



SHILOH NATIONAL MILITARY PARK



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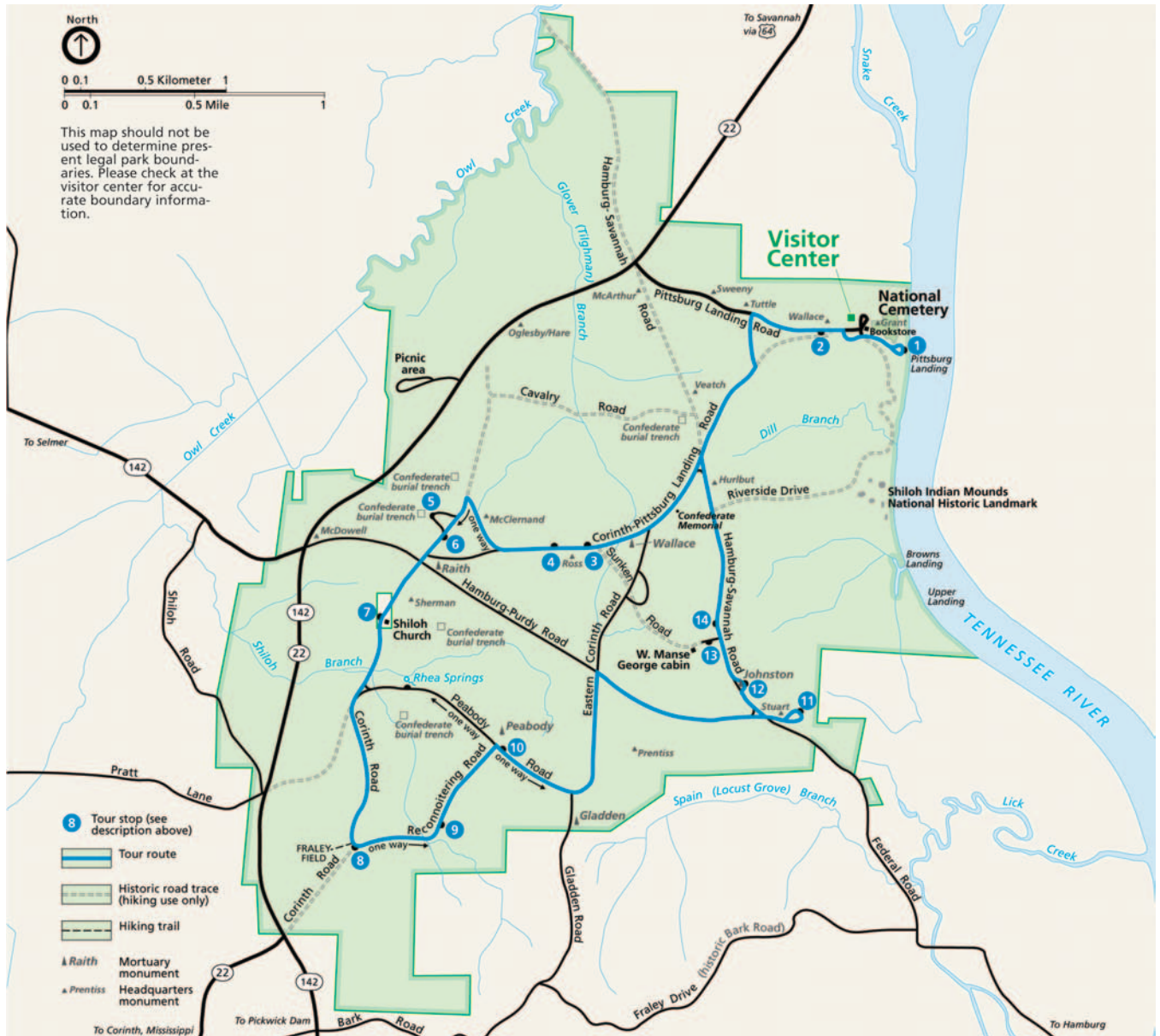
Tennessee's Civil War National Parks

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.

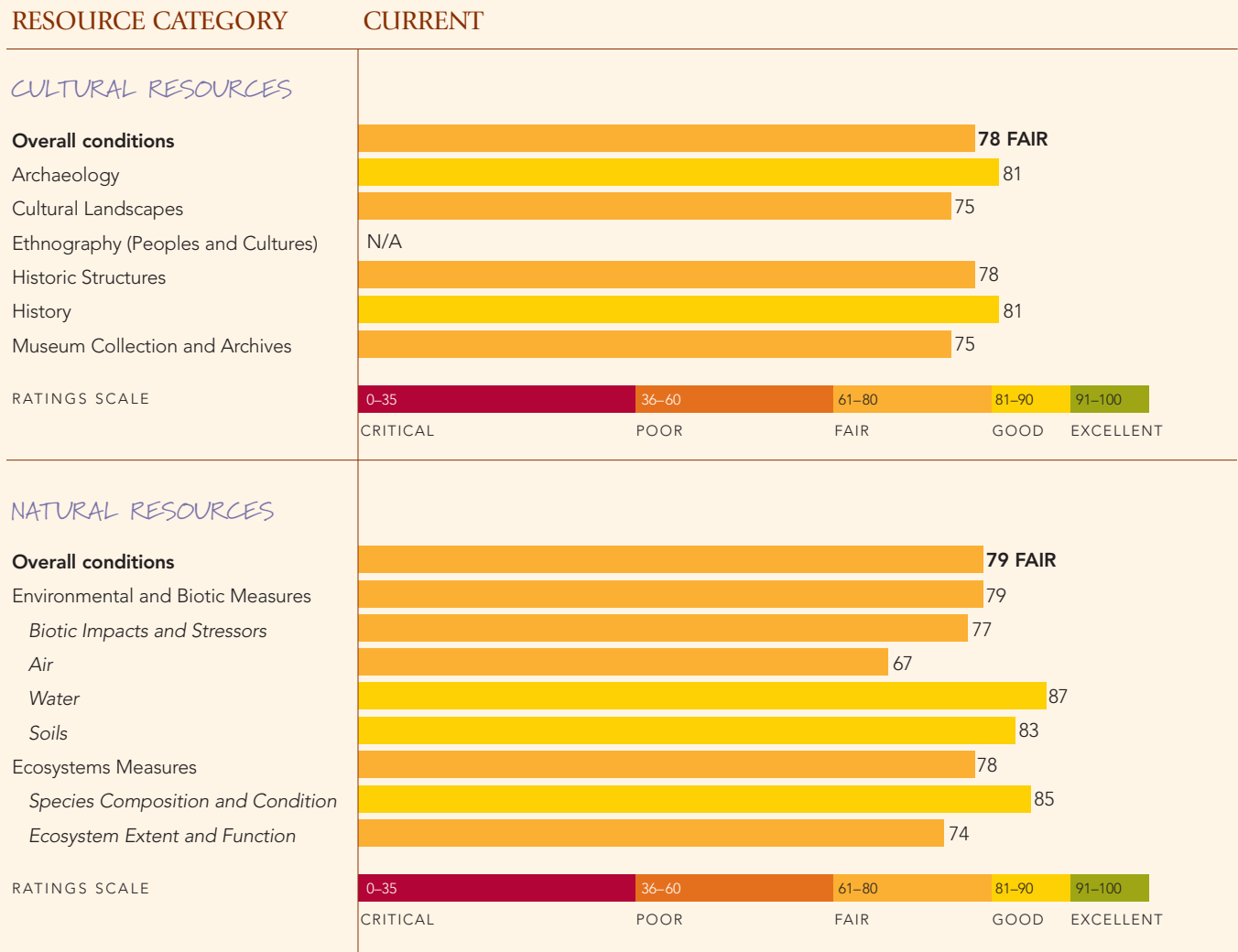
In addition to a wealth of cultural treasures, the park also protects six ecosystems that harbor hundreds of mammal, bird, fish, reptile, and amphibian species. Lichen species in the park number more than 500, including a rare species for the region. The woodlands of the park are threatened primarily 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.

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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.

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.



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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.

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.

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.")



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.



NATIONAL PARK SERVICE

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.



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 saviannarum*). 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 myceto-zoans (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

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.

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

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