

STATE
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PARKS®

June 2009



CIVIL WAR NATIONAL PARKS:
THE BATTLES FOR MISSOURI

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 status of and trends in conditions 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 in the parks, and 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 policymakers, 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 and 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: MSST Foundation, Ben and Ruth Hammett, Lee and Marty Talbot, and anonymous donors.

Cover photo: One of the artillery cannons on display at Wilson's Creek National Battlefield. Photo courtesy of the National Park Service

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EXECUTIVE SUMMARY



The Civil War battles of Wilson’s Creek and Pea Ridge were fought for the control of Missouri, a strategically located state populated by residents with divided loyalties. At the onset of the Civil War, most Missouri residents desired neutrality. However, there was a sizeable population of people who were sympathetic to the Confederacy, including Governor Claiborne Fox Jackson. Missouri, flush with natural resources and strategically located on two of the country’s

main rivers—the Missouri and the Mississippi—was a significant battleground state.

The Battle of Wilson’s Creek took place in southwest Missouri on August 10, 1861, and ended with a Confederate victory. Despite winning the battle, the Confederacy was unable to gain control of Missouri. Following the Battle of Wilson’s Creek, Confederate troops occupied the Union garrison in Lexington, Missouri, but were driven from the

Each year park staff and volunteers dress in period costumes and bring history to life during Wilson’s Creek National Battlefield’s annual moonlight tour, one of the park’s most popular programs.

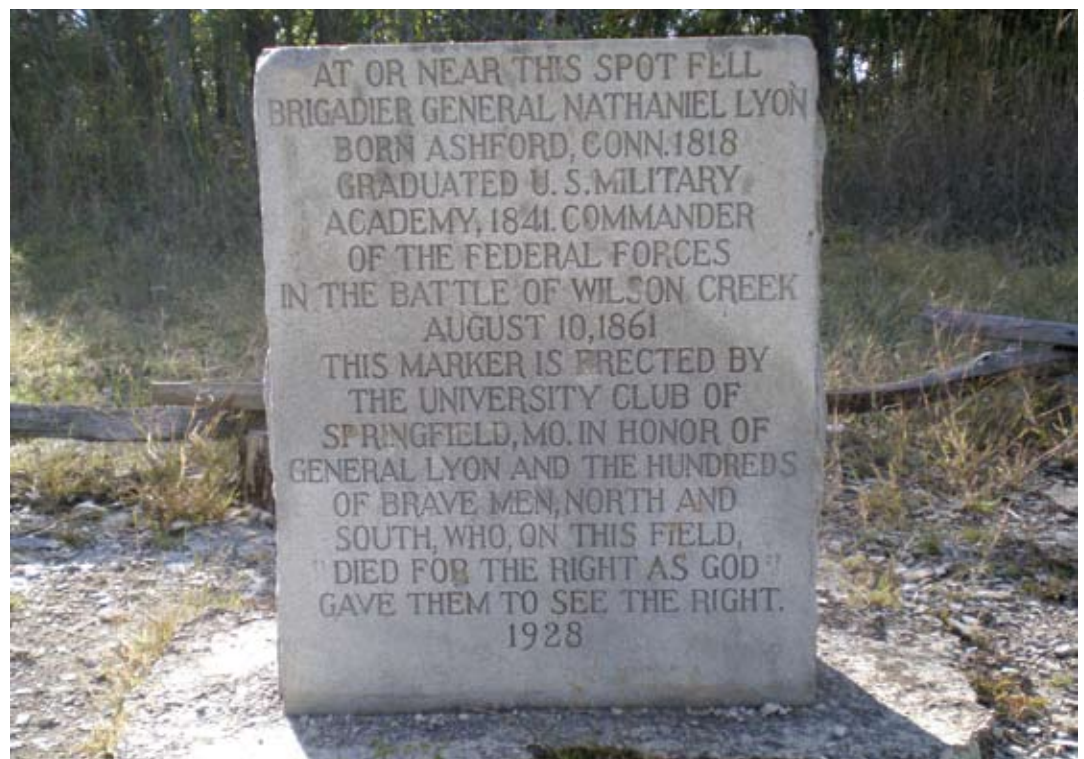
area by the newly appointed leader of the Union Army of the Southwest, Brigadier General Samuel Curtis, in February 1862. The Confederate troops were forced into a retreat that took them into the neighboring state of Arkansas. Unsatisfied with simply driving the Confederate troops from the state, the Union Army continued to push the Southerners deeper into Arkansas, and the two sides prepared for a battle near Pea Ridge.

The Union Army of the Southwest and the Confederate Army of the West squared off in the spring of 1862 at the Battle of Pea Ridge. The battle took place in northwest Arkansas and was the second major clash of Union and Confederate forces in the struggle for control of Missouri. The fighting lasted for several days with the Union claiming victory on March 8, 1862. The Battle of Pea Ridge sealed the fate of Missouri. It remained under Union control for the rest of the war, and though no other significant battles were fought in northwest Arkansas, the two sides waged a constant campaign of guerrilla warfare.

Efforts to commemorate the Battle of Wilson's Creek began in 1861 with a joint resolution passed by Congress. However, without support from the United States War Department, the attempt to create a protected park failed. Earlier, in 1928, the University Club of Springfield erected a monument to Brigadier General Nathaniel Lyon, the first Union general killed in action during the Civil War, on the battlefield. The establishment of Wilson's Creek Battlefield National Park in 1960 was made possible by the work of the Wilson's Creek National Battlefield Foundation, which purchased 37 acres of Bloody Hill in 1951 and then worked with the Park Service to transfer the land and establish a national park. The name of the park was changed in 1970 to Wilson's Creek National Battlefield with legislation that also provided for additional funds for the development of the park. Today, the national park site contains about 80 percent of the historic land where the battle occurred.

Efforts to preserve the battlefield and

The University Club of Springfield erected the General Lyon monument in 1928 to honor the first Union general to be killed in the Civil War.



commemorate the events at Pea Ridge began in 1887 when the people of Benton County, Arkansas, erected a monument to the Confederate generals who died in the battle. Two years later, Confederate and Union veterans placed the Reunited Soldiery Monument a short distance away. Legislation to preserve the battlefield was first introduced to the U.S. Congress in 1890. However, it was not until 1926 that Congress authorized a commission to "... inspect the battle field [sic] of Pea Ridge, Arkansas, in order to ascertain the feasibility of preserving and marking for historical and professional military study such field." Pea Ridge National Military Park was not officially established until 1956, after decades of effort by the citizens of Arkansas. The land that comprised the battlefield area was acquired by the State of Arkansas and donated to the National Park Service in 1960, and the park was officially opened to the public in 1963 after three years of development, funding, and staffing efforts.

Today, Wilson's Creek National Battlefield and Pea Ridge National Military Park both preserve cultural treasures and the natural landscapes that relate to a pivotal time in the history of the United States. The parks offer visitors the opportunity to follow in the footsteps of soldiers from both camps and to view historic lines of sight that help to define the events of these two battles. In addition to protecting valuable cultural resources, Wilson's Creek and Pea Ridge provide important habitats that support native animal and plant species, including federally listed and state-listed species. The parks also protect natural areas and green space that are enjoyed by both local residents and visitors.

In recognition of the important historical events Wilson's Creek National Battlefield and Pea Ridge National Military Park commemorate and interpret, the National Parks Conservation Association's Center for State of the Parks conducted assessments to determine



the current condition of the parks' cultural and natural resources. This report details the findings of those assessments, with each park highlighted in its own chapter.

COMMON CHALLENGES

NPCA's assessments of Wilson's Creek National Battlefield and Pea Ridge National Military Park brought to light shared challenges, several of which are outlined here and expanded upon throughout this report.

Incompatible adjacent development:

Continued development of land surrounding both Wilson's Creek and Pea Ridge is a major concern at both parks. This development will further mar the parks' viewscapes, make it increasingly difficult for the National Park Service to interpret the battles of Wilson's Creek and Pea Ridge, and will reduce open space—placing additional strains on the parks' natural resources. At Wilson's Creek, future high-density development—particularly the expected growth of the city of Republic from

the northwest and Christian County from the south—would bring additional pollutant-laden storm-water runoff into park waterways, further fragment wildlife habitat, and increase the likelihood of vehicular accidents resulting in wildlife deaths. The continued development of land adjacent to Pea Ridge also represents the largest threat to the park’s natural resources and the historic landscape.

Lack of funding and staff: Wilson’s Creek and Pea Ridge, like many park sites in the National Park System, are experiencing an overall lack of sufficient federal funding and staff. These critical shortfalls hinder the Park Service’s ability to fully protect resources and provide the best possible experience for visitors. Unfunded projects at Wilson’s Creek and Pea Ridge include management and planning documents, landscape restoration, invasive non-native plant removal, and research and data collection on park flora and fauna. Unfilled staff positions plague nearly every division at both parks as well. Prior to the expected Centennial Initiative funding for 2009, Wilson’s Creek’s unfilled staff positions included museum curatorial staff, a law enforcement ranger, and several interpretive positions. Once the park receives these additional funds they will be able to hire a museum curator chief and museum assistant, a law enforcement ranger, an

education ranger, and five seasonal rangers. Staffing needs at Pea Ridge include a park historian and two interpretive rangers.

Invasive plant species: Invasive non-native plant species are a serious concern at both parks. Once introduced into an ecosystem, these species can quickly colonize, becoming so entrenched that they outcompete native plants. The resulting loss of native plants puts wildlife and historic landscapes at risk. Common non-native plant species that are affecting both parks include sericea lespedeza, Johnsongrass, downy brome, and multiflora rose. Wilson’s Creek and Pea Ridge are attempting to control and manage these non-native populations, but a lack of sufficient funding and staff limits this work.

Eastern red cedar encroachment: The spread of eastern red cedars into open fields and glades has taken place at both Wilson’s Creek and Pea Ridge. This spread has changed the landscape that soldiers saw during the Civil War. Both parks are battling the encroachment of eastern red cedar by removing trees and conducting prescribed burns.

Park Statistics	Wilson’s Creek National Battlefield	Pea Ridge National Military Park
Park location	Southwest Missouri, near Springfield	Northwest Arkansas, near Bentonville
Park establishment	1960	1956 (opened to the public in 1963 once the necessary funding was secured)
Park size (acres)	1,929	4,300 (including a small noncontiguous parcel that encompasses trenches built by Federal troops during the battle)
Annual visitation (2008)	120,670	68,464

THE WILSON'S CREEK NATIONAL BATTLEFIELD ASSESSMENT



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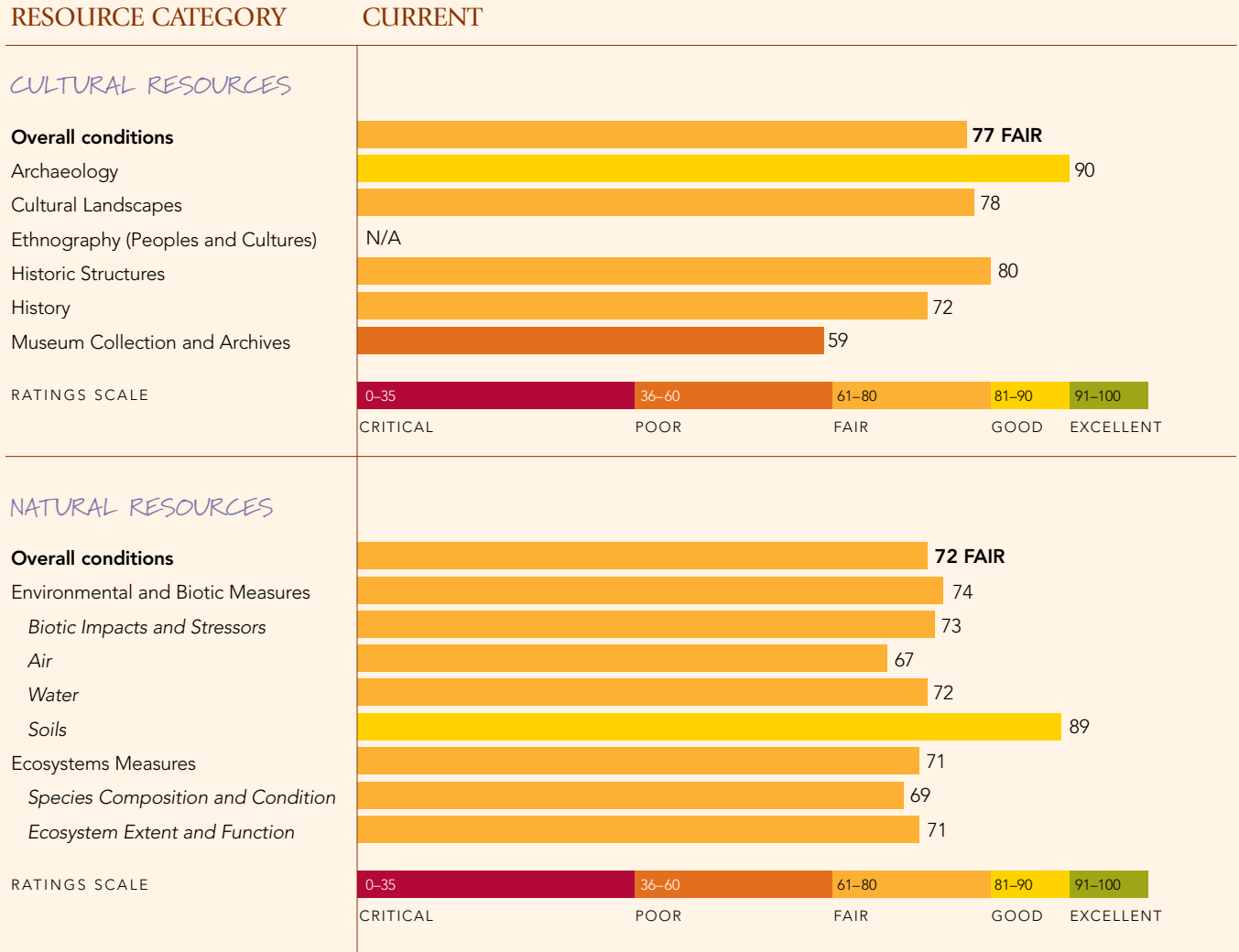
The Battle of Wilson's Creek was the second major battle of the Civil War. Confederate and Union troops clashed at Wilson's Creek, Missouri, on August 10, 1861, just over four months after the start of the Civil War at Fort Sumter, South Carolina. The two forces fought for control of the state of Missouri, which is located on the Mississippi and Missouri Rivers, both vital transportation routes at the time.

The Union forces, under the command of

Brigadier General Nathaniel Lyon, totaled about 6,400 men, including 1,200 men under Colonel Franz Sigel. Despite being greatly outnumbered, Lyon devised a plan to attack the Confederate encampment of more than 12,000 men near Wilson's Creek. Lyon wanted to surprise the Confederates with an attack from the north, while coordinating with Colonel Franz Sigel and his men, who would flank the Southerners and prevent their retreat. This

These cannons mark the position of a battery during the Battle of Wilson's Creek, helping visitors to visualize the position of troops and how the fighting unfolded.

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 Wilson’s Creek National Battlefield, 100 percent of the cultural resource information required by the methodology was available and 56 percent of the natural resource methodology 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 times, in many cases pre-dating the park’s creation. 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 in the future.

proposal was bold and ambitious, and if the plan went awry, the two commanders would not be able to contact each other or know how the other force fared.

The Confederates, under the leadership of General Benjamin McCulloch, also planned on using the element of surprise to attack the Union forces. However, McCulloch canceled these plans on account of the rain that fell throughout the night of August 9, which muddied the area's roads and made travel difficult. Lyon was undeterred and ordered his men to attack on the morning of August 10. The Union's surprise attack caught the Confederate troops off guard and chaos broke out throughout their camp. Despite the Confederate's disorganization, the Union troops were stalled in their advance on the slopes of a hillside and major fighting broke out.

The battle for what became known as "Bloody Hill" raged for five hours, with the Confederate lines charging the Union positions, only to be repeatedly rebuffed. Lyon was wounded twice before he was eventually killed on the battlefield as he led a countercharge at 9:30 a.m. Major Samuel Sturgis took control of the Union troops, but with their ammunition nearly exhausted and seeing no sign of Sigel's men (who had already been driven from the battlefield), coming to his aid, he ordered a retreat to Springfield around 11 a.m., effectively ending the battle. Though Confederate forces had won, the commanders decided not to pursue the Union troops, and were unable to secure control of Missouri for the Confederacy. Both sides suffered heavy casualties at the Battle of Wilson's Creek—1,317 Union troops and 1,222 Confederate troops were killed, wounded, or went missing. An estimated 1,700 of these casualties occurred on Bloody Hill alone.

RATINGS

Overall conditions of Wilson's Creek National Battlefield's known **cultural resources** rated a "fair" score of 77 out of 100. 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. Challenges to the park's cultural resources include insufficient funding and staffing to catalog and adequately store the park's extensive collection of museum artifacts, outdated and insufficient interpretive exhibits and waysides, and an overall lack of cultural resource staff to provide interpretation and restore landscapes. Additional maintenance staff are needed to complete routine upkeep of historic structures. The park will receive funding through the Park Service's Centennial Initiative this year and will be able to fill several staff positions, and will have the funds to design and construct interpretive wayside signs on Bloody Hill.

Current overall conditions of Wilson's Creek's **natural resources** rated a "fair" score of 72 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"). Known natural resource issues include the degraded nature of Wilson's Creek, the proliferation of eastern red cedars and invasive non-native grasses throughout the park's open fields, and future threats of resource degradation caused by adjacent development.

Wilson's Creek's wayside exhibits were installed in 1982 and are now outdated, faded, scratched, and difficult to read.



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This building currently houses the Wilson's Creek Civil War Museum, which includes about 8,200 original Civil War artifacts. The building is several miles from the park's visitor center and receives few visitors. Plans are under way to build an addition to the park's visitor center to house the collection and make it more accessible.

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KEY FINDINGS

- The acquisition of the Sweeny Collection in 2005, an impressive assemblage of about 8,200 original Civil War artifacts relating to the war west of the Mississippi River, was an incredible addition to the park's museum collection and archives. Wilson's Creek now needs additional funding and staff to fully preserve and protect this collection, including a museum technician to continue cataloging the collection. A facility to house the Sweeny Collection, recently renamed the Wilson's Creek Civil War Collection, is also needed. The current facility is separate from the park's visitor center and does not receive many visitors. The park is currently developing a plan to build an addition to its visitor center to accommodate the collection and make it more accessible to visitors. The Wilson's Creek National Battlefield Foundation has hired an architect and an exhibit planner to complete the plans for the addition that will house the collection.
- Wilson's Creek's wayside exhibits were installed in 1982 and are now outdated, and the park has just a few seasonal rangers available to interact with visitors and assist with educational programs, such as guided tours. In fact, the park does not have any staff solely dedicated to interpretation, and has just two staff to provide interpretive services to about 120,000 visitors annually, among their other many duties. Increased funding for both additional staff and updated exhibits would allow the park to better interpret resources and give visitors a more meaningful park experience. According to the park's 2005 business plan, Wilson's Creek needs 2.4 full-time equivalent employees for educational outreach and interpretation, and seven seasonal positions within the visitor services division.
- The park does not currently have the funds needed to hire sufficient staff to complete landscape rehabilitation projects, such as removing invasive non-native plants from the battlefield, replanting native prairie grasses, or restoring limestone glades threatened by eastern red cedar. The park also needs access to the necessary experts, such as a resource specialist, to help monitor and supervise the landscape rehabilitation process. Additional staffing needs at the park include a full-time historian, a museum curator, and a museum technician.
- Farms, low-density housing, and forested areas that currently border Wilson's Creek National Battlefield do not disrupt the park's historic battlefield views. The U.S. Department of Agriculture's Farm and Ranch Lands Protection Program has secured conservation easements that restrict development on the south and east borders of the park, and there are

verbal agreements between the Park Service and the neighboring cities of Battlefield and Republic so that no sewer or water development will occur within a quarter mile of the park boundary. However, there is concern that future high-density development (particularly with the growth of Springfield to the north and east and Republic to the north and west) may occur within one mile of the park. Approximately 1,800 acres near the park are expected to be developed in the near future. This development is expected to impact the park's natural resources (e.g., vehicle accidents resulting in wildlife deaths and an increase in pollutant-laden runoff entering Terrell Creek that enters Wilson's Creek) and impair the Park Service's ability to preserve the battlefield and the surrounding viewshed as they were seen by Civil War soldiers.

- The City of Springfield's Southwest Wastewater Treatment Plant discharges an estimated 42.5 million gallons of treated wastewater into Wilson's Creek each day. This treated effluent accounts for 75 percent of the creek's flow. This percentage increases to 80 percent during low-flow periods, and the discharge likely prevents Wilson's Creek from running dry during low flows. Wilson's Creek is listed by the Missouri Department of Natural Resources as impaired for unknown toxicity, which is not believed to be linked to the wastewater treatment plant. However, the wastewater treatment plant does become an issue when inadequately treated water is released or during periodic accidental spills. These events have led to a history of coliform contamination. Wilson's Creek is also threatened by storm-water runoff from the nearby

communities of Battlefield, Republic, and Springfield, which has the potential to further degrade water quality within the park.

- Wilson's Creek National Battlefield contains approximately 37.5 acres of limestone glade—rare wildlife habitat that is disappearing in the region due to urban development. Threats to the park's limestone glades include the encroachment of eastern red cedars that has been facilitated by a century and a half of fire suppression, the invasion of non-native plants, and trampling by humans. The park began restoring its glades in 1970, primarily by removing eastern red cedars, and restoration work and monitoring continues today. However, restoration efforts are affected by limited funding and staff capacity.
- According to a 2001 Park Service report, invasive non-native plants have "disturbed" or "infested" approximately 1,100 acres of Wilson's Creek National Battlefield. The non-native plants that are the biggest concern include bromes (soft chess, downy brome, and barren brome), Johnsongrass, multiflora rose, musk thistle, and sericea lespedeza. Currently, the park does not receive assistance from a Park Service exotic plant management team and must control non-native species on its own, as time and funds allow. Park staff would like the additional help an exotic plant management team could provide.

RESOURCE MANAGEMENT HIGHLIGHTS

This photo depicts actors during the filming of Wilson's Creek National Battlefield's new interpretive film. Filmed on location at the park, the film is shown at the visitor center to educate patrons about the August 1861 campaign for control of Missouri.

NATIONAL PARK SERVICE



- Wilson's Creek has made significant progress in rehabilitating the park's landscape to restore and maintain high-quality native habitats, despite a limited number of staff. Prairie restoration at the park began in 1985, with the majority of work completed since 1990. Park staff are currently restoring savanna and grassland habitats by removing trees and shrubs, controlling invasive non-native plant species with herbicides and prescribed burns, and reseeded some restored prairies and savannas with native species. For example, 200 acres of land that were besieged by invasive non-native plant species were cleared in 2007, and several historic fields, including a cornfield, were replanted with native plants and agricultural crops. As with glade restoration efforts (see "Key Findings" on page 9), insufficient federal funding and staff capacity limits the acreage the park staff can restore.
- The park's acquisition of the General Sweeny Museum, now the Wilson's Creek Civil War Museum, represents a significant step toward meeting the National Park Service's mission to preserve resources for future generations. Additional achievements include new fire suppression systems in the historic McElhaney and Ray Houses, restoration of the Ray House porch (where John Ray watched the battle), and restoration of a historic cabin, now called the Edwards Cabin. The Edwards Cabin, restored in 2005 through a partnership between the National Park Service's Challenge Cost Share Program and the Wilson's Creek National Battlefield Foundation, is a replica of the original structure that stood next to General Sterling Price's headquarters at the time of the battle.
- Wilson's Creek National Battlefield, in conjunction with Wide Awake Films of Kansas City, has produced a new 29-minute interpretive film that explores the August 1861 campaign. The film is currently being shown in the visitor center.
- Once a year, the park, with the assistance of the Wilson's Creek National Battlefield Foundation, offers a moonlight/candlelight living history tour, which is very popular with visitors and quickly sells out. It highlights the events leading up to and after the Battle of Wilson's Creek, using staff and volunteers in period costume.
- Wilson's Creek National Battlefield encompasses 80 percent of the land where the historic battle took place. As part of the effort to achieve the Park Service's goal of protecting 95 percent of the original battlefield, the park recently

acquired 155 acres on the west side of the park's existing boundary from the Wilson's Creek National Battlefield Foundation. The remaining 5 percent of the original battlefield is not identified in any plan for protection because it has already been developed residentially.

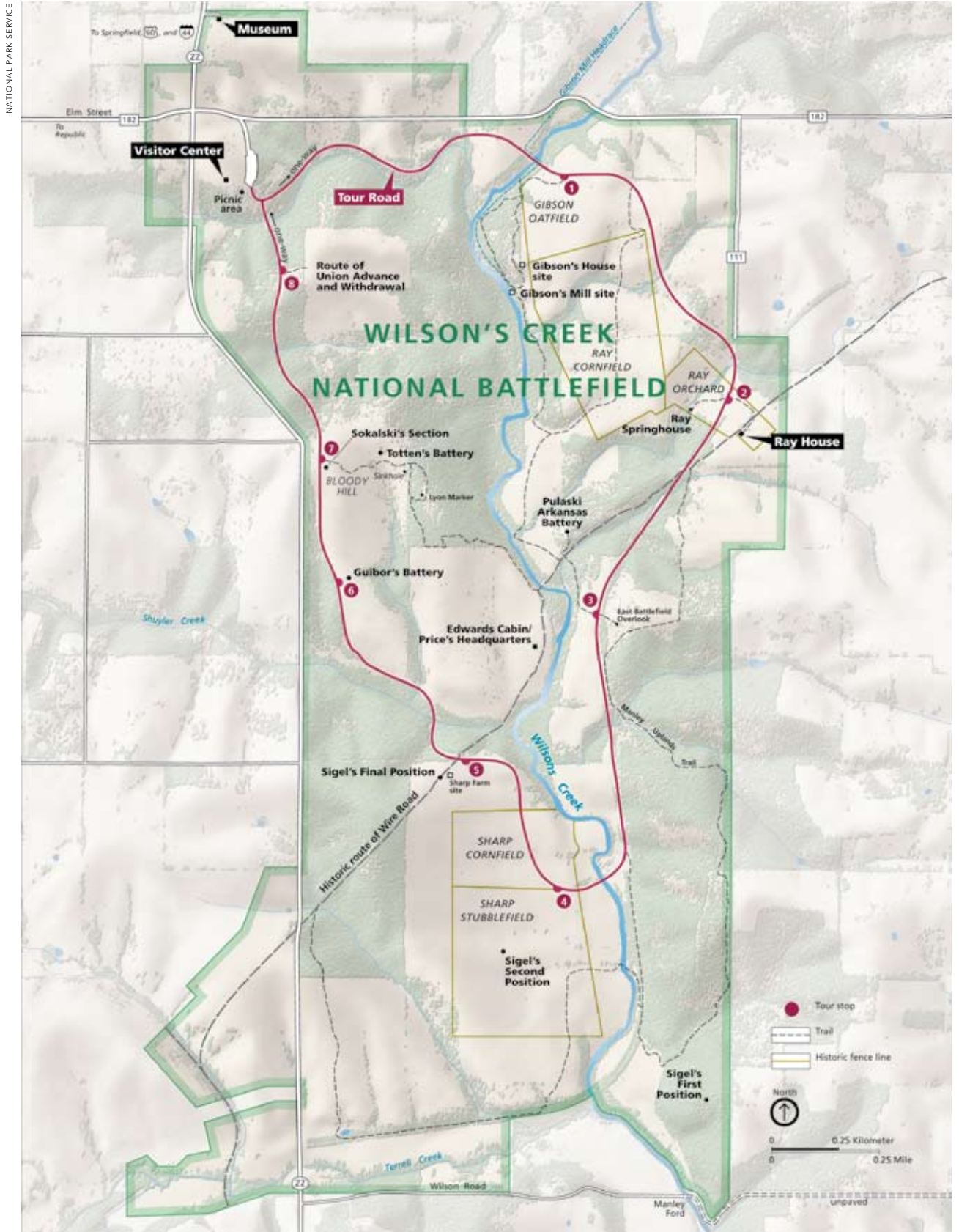
- Wilson's Creek National Battlefield contains five caves, two of which have been mapped and surveyed. Species inventories have shown that the park's caves serve as important refuges for rare amphibians, including two species of special concern in Missouri—bristly cave crayfish and grotto salamander—and the gray bat, a federally listed endangered species. All caves at Wilson's Creek are closed to the public to protect these and other wildlife species.
- Wilson's Creek National Battlefield staff are making an effort to construct all new buildings in accordance with green building standards and to redesign existing buildings to these standards as well. For example, the park is proposing to build the visitor center addition using green building techniques to reduce the structure's environmental impact, and the park has installed recycled carpet in the visitor center. Energy efficiency and environmental sustainability efforts employed by the park include using photovoltaic lights in the visitor center and photovoltaic panels to light the park's entrance sign; the park also owns a hybrid vehicle for staff use.



The bed that Brigadier General Lyon was placed on after he had been killed in battle is one of the irreplaceable historic artifacts on display at the Ray House.

WILSON'S CREEK NATIONAL BATTLEFIELD AT A GLANCE

- **Premier cultural resources:** The park recently acquired the Wilson's Creek Civil War Museum (formerly the General Sweeney Museum) from Dr. Tom Sweeney of Springfield, Missouri. This museum represents the largest assemblage of Civil War artifacts west of the Mississippi River and includes the bed where Brigadier General Lyon's body was placed after he died on the battlefield, a sword belt and sash of Arkansas Confederate General Patrick Cleburne, the telescope of abolitionist John Brown, and a great deal of personal memorabilia, such as a folded note carried by a soldier that contained the passwords of the day.
- **Rare natural resources:** The park provides important habitat for rare plant and animal species, such as the federally listed Missouri bladderpod and gray bat and the state-listed green-thread, royal catchfly, buffalo grass, false gaura, bristly cave crayfish, and grotto salamander.
- **Recreation activities:** Visitors to Wilson's Creek can enjoy myriad recreational opportunities, such as running, hiking, bicycling, and horseback riding on trails located off of the park's 4.9-mile tour road, as well as traveling along the road itself, which is lined with eight stops featuring interpretive waysides.





CULTURAL RESOURCES— PRESERVING THE RESOURCES OF THE SECOND MAJOR CIVIL WAR BATTLE

Wilson's Creek National Battlefield scored an overall "fair" score of 77 out of 100 for the condition of cultural resources, including history, historic structures, cultural landscapes, archaeology, and museum collection and archives. Key challenges to protecting and preserving Wilson's Creek's cultural resources include insufficient funding and staff to catalog the Wilson's Creek Civil War Museum, provide interpretation for the public, and restore landscapes. In addition,

the park's interpretive exhibits and waysides are outdated.

HISTORY—ADDITIONAL RESEARCH NEEDED

Wilson's Creek National Battlefield's history program suffers from an overall lack of up-to-date reports, studies, and documents, which park staff could use to make the best management decisions. The program includes a historic resource study produced by Edwin C. Bearss (it was written in 1960 and needs to be updated) and a history of the park legislation that was completed in partnership with Southwest Missouri State University, a five-year strategic

This cabin was built in the 1850s and donated to the park in the 1970s. It was moved from its original location in a nearby town to this location in the park. Now called the Edwards Cabin, it stands in the place of the original cabin that burned down during the Battle of Wilson's Creek.

The Wire (telegraph) Road, which ran from Jefferson City, Missouri, to Fort Smith, Arkansas, served as the area's main transportation artery for both Union and Confederate forces during the Civil War. Further research is needed to expand interpretation of the road and associated historical themes.



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plan, a business plan, a boundary expansion plan, and an updated general management plan. An administrative history—which would document a park's legislative history, planning, land acquisition and development, public relations, and ongoing management concerns to the present day—has never been completed, though staff have requested funds to produce the study.

To bolster understandings of battle history and contribute to interpretation of historic events, staff use research completed by historians and scholars outside the Park Service, such as *Wilson's Creek: The Second Battle of the Civil War and the Men Who Fought It*, published in 2000 and written by William Garrett Piston and Richard W. Hatcher III. The park also preserves 6,500 volumes in the Hulston Library, which focuses on the Civil War and the events that occurred west of the Mississippi River. The library contains many histories of individual Civil War regiments (especially Union units), many Union generals' reports, and to a lesser

extent, information on Southern troops.

Wilson's Creek interprets several themes identified in the park's 2003 general management plan, including the diversity of political leanings within the population of Missouri as a border state during the war, the Battle of Wilson's Creek, Missouri's significance to the outcome of the Civil War, and the lives of residents in the area during the battle. These themes will be revisited and further research will be done to enhance interpretation when the park is fully staffed. The park moved closer to achieving these goals by completing a long-range interpretive plan in 2009.

Historical themes that need further research to expand interpretation include the Wire (telegraph) Road, which also runs through Pea Ridge; the civilian population that lived in the area at the time of the battle; the descendants of slaves who lived in the area; the role of American Indians in the battle; and studies of Union army troops at Wilson's Creek who were of German and/or Irish descent.

CULTURAL LANDSCAPES—
BATTLEFIELD RESTORATION IS THE
PARK SERVICE'S TOP PRIORITY

Cultural landscapes illustrate how people have used, changed, and adapted to their surroundings through time. Wilson's Creek National Battlefield has identified one cultural landscape: the battlefield where Union and Confederate troops met in August 1861. During the time of the battle, the area consisted of agricultural fields, orchards, prairies, and open savannas. It has since become heavily vegetated, filled with invasive non-native plant species, and no longer contains fruit orchards. As a result, Wilson's Creek's current cultural landscape differs vastly from what soldiers saw in 1861.

Park staff completed a cultural landscape report in 2004, which details the history of the landscape and its current condition. According to the report, the park's natural resources are in a state of "rapid collapse" and do not represent what was historically present. The report indicates that rehabilitation of the battlefield to its 1861 condition is the park's preferred management strategy. As part of the effort to achieve this goal, staff removed invasive non-native grasses from more than 200 acres in 2007 and planted corn in two historic cornfields. Future projects include thinning woodlands, completing research on and replanting historic orchards, and replanting the former oatfield of the Gibson family, who lived in the Wilson's Creek area and witnessed the fighting firsthand. Removing vegetation from certain areas of the park will re-create wildlife habitat present at the time of the battle (e.g., savanna) that supports native species, and it will re-establish historic lines of sight that are important to interpreting the battle. The main obstacle to restoring the park's landscape is a lack of staff—the park has calculated that an additional 5.3 full-time equivalent employees are needed to carry out the necessary work. In particular, a cultural landscape specialist or historical landscape architect is needed. Another major obstacle is

that the park currently lacks guidance in the form of exactly what and how much vegetation to remove. If these directives were clear, staff would be able to put them in the Park Service's facility management software system and request funding.

The most significant threat to Wilson's Creek's cultural landscape is that only 80 percent of the original battlefield is protected within park boundaries. Adjacent development within the area continues to encroach on the park and threatens to drastically alter portions of the battlefield. The park is working diligently to prevent this from happening and, as funds are available, has purchased acreage near the southwest section of the park—the Guinn farm site, portions of the historic Wire Road, and parcels surrounding the Wilson's Creek Civil War Museum. The park purchased these parcels from the Wilson's Creek National Battlefield Foundation, which acquired the land from willing sellers. The park also recently began the process of obtaining the 40-acre Moody Springs

Overgrown vegetation obscures historic lines of sight and views from Bloody Hill, where some of the fiercest fighting occurred during the Battle of Wilson's Creek. This can make it difficult for visitors to understand battle events.



The Ray House is one of the last remaining structures still standing from the time of the Civil War battle at Wilson's Creek. The park has worked to restore the building and now needs funding to repaint the exterior of the structure and to complete updated historic structure and historic furnishing reports to ensure the structure is protected for future generations.

property from the Wilson's Creek National Battlefield Foundation. These acquisitions move the park towards the goal of protecting 95 percent of the original battlefield. The remaining 5 percent of the original battlefield has been developed and is not identified in any plan for protection.

HISTORIC STRUCTURES—BATTLE-ERA HOME IN "FAIR" CONDITION

Wilson's Creek National Battlefield protects 30 historic structures that are integral to the interpretation of the battle. A 2007 evaluation indicates that 28 of them are in "good" condition. The other two structures, the McElhaney House and the Ray Springhouse, are in "fair" condition and require yearly rehabilitation work.

Wilson's Creek's pre-eminent historic structure is the Ray House, one of the last surviving dwellings from the days of the battle, along with

the springhouse on the Ray property. John Ray moved to the area in the 1840s, and he had developed a prosperous farm by the time the Civil War broke out. Ray watched from his home as a major battle was fought on his cornfield. The Ray House and springhouse were spared during the fighting because Confederates were using the house as a field hospital, and Union troops respected the yellow flag that the doctors flew from structures identifying them as such. Much of the building materials of the Ray House are original, including the fireplace that was built from local stone. To improve the security and protection of the Ray House, the park recently installed a fire-suppression system, rebuilt the front porch, and installed a new roof. A dead tree located on the north side of the house was also removed to prevent it from falling on the house. The park's only historic structure report was written for the Ray House in



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1968 and needs to be updated to reflect the structure's current condition and future needs. Park staff would also like to complete a historic furnishing report for the Ray House, which details the history of a structure's use, and documents the type and placement of furnishings to represent a period of interpretive significance. A historic furnishing report also provides guidance for the care and maintenance of furnishings that are exhibited in the structure, including specific instructions for the care of newly acquired objects.

In 1973, the historic Phillips/Patterson Cabin, which was built in the 1850s, was donated to the park and moved there from the nearby town of Battlefield, Missouri, in the 1970s. The cabin was placed on the site of the original Edwards Cabin, which burned down before the park was established. The original Edwards Cabin stood next to the headquarters of General Sterling Price, commander of the Missouri State Guard, during the battle. The park restored the Phillips/Patterson Cabin, now called the Edwards Cabin, in 2005 through a partnership with the National Park Service's Challenge Cost Share Program and the Wilson's Creek National Battlefield Foundation.

Wilson's Creek National Battlefield also contains the historic McElhaney Farm, which includes several structures (house, barn, storm cellar, smokehouse, cistern, and sidewalk) built by the McElhaney family beginning in 1911. The McElhaney Farm is important to the park for its potential to contribute to interpretation of the post-battle period of the area. The park's historian interviewed a descendant of the McElhaney family in 2005, which helped capture information on the time when she and her daughter were living in the Ray House and in the McElhaney House. A historic structure report on the farm would supplement the information gained through this oral history, but the park has not yet received federal funds for this work. The lack of a historic structure report has prevented the staff from accessing available



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funds to repaint the McElhaney House and rehabilitate the roof.

Protecting the park's historic structures through regular maintenance is a critical responsibility for Wilson's Creek National Battlefield. Current park staff have the knowledge and expertise to perform this preservation work but are limited by available funding. One maintenance staff member has had extensive training in historic preservation at Harpers Ferry National Historical Park, and other staff have attended historic preservation trainings. Despite these trained staff, however, the park continues to contend with unfunded maintenance projects, including completing a historic structure report for the McElhaney Farm and rehabilitating the McElhaney House and Wellhouse.

The Ray Springhouse, built to store perishable food, is one of just a handful of structures at the park that remain from the time of the battle. Today the springhouse is in "fair" condition and the park needs funding to repair the masonry joints.

Archaeologists and volunteers inventoried the battlefields at Pea Ridge National Military Park in 2001. This involved walking the fields with metal detectors, locating metal targets or artifacts, excavating the artifacts, and plotting their locations on a map.



ARCHAEOLOGY—RESOURCES WELL KNOWN, BUT INTERPRETATION IS LIMITED

Archaeological resources are an essential component of the preservation and interpretation of any battlefield, and Wilson's Creek National Battlefield is no exception. The park's archaeological resources include burial sites on the battlefield, artifacts relating to the battle, architectural remains and structures, and prehistoric artifacts such as lithic scatter and Early Archaic projectile points. Wilson's Creek's premier archaeological resources are the battlefield and the Ray House grounds. Battlefield artifacts relate to battle events and individual soldiers, while artifacts associated with the Ray House grounds provide a window into the lives of civilians during the Civil War battle.

The park completed an archaeological overview and assessment in 2000 and a park-wide archaeological inventory in 2005. These are notable accomplishments considering that

there are no full-time staff at Wilson's Creek dedicated solely to archaeology. Instead, park staff collaborate with universities and other entities to complete archaeological research. The park partnered with Missouri State University in 2006 on an investigation to identify the Ray House outbuildings, and the 2005 archaeological inventory was made possible with the help of staff from the Park Service's Midwest Archeological Center. This study identified 52 historic and prehistoric archaeological sites; all but one was assessed as being in "good" condition. Just two Wilson's Creek battlefield sites have been listed in the National Register of Historic Places. The park would like to complete additional archaeological work in several areas (e.g., identifying the exact location of the Sharp Farm), but the park has been unable to secure funding and heavy vegetation must be removed before these additional surveys can be completed. In the meantime, Missouri State University students have

provided archaeological research in selected areas of the park for the past three years.

The greatest threat to archaeological resources associated with the Battle of Wilson's Creek is that many important sites are not within the park's current boundaries, making them vulnerable to development. For example, a portion of Bloody Hill lies outside the park. Park managers are actively working to acquire the remaining lands, as previously noted. One recent acquisition—a parcel in the southwest corner of the park, acquired in 2006—allowed for a survey of the remains of the Guinn Farmhouse in 2007, which uncovered the traces of the Wire and York Roads.

Another threat to the park's archaeological resources is illegal relic hunting. This was a popular activity on the battlefield before the establishment of the park, though few instances of looting have occurred since. A notable instance was a case of metal detecting at the Ray House in 1999. The park successfully used the national Archaeological Resources Protection Act to prosecute the offender and was awarded a monetary settlement to correct the damage. Though this is not currently a significant problem, increased development near the park could increase the threat of looting and vandalism. Part of Wilson's Creek is located within Christian County, which according to the U.S. Census Bureau, experienced a 29.9 percent growth in population between 2000 and 2006. Information gathered during the 2005 archaeological inventory has made it easier for the Park Service to prosecute incidents of looting or vandalism.

While some archaeological artifacts are on display at the visitor center, Wilson's Creek's archaeological resources are not extensively interpreted throughout the park, despite the fact that many of the features that were present during the battle have deteriorated to archaeological sites, such as the Sharp Farmhouse and Ray House outbuildings. The park's 44,000 archaeological artifacts are stored off-site at the

Midwest Archeological Center in Lincoln, Nebraska. The Park Service recognizes that there is a need to expand the park's exhibition and interpretation of these resources and is planning to install an archaeology exhibit in the new addition to the visitor center.

MUSEUM COLLECTION AND ARCHIVES—PARK INCLUDES NOTABLE CIVIL WAR MUSEUM

Wilson's Creek National Battlefield preserves an impressive museum collection and archives that total more than 90,000 items (in addition to the items within the Wilson's Creek Civil War Collection). Nearly 37,000 of these are in the park's archives, including photographic prints, scrapbooks, original documents, tintype photographs, and transcripts of oral history interviews. More than 16,000 of the archival pieces are currently waiting to be cataloged. Wilson's Creek's historian currently performs the archivist duties, but the park has requested the funds for a full-time curator and an archivist. One of the most significant items within the museum collection is the recently acquired bed in the Ray House where Brigadier General Lyon's body was placed after he died on the battlefield.

Exhibits in the Wilson's Creek Civil War Museum incorporate items from the park's museum collection.



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The park displays some historic artifacts at its visitor center, in exhibits that interpret both the Civil War battle and the lives of area residents and farmers during the war. Displayed items include bullets, weapons, the silk guidon (small flag) of Company H, 1st Arkansas Cavalry, and farming implements such as a hay rake. An 8,000-square-foot addition to the visitor center was completed in 2005 to store and increase the amount of exhibit space to 2,000 square feet.

The acquisition of the General Sweeny collection in 2005 represents one of the park's most significant successes in the last several years in preserving and interpreting this Civil War battle. The museum, now called the Wilson's Creek Civil War Museum, is separate from the park's visitor center and preserves a collection that tells the story of the Civil War west of the Mississippi River. The collection includes original regimental flags, including the flag for the Confederate "Cherokee Braves" who fought under Brigadier General Stand Watie, and a great deal of personal memorabilia, such as a folded note carried by a soldier that contained the passwords of the day. The park's historian has begun cataloging the collection, beginning with the weapons. Additional full-time staff, such as museum curatorial staff, educational outreach and interpretation rangers, law enforcement, and several facility management positions are needed to properly care for the expanded collection.

The Wilson's Creek Civil War Collection is

considered one of the best Civil War museums within the park system, but because it is located off-site, it does not receive as many visitors as the park's visitor center. Park staff are planning for the construction of an addition to the park's visitor center to adequately store and increase the visibility of the Wilson's Creek Civil War Collection.

The Hulston Library is another valuable park resource. It contains approximately 6,500 historical and contemporary volumes focusing on the Civil War and the campaign west of the Mississippi River.

To enhance museum and archival collection protection and management, Wilson's Creek National Battlefield needs to update its collection management report. The latest collection management report, which guides staff with short- and long-term management and care of the park's museum collection and archives, was written in 2001, before the park acquired the Wilson's Creek Civil War Collection. The scope of collection statement, which states the significance of the collection and guides interpretation based on the park's establishing legislation and other planning documents, was recently updated.

ETHNOGRAPHY—RESEARCH NEEDED TO IDENTIFY POTENTIAL CONNECTIONS

Wilson's Creek does not have a formal ethnography program, so this category was not evaluated in this assessment. Little ethnographical work has been completed at the park, but staff have identified the Cherokee and Delaware American Indians as cultural groups and stakeholders with an interest in the park. Park staff would like to conduct historical research into the role American Indians, specifically the Cherokee, may have played in the battle. The long-range interpretive planning process will also explore the Civil War soldiers of German and Irish descent and the lives of the people that lived in the area before the battle was fought.

Among the outstanding artifacts displayed at the Wilson's Creek Civil War Museum is the flag of the Confederate "Cherokee Braves" who fought under Brigadier General Stand Watie.

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**NATURAL RESOURCES—
PARK MAINTAINS HABITATS AND
SUPPORTS RARE PLANT AND ANIMAL
SPECIES**

The assessment rated the overall condition of natural resources at Wilson’s Creek National Battlefield a score of 72 out of 100, which ranks park resources in “fair” condition. Prominent factors influencing the ratings include the proliferation of eastern red cedars and invasive non-native grasses throughout the park’s open fields, the degraded water quality within Wilson’s Creek, and future threats of resource degradation caused by adjacent development.

**PARK HABITATS—DIVERSE HABITATS
MANAGED TO PRESERVE THEIR CIVIL
WAR APPEARANCE**

Wilson’s Creek encompasses a variety of habitats, including prairie savanna, bottomland forest, oak-hickory forest, tallgrass prairie, upland scrub, limestone glade, and upland woodland. The park’s prairie savanna, which is defined as transitional vegetation occurring at the interface between oak-hickory forest and tallgrass prairie, represents the most dominant vegetation type. Wilson’s Creek National Battlefield also contains six limestone glades, uncommon habitat that supports the federally listed threatened Missouri bladderpod

Prairie savanna, which occurs at the transition between oak-hickory forest and tallgrass prairie, is the most common vegetation type at the park.

Wilson's Creek's natural habitats include prairie savannah, open fields, and tallgrass prairie, among others, and the park works to preserve these landscapes as the soldiers saw them during the battle.



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(*Lesquerella filiformis*), a small annual plant with distinctive yellow flowers. Terrestrial mammal and herpetofaunal (amphibians and reptiles) inventories at the park point to high species richness (i.e., a high number of species), which indicates generally high-quality habitat. Grassland bird and butterfly studies could help staff to determine the quality of the park's tallgrass prairie and savanna habitats.

Wilson's Creek staff are working to preserve the area's 1861 appearance in order to provide visitors with an opportunity to view the landscape that Civil War soldiers witnessed. At the onset of the fighting, an estimated 797 acres of land now within the park were under agricultural production. These fields were planted mainly with corn and oats. This amount of land remained under cultivation until the mid-20th century, when the park was established and agricultural activities ceased. Since then, woody species (especially invasive non-native species) have encroached upon the landscape and are

entrenched within areas that were once open fields. These woody species now obscure historic views and lines of sight that are necessary for visitors to fully understand the events of the battle. To mitigate the damage from and to help prevent the encroachment of woody species, the Park Service plants approximately 55 acres of corn and leases about 280 acres to farmers for hay production. The acreage of planted corn and hay varies from year to year based on the time and money available for the project.

Wilson's Creek National Battlefield has identified preserving native species as an integral park goal, and to achieve this, native habitats—savannas, tallgrass prairies, and limestone glades—need to be preserved and restored. Rehabilitation of the park's landscape will be extensive. Plans have been made to restore 718 acres to their 1861 condition, which will re-create the cultural landscape, historic views, and habitats present at the

time of the battle. To restore historic prairies and savannas, the park reduces forest cover by removing small trees and shrubs and then treats any remaining woody and weed species with herbicide and prescribed fire. Some treated areas are then reseeded with native plant species, such as big bluestem (*Andropogon gerardii*), Indiangrass (*Sorghastrum nutans*), and little bluestem (*Schizachyrium scoparium*). Park staff collect and plant seeds from the surrounding area in an effort to maintain the locally adapted genotypes of the native grasses and forbs.

Each of the park's six limestone glade habitats has been on the receiving end of restoration efforts since 1970. To restore limestone glades, the park uses controlled burns to reverse the effects of more than 150 years of fire suppression, which has allowed woody species, particularly eastern red cedar (*Juniperus virginia*), to encroach upon the park's glades and crowd out other species. These controlled burns—and others conducted to restore savannas and prairies—are guided by the park's 2004 fire management

plan. Both a lack of funding and a lack of staff time limit the amount of habitat restoration that can be accomplished.

PROTECTED PLANTS AND INVASIVE PLANTS—PARK HARBORS BOTH RARE SPECIES AND UNWANTED NON-NATIVE SPECIES

The Missouri bladderpod, a federally listed threatened species, occupies the limestone glades in Wilson's Creek National Battlefield. The Park Service has monitored the plant for the past 20 years and has found that, overall, the Missouri bladderpod is doing well in the park: Three populations appear to be growing, while two remain stable. A new population was discovered on recently acquired land. Plans are under way to improve the habitat for this bladderpod population by removing eastern red cedars. Research has shown a direct correlation between the thinning of eastern red cedars and an increase in the abundance of Missouri bladderpods. In addition to encroaching cedars, another threat to Wilson's Creek's Missouri bladderpod populations comes from trampling

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In an effort to recreate the scene during the Battle of Wilson's Creek, the Park Service plants about 55 acres of corn and leases about 280 acres of park land to farmers to grow fescue species.

that occurs when park visitors travel off-trail. Recommendations to mitigate this problem include re-routing trails and constructing boardwalks, reducing the width of hiking/walking trails, visitor education, and the continued restoration of glade habitat.

Wilson's Creek also supports a number of state-listed endangered and threatened plant species, including royal catchfly (*Silene regia*), buffalo grass (*Buchloe dactyloides*), greenthread (*Thelesperma filifolium*), false gaura (*Stenosiphon linifolius*), Texas sedge (*Carex texensis*), blue grama (*Bouteloua gracilis*), earlyleaf brome (*Bromus latiglumis*), stemless evening primrose (*Oenothera triloba*), and little hip hawthorn (*Crataegus spathulata*). These plants can be found within a variety of park habitats, including restored prairies and limestone glades.

A baseline plant community monitoring report from 2001 found 35 species of non-native plants at Wilson's Creek that affect about 1,110 acres of the park. The non-native plants

that are of most concern include bromes (soft chess, downy brome, and barren brome [*Bromus* spp.]), Johnsongrass (*Sorghum halepense*), multiflora rose (*Rosa multiflora*), musk thistle (*Carduus nutans*), and sericea lespedeza (*Lespedeza cuneata*).

This last species is the park's most prevalent non-native plant. Sericea lespedeza is native to eastern and central Asia and was introduced into the United States in 1896 by the North Carolina Agricultural Experiment Station to control erosion and serve as a source of hay and wildlife habitat and food. During 2007, the park sprayed 32 canopy acres (i.e., a measurement that includes the height, length, and width of a grove) to control its spread. While sericea lespedeza can be found throughout Wilson's Creek National Battlefield, it is most abundant in the park's open prairies/savannas and glades, including areas being restored. The park is controlling the emergence of this non-native by spraying herbicide, and researchers from

More than 150 years of fire suppression have allowed eastern red cedars to encroach into various park habitats. The Park Service uses prescribed burns and manual tree removal (shown here at Bloody Hill) to restore some areas.



Missouri State University are reviewing recommendations for the control of sericea lespedeza.

WILDLIFE—PROTECTED SPECIES TAKE REFUGE IN THE PARK

Wilson's Creek National Battlefield provides habitat that supports a variety of wildlife species, including some federally listed and state-listed rare animal species. Surveys have documented 53 fish, 20 reptile, nine amphibian, 37 mammal, 58 butterfly, 88 lichen, and 54 bird species within park boundaries. Threatened and endangered species include the gray bat (*Myotis grisescens*), bristly cave crayfish (*Cambarus setosus*), and grotto salamander (*Typhlotriton spelaeus*), which are all cave-dwelling species.

The park's most common large mammal, the white-tailed deer (*Odocoileus virginianus*), has been well studied. A 2007 report identified a decrease in the white-tailed deer population, which was attributed to a combination of starvation and hemorrhagic disease (bluetongue disease). Hemorrhagic disease is a virus spread by a midge (*Culicoides imicola*) that affects white-tailed deer. Despite this recent decline, the 2007 white-tailed deer population density at the park is comparable with the densities for the surrounding area. At current population levels, the Park Service is not concerned that the deer are overbrowsing vegetation, but staff monitor the deer and have plans in place to manage them should their numbers increase to a level that would damage vegetation. Staff believe that white-tailed deer and wild turkey poaching do occur, but the effects on populations are believed to be minimal.

A 2005 fish inventory of Wilson's Creek identified 30 native species of fish. The most common fish species found were black redhorse (*Moxostoma duquesnei*), golden redhorse (*Moxostoma erythrurum*), and central stonerollers (*Campostoma anomalum*). Species inventories discovered two non-native fish species in the park, blue gill (*Lepomis*

macrochirus) and common carp (*Cyprinus carpio*). Their impact on the park's native species and aquatic habitat is unknown.

WATER QUALITY—WILSON'S CREEK IMPAIRED

Wilson's Creek itself is an important natural resource for the park and represents its main hydrological feature. The natural flow of the creek has been greatly altered by the introduction of some 42.5 million gallons of treated wastewater that are released into the creek from Springfield's Southwest Wastewater Treatment Plant each day. Although the release of this treated wastewater is not the best possible situation, the wastewater does supplement the creek's natural flow, reduces the effects of human diversions, prevents the creek from running dry, and provides habitat for aquatic species at the park.

The Missouri Department of Natural Resources lists Wilson's Creek as an impaired waterway, which means that the water quality is not meeting the standards of the federal Clean Water Act, on account of unknown toxicity. The source of this toxicity has been difficult to determine. Mercury or some other waste product could be polluting the creek. The city of Springfield is an upstream urban area, and there could be any number of pollutants from nonpoint sources within the runoff that enters Wilson's Creek from the city. The degraded water quality may also be attributed to fertilizer-rich runoff from the adjacent agricultural fields, which causes excessive algae growth.

Organic wastes—originating from livestock—within Wilson's Creek are problematic and are attributed to this runoff, as well as from the release of inadequately treated water from Springfield's Southwest Wastewater Treatment Plant during periods of heavy rains. There is a history of contamination in Wilson's Creek from inadequately treated water released from the treatment plant during rain events and from periodic untreated spills. One inadequately treated water



The federally protected Missouri bladderpod (pictured here) is one of the rare plants protected within Wilson's Creek National Battlefield.

release event resulted in a documented fish kill in the park in 1996. However, these irregular releases are probably not as detrimental to the park's water quality as the neighboring aging septic systems that constantly leak effluent into Wilson's Creek and the runoff from the nearby communities of Battlefield and Republic. The condition of Wilson's Creek is not likely to improve because its entire upper watershed is located within the Springfield metropolitan area.

Years of poor water quality seem to have taken a toll on common herpetological species that were once found along park waterways. Species that are considered extirpated include mudpuppy (*Necturus* spp.), western chorus frog (*Pseudacris triseriata*), eastern narrowmouth toad (*Gastrophryne carolinensis*), and cricket frog (*Acris* spp.)

Other water resources include three springs (Short, Ray, and Terrell) as well as Skeggs' Branch and McElhaney Branch. Terrell Spring, in particular, is considered to have near pristine water quality, but could be at risk of disturbance and degradation with future residential development projects near the park.

Wilson's Creek is listed as impaired by the Missouri Department of Natural Resources, the causes of which are unknown.

AIR QUALITY—LIMITED DATA AVAILABLE TO PARK MANAGERS

There are no air-quality monitoring stations within Wilson's Creek National Battlefield. However, the National Atmospheric Deposition Program gathers data on acidity, sulfate, nitrate, ammonium, and chloride levels at two locations within 90 miles of the park and the data from these sites are considered indicative of conditions at the park. In 1999, the average wet deposition of ammonium was considered moderate at one site and high at the other compared to the national average, and nitrate and sulfate were considered to be at moderate levels at both sites. Ozone is measured at two monitoring stations located in Springfield, Missouri, about ten miles away from the park, and has not exceeded acceptable levels.



CORI KNUDTEN



STEWARDSHIP CAPACITY

FUNDING AND STAFFING—CURRENT LEVELS LIMIT PROGRAMS

The most significant factor affecting a park's ability to protect its resources is the annual funding it receives from Congress and the administration. In fiscal year 2007, Wilson's Creek National Battlefield had an annual operating budget of \$2.06 million to support staff and fund resource protection projects. The park's operating budget has increased over the last ten years, but the park's actual purchasing power has decreased when inflation and rising labor costs are considered. As a result, day-to-

day park administration often comes at the expense of the historic, cultural, and natural preservation that the park was established to achieve.

Staff shortages directly affect visitor experience at the park. Ranger-led interpretive programs are offered only on weekends and only during the summer, and personal interactions between rangers and visitors are limited. The Ray House, the park's premier historic structure, is only open to visitors sporadically because of inadequate staffing. To provide adequate interpretive and educational programs, the park has identified the need for an additional 2.4 full-time equivalent staff posi-

Park staff and local volunteers in period dress perform living history programs that include firing muskets and artillery. Due to funding and staffing shortfalls, the park is able to perform these demonstrations only on certain weekends during the summer.

ERIN MCPHERSON



The park needs more staff to keep up with the amount of routine maintenance and rehabilitation work that the park's historic structures, including the Ray House shown here, require.

tions. The park is also seeking seven new seasonal positions to provide visitor services.

Federal staffing and funding shortfalls also diminish the Park Service's ability to complete cultural landscape restoration and facility maintenance at Wilson's Creek. Funding is needed for positions to supervise and contract work to rehabilitate the park's Civil War landscapes, protect archaeological sites, and improve habitats for endangered species. Thinning vegetation, rehabilitating landscapes, and replanting native species is needed to enhance 718 acres, maintain 546 acres of cultural landscapes, and improve 154 acres of natural and cultural resources. The park's core operations plan and

business plan identify the need for another 5.3 full-time equivalent staff to oversee cultural landscape restoration and facility maintenance, two positions to care for the park's museum and archival collections, and one law enforcement position.

PLANNING—GENERAL MANAGEMENT PLAN UP-TO-DATE; PARK NEEDS ADDITIONAL PLANNING DOCUMENTS

Wilson's Creek's general management plan, typically a park's most important planning document, was updated in 2003 and is regularly used to guide park resource management. This plan identifies the main themes that the park interprets: the battle's significance to the war, the lives of residents in the area during and after the battle, and the actual battle itself. In order for the park to interpret these themes and manage associated cultural and natural resources, park staff need additional research and resource studies, plans, and reports.

Currently, the park has very few planning and management documents. For example, the park has only one historic resource study and it dates from 1968. The book *Wilson's Creek: The Second Battle of the Civil War and the Men Who Fought It*, which was written by William Garrett Piston and Richard W. Hatcher III in 2000, serves as an important source from which park staff draw information to guide resource management and interpretation. Park staff partnered with Southwest Missouri State University to complete a history of the legislation to establish Wilson's Creek, but funds for an administrative history detailing park operations since establishment have not been forthcoming. Additional needed plans include a resource stewardship plan, vegetation management plan, integrated pest management plan, and a curatorial plan. The lack of these plans is a direct result of staffing and funding shortages, and no new plans or studies are scheduled to be completed in the near future.

RESOURCE EDUCATION—INTERPRETIVE PROGRAMS REACH MANY VISITORS

Wilson's Creek National Battlefield presented 1,457 interpretive programs in 2007, reaching 135,830 visitors. Visitors can join ranger-led interpretive walks on summer weekends, participate in the park's annual moonlight living history tour, enjoy the art-in-the-parks program, and take in artillery demonstrations and anniversary/memorial ceremonies. Walking tours to the Ray House and Bloody Hill are also offered as school field trips, and the park will be able to offer more of these tours when an additional educational ranger is hired later this year. Because the park has no staff dedicated solely to interpretation, volunteers present the majority of the programs, with assistance and guidance from the park's historian and librarian.

Wilson's Creek's staff feel that the park does not have the necessary staff to serve park visitors (120,670 visitors in 2008). Staff also consider

most of the park's exhibits, including the waysides along the tour road that were installed in 1985, to be out-of-date and in need of replacement. To partially address this need, several new exhibits and interpretation tools have been completed or are being developed. A fiber-optic map in the visitor center gives an overview of the battle and helps visitors understand how the terrain of the landscape affected the battle. For example, the map demonstrates how open spaces were needed for Civil War battles. In 2008, the park began showing a new 26-minute film at the visitor center. Most of the film was shot within the park and features re-enactments of key battle scenes.

According to the park's website, the Wilson's Creek Civil War Museum is closed from December 1 through March 31. Though the closure is attributed to staffing shortages, it allows the park time to clean and catalog the collection.

Wilson's Creek National Battlefield's tour road is a 4.9-mile paved road that includes eight stops featuring interpretive waysides. The tour road also provides access to five walking trails and a 7-mile horseback riding and hiking trail.

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EXTERNAL SUPPORT—VOLUNTEERS ASSIST PARK STAFF

Faced with significant funding and staffing shortfalls, the park increasingly relies on partners and volunteers to bridge the gap between what is needed and what the park can afford. In fiscal year 2007, park volunteers contributed 7,318 hours of service, helping with visitor orientation and interpretation, special events, living history programs, and cultural and natural resource projects. But because the park lacks a volunteer coordinator, it is unable to maximize volunteer recruitment and contributions.

The park has a friends group, the Wilson's Creek National Battlefield Foundation, which has played a vital role in the park's development. Founded in 1950, the foundation originally purchased and donated 37 acres of land on Bloody Hill and later went on to fund-raise, acquire, and donate 1,700 acres of land that would become Wilson's Creek National Battlefield. The foundation has also assisted with the construction of a new building for the

Hulston Library, the acquisition of the Wilson's Creek Civil War Collection, the Edwards Cabin repair, land purchases, and conservation easements.

Although Wilson's Creek National Battlefield was established to preserve cultural resources important to the Civil War battle, the park has become dedicated to protecting the natural resources as well, especially as Wilson's Creek becomes a place of recreation in an increasingly developed region. To protect the park's natural resources, partnerships with entities in the surrounding communities are essential. As such, the Park Service coordinates efforts with local government agencies, elected officials, community leaders, landowners, nonprofit organizations, law enforcement agencies, schools, and businesses. Through these partnerships, the Park Service is able to share resources, achieve goals, execute creative solutions to common challenges, contribute to joint events, exchange in-kind services, and above all, generate much-needed additional funding and capacity.

Volunteers from local communities help keep Wilson's Creek National Battlefield clean by picking up trash. Volunteers also assist the park with a host of other programs and projects.



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THE PEA RIDGE NATIONAL MILITARY PARK ASSESSMENT

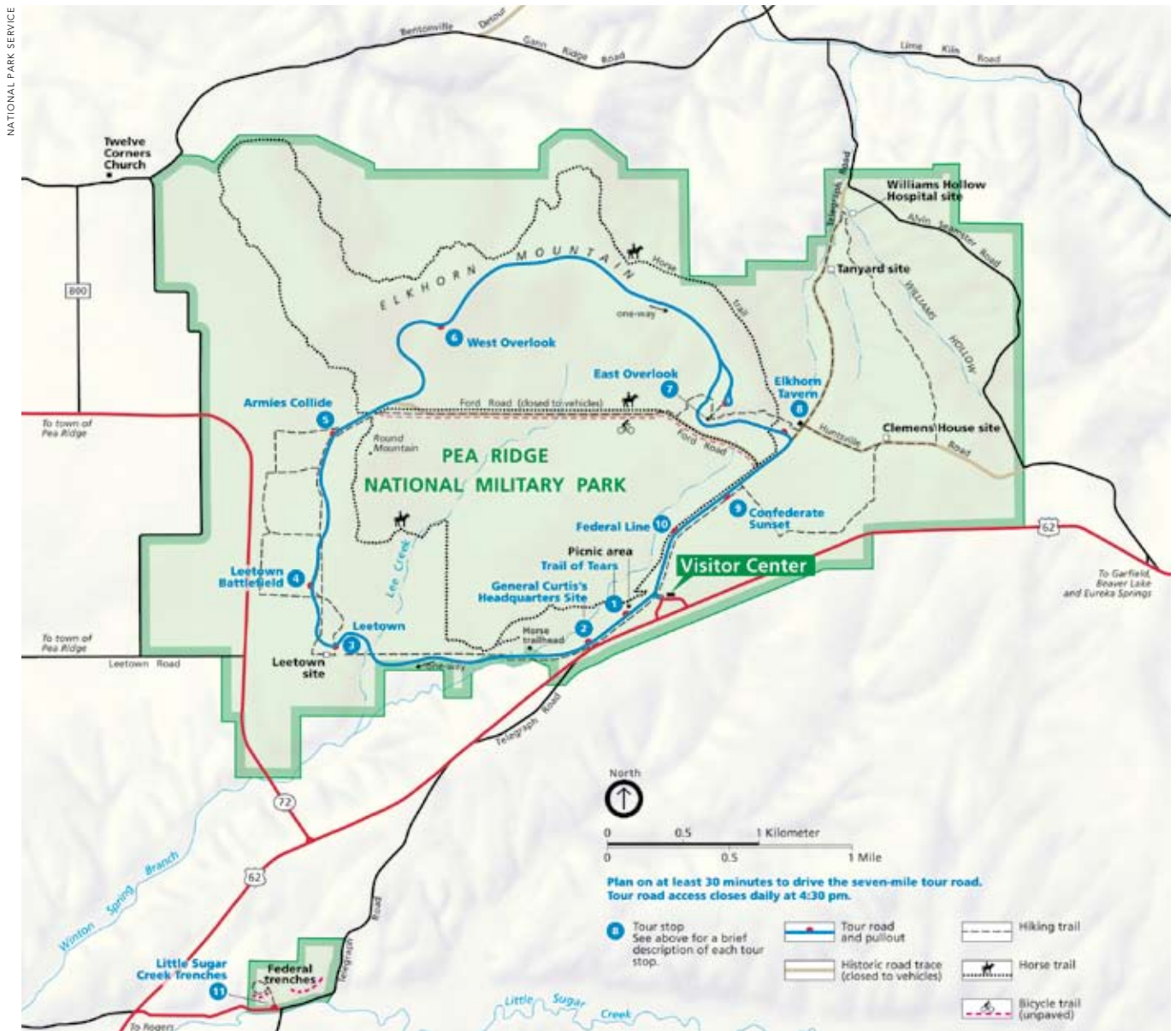


At the outbreak of the Civil War, the majority of the residents in the cotton-growing regions of southern and eastern Arkansas were sympathetic to the Confederacy. In May 1861, state officials ordered the seizure of the federal garrison at Little Rock and voted for secession from the Union. Later that summer, Union and Confederate forces met at Wilson's Creek in the neighboring state of Missouri. The Battle of Wilson's Creek ended in a Confederate victory

on August 10, 1861, but Confederate forces were not able to completely seize control of Missouri. In February 1862, the Union Army of the Southwest marched on Lexington, Missouri, where the Confederates were encamped. Fighting ensued and the Union forces were able to push the Confederates out of Missouri, pursuing them on their retreat into Arkansas.

Under Major General Earl Van Dorn, the Confederates set out from the Boston

Natural and cultural resources are intertwined at Pea Ridge National Military Park.



Mountains, south of Fayetteville, Arkansas, on March 4, equipped with only three days of rations and limited supplies—one blanket and 40 rounds of ammunition for each soldier. Van Dorn expected to capture the Union provisions and use them until their own supply wagons caught up with them. However, a snowstorm on March 4 slowed the Confederates and spoiled Van Dorn's plan to take the Union forces by surprise. On account of this setback, Van Dorn changed the plan of attack and decided to try to flank the Union forces using the Bentonville

Detour road. He and his tired troops set out late in the day on March 6.

The Union troops were encamped just south of the town of Pea Ridge at Little Sugar Creek, and began in earnest to construct earthen fortifications to improve their defensive position. Preparing for the inevitable battle, Brigadier General Samuel Curtis deployed one division a few miles to the west in Bentonville, Arkansas. When he later learned of the Confederate change in plans, he sent men to block the Bentonville Detour, which they accomplished

by felling trees on the evening of March 6. The new Confederate plan was to have four divisions rendezvous near the Elkhorn Tavern by the morning of March 7. However, only two divisions were able to make it in time, and when the Union command learned of the Confederate movements, they dispatched troops to meet the two Confederate divisions. Fighting began in the woods and farm fields along the Leetown and Ford Roads on the morning of the 7th. Confederate Brigadier General Benjamin McCulloch rode out to the front lines and was killed by a volley of Union fire. Moments later, unaware of McCulloch's fate, Brigadier General James McIntosh rode forward with his cavalry and also was killed. These deaths left the Confederate troops reeling and without any leadership on the ground. As such, the two Confederate divisions at the Leetown battlefield made no concerted attempt to attack the much smaller Union force.

Meanwhile the Confederate divisions located near the Elkhorn Tavern engaged their Union foes and were only able to gain the high ground after an exhausting day filled with long marches and fighting in wintry weather. With rations and ammunition nearly depleted, the Confederate forces were in a bad way. By the next morning, Brigadier General Samuel Curtis had his troops placed south of Elkhorn Tavern and the Union artillery began to attack the Confederate positions. After two hours of continuous fire, the Union Army was able to decimate the Confederate artillery and Curtis ordered the infantry forward. Union troops made steady progress and by noon on March 8, Confederate Major General Sterling Price had ordered his Missouri Guard to retreat east on the Huntsville Road, while the remainder of Major General Earl Van Dorn's army retreated back down off the ridge to the Bentonville Detour and the long march back to Fayetteville. This time, Curtis decided not to pursue the Confederates and camped at Elkhorn Tavern for several days to regroup, tend to the wounded,

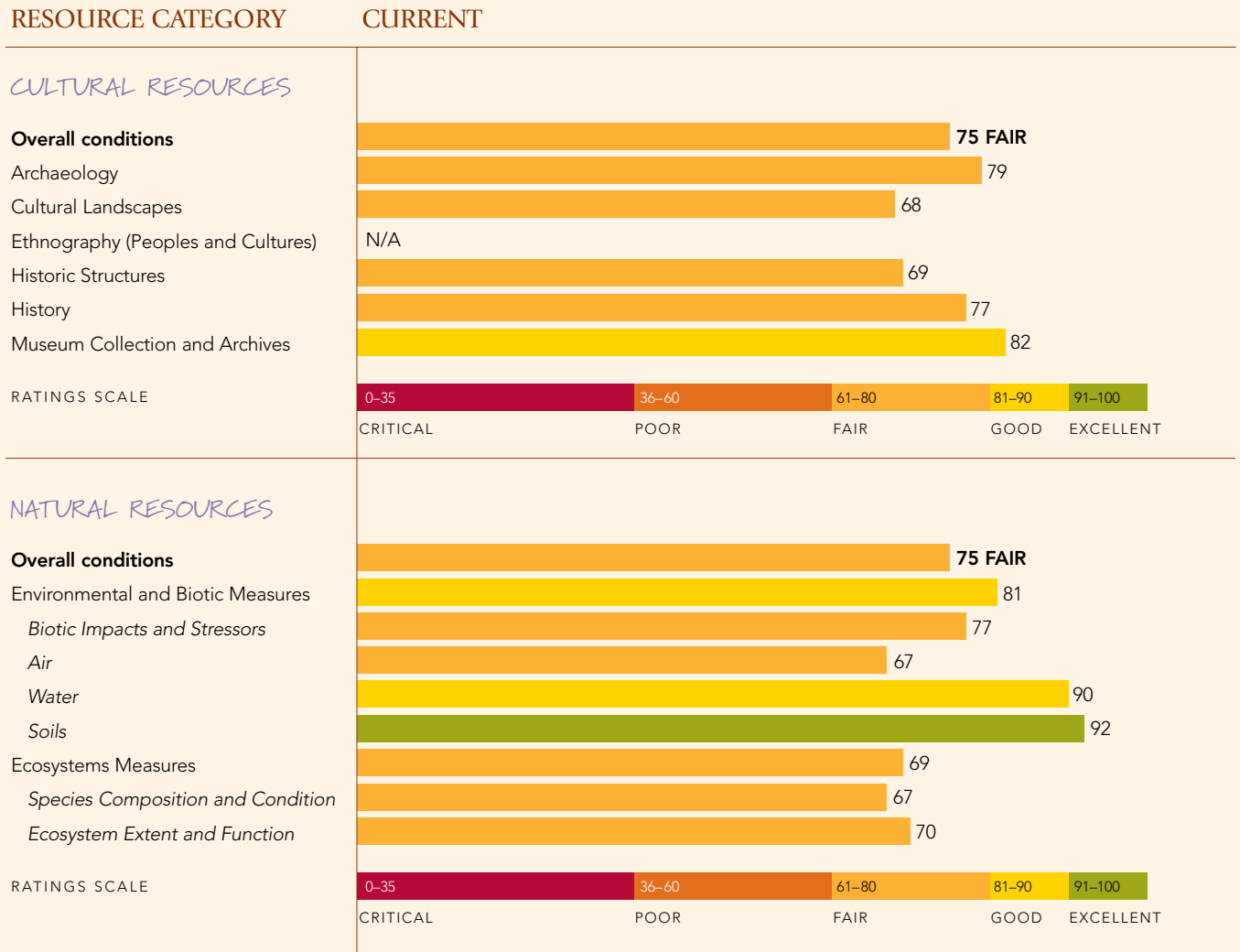
PEA RIDGE NATIONAL MILITARY PARK AT A GLANCE

- **Premier cultural resources:** About 95 percent of the Civil War battlefield where fighting took place is protected within Pea Ridge National Military Park. Protecting such a large portion of an original battlefield is uncommon among Civil War parks in the National Park System. The park also protects the Elkhorn Tavern, used by both Confederate and Union forces during the battle; a segment of the Cherokee Trail of Tears; thousands of Civil War artifacts in its museum collection; and historic fields and roads. All of the park's historic fields have been restored and fenced with historically accurate fences, and more than 80 percent of Pea Ridge's historic roads have been restored.
- **Rich natural resources:** Pea Ridge encompasses diverse ecosystems and habitats that support a variety of species, including several rare plants—field pussytoes, lobed spleenwort, and Ozark chinquapin—and the federally listed endangered gray bat. The park contains a number of streams that originate within park boundaries as well.
- **Recreation activities:** Visitors to Pea Ridge National Military Park have the opportunity to view cultural resources such as historic structures, earthworks, and historic ruins. They can also see birds (great blue heron, broad-winged hawk, and summer tanager are common) and other wildlife (e.g., white-tailed deer and gray fox), as well as rare plant species, including field pussytoes, lobed spleenwort, and Ozark chinquapin. Walking trails provide views of the historic battlefield and access to the park's upland and forest habitats, while the tour road traces important battle sites. Some portions of the park are also accessible to visitors on horseback.

The Elkhorn Tavern is one of Pea Ridge's most significant cultural resources.



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 Pea Ridge National Military Park, 96 percent of the cultural resources information required by the methodology was available and 60 percent of the natural resource 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 pre-dating the park's creation. 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 help to protect them in the future.

and bury the dead. The Army of the Southwest had achieved its goal: It had driven the Confederates out of Missouri and secured this vital state for the Union. For the remainder of the war, the Confederacy would not seriously challenge the Union for control of Missouri.

Pea Ridge also has the distinction of being one of the only major Civil War battles in which American Indian troops participated. Almost 1,000 American Indians, mostly Cherokee, were recruited. The two Cherokee regiments at Pea Ridge fought under Brigadier General Albert Pike, who reported to Brigadier General Benjamin McCulloch.

RATINGS

Current overall conditions of the park's known **cultural resources** rated a score of 75 out of 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. Challenges to the park's cultural resources include threats from adjacent development that would affect the park's viewshed and cultural landscapes; an overall lack of planning documents; a shortage of maintenance and interpretation staff; and the fact that the battlefield is besieged with invasive non-native plants and trees that obscure historic lines of sight.

Overall conditions of Pea Ridge National Military Park's **natural resources** 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"). Natural resource challenges include an overall lack of research on and monitoring of the park's animal and plant species; entrenchment of invasive non-native plants within the park's open fields; and the encroachment of eastern red cedars into the park's prairies.

RESOURCE MANAGEMENT HIGHLIGHTS

- Pea Ridge National Military Park has several projects that are focused on restoring as much of the park's habitats, historic views, fences, and roads as possible to their Civil War-era appearance. For example, 90 acres of native tallgrass prairie—which was a historically common habitat—have been replanted, and the park mows about 560 additional acres to maintain them as open fields. Two historic orchards, one apple and one peach, have been replanted with the help of local Boys and Girls Clubs and Unilever employees. In an effort to re-create the scenery that soldiers witnessed during the Civil War battle, the park has removed 2,500 feet of power lines (and has plans to remove another 8,500), planted more than 2,000 trees in areas that were forested in 1862, rebuilt 17 miles of fence, and restored five miles of historic roads and road traces. In addition, the Park Service is working to control eastern red cedar trees, which are encroaching on the park's open fields.
- The park's black powder program is popular with visitors. Black powder cannons were important pieces of artillery used during the Battle of Pea Ridge. Pea Ridge National Military Park purchased its first firing black powder cannon in 2007, and it has since acquired an additional working cannon. Park staff and trained volunteer black powder demonstrators fire the cannons multiple times a year during performances for school groups, demonstrations, and during volunteer work days. In addition to these working cannons, the park has a total of 58 cannon carriages, 29 of which are outfitted with tubes that are on display for visitors.
- In 2005, Pea Ridge received a \$25,000 donation from Wal-Mart to install new interpretive wayside exhibits, which were completed in 2006. The Park Service is also working to install 14 new museum exhibits by 2010.

Park Service staff and numerous volunteers have rebuilt 17 miles of fences around the park's open fields.



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KEY FINDINGS

- The restoration projects recommended in the park's 2005 general management plan are some of the Park Service's highest priorities. The park relies largely on volunteers to assist with restoration work, so maintaining momentum on projects is important to help keep them engaged and enthusiastic. Delaying restoration projects could result in loss of those critical supporters. The Federal earthworks are the park's most sensitive cultural resource, and the improvements to access and stabilization outlined in the general management plan are critical to maintaining the only physical manifestation of the Union Army's presence at Pea Ridge.
- The highest priority staffing needs at Pea Ridge are in the areas of maintenance, interpretation, and administrative support. Pea Ridge National Military Park currently has four full-time staff within the maintenance division and no full-time interpretive staff. Park managers have identified the need for three full-time positions in each area to properly care for and interpret the park's resources.
- Development of land adjacent to the park represents the largest threat to the park's natural resources. All borders of the park are under threat from urban expansion. Park managers have major concerns about the surrounding urban expansion and the two large-scale highway projects being considered in the area, as they would increase vehicular traffic and impact the park's air quality, soundscapes, night skies, and wildlife.
- Several baseline research reports are critically needed to guide park management and planning. The most important of these studies are a park-wide cultural landscape inventory and report, a historic resource study, an ethnographic overview and assessment, and historic structure reports for the Federal earthworks. The park would also like to complete additional archaeological surveys for the battlefield. The Midwest Archeological Center's preliminary work suggests there is good potential for significant findings that would enhance interpretation of the battlefield and of the civilian sites in the park.
- Research on and monitoring of Pea Ridge's flora and fauna is lacking and needs to be addressed with more extensive ecological studies. Research is needed to better understand animal and plant population numbers and continued monitoring is needed to track environmental quality. The Park Service's Heartland Network Inventory and Monitoring Program has begun addressing these needs and has generated lists of the park's mammal, reptile, amphibian, avian, fish, and plant species; has produced two ecological and natural resource overview documents; and is planning aquatic invertebrate, fish, and additional water-quality monitoring in the near future.
- Invasive non-native species, such as sericea lespedeza and Japanese honeysuckle, are a significant threat to the integrity of Pea Ridge's habitats due to their ability to colonize, overrun, and disrupt ecosystems. Non-native species dominate portions of nearly all fields and road corridors in the park. Non-native species may also become established when eastern red cedar trees are removed to restore prairies, fields and savannas. To prevent this, these areas should be monitored for invasive plants.



CULTURAL RESOURCES—IMPORTANT CIVIL WAR BATTLE RESOURCES PRESERVED AND INTERPRETED

Pea Ridge National Military Park scored an overall “fair” score of 75 out of 100 for the condition of its cultural resources, including history, historic structures, cultural landscapes, archaeology, and museum collection and archives.

Key challenges at Pea Ridge include a lack of planning documents and maintenance and interpretation staff, as well as continued threats from adjacent development that would affect the park’s viewshed and cultural landscapes.

HISTORY—VICTORY SECURES MISSOURI FOR THE UNION

Pea Ridge National Military Park’s history program is guided by the research completed by renowned historian Edwin C. Bearss in the 1960s, shortly after the park was established. The Park Service has made requests for a historic research study for the park as a whole to update and expand upon the work done by Bearss. The park has an administrative history that dates from 1997 and is currently being updated.

Pea Ridge focuses its interpretation on the Civil War battle and the events surrounding the fighting. The park’s interpretive signs and exhibits provide firsthand accounts from the

Historic cannons and caissons are in place on the battlefield, showcasing these artifacts and helping visitors understand troop placement and lines of sight during the battle.

MARK BIAS



Union and Confederate Army veterans erected the Reunited Soldiers Monument near the Elkhorn Tavern in 1889. The sandstone monument is more vulnerable to weathering than harder materials such as marble.

soldiers at the battle and explain how the terrain and weather affected the outcome of the battle. Interpretation at Elkhorn Tavern includes an exhibit of Civil War surgical implements, some period furnishings, and replicas of typical military supplies of the era. There are also wayside exhibits that provide some interpretation of the Cherokee Trail of Tears, which passes through the park. The Park Service would like to undertake historical research studies into pre- and

post-war local life, transportation and communication history, and guerrilla warfare following the battle. They would also like to establish the roster of soldiers who fought at Pea Ridge, including American Indian regiments. This information would allow staff to expand interpretation of historical events for visitors, but to date, a lack of sufficient funding and staff capacity has hindered the completion of this new research.

CULTURAL LANDSCAPES— BATTLEFIELDS ARE THE PREMIER CULTURAL LANDSCAPES

Cultural landscapes reveal how people shape their environment by living on the land and using the resources that surround them. The park's cultural landscapes are the focus of management and interpretation at Pea Ridge. Landscapes include several battlefield areas, the Union Army earthworks at Little Sugar Creek, historic road traces (including a portion of the Cherokee Trail of Tears), split-rail fences, the Union battle commander Brigadier General Nathaniel Lyon's headquarters, the park's tour road, and two overlooks that provide bird's-eye views of the battlefield. The park manages the cultural landscapes that are associated with the Civil War to represent their condition during the battle in March 1862. Park staff have assessed these landscapes and found them to be in "good" condition.

The park is listed in the National Register of Historic Places as a district, and the portion of the Trail of Tears that runs through the park is also included in the register as a part of the Trail of Tears National Historic Trail. The Park Service suggests that several individual cultural landscapes should be evaluated to determine their eligibility to be added to the register as individual sites.

Because of lack of funding, Pea Ridge National Military Park does not currently have a cultural landscape inventory to guide maintenance and preservation of these important

resources. In the interim, the park's general management plan, the historic base map by Edwin C. Bearss, and the historic vegetative base map by Drs. Weih and Shea guides the preservation of cultural landscapes. This preservation has included the restoration of the battlefield and portions of the forests to their 1862 appearance, which entailed rebuilding the historic fence lines that help to demarcate battle lines and the placement of artillery, planting native tree species, removing non-native and encroaching trees, thinning out some densely forested areas, and restoring the historic road traces within the park. So far, the Park Service has rebuilt all 17 miles of fences and five of the park's 14 miles of historic roads and road traces that staff deem important for interpreting the Civil War battle.

Most of this restoration work has been carried out with the help of volunteers; it could not have been accomplished by park staff alone due to time and funding constraints. This collaboration benefits park resources and it fosters a stewardship ethic among the volunteers. Although volunteers have been instrumental in helping the park complete restoration projects, the park needs additional maintenance personnel to maintain the fences and historic roads.

Pea Ridge National Military Park's cultural landscapes are primarily threatened by encroaching development and the deterioration of the resources resulting from a lack of maintenance and funding to allow for their preservation. Pea Ridge is located within Benton County—one of the fastest growing counties in the nation (it grew 57 percent between 1990 and 2000)—and this growth has put pressure on the park to preserve the cultural landscape viewsheds. Because the Park Service has not been successful in acquiring additional land, it has implemented a plan to create a 100-meter buffer within the park's boundaries to protect the bucolic integrity of the Civil War-era scene.

The Park Service is considering using cattle to help preserve the historic look of the park's

battlefields. At the time of the Battle of Pea Ridge, cattle grazed in these fields and kept the grass around the fences shorn; today's mechanical mowers are not able to get close enough to cut this grass. However, a plan for allowing cattle to graze within the park has yet to be developed.

Mowing the park's historic fields is a time-consuming task, and mowers are unable to reach grasses growing next to fences. The Park Service is considering using cattle to help maintain the park's cultural landscape, partly because they can keep the grass close to fences shorn.



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HISTORIC STRUCTURES—ELKHORN TAVERN TOPS LIST OF HISTORIC STRUCTURES

Pea Ridge National Military Park preserves one important standing historic structure and the remains of various historic buildings. The park's list of classified structures—which includes information ranging from a structure's significance to its condition and threats it faces—contains 11 structures. However, this list was compiled in 1994, and the Park Service would like to update it to include additional structures and revised information on the structures. The park requested the funds to update the list of classified structures in 2004, but has not received funding.

The Elkhorn Tavern, the park's most-visited historic structure, played a pivotal role both during and after the Civil War. The tavern was at the center of the two-day battle: It was used by both Union and Confederate forces as a head-

quarters, hospital, and storage facility. In the winter of 1863, the Elkhorn Tavern, which had survived the battle relatively unscathed despite being at the epicenter of the fiercest fighting, was burned to the ground by Confederate troops intent on preventing the Union army from using it as a supply and communications depot. The Cox family, area residents who took refuge in the tavern's cellar during the fighting, rebuilt the tavern in 1865. It became the center for commemorative activities, with veterans gathering at the tavern in the years following the war. The Park Service began restoring the Elkhorn Tavern in 1964. This restoration lasted five years and was guided by historical pictures from the 1880s. Today the building is in "good" condition and contains original and reproduction furnishings, and battle-era surgical equipment and military supplies. Part-time volunteer interpreters teach visitors about the structure and its history.

The Elkhorn Tavern was at the center of the fighting during the Battle of Pea Ridge and is the park's most-visited historic structure.



MARK BIAS



The Reunited Soldiery Monument (foreground) and the Monument to the Brave Confederate Dead (background) were erected in 1889 and 1887, respectively.

Additional historic structures include the Federal earthworks; commemorative monuments; the foundations of several buildings; and the remains of other man-made structures such as fences, water wells, cemeteries, roads, and road traces. The Federal earthworks, fortifications built by Union soldiers, are currently closed to the public as poor access and unmanaged visitation in prior years caused erosion, which threatened to wash away the earthworks. The Park Service has developed a plan to provide future access for visitors to view the earthworks via a new trail.

Pea Ridge National Military Park contains three commemorative monuments—two are placed near the Elkhorn Tavern and one is located near the site of General Samuel Curtis's headquarters. One of the monuments near the Elkhorn Tavern is the Monument to the Brave Confederate Dead placed in 1887 by the residents of Benton County, Arkansas, to honor the three Confederate commanders killed at the

Battle of Pea Ridge: Benjamin McCulloch, James McIntosh, and William Slack. The second is the Reunited Soldiery Monument that was erected by Union and Confederate Army veterans in 1889. The third monument marks the site of the U.S. Army headquarters for the battle at Pea Ridge and was built in 1935. This monument is located near a busy stretch of highway and because there is no parking lot near the monument, the Park Service does not encourage visitors to seek it out because of safety concerns. The park's most recent assessment of these monuments was completed in 1994. At that time, both the Monument to the Brave Confederate Dead and the U.S. Army Headquarters Monument were in "good" condition, while the Reunited Soldiery Monument was in "fair" condition. The Reunited Soldiery Monument is made of sandstone, which weathers much faster than marble and accounts for its current condition.

Historic structure reports contain informa-

Pea Ridge's archaeological resources include the remains of structures, such as the foundation of the Ruddick House (pictured here), which was the home of the initial owners of the Elkhorn Tavern (then called the Ruddick Inn).



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tion on a particular historic structure, including a description of the structure, its current condition, reasons for deterioration, and alternative potential uses for the structure. Completing historic structure reports is the best way for the park to outline its maintenance and preservation needs. The park's only historic structure report was written in 1963 for the rebuilt Elkhorn Tavern, though this report was completed before the Park Service finished restoring the structure. The Park Service is seeking federal funding to complete a new historic structure report for the restored Elkhorn Tavern, as well as for the earthworks and several other structures.

*ARCHAEOLOGY—PARK'S
ARCHAEOLOGICAL RESOURCES
VULNERABLE TO LOOTERS*

Pea Ridge National Military Park has eight identified archaeological sites in the Park Service's Archeological Sites Management Information System, a database that catalogs a park's prehistoric and historic archaeological resources. The sites consist of surface scatter (archaeological

materials found on the ground surface) and architectural elements (ruins of structures). The main battlefield is considered to be in "good" condition; the conditions of the remaining seven identified sites are unknown.

Pea Ridge does not have a full-time archaeologist on staff, but the park receives expertise from Park Service staff at the Midwest Archeological Center and from staff at the University of Arkansas in Fayetteville. From 2001 to 2003, staff from the center and the university inventoried the battlefield areas for archaeological resources. This work uncovered 2,755 battlefield items that the center has cataloged. An archaeological overview and assessment was written in conjunction with this research, and it recommends that the park undertake further archaeological investigations, including additional inventories at the Elkhorn Tavern and within the Leetown Hamlet.

Though threats to archaeological resources in the park are minimal, relic hunting is a concern. The Park Service documents approximately four reports of illegal relic hunting within park boundaries each year. The sentencing of one

looter several years ago to a 17-month federal prison term was extremely effective in raising awareness in the local community about the gravity of stealing and vandalizing archaeological resources. This unlawful activity prevents the Park Service from preserving resources for future generations.

MUSEUM COLLECTION AND ARCHIVES—PARK UPDATING INTERPRETIVE EXHIBITS

Pea Ridge National Military Park preserves a collection of museum artifacts and archival documents that totals more than 4,097 items, some of which are displayed to the public at the park's museum. The collection includes Civil War-era weapons, ammunition, clothing, and equipment used by the soldiers; a diary kept by a Union soldier at the battle; and several letters from other soldiers in both the Union and Confederate armies. Archaeological artifacts that have been unearthed from excavations at

the park include ammunition, artillery shells, and some metal remains of artillery wagons. All of the park's historical, archaeological, and archival materials have been cataloged.

The park's museum exhibits, located within the visitor center, date to the opening of the museum in 1963, and primarily contain artifacts purchased or replica items and are not unique to the events at Pea Ridge. New exhibits are being designed at the Park Service's Harpers Ferry Center and are scheduled to be installed at the park by 2010. These new exhibits aim to more widely reflect the park's interpretive themes: economic and transportation factors important to the region in the 1860s; the different points of view about the battle from both soldiers' and civilians' perspectives; contrasting scenes of the farms and villages at Pea Ridge before and after the battle; life in the region following the battle; and the history of the commemoration of the battle with emphasis on the movement from conflict to reconciliation.

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Exhibits at Pea Ridge's visitor center include historic artifacts from the park's museum collection. The exhibits date to the 1960s and are scheduled to be replaced in the near future.

Archaeological artifacts uncovered and collected during the Midwest Archeological Center's 2001-2003 survey are now cataloged and stored at the center in Lincoln, Nebraska. The remainder of the park's museum and archival collections is stored at the University of Arkansas in Fayetteville under a cooperative agreement with the university and the Arkansas Archeological Survey. The university's facilities and curatorial resources exceed Park Service requirements for storage of museum and archival collections.

ETHNOGRAPHY (PEOPLES AND PLACES)—ORAL HISTORIES WOULD ENHANCE PARK INTERPRETATION

Pea Ridge National Military Park does not have a formal ethnography program or an ethnographic overview and assessment, and the Park Service has not officially identified people traditionally associated with park resources. Because of this lack of information, ethnography was not rated in this assessment. However, the park consults with the Cherokee Nation on

an ongoing basis (several times each year) with regards to the management of the segment of the Trail of Tears that runs through the park, and in its efforts to interpret the role of Cherokee soldiers in the battle of Pea Ridge. Currently, the park provides limited interpretation of both Cherokee participation in the battle and the Trail of Tears with exhibits and via information available at the Elkhorn Tavern and at the visitor center.

Park staff would like to collect oral histories from local residents who may have family ties to civilians who lived in the area at the time of the battle. The park has general information about the civilian population during the Civil War, but the only firsthand accounts it has are from the Cox family who owned the Elkhorn Tavern. Oral histories from descendants would enrich the interpretation of civilian life before, during, and after the battle, and they would provide important perspectives on the lives of area residents and their use of the landscape prior to the establishment of the park.

American Indian history at Pea Ridge is interpreted through this exhibit on American Indian regiments that participated in the battle, an interpretive wayside on the Trail of Tears, and through contact with interpreters at the Elkhorn Tavern and the visitor center. In addition, the park's bookstore features a variety of materials about the Trail of Tears and American Indian participation in the Civil War.



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NATURAL RESOURCES—PARK'S NATURAL RESOURCES SIGNIFICANT TO THE REGION

The assessment rated the overall condition of natural resources at Pea Ridge National Military Park a score of 75 out of 100, which ranks park resources in “fair” condition. Prominent factors influencing the ratings include the entrenchment of invasive plant species within certain patches of the park, the increasing urban sprawl that is surrounding the park, a lack of research and monitoring of the park’s animal and plant species, and the encroachment of eastern red cedars into the park’s prairie habitats.

PARK HABITATS—DIVERSE HABITATS SUPPORT A VARIETY OF SPECIES

Pea Ridge National Military Park is located within a transitional area between the tallgrass prairies to the north, the mountainous region to the south, the eastern deciduous forest to the east, and the beginnings of grasslands to the west. As a result, the predominant park habitats include hardwood forests, open fields, and prairies. The park’s prairies are comprised of 90 acres of tallgrass prairie that the park has restored (see “Resource Management Highlights” on page 35). Of the park’s 760 acres of open field, 560 acres were open during the Civil War battle and are now mowed to main-

Pea Ridge National Military Park is comprised mostly of hardwood forests, open fields, and prairie.

Fall colors adorn the landscape and treat visitors to wonderful panoramas from the park's overlooks. Pictured here is the view of the battlefield from the East Overlook.



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tain their Civil War-era appearance. The remaining 200 acres were forested at the time of the battle; today they are open fields that do not accurately represent what the soldiers saw. The vast majority of park's remaining acreage, about 3,400 acres, is mixed hardwood upland forest, which provides year-round habitat for a variety of wildlife. Pea Ridge's forests are relatively unfragmented and intact, despite the encroachment of eastern red cedars, and are unaffected by the invasive non-native plants that have damaged other park habitat types. The park's natural resources will become even more important as development of adjacent land continues to cut into the region's limited natural areas.

The land that is now protected within Pea Ridge National Military Park underwent extensive changes from the time of the battle until the park was established in 1956. Prior to the establishment of the park much of the land that now constitutes Pea Ridge National Military Park was

used for agriculture, raising livestock, and for the sites of homesteads. These land uses, along with practices of fire suppression and logging, both before and after the battle, have combined to alter the landscape and influence the character of the park relative to its historic appearance. Fire suppression resulted in a change in the species composition within the park's hardwood forests. Today eastern red cedar (*Juniperus virginiana*) dominates about 1,000 acres. Historically, elk and bison grazing, as well as regular fires, controlled the eastern red cedar population. Fragmentation has also helped the cedars become entrenched, as they are adapted to thrive in newly opened areas of forest and along forest edges. The result of this encroachment has been a decrease in biodiversity and a reduction of suitable habitat for wildlife and plant species. The park would like to re-create the natural environment that was present during the battle. To accomplish this, the Park Service is planning to treat the entire park with

prescribed burns and has already removed eastern red cedars from 100 acres over the past six years to restore the historic forest composition of 1862.

Pea Ridge's open fields and prairie areas are besieged by invasive non-native plants. The park uses prescribed burns to restore and perpetuate native flora and fauna. Approximately 500 to 1,000 acres are treated with prescribed burns annually, and another 200 acres of invasive plants are mechanically removed. Removing invasive non-native plant species along the historic roads and traces to restore traditional views and lines of sight is a primary park goal. There are similar goals to restore the battlefields to their 1862 appearance, which entails reestablishing the historic prairie ecosystem with native species, maintaining open fields, clearing invasive non-native species, and restoring forest density by both planting trees in some areas and removing them in others, to provide visitors with the historic viewshed. The Park Service has

planted 2,000 oak trees in areas that would have been forested in 1862, and planted apple trees in the historic apple orchard at the Elkhorn Tavern. The Park Service is removing eastern red cedars as discussed above.

The Park Service worked with Carol Electric, the local electricity provider, to restore historic viewsapes by removing aboveground power lines that interfere with battlefield views. Through this partnership, 2,500 feet of power lines have already been removed, and there are plans to eventually eliminate a total of 11,000 feet of power lines by the end of 2009.

ADJACENT LAND USE—DISCORDANT DEVELOPMENT POSES A SERIOUS THREAT

The Park Service considers incompatible development on lands adjacent to the park to be the greatest threat to Pea Ridge's natural and cultural resources. Pea Ridge National Military Park is located within one of the fastest growing

The Park Service uses prescribed burns on 500 to 1,000 acres each year to control invasive non-native plant species, which have proliferated within Pea Ridge's open fields and prairies.

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counties in the United States and urban expansion from the nearby cities of Bentonville and Rogers is pushing up against each of the park's borders. The area's population growth and demand for green space will likely increase pressure on the park's natural resources. One consequence of this development that can be seen today is the increase in the number of white-tailed deer that have been struck and killed on Arkansas State Highway 72, which passes through the park.

The city of Pea Ridge is considering two large-scale highway projects that will affect park habitats and natural resources. The projects propose to expand two roads within the park—U.S. Highway 62 and Arkansas Highway 72—to accommodate the increase in traffic that will accompany the area's population growth. U.S. Highway 62 may be expanded from two lanes to four. This project could affect the historical integrity of Pea Ridge, and the Park Service is working with the Arkansas Department of Transportation to consider alternatives to the highway widening. These options include keeping the current two-lane highway inside the park and constructing another two-lane road outside the park boundaries, or abandoning the existing road in the park and developing a new four-lane road outside the park. There are also plans to reroute Arkansas Highway 72, which runs along a portion of the park's western boundary. The park would like to see this highway rerouted outside the park and use portions of the existing road to provide access to future park facilities and buildings.

While the importance of the Park Service's protecting 95 percent of the original battlefield cannot be overstated, there are several areas that are important to the telling of the Battle of Pea Ridge that the Park Service does not yet manage and protect. Pea Ridge's general management plan lists five separate adjacent areas that are not protected by the Park Service but are considered "significant to the battle." The Park Service has been consulting with landowners about

adding these parcels to the park, but due to a lack of available funds, so far has been unable to acquire these lands. The park has been exploring alternatives, including conservation easements, acquiring land with certain rights reserved, and other cooperative approaches with landowners.

PLANT COMMUNITIES—NON-NATIVE PLANTS AND ENCROACHING EASTERN RED CEDARS ARE SIGNIFICANT THREATS

Pea Ridge National Military Park's habitats support a wide variety of plants. The park's vascular plant species list identifies 520 species, of which 85 are non-native. Pea Ridge is known to harbor three state-listed rare plant species: field pussytoes (*Antennaria neglecta*) [extremely rare within Arkansas], lobed spleenwort (*Asplenium pinatifidum*) [rare to uncommon], and Ozark chinquapin (*Castanea pumila ozarkensis*) [rare to uncommon]. These plants are tracked by the Arkansas Natural Heritage Commission. The population of Ozark chinquapin (also Ozark chestnut) has been decimated by the chestnut blight fungus (*Cryphonectria parasitica*), which came to the United States from Asia and can kill an otherwise healthy chestnut tree within one growing season.

The establishment and success of invasive non-native plant species is a serious threat to the park's native species and natural resources. The Park Service has identified 22 non-native plant species that are of most concern, including Japanese honeysuckle (*Lonicera japonica*), fescue grasses (*Festuca* spp.), spotted knapweed (*Centaurea maculosa*), sericea lespedeza (*Lespedeza cuneata*), and Canada bluegrass (*Poa compressa*). The spread of these invasives has been facilitated by their ability to colonize and dominate areas, making the survival or succession of native plants difficult to impossible.

Staff mow the park's open fields to control invasive species, use prescribed burns, and



Park staff mow Pea Ridge's open fields to maintain the landscape that soldiers witnessed during the Civil War battle. Mowing also helps combat the entrenchment of invasive non-native grasses and plants.

replant affected areas with native species. As invasive species continue to thrive and spread throughout the park despite these treatments, the Park Service may consider alternative treatments—applying herbicide after mowing (currently, herbicides are applied in the park only along country road rights-of-way), removing non-native plants by hand in areas where they are not fully established, and planting additional native grasses to displace the invaders. Pea Ridge National Military Park participates in the Park Service's Heartland Network Inventory and Monitoring Program, which monitors invasive species, recently established seven vegetation monitoring sites within the forested areas of the park, and took samples in 2007. A draft report is now under review.

Eastern red cedars were not as prevalent within the historical forest composition during

the Civil War as they are today, and their encroachment has become a serious concern. Today about 1,000 acres of the park's forested areas are supporting large stands of eastern red cedar. The dominance of these trees is problematic for several reasons: They obstruct historic viewsheds, move into and alter the open prairie ecosystem, reduce biodiversity and native habitats, and do not reflect historic forest composition or density. The Park Service is addressing this encroachment by using controlled burns and mechanical cutting. Park staff closely monitor this thinning, as it could allow invasive plant and tree species to take root.

A white-tailed deer fawn lies curled up in tall grasses at the park. A 2007 survey found a decline in the park's deer population. The park plans to continue monitoring deer to determine if any management actions are needed.



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WILDLIFE—PARK SUPPORTS SEVERAL RARE SPECIES

Species surveys conducted by the Park Service at Pea Ridge have found 92 bird, 46 mammal, 86 fish, 27 amphibian, and 50 reptile species. Common park wildlife includes white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), red fox (*Vulpes vulpes*), several small mammals—gray squirrel (*Sciurus carolinensis*), fox squirrel (*Sciurus niger*), and eastern chipmunk (*Tamias striatus*)—as well as numerous migratory songbirds. Scarlet tanagers (*Piranga olivacea*), summer tanagers (*Piranga rubra*), rose-breasted grosbeaks (*Pheucticus ludovicianus*), ovenbirds (*Seiurus aurocapillus*), and various woodland warblers (*Phylloscopus* spp.) are among the bird species that visit the park in the spring and summer to nest and breed. The endangered gray bat (*Myotis grisescens*) is the only federally listed animal species that has been observed within the boundaries of Pea

Ridge, though there are no resident populations within the park.

Concerns of overpopulation of white-tailed deer are common throughout many areas of the United States. The extirpation of natural predators and the frequency of milder winters have combined to allow the white-tailed deer population to explode beyond the carrying capacity of many areas. However, a 2007 survey recorded a significant decline in the white-tailed deer population at Pea Ridge. The park's white-tailed deer are susceptible to bluetongue disease, an insect-borne disease that may be responsible for this decline. The virus is spread by midges (*Culicoides* spp.) and can cause mortality in as few as seven days. The Park Service plans to continue the park's white-tailed deer monitoring program to determine if management intervention is needed and to address visitor comments and concerns.

AIR AND WATER QUALITY—PARK HAS AN OVERALL LACK OF DATA

Pea Ridge National Military Park's streams include Winton Spring Run, Pratt Creek, Big Sugar Creek, Little Sugar Creek, Williams Hollow, and Lee Creek. The streams are characteristