its karst geology, which accounts for unique and beautiful cave systems in and around Lookout Mountain. The process of karst—mineral dissolution and deposition—creates stalagmites and stalactites in these caves.
- **Rare firearm collection:** The park houses the Claud E. and Zenada O. Fuller Collection of American Military Shoulder Arms—an extensive array of antique firearms spanning the American colonial period to the Spanish-American War. Highlights of the collection include several rare and unique items, such as the Harpers Ferry Blunderbuss, manufactured in 1808, and the Texas Rifle (ca. 1844).

KEY FINDINGS

- Considering the historical importance of the grounds within Chickamauga and Chattanooga National Military Park, more cultural resource studies are warranted. Important work needed includes a cultural landscape report and a historic resource study for Moccasin Bend, and cultural landscape reports for Lookout Mountain and Missionary Ridge.
- Historical interpretation at the park focuses on the significance of the battles of Chickamauga and Chattanooga; the scope must now be expanded to include Moccasin Bend National Archeological District. This will require the park to train permanent and seasonal rangers in American Indian culture and history. In addition, the park may need to hire a full-time archaeologist or anthropologist to document and interpret archaeological sites, which have increased with the addition of Moccasin Bend.
- The park contains hundreds of historic structures, including monuments, markers, plaques, and buildings, yet it lacks a preservation crew to maintain

Currently, the park does not have a professional preservation crew with the skills needed to care for hundreds of historic monuments and markers.



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these irreplaceable resources. Historic structures in the park are susceptible to threats such as bronze leaching, damage from dead trees, and overgrown vegetation.

- The Chickamauga and Chattanooga museum and archival collections contain original battle-era documents, fragile maps and photographs, and a historic firearms collection. Items are well protected in climate-controlled storage space at the Chickamauga Battlefield Visitor Center, where many are also displayed in interpretive exhibits at the visitor center museum. An updated physical inventory of the entire collection is warranted; the previous physical inventory was completed in 1992.
- Before the acquisition of Moccasin Bend, the park did not consider ethnography to be a significant aspect of its overall cultural resources program. Now that the park includes an area with significant importance to associated American Indian groups, ethnographic resources will figure more prominently in the cultural resources program. An ethnographic overview and assessment and an ethnographic landscape study are both needed to inform management of the park's ethnographic resources, but both are on hold until funding is secured.
- Although a historical park, Chickamauga and Chattanooga is also tasked with the protection of biological diversity and unique geology. Non-native plant species such as Chinese privet and kudzu threaten ecosystems as they aggressively compete with native plants for water, nutrients, sunlight, and space. Mowing of park fields has raised issues regarding ecosystem health—alternative mowing regimes must be considered to increase



Some parts of the park, such as the Orchard Knob reservation shown here, are tiny islands of protected land within neighborhoods.

habitat for wildlife and restore fields to a more natural condition. A vegetation management plan, which would address forest issues, mowing, and pasture/field practices, is needed for managers and maintenance staff, for the protection of both natural and cultural resources. In addition, the scattered nature of the park units makes management of ecosystems on a landscape level difficult.

- To gain a comprehensive understanding of park ecology, further study is needed. With the recent addition of Moccasin Bend, inventories, surveys, and monitoring are needed to provide initial data on natural resources. The majority of research conducted at the park so far has established baseline data for communities and populations of species. With baselines established, regular monitoring of Chickamauga and Chattanooga's species and habitats (including caves) is vital to note ecological changes and allow the park to adjust its management practices accordingly.
- The areas surrounding the park are becoming more developed as they fill with bedroom communities for Chattanooga and possibly even Atlanta. The park is keenly interested in maintaining nonurbanized areas as buffers to their borders. Unfortunately, suburban sprawl is encroaching and there are strip malls and housing developments just outside the park. The Lookout Mountain portion of the park is near tourist attractions and single-family homes. Other portions of the park are considered parts of the Chattanooga urban area—small units such as those on Missionary Ridge and Orchard Knob are actually tiny islands of protected land within neighborhoods.



THE CHICKAMAUGA AND CHATTANOOGA NATIONAL MILITARY PARK ASSESSMENT

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The Snodgrass Cabin, pictured here, was located in an area that saw some of the fiercest fighting of the Battle of Chickamauga. By the time the battle began, the Snodgrass family had abandoned their cabin and sought refuge elsewhere.

CULTURAL RESOURCES— ADDITIONAL STAFF AND FUNDING ESSENTIAL TO PROTECTION OF BATTLEFIELDS AND ARCHAEOLOGICAL SITES

Chickamauga and Chattanooga National Military Park scored an overall 75 out of 100 for the condition of cultural resources that include archaeology, cultural landscapes, history,

historic structures, and museum collection and archives. This score indicates that the resources are in “fair” condition.

Cultural resources at Chickamauga and Chattanooga include hundreds of monuments and markers on the battlefields, historic cannon tubes, an antique firearms collection, and reconstructed (post-war) cabins. The newly acquired Moccasin Bend section of the park is replete with archaeological sites.

Cultural landscape reports are needed for Moccasin Bend, Lookout Mountain, and Missionary Ridge; at this time, only the Chickamauga Battlefield unit has been assessed via a cultural landscape report, which is vital to directing park management and preventing the loss of significant landscape features. Weather, overgrown vegetation, and vandals threaten historic structures. Funding for a permanent preservation crew and a full-time archaeologist is needed.

HISTORY—CIVIL WAR CAMPAIGN AND COMMEMORATION PERIOD WELL DOCUMENTED

The history and significance of Chickamauga and Chattanooga National Military Park have been well documented. A historic resource study—intended to identify and evaluate cultural resources within a historic context—was completed in 1999 and encompasses the Chickamauga, Chattanooga, and Lookout Mountain areas of the park. This study was completed before the acquisition of Moccasin Bend, so a separate study for the district should be conducted to identify the need for any additional special history studies and make recommendations for resource management and interpretation.

The park's administrative history, completed in 1983, documents the establishment of the park in 1890 and its significance as the country's first national military park. It also covers the commemorative period of the park, when veteran groups from both the North and the South erected monuments on its grounds. Park staff recognize the need for an updated administrative history, especially to document the addition of Moccasin Bend National Archeological District, but this is considered a lower priority project and requests for additional funding have been denied.

In addition to the historic resource study and administrative history, interpretive rangers have access to an extensive research library at the

Chickamauga Battlefield, which they turn to frequently for reference.

Because the park is composed primarily of preserved battlefields, the military campaigns of 1863 at Chickamauga and Chattanooga have been the focus of historical interpretation. Themes include the role of Chattanooga as a strategic transportation hub and the political climate of the Chattanooga region as a microcosm of the United States in the mid-19th century. Interpretation begins with the individual battles and expands to illustrate how the battles fit into the larger picture of Civil War history. Major points in the Battle of Chickamauga are covered in a self-guided auto tour, and tours led by park rangers are also available. During the summer months, the park offers a living history program on the life of the common Civil War soldier. Independent living history groups are also invited to set up encampments and educate visitors on the lives of soldiers.

The commemorative period that began after the park was founded is interpreted through exhibits at the Chickamauga Battlefield Visitor Center. In addition, historical interpretation in the park was recently expanded with the acquisition of Moccasin Bend National Archeological District, which preserves nationally significant American Indian cultural features, including a portion of the Trail of Tears.

Chickamauga and Chattanooga National Military Park employs a full-time historian who conducts historical research, guides interpretation of historical themes, and oversees park tours led by seasonal and permanent rangers. In addition to Civil War themes, rangers are being trained in interpretive themes for Moccasin Bend. The park plans to begin offering some interpretive programs at Moccasin Bend in summer 2009.

ARCHAEOLOGY—MOCCASIN BEND ADDS SIGNIFICANTLY TO RESOURCES

Until recently, archaeology was not a primary focus for park managers at Chickamauga and Chattanooga National Military Park, but with the addition of Moccasin Bend National Archeological District, it has become one. The Battle of Chickamauga was fought on farmland in the area of Chickamauga Creek, on properties owned by various families whose names still denote parts of the battlefield: Dyer Field, Brotherton Cabin, Kelly House, Snodgrass Hill, and others. The entire battlefield at Chickamauga is listed as one archaeological site, and all the sites within it are listed in the National Register of Historic Places under this umbrella nomination. (The Cravens House on Lookout Mountain is the only historic structure at the Chattanooga Battlefield that could be considered an archaeological site and is included in the listing.)

Other significant sites within the Chickamauga unit include the Cave Spring rockshelter (a cave formed by a ledge of overhanging rock), which is the only prehistoric site (not including Moccasin Bend) within the park; the Horseshoe Ridge zone, one of the most bitterly contested areas of the battlefield; Hoods Trench, believed to be built by the Confederate troops of Colonel John H. Kelly and used as a shelter from military bombardment; other Civil War-era trenches; Bloody Pond, a significant battle site; and finally, all sites of historic houses, whether standing or destroyed. It is believed that these historic sites, and the sites of their associated outbuildings, wells, privies, cooking and work areas, trash disposal areas, and so on, are of archaeological value, as are unnamed sinkholes believed to contain items disposed of during the Spanish-American War.

According to a survey completed in 2006, 109 of the park's 115 identified archaeological sites (not including those in Moccasin Bend) are reported in "good" condition; the remainder are in "fair" or "unknown" condition. The park

has requested funding for updates to determine current site conditions.

The new centerpiece of archaeology at Chickamauga and Chattanooga National Military Park is Moccasin Bend, a natural oxbow formed by the curve of the Tennessee River at the base of the Cumberland Mountains. Designated as a national archeological district in 1986, Moccasin Bend contains valuable cultural resources pertaining to human history in the region, covering themes such as Woodland Period (300 B.C. to A.D. 900) settlement (sites and burial mounds); fortified proto-historic (just before recorded history) villages; Spanish exploration and settlement of the southeastern United States; and contact between native and non-native peoples. The area includes a part of the Trail of Tears National Historic Trail and Union earthworks (soil ramparts) used during the siege of Chattanooga.

Park management began to address Moccasin Bend's archaeological needs by completing an archaeological overview and assessment in late 2007. This document describes and evaluates known and potential archaeological resources at Moccasin Bend and identifies what additional work is needed to locate, evaluate, and document resources. (An archaeological overview and assessment for Chickamauga and Chattanooga was completed in 1987.)

Threats to archaeological resources at Moccasin Bend include unstable shorelines that result in erosion. Forest vegetation also jeopardizes archaeological sites: Tree roots have overgrown tribal burial mounds and could potentially penetrate and churn soil, compromising the integrity of the land as an archaeological resource. The park needs to complete a cultural landscape report before determining how to address the trees.

Prior to acquiring Moccasin Bend, interpretation of the park's historical (Civil War-era) significance did not include consideration of archaeological resources. As such, the park does



On September 20, 1863, Confederate soldiers marched past Brotherton Cabin on their way to exploit a gap in the Union line. Tom Brotherton served as a scout and helped the Confederates maneuver through the dense forest.

not employ a full-time archaeologist, but relies on the Park Service's Southeast Archeological Center for its archaeological needs. A full-time archaeologist, as well as additional managers, law enforcement officers, and interpretive staff would allow the park to adequately service Moccasin Bend. At current budget levels, however, there are no funds for these positions.

HISTORIC STRUCTURES—MONUMENTS, MARKERS, CABINS, AND CANNONS MEMORIALIZE BATTLES

Chickamauga and Chattanooga National Military Park is home to more than 750 historic structures. They include some buildings, but the majority are monuments and markers erected on the battlefields. The park is in the process of updating its list of classified structures—a database of all prehistoric and historic structures—to include all structures. None of the park's

historic structures have been documented through historic structure reports; however, a historic structure report is planned for Cravens House on Lookout Mountain, but it cannot be undertaken until funding is provided.

Four of the main historic buildings in the park are houses that were destroyed during the Battle of Chickamauga and the Battles for Chattanooga, but were rebuilt shortly thereafter, on their original locations and to their original specifications. These structures include the Kelly House, Snodgrass Cabin, and Brotherton Cabin on the Chickamauga Battlefield and the Cravens House on Lookout Mountain in Chattanooga. All three houses on the Chickamauga Battlefield are unfurnished and empty inside; Cravens House is furnished with period furniture and objects, and is open to the public from June through August.

The cabins and houses in the park are impor-

General Rosecrans used the Kelly House, pictured here, as a landmark as he moved his Union forces north to extend his line toward Chattanooga on September 18 and 19, 1863.



NATIONAL PARK SERVICE

tant to interpretation of the Battle of Chickamauga and the Battles for Chattanooga. When Lieutenant General James Longstreet launched his attack on September 20, Confederate soldiers marched past Brotherton Cabin, a simple log structure with a stone chimney and a wood shake roof, on their way to exploiting a gap in the Union line. The Brotherton family also played a role in the battle: Tom Brotherton, who had grown up on the farm and had left to enlist in the Confederate Army, was employed as a scout by Longstreet and served with distinction by helping the Confederates maneuver through the dense forest.

The Snodgrass Cabin was located in an area that saw some of the fiercest fighting of the Battle of Chickamauga. Once Longstreet had passed Brotherton Cabin and sent the Union army into full retreat, the last Union elements still on the field—under General George H.

Thomas—made their stand on Horseshoe Ridge at the Snodgrass farm, taking up positions on Snodgrass Hill and Snodgrass Ridge. By the time the battle began, the Snodgrass family, along with others in the region, had abandoned their cabin and sought refuge elsewhere.

The Kelly House, built by Elisha Kelly prior to the Civil War, was also an important location in the Battle of Chickamauga. General Rosecrans used this cabin as a landmark as he moved his Union forces north to extend his line toward Chattanooga on September 18 and 19, 1863.

The Cravens House was built as a summer retreat by leading industrialist Robert Cravens, who purchased the land for his home and orchard on Lookout Mountain in 1854. After the Battle of Chickamauga, Confederate troops occupied Lookout Mountain and built defenses on Cravens's land, yet the family remained in their house until mid-November before fleeing for safer ground. Although the

home sustained only minor damage during combat, it was later destroyed by Union soldiers in a drunken brawl. Finding only the stone foundation standing after the fighting, Cravens rebuilt the house and remained on the mountain until his death in 1886.

After the war ended, veterans from both sides of the conflict gathered at Chickamauga and Chattanooga to reflect on the 1863 battles and the actions of their regiments. After the park was established in 1890, the War Department urged governors of states whose troops served at Chickamauga and Chattanooga to appoint commissions to aid in the location of battle lines in the park, in order to erect monuments to the contributions of their soldiers. The monuments—some intricate and ornate, others more subdued—are considered historic structures and are part of the interpretation of the commemorative period of the military park.

Besides the monuments to troops that fought, numerous tablets were erected at Chickamauga and Chattanooga to inform visitors of military movements and mark the battle lines for further study. Two hundred iron tablets were commissioned after passage of park legislation, each measuring four feet by three feet and featuring raised white lettering on a black background. The tablets represented locations of army headquarters, corps, divisions, and brigades, and each bore either a “U” for Union, or a “C” for Confederate in the upper right corner. In addition to markers that interpreted the battle, distance markers and locality tablets were placed at crossroads and prominent battlefield landmarks, to further orient visitors. Today approximately 700 of these tablets exist throughout the park.

In addition to markers and tablets outlining battle positions, cannon tubes are on permanent display to mark the locations of artillery batteries during the Battle of Chickamauga and the siege of Chattanooga. All of the 256 cannon tubes are cataloged in the park’s museum collection.

Most monuments and markers in the park are in “fair” to “good” condition, though they are vulnerable to various natural and human-caused threats. Exposure to the elements wears away stone structures, while limestone monuments with bronze plaques are prone to staining: Bronze oxidizes and absorbs into the limestone, leaving a permanent mark. In some cases, tannic acid from overhanging trees stains monuments below. Falling trees can also damage monuments and markers. In addition to damage from natural sources, the park’s historic structures suffer from the actions of vandals who graffiti them or steal bronze portions of the structures. Some have also been hit and damaged by motorists traveling through the park.

Current high-priority historic structure projects include the preservation and rehabilitation of Cravens House, which would be facilitated by a historic structure report once funds are received to complete this work. The park would also like to implement a plan to preserve veteran-placed monuments, but funds are needed to do this work.

Although Chickamauga and Chattanooga National Military Park is entrusted with the care of hundreds of historic structures, the park lacks a preservation crew to regularly maintain, repair, and inspect these irreplaceable resources. Currently, monuments and markers are cleaned once every five years (or every three years, for markers and monuments located on tour routes), the park’s cultural resource manager annually inspects structures on the list of classified structures, and the park’s deferred maintenance—part of which is related to work on historic structures—tops \$12 million. Hiring a skilled preservation crew (ideally, a chief of operations, a mason, a welder/fabricator, a painter, and three laborers) would allow the park to provide enhanced care for historic structures and begin to address the backlog of deferred maintenance.

CULTURAL LANDSCAPES—IMPORTANT REPORTS NEEDED

Cultural landscapes encompass natural and human-made features, illustrating the ways people have altered and adapted to their surroundings through time. Park managers have identified 21 separate cultural landscapes at Chickamauga and Chattanooga; all are listed in the National Register of Historic Places under the umbrella nomination that encompasses the park as a whole. Of the 21 cultural landscapes in the park, only nine are listed in “good” condition, according to the Park Service’s Performance Measure Database System. One of the park’s main landscapes, the Chickamauga Battlefield, has been divided into several smaller component cultural landscapes, which are composed of the locations of farmsteads that existed in the area at the time of the battle. These component landscapes need to be added to the park’s cultural landscape inventory, as does the landscape at Moccasin Bend.

Up-to-date cultural landscape research includes a cultural landscape report for the Chickamauga Battlefield, completed in 2004, which park managers use to identify and develop specific projects to improve the battlefield’s component landscapes. Park staff have requested funds to complete a cultural landscape report for Moccasin Bend. Similar reports for the Chattanooga Battlefield units at Lookout Mountain and Missionary Ridge are also needed, but funding has not been allocated.

The integrity of the cultural landscapes at Chickamauga and Chattanooga is closely tied to management of the natural landscape. At the time of the siege of Chattanooga, Lookout Mountain was only lightly forested, but today the forests here are so dense that they obscure views from the summit at Point Park. In addition to dense forests, park managers must contend with non-native plants—primarily Chinese privet (*Ligustrum sinense*) and kudzu (*Pueraria montana*)—that overtake native vegeta-

Non-native Chinese privet has the capacity to overtake areas, changing the forest structure and obscuring important features. Here the park is removing privet from a section of forest. See the results on the next page.



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Removing non-native privet helps restore cultural landscapes to their battle-day appearance.

tion and obstruct monuments, buildings, and land features. The park needs a vegetation management plan that includes forest management, mowing, non-native species, and pasture/field management to preserve cultural landscapes in the park.

Because preserving the park's cultural landscapes is integral to communicating the historic events that transpired there, Chickamauga and Chattanooga would greatly benefit from the expertise of a cultural landscape architect. In an effort to economize, managers have suggested that a cultural landscape architect be hired to serve three parks: Stones River National Battlefield, Georgia's Kennesaw Mountain National Battlefield Park, and Chickamauga and Chattanooga.

ETHNOGRAPHY (PEOPLE AND CULTURES)—ADDITION OF MOCCASIN BEND DRIVES NEW PROGRAM

No ethnographic studies have been conducted at Chickamauga and Chattanooga National Military Park. The limited ethnographic scope of interpretation—soldiers from two armies that clashed here between September and November 1863—made ethnography a low priority. Because of the lack of ethnographic information, the National Parks Conservation Association did not determine a score for ethnographic resources. With the addition of Moccasin Bend in 2003, a significant site for a number of American Indian groups, the park will begin implementing an ethnography program. Funding for an ethnographic overview and assessment, necessary to help establish ethnographic themes for park interpretation

ANN FROSCHAUER



The park's visitor center includes the Claud E. and Zenada O. Fuller Collection of American Military Shoulder Arms, an extensive array of antique firearms spanning from the American colonial period to the Spanish-American War.

and to guide protection of resources, needs to be secured before the work can commence. An ethnographic landscape study is also planned and is a high priority for park management, but it is also on hold until funding is allocated.

Close working relationships with the land's associated peoples are essential for developing the fledgling ethnography program at the park. Seventeen different tribes—including Shawnee, Chickasaw, Choctaw, Cherokee, and Creek—are affiliated with Moccasin Bend. Park managers will consult tribal representatives regularly, through annual meetings and less formal consultations as needed. Because a significant portion of the archaeological district is a burial ground and is considered sacred to associated peoples, free-flowing communication between the Park Service and tribes—regarding management practices, upcoming projects, and administrative decisions—is essential.

Currently, there is no cultural anthropologist on staff at Chickamauga and Chattanooga National Military Park, but given the acquisition of Moccasin Bend, the park may eventually create and fill this position.

MUSEUM COLLECTION AND ARCHIVES—BATTLEFIELD MUSEUM A HIGH POINT FOR VISITORS

Nearly 100,000 items compose the museum and archival collections at Chickamauga and Chattanooga National Military Park, many of which are exhibited at the museum at the Chickamauga Battlefield Visitor Center. For many, the Claud E. and Zenada O. Fuller Collection of American Military Shoulder Arms—an extensive array of antique firearms spanning from the American colonial period to the Spanish-American War—is the highlight of the visitor center. The Fuller gun collection includes several rare and unique items, such as the Harpers Ferry Blunderbuss, manufactured in 1808, and the Texas Rifle (ca. 1844); the park's specimens are the only ones known to exist today. The Jenks Rifle, the pattern for the Model 1840 Musket, the pattern for the Model 1817 Rifle, and the Sharps Carbine—with coffee mill built into the stock—are extremely rare. Other exhibits at the Chickamauga Battlefield Visitor Center include one describing the park's history as well as one that features a timeline of the Civil War and descriptions of how the war affected the Chattanooga region and eastern Tennessee. An artillery display is located outside the museum, showcasing cannons of the Civil War, while 256 historic cannon tubes are displayed on the battlefield itself.

At the Lookout Mountain Battlefield Visitor Center and Ochs Museum, located at Point Park in the Lookout Mountain unit, visitors can view the historic James Walker painting "The Battle Above The Clouds," a stunning work of art measuring 13 by 33 feet. The Ochs Museum is currently closed for repairs. Period furniture and artifacts are on display at the Cravens House on Lookout Mountain, which serves as a seasonal interpretive facility.

In addition to museum items, the park is entrusted with a substantial archive and manuscript collection that includes irreplaceable battle-era and park-development documents.

Fragile maps and original photographs are also part of the collection, housed on the second floor of the Chickamauga Battlefield Visitor Center. Overall, the collection is properly stored, although minor repairs to the storage area are needed to address inadequate insulation and the potential for water to leak through a false chimney. Space is the biggest issue for the archives—the archive storage areas are almost filled to capacity. The addition of Moccasin Bend is not expected to impact storage at Chickamauga, however, as a separate visitor center is planned for the archaeological district and would be used to house relevant archival objects.

Chickamauga and Chattanooga National Military Park employs a full-time museum curator who oversees the park's museum collection. Archival materials are readily accessible to researchers, who contact the curator to obtain permission for their use.

Of the 99,674 items in the museum and

archival collections, only 13,238 (13 percent) are backlogged, awaiting inclusion in the Automated National Catalog System. According to the last collection survey, compiled in 1993, 1,058 items are in "excellent" condition, while 43,980 are considered "good." "Fair" condition was assigned to 34,836 items, and 13,104 received a "poor" condition rating. Park staff realize the need to conduct an updated and comprehensive collection condition survey, but this work has not yet been scheduled due to funding constraints.

The park's collections management plan was last updated in 1994; park staff are working on a revised plan. A collections management report and a scope of collection statement also guide management of the museum and archival objects. The museum curator keeps the *Checklist for the Preservation and Protection of Museum Collections* up-to-date. As of 2007, all items were accounted for and 82 percent of the checklist standards were met.



Preserving James Walker's historic painting "The Battle Above the Clouds" is an important and time-consuming responsibility. Walker witnessed the battle fought on the north slope of Lookout Mountain and completed a rendition of the battle that measures 13 by 33 feet. This photo shows a professional art conservator filling a small crack in the painting.



At the Chickamauga Battlefield, forests account for most of the landscape, and indeed the densely wooded nature of the terrain was daunting to soldiers fighting here.

NATURAL RESOURCES— METROPOLITAN GREEN SPACES HARBOR RARE GLADES, CAVES, AND FORESTS

The assessment rated the overall condition of natural resources at Chickamauga and Chattanooga National Military Park a 75 out of 100, which ranks park resources in “fair” condition. Non-native plants are a major threat to ecosystem health, as these aggressive invaders outcompete native species for vital resources. Additionally, the park has never employed any natural resources staff. Air quality is poor; high ozone levels in the airshed of the park threaten

certain sensitive plant species and air pollution contributes to haze that often obscures panoramic views of the Tennessee River Valley at park overlooks.

PLANT LIFE IN THE PARK—FOUR DISTINCT AREAS HARBOR 33 COMMUNITIES

Forests, fields, and glades compose the major habitat types at Chickamauga and Chattanooga National Military Park. Within these broad categories, 33 different vegetative communities have been identified throughout the park. Six are considered globally rare. The majority of the park’s vegetative communities are natural, but

some have been modified by humans, while others are in an active successional phase, meaning that dominant plants groups will be naturally replaced by others as time passes.

One federally listed plant species occurs at Chickamauga and Chattanooga: the threatened large-flowered skullcap (*Scutellaria montana*). One population of this plant exists on Lookout Mountain. The park also houses (or is suspected to contain) 24 state-listed protected plant species.

Chickamauga Battlefield. At Chickamauga, mixed hardwood (deciduous) and conifer (evergreen) forests account for most of the landscape, and indeed the densely wooded nature of the terrain was daunting to soldiers fighting here. Oak communities, which account for much of the canopy in the mixed forest, include ten different species of oak. Chinquapin oak (*Quercus muehlenbergii*)/Shumard oak (*Quercus shumardii*) communities, considered globally rare, are widespread within the cedar glade systems on the battlefield.

A special rare assemblage of plants at Chickamauga Battlefield, classified as the Cumberland Plateau Willow Oak Pond Community, is associated with ponds created by the natural subsidence (sinking) of limestone terrain. Seasonal rains flood the willow oak-associated pond at Chickamauga Battlefield, providing vital spring breeding grounds for amphibians; in the latter part of the growing season it dries up. Another wet area on the battlefield, formed by a natural limesink (sinkhole), is used extensively by beavers (*Castor canadensis*).

Cedar glade communities are by far the most biologically significant communities in the park, and three specific glade types are found at Chickamauga Battlefield (see “Park Protects Rare Cedar Glades at Chickamauga Battlefield” on page 116). A recent park survey identified a total of 23 individual glades.

Ten percent of the land in the Chickamauga

Battlefield unit is made up of field communities—cultivated grasslands maintained to replicate the historic 1863 landscape. This includes more than 500 acres of hay fields leased out to local farmers and cut in early summer and fall. Park staff regularly maintain (mow) 20 acres of fields on the battlefield.

Lookout Mountain. Mixed hardwood forests cover most of the Lookout Mountain unit of Chickamauga and Chattanooga National Military Park. Species composition in these wooded areas varies depending on soil type, elevation, aspect, and geology, and includes several species of oaks, maples, grasses, sedges, lichens, and mosses.

Missionary Ridge. Because the park units on Missionary Ridge are small, fragmented, and embedded in a residential neighborhood, few natural plant assemblages exist. Native trees and shrubs include black cherry (*Prunus serotina*), willow oak (*Quercus phellos*), and red mulberry (*Morus rubra*). Groundcover comprises non-native plants, such as Japanese honeysuckle (*Lonicera japonica*) and Chinese privet, and the native poison ivy (*Toxicodendron radicans*).

Non-native Chinese privet has invaded much of the park. It is difficult to control, and it is regularly reintroduced into the park because neighboring landowners plant the species in their landscapes.



NATIONAL PARK SERVICE

Moccasin Bend. Two cultivated forest plantations exist at Moccasin Bend National Historic District. The first, a white pine plantation, has suffered mortality from disease and wind. Its canopy is primarily white pine (*Pinus strobus*), with lesser numbers of loblolly pine, tuliptree (*Liriodendron tulipifera*), and sweetgum (*Liquidambar styraciflua*). Non-native invasive plants are common here. The second cultivated forest is almost entirely dominated by Virginia pine (*Pinus virginiana*), with a sparse shrub layer. Non-native Japanese honeysuckle (*Lonicera japonica*) and Japanese stiltgrass (*Microstegium vimineum*) compose the meager herbaceous layer.

Japanese honeysuckle, an aggressive invasive non-native species, threatens the park's cultural landscape.

The forest community comprised largely of oaks and hickory is found where soils are sandy and well drained. A box elder (*Acer negundo*) floodplain forest exists on the historic floodplain of the Tennessee River at Moccasin Bend.

Canopy species are primarily box elder and sugarberry (*Celtis laevigata*).

Other areas are flooded on a regular basis at Moccasin Bend, allowing for the development of rich soils as water delivers nutrients via overflowing stream banks. Sycamore/silver maple forests are found in some floodplains in the archaeological district. These assemblages are dominated by silver maple (*Acer saccharinum*) and American sycamore (*Platanus occidentalis*), with a dense cover of spicebush (*Lindera benzoin*) dominating the shrub layer; non-native Chinese privet is also abundant.

VEGETATION MANAGEMENT— COMPREHENSIVE PLAN NEEDED TO ADDRESS RESOURCE PROTECTION

Historical accounts from the Civil War describe Chickamauga Battlefield primarily as woodlands interrupted by pastures, cultivated fields, and the home sites of 24 small farms. During the battle, heavy fighting damaged or destroyed much of the vegetation, and following the war, more land was cleared for farming, with cultivation continuing on present-day park lands until 1890. Today the park manages vegetation to replicate the historic conditions of 1863; thus, unlike most national military parks and battlefields, much of the park is kept forested. Parts of the park were reforested as early as 1901, when more than 1,000 trees and shrubs were planted primarily from seedlings grown in nurseries at the park. Again in 1905, 12,223 trees were planted, almost all of which were native species. Unfortunately, much of the forest restoration work was destroyed during Army occupation of the park, as described in the "Land Use History" section.

Various issues impact the health of ecosystems at Chickamauga and Chattanooga National Military Park and must be addressed in a comprehensive vegetation management plan. Following are challenges park staff face when managing vegetation:



WOUTER HAGENS



The Park Service's Southeast Exotic Plant Management Team regularly visits the park to help control non-native plants.

Diseases and Non-Native Plants and Pests. Of the 966 plant species found at Chickamauga and Chattanooga today, 159 are non-native, and 23 of these species pose a severe or significant threat to native species in the park because of their ability to outcompete and displace native species. The most aggressive species are Japanese honeysuckle, Chinese privet, Japanese stiltgrass, kudzu, and English ivy (*Hedera helix*). In addition to displacing native species, these invasive plants also threaten to alter the cultural landscape of the Chickamauga Battlefield.

Chinese privet, an evergreen shrub intentionally introduced to the battlefield as a landscaping hedge, is pervasive in all parts of the park. Controlling this species is a challenge because it is not killed by fire, and a combination of deer browsing and cutting is not effective for suppressing this invasive species. In addition, surrounding landowners still use this shrub in landscaping, so it is regularly reintroduced to

the park. Park staff attempt to control privet by cutting it to ground level and applying an herbicide to the cut areas the following year. This process is repeated as necessary.

Invasive, non-native species in the meadow areas of the battlefield compete with native grasses for food, water, and space. Non-native species found in the grassland areas of the Chickamauga Battlefield include southern Johnsongrass (*Sorghum halepense*), dallisgrass (*Paspalum dilatatum*), crabgrass (*Digitaria sanguinalis*), and ox-eye daisy (*Leucanthemum vulgare*). The park has not yet begun targeting any of these species.

The park identifies and prioritizes areas that need to be treated for non-native plants and uses volunteer groups to assist with removal projects. The Park Service's Southeast Exotic Plant Management Team visits Chickamauga and Chattanooga National Military Park regularly to apply herbicide treatments to targeted species.

PARK PROTECTS CEDAR GLADES AT CHICKAMAUGIA BATTLEFIELD

The term “cedar glades” applies to several different globally rare plant communities that occur on rocky, calcareous (chalky and containing calcium or limestone) soils in eastern North American woodlands. Cedar glades are found where limestone bedrock occurs at or near the ground’s surface. The weathering of limestone over time results in thin soils that do not support much tree growth, thus glades provide open areas in otherwise forested terrain.

Life is hard in the harsh cedar glade microenvironment. Sheets of water wash soil across the rocky ground and deposit it in sinkholes, making it unavailable to larger plant species. Drought kills saplings and shrubs around the limestone, allowing sun-loving glade plants to re-establish. Naturally caused fire plays an important role in the ecology of the glades by

preventing woody encroachment.

At one time glade communities accounted for 5 percent of the Central Basin of Middle Tennessee. It is estimated that less than half of the original glade habitat in the region survives intact, and most of what is remaining is ecologically compromised by non-native species encroachment, disturbance, and overbrowsing by herbivores.

Chickamauga and Chattanooga National Military Park includes examples of three different types of cedar glade communities. The Central Limestone Glade is the most globally rare plant community in the park and features exposed limestone and a few dwarfed trees and shrubs scattered throughout. Limestone Seep Glades at Chickamauga Battlefield are located in seepages, often where limestone is fractured. Southern Ridge and Valley Annual Grass Glades are characterized by shallow soils and groundcover dominated by annual grasses.

The cedar glades in the park represent the southeastern-most occurrence of this ecosystem type protected within the National Park System. A total of 23 glades occur on the Chickamauga Battlefield, harboring 24 plants listed as state (Georgia) species of concern, such as Tennessee gladecress (*Leavenworthia exigua*), flat-stemmed spikerush (*Eleocharis compressa*), and Gattinger prairie clover (*Dalea gattingeri*). Several of the threatened plants compose the only populations of these species found in Georgia. Threats to glades in and near Chickamauga and Chattanooga include invasion by non-native vegetation aided by fire suppression, deer browsing and trampling, timber harvesting, road building, and residential development.

Tennessee gladecress is one of the species of concern found in the park’s cedar glades and in cedar glades at Stones River National Battlefield, where this photograph was taken.



NATIONAL PARK SERVICE



Hemlock woolly adelgids are non-native insects that have infested trees near the park and are suspected to be present in hemlocks on Lookout Mountain. Combating the spread of these deadly insects is critical, but the park does not have funds to identify and treat the adelgid.

In addition to challenges posed by non-native plants, the park must contend with forest pests and diseases. An outbreak of southern pine beetles (*Dendroctonus frontalis*) in the early 2000s killed and weakened many pines within the park, especially at Chickamauga Battlefield and Moccasin Bend. Hemlock woolly adelgid (*Adelges tsugae*), a non-native insect species that has infested trees in areas near the park, is believed to be present in hemlocks on Lookout Mountain. This insect is capable of severely weakening and killing host plants, and the key to its management is early recognition and implementation of control strategies. Already, this insect is responsible for widespread hemlock mortality along parts of the Blue Ridge Parkway and in Shenandoah National Park. It has also harmed trees at Great Smoky Mountains National Park; combating its spread in Chickamauga and Chattanooga National Military Park is critical, but the park does not have funds to identify and treat the adelgid. The park is also dealing with cases of dogwood anthracnose (*Discula destructiva*), a fungal infection in flowering dogwood (*Cornus florida*) that

increases in severity during times of drought (recently experienced in the park).

Field Maintenance Procedures. Given the scattered nature of the park units, fragmentation is a significant challenge to park managers. Eighteen units—landscapes that lack natural corridor connections—must be considered holistically. Chickamauga Battlefield, the largest unit, is internally fragmented with at least two major roads (old Route 27 and Lafayette Road), a spider web of smaller roads, and several horse and foot trails. Most of the reservation units on Missionary Ridge are literally embedded in a residential setting. The Sherman Reservation is bordered by private homes. Both the Signal Point and Orchard Knob units are manicured lawn.

The park's current vegetation management strategy focuses on replicating historic conditions. In 1994 the park began a program to restore hay field and other field boundaries to their Civil War locations. Management activities include mowing fields to replicate the historic farmland conditions of 1863. The downside of

Mowing fields helps replicate the landscape witnessed by Civil War soldiers, but it can detrimentally affect ecosystems by removing habitat for small mammals and grassland birds. Altering the park's mowing practices could lead to increased species diversity.



KELLY COURKAMP

mowing is that it can have detrimental effects on ecosystems. Mowing areas associated with wetlands, for example, reduces habitat used by birds, amphibians, and reptiles. Grasses provide important shelter for small animals, especially in winter. Increasing mowing intervals and scheduling different fields for cutting at different times would allow for fields in different stages of more natural growth, a management strategy that would likely lead to increased species diversity overall. Researchers have also suggested that mowing be reduced at the field-forest edge, allowing for a more natural transition between the two communities by encouraging a scrub/shrub habitat at the edge. Natural edges increase biodiversity by increasing refuge and forage habitat for smaller vertebrates.

Fire Suppression. Fire has historically played a vital role in shaping vegetation in the area. Considerable evidence suggests American Indians used fire to modify their landscapes. For

the Chickamauga and Chattanooga area, it is estimated that American Indians probably set fires in the forest understories about every three years. For the past 150 years, all wildfires have been suppressed, resulting in forest canopies that have closed in on grasslands. Encroachment of woody species in the glades, which would normally be controlled by natural wildfires, is also a park concern. The lack of fire has also created a fuel complex that is likely difficult to ignite under natural conditions, were wildfires allowed to burn. Prescribed burning needs to be considered as a management strategy, though smoke dispersion is an anticipated problem of intentionally set fires.

Visitor Impacts. Off-trail hiking and rock climbing have damaged fragile rock ecosystems, especially at the Lookout Mountain unit. Mountain spleenwort (*Asplenium montanum*), a species that grows in the cracks and crevices of cliff faces, is absent from the popular climbing

routes, as the plant's habitat is one favored by climbers. Round-leaf catchfly (*Silene rotundifolia*), a plant that grows at the base of cliffs, is being trampled and crushed by climbers and their gear. Popular climbing routes are clearly visible due to the lack of lichens on the cliff faces.

WILDLIFE—OASIS OF GREEN HARBORS A MULTITUDE OF SPECIES

Embedded in a matrix of urban and suburban development, Chickamauga and Chattanooga National Military Park is the largest "green" open space in the region, providing refuge for a variety of animals. Inventories at Chickamauga and Chattanooga have documented 29 mammal, 175 bird, 36 amphibian and reptile, and 19 fish species. The park may harbor the federally listed endangered gray (*Myotis grisescens*) Indiana (*M. sodalis*) bats.

While some large carnivores do occur in the park—bobcats (*Lynx rufus*) are present and black bears (*Ursus americanus*) may travel through the Lookout Mountain unit—the most ubiquitous mammals seen at Chickamauga and Chattanooga are herbivorous white-tailed deer (*Odocoileus virginianus*). Although overpopulation of white-tailed deer is a management problem for much of the Eastern United States, deer overpopulation does not appear to be a problem for ecosystems at the park, as evidenced by the lack of an obvious deer browse line on vegetation. But adjacent suburban encroachment is reducing habitat outside park units, which may force more deer onto park lands in the future. According to managers, some poaching of deer does occur in the park. Staff estimate that five to ten deer are poached each year; additional law enforcement staff would help address this illegal activity. Additionally, approximately five to ten deer are killed each year by automobile collisions on park roads. Roads also act as a significant dispersal and recolonization barrier for many species, especially small mammals, reptiles, and amphibians.

Beaver activity alters water sources and vegetation at Chickamauga and Chattanooga, and undoubtedly beaver played a larger role in the historic 1863 ecosystem of the park than they do today. By pooling water, beaver dams create wetland habitats that increase numbers of certain bird species in the park. For example, a beaver dam located downstream in the Cave Spring drainage is directly responsible for a great blue heron (*Ardea herodias*) rookery there. Beaver activity is also credited with increasing the population of red-headed woodpeckers (*Melanerpes erythrocephalus*) in the park.

A bat survey conducted in the park in 2004 documented eight species, including the federally listed endangered gray bat. The West Chickamauga Creek riparian area is an important foraging and travel corridor for the gray bat, and several male bachelor colony caves have been located in the region. Protecting riparian

Beaver activity is credited with increasing the park's population of red-headed woodpeckers.



DAVE MENKE/USFWS

areas and maintaining high water-quality standards are important for bat conservation.

Bird-watchers are rewarded by a visit to Chickamauga and Chattanooga, where inventories have identified 175 species. Even so, raptors occurred less frequently than expected in field habitats, while northern harriers (*Circus cyaneus*) and short-eared owls (*Asio flammeus*) were absent altogether. Researchers have suggested that the park's mowing regime keeps grasses too short to support prey for these species. Species dependent on shrub/scrub habitat, such as the blue-winged warbler (*Vermivora pinus*), prairie warbler (*Dendroica discolor*), and field sparrow (*Spizella pusilla*), were scarce or absent on the survey as well, presumably due to lack of habitat.

A 2006 herpetofaunal survey documented 36 species of amphibians and reptiles in the park. Commonly seen species include American toad (*Bufo americanus*), eastern garter snake (*Thamnophis sirtalis*), and eastern box turtle (*Terrapene carolina*). Amphibian populations, because of their complex life cycles and permeable skin, are especially sensitive to environmental changes. Reptile populations, because they serve as top predators in the food chain, also signal alterations to the environment. Thus, amphibians and reptiles are exceptional indicators of environmental degradation and should be monitored in the park.

According to records from the Cumberland Piedmont Network of the Park Service's Inventory and Monitoring Program, there are 19 fish species at Chickamauga and Chattanooga, a relatively low count. Five streams occur within the park—four intermittent streams at Chickamauga Battlefield (Black Branch, Jays Mill Creek, Glenn Viniard Creek, and Cave Spring) and one perennial stream (Skyuka Spring) at Lookout Mountain. The low count could be due to the low order and intermittent nature of the streams. There are no known concerns related to non-native fish populations in the park.

Cave inventories are needed to document species inhabiting the caves, determine how complicated the cave system below the park is, or and explore how the caves affect the hydrology of the park.

AIR AND WATER QUALITY—OZONE LEVELS THREATEN PLANT SPECIES

Air-quality monitoring is not conducted at Chickamauga and Chattanooga; the park relies on data gathered at external monitoring sites located in the surrounding region. Air quality in the region is monitored through the Clean Air Status and Trends Network (CASTNet) and through the Interagency Monitoring of Protected Visual Environments (IMPROVE) program, both of which are funded through the Environmental Protection Agency and other agencies. Pollutant deposition data from stations located 60 miles to the southwest show no clear overall trends; wet deposition of sulfate appears to have slightly decreased while nitrate and ammonium deposition have increased. A 2004 Park Service risk assessment of parks in the Cumberland Piedmont Network indicated that Chickamauga and Chattanooga may be exposed to ozone levels high enough to damage the leaves of sensitive plant species. The Cumberland Piedmont Network has plans to monitor leaf damage from ozone at the park.

Visitors can take advantage of a number of overlooks—such as the terraces in Point Park—to enjoy a panoramic view of the Tennessee River Valley below. However, air pollution from the Chattanooga metropolitan area contributes to haze that often reduces visibility at these overlooks. Data for the region note visibility as poor.

From November 2002 to September 2004, the Cumberland Piedmont Network conducted a water-quality inventory, as part of a long-term monitoring program. Sites sampled for the inventory included Cave Spring, Skyuka Spring, Jackson Spring, Rock Spring, and Gum Spring. West Chickamauga Creek and Lookout Creek, both along or just outside park boundaries,



were also sampled. Generally, water quality is good within the park. There is no evidence of nutrient loading in any park waters; nutrient levels were within expected ranges, except for higher than normal nitrate levels at Rock Spring, which are attributed to residential development directly above the spring. Fecal coliform levels at the park range from extremely low levels (Rock Spring), to low but slightly variable levels (Gum, Jackson, and Skyuka Springs), to highly variable levels (Cave Spring and Lookout and West Chickamauga Creeks). The three highly variable systems sometimes exceed the 200 colonies per 100 milliliter limit during the summer months, leading researchers to conclude that six of the seven water sources

sampled are in a degraded or potentially degraded condition.

In 1996, 70,000 gallons of fuel oil and kerosene accidentally spilled out of a pipeline a half mile from the Tennessee River on Lookout Mountain, seeping into underground caverns. The pipeline was operated by Colonial Pipeline Company, headquartered near Atlanta, a major pipeline network transporting gasoline and other fuels from Houston to New York. Only 2,000 gallons were recovered in the cleanup; the remaining oil is assumed to have been assimilated into the underground karst system. Little is known about this system as it relates to the park. Other data on soil conditions at Chickamauga and Chattanooga are unavailable.

According to data gathered from 2002 to 2004 as part of a long-term monitoring program, water quality is generally good within the park, though Cave Spring, Lookout Creek, and West Chickamauga Creek (shown here) sometimes exceed fecal coliform limits during summer months.



In 2007, an estimated 116,562 visitors received some type of interpretive program, such as a living history demonstration.

STEWARDSHIP CAPACITY

STAFFING AND FUNDING—MORE FUNDS AND STAFF NEEDED FOR PRESERVATION, INTERPRETATION, AND LAW ENFORCEMENT

The operational budget for Chickamauga and Chattanooga National Military Park was \$2.55 million in fiscal year 2007, an increase of \$43,000 from the previous year. While the park's budget has increased slightly each year, at least 50 unfunded projects totaling more than \$20 million have been identified, including cyclic maintenance of cultural landscapes and commemorative features. Several monuments

were vandalized (bronze plaques and artillery shells stolen) in 2007 and 2008 and require repairs estimated at \$30,000. However, maintenance of cultural landscapes and commemorative features in the park remains undone due to lack of staff and funding.

There are nine permanent positions vacant within the park affecting the administration, interpretation, law enforcement, and maintenance divisions. Current funding allows for only three or four of these positions to be filled. In addition to existing unfilled positions, the park requires further expertise in certain subject areas. A permanent archaeologist is necessary to oversee management and protection of

Moccasin Bend. Historic structures and monuments require a permanent preservation crew to address a backlog of repairs and to complete inspection, maintenance, and restoration in a timely fashion. More interpretive staff are needed at Chickamauga and Chattanooga, most urgently to service the Moccasin Bend unit of the park. The park would also greatly benefit from the addition of a cultural landscape architect to address deficiencies in the cultural landscapes program. Finally, for the past 20 years, the park has operated without a natural resources ranger or manager. To adequately protect natural systems—biotic and abiotic—this deficiency must be addressed.

PLANNING—NEW DOCUMENT WILL GUIDE THE FUTURE OF CHICKAMAUGA AND CHATTANOOGA

Chickamauga and Chattanooga National Military Park's general management plan, completed in 1987, was written to update and incorporate several previous plans and reports. The rerouting of U.S. Highway 27 to bypass the park and additions to the Chickamauga and Lookout Mountain visitor centers—projects that have been completed—were the main short-term goals discussed in the plan. When the general management plan was published, Moccasin Bend was not part of the park. Today, Moccasin Bend is part of the park, and management and public access there remains undetermined. These topics will be addressed in the park's new general management plan, which is under way.

The new general management plan will also examine all natural systems in the park, and with the benefit of the last 20 years of ecological research, will be better able to address issues of ecosystem health and protection.

The park's administrative history was completed in 1983 and outlines the history of Chickamauga and Chattanooga. The extensive document contains valuable information on the park's inception, management by different

agencies, use by the military, and changes over time to the surrounding area. It should be updated to reflect new administrative changes, such as the acquisition of Moccasin Bend to the park.

In 1994, the park completed a land protection plan to address adjacent land uses and their compatibility with the historic nature and image of the park. Today park staff feel that this plan is outdated and no longer correctly identifies opportunities or threats along park borders. Funds are needed to support an updated plan.

The 2004 fire management plan calls for suppression of all wildfires, and states that the park will not use prescribed burning as a management tool, citing Chattanooga air-quality issues. Mechanical methods are to be used to create firebreaks and defensible areas around park buildings.

The park's climbing management plan was written as part of a 2004 climbing management study that focused on rock climbing at Lookout Mountain. Because the study suggested that chalk used by climbers might be changing pH

The park's many historic buildings, monuments, and cannons require the services of a permanent preservation crew to address a backlog of repairs and to complete inspection, maintenance, and restoration in a timely fashion.



levels in crags and harming vegetation, some routes were closed. Park managers are also considering a user fee to reduce the number of climbers on the bluffs.

Additional plans are needed to address resource management issues at the park, including cultural landscape reports for Lookout Mountain, Missionary Ridge, and Moccasin Bend, as well as historic structure reports for Cravens House and the cabins/houses on the Chickamauga Battlefield. A vegetation management plan, which would address issues such as non-native species control, reforestation concerns in viewsheds, and mowing/field practices, is needed for managers and maintenance staff, for the protection of both natural and cultural resources. These reports remain unwritten due to funding and staffing shortfalls.

RESOURCE EDUCATION AND OUTREACH—MORE STAFF, NEW PROGRAMS NEEDED

At Chickamauga and Chattanooga National Military Park, interpretation focuses on Civil War themes, although new interpretation programs will eventually be developed to educate visitors of the significance of Moccasin Bend. Natural resource themes are not currently interpreted at the park and should be included in its educational program in the future, though there are currently no plans to do so.

In 2007, the park's four interpretive staff conducted 2,772 formal, on-site interpretive programs and 45 off-site programs. An estimated 116,562 visitors received some type of interpretive program, such as a living history demonstration. In the past ten years, the number of interpretive programs offered at Chickamauga and Chattanooga has remained steady; with new themes and area to cover at Moccasin Bend, staff levels and programs—and

Living history programs are a popular form of interpretation at the park. Additional interpretive staff are needed, particularly to serve the Moccasin Bend unit.





Each spring, two local elementary schools participate in March for Parks—a three-mile walk that raises money for restoration of historic tablets at Chickamauga and Chattanooga.

associated funding—will have to be increased.

The park has two visitor centers, at the Chickamauga Battlefield and at Lookout Mountain, providing important and engaging information to the public. At the Chickamauga Battlefield Visitor Center, exhibits highlight the importance of resource stewardship; pieces of monuments that have been vandalized or damaged by wear are displayed. Other exhibits prepare visitors for their tours of the battlefield. One gallery features a timeline of the entire Civil War, highlighting the effects of the war on Chattanooga and eastern Tennessee. The themes of remembrance and commemoration are interpreted through exhibits that detail the establishment of the park and post-war reflection. The majority of exhibits at the Chickamauga Battlefield Visitor Center are up-to-date and in good condition.

In 2008 the Lookout Mountain Visitor

Center was renovated with new and improved exhibits. Additionally, a brand new visitor center is planned for the Moccasin Bend unit of the park in the next three to four years.

The park is involved in a number of outreach projects with the surrounding communities. Every April during National Park Week, two local elementary schools participate in “March for Parks”—a three-mile walk that raises money for restoration of historic tablets at Chickamauga and Chattanooga. The park also sponsors a Youth Public Land Corps with the Chattanooga-area YMCA. This program offers area young people opportunities to carry out needed repair and restoration projects in the park. Members of the Boy Scouts of America hike in the park. Special use permits at Chickamauga and Chattanooga allow for an annual marathon and an outdoor concert in the summer (see “External Support”).

In 2007, 623 individuals volunteered a total of 10,232 service hours to the park. Here they are building a fence using traditional methods.



NATIONAL PARK SERVICE

EXTERNAL SUPPORT—FRIENDS GROUP AND VOLUNTEERS PROVIDE ESSENTIAL SERVICES

Faced with limited funds and personnel, the park is fortunate to have dedicated volunteers and advocates working to meet management goals. Established in 1986, Friends of the Park is a nonprofit organization dedicated to providing support for Chickamauga and Chattanooga National Military Park. The group serves as an advocate for the park, promoting public care of its valuable resources and its protection from encroachment and misuse. Friends of the Park also acts as a community liaison group and coordinating agent for projects that promote and support the park and its founding ideals. Friends of the Park provides a permanent source of funds for worthy projects at the park. This extra support is extremely important because funds appropriated by Congress and the admin-

istration do not cover all expenses.

Examples of Friends of the Park projects at Chickamauga and Chattanooga are diverse. In 2005, with the help of external contributors, the group provided funding to upgrade the park's Junior Ranger enrichment program. The Junior Ranger program is available to all young visitors free of charge, and is part of a nationwide network of such programs designed to engage young people and encourage stewardship during national park visits. Friends' donation dollars have helped reopen the park to Memorial Day concerts, a popular area tradition. The Friends have also funded development of online educational materials for teachers and students.

The park also partners with the Friends of Moccasin Bend National Park to preserve, protect, and interpret resources at Moccasin Bend National Archeological District. The group

will be active in developing and operating a new visitor center to be built at the site. Since 2006, Friends of Moccasin Bend has organized a lecture series provided free to the public, featuring noted authors, former National Park Service staff, and other distinguished professionals.

Volunteers provide vital services to Chickamauga and Chattanooga, such as participating in living history demonstrations, assisting at information desks, or controlling non-native plants. In 2007, 623 individuals volunteered a total of 10,232 service hours to the park. Chickamauga and Chattanooga recently received funds that allowed the park to hire a volunteer coordinator to organize the many people interested in helping out at the park.

The park also benefits from the work of research collaborators at the University of Georgia who have studied the park's white-tailed deer.

In April 2008, Sen. Lamar Alexander (R-TN) and Rep. Zach Wamp (R-TN) joined the National Park Service, The Trust for Public Land, and more than 100 supporters at Point Park to celebrate the addition of 382 acres of historic battlefield to Chickamauga and Chattanooga National Military Park. The land, acquired from the CSX Railroad Company, is located in Lookout Valley west of Lookout Mountain. Federal funding for the acquisition was secured through the efforts of Sen. Alexander and Rep. Wamp. Assistance from The Trust for Public Land, a national private nonprofit conservation organization, was instrumental in the land acquisition and transfer process.

WHAT YOU CAN DO TO HELP:

- **Participate in park planning efforts.** The public is invited to provide input on all park plans and studies. Check individual park websites for information on park planning work and ways to participate.

Fort Donelson National Battlefield: www.nps.gov/fodo

Shiloh National Military Park: www.nps.gov/shil

Stones River National Battlefield: www.nps.gov/stri

Chickamauga and Chattanooga National Military Park:
www.nps.gov/chch

- **Support or become a member of a group helping to protect Tennessee's Civil War parks.** These groups include:

The Civil War Preservation Trust: www.civilwar.org

Eastern National: www.easternnational.org

Friends of Stones River: www.friendsofstonesriver.org

Friends of the Park (Chickamauga and Chattanooga National Military Park): www.chickchatt.org

Friends of Moccasin Bend National Park: www.moccasin-bendpark.org

Tennessee Civil War Preservation Association:
www.tcwpa.org

The Trust for Public Land: www.tpl.org

NPCA: www.npca.org/support_npca

- **Volunteer in the parks.** Many parks are looking for dedicated people who can lend a helping hand. To learn about opportunities for volunteering, contact respective park headquarters. Contact information is readily found on the park websites listed above.
- **Become an NPCA activist and learn about legislative initiatives and protection projects affecting parks.** When you join our activist network, you will receive Park Lines, a monthly electronic newsletter with the latest park news and ways you can help. Join by visiting www.npca.org/takeaction.



APPENDIX: METHODOLOGY

To determine the condition of known natural and cultural resources at Fort Donelson National Battlefield, Shiloh National Military Park, Stones River National Battlefield, and Chickamauga and Chattanooga National Military Park and other national parks, the National Parks Conservation Association developed a resource assessment and ratings process. The assessment methodology can be found online at NPCA's Center for State of the Parks website: www.npca.org/stateoftheparks.

Researchers gather available information from a variety of research, monitoring, and background sources in a number of critical categories. The natural resources rating reflects assessment of more than 120 discrete elements associated with environmental quality, biotic health, and ecosystem integrity. Environmental quality and biotic health measures address air, water, soils, and climatic change conditions as well as their influences and human-related influences on plants and animals. Ecosystems measures address the extent, species composition, and interrelationships of organisms with each other and the physical environment.

The scores for cultural resources are determined based on the results of indicator questions that reflect the National Park Service's own Cultural Resource Management Guideline and other Park Service resource management policies.

Stewardship capacity refers to the Park Service's ability to protect park resources, and it includes discussion of funding and staffing



NATIONAL PARK SERVICE

Artillery demonstrations at Stones River National Battlefield help bring the events of the Civil War to life for visitors.

levels, park planning documents, resource education, and external support.

For this report, researchers collected data and prepared papers that summarized the results. These papers were used to prepare this resource assessment, which underwent peer review and was also reviewed by staff at all four parks.

NPCA's Center for State of the Parks represents the first time that such assessments have been undertaken for units of the National Park System. Comments on the program's methods are welcome.

ACKNOWLEDGMENTS

For more information about the **Center for State of the Parks®** and this and other program reports, contact:

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Assateague Island National Seashore (MD, VA)
Big Bend National Park (TX)
Big Hole National Battlefield (MT)
Big Thicket National Preserve (TX)
Biscayne National Park (FL)
Bryce Canyon National Park (UT)
Cabrillo National Monument (CA)
Canyonlands National Park (UT)
Catoclin Mountain Park (MD)
Channel Islands National Park (CA)
Charles Pinckney National Historic Site (SC)
Chesapeake and Ohio Canal National Historical Park (DC/MD/WV)
Cumberland Island National Seashore (GA)
Death Valley National Park (CA)
Denali National Park and Preserve (AK)
Fort Laramie National Historic Site (WY)
Fort Necessity National Battlefield (PA)
Fort Pulaski National Monument (GA)
Fort Sumter National Monument (SC)
Fort Union Trading Post National Historic Site (ND)
Frederick Douglass National Historic Site (DC)
Gateway National Recreation Area (NY)
Glacier Bay National Park and Preserve (AK)
Great Basin National Park (NV)
Great Smoky Mountains National Park (TN/NC)
Harpers Ferry National Historical Park (WV)
Hawai'i Volcanoes National Park
Hopewell Furnace National Historic Site (PA)
Indiana Dunes National Lakeshore (IN)
Isle Royale National Park (MI)
Joshua Tree National Park (CA)
Keweenaw National Historical Park (MI)
Knife River Indian Villages National Historic Site (ND)
Lewis and Clark National Historical Park (OR)
Lewis and Clark National Historic Trail (various)
Little Bighorn Battlefield National Monument (MT)
Longfellow National Historic Site (MA)
Missouri National Recreational River (NE)
Mojave National Preserve (CA)
Nez Perce National Historical Park (WA, ID, MT, OR)
Olympic National Park (WA)
Pictured Rocks National Lakeshore (MI)
Point Reyes National Seashore (CA)
Redwood National and State Parks (CA)
Rocky Mountain National Park (CO)
Saint-Gaudens National Historic Site (NH)
San Juan Island National Historical Park (WA)
Santa Monica Mountains National Recreation Area (CA)
Shenandoah National Park (VA)
San Antonio Missions National Historical Park (TX)
Sleeping Bear Dunes National Lakeshore (MI)
Vicksburg National Military Park (MS)
Virgin Islands National Park
Virgin Islands Coral Reef National Monument
Waterton-Glacier International Peace Park (MT-Alberta)
Zion National Park (UT)

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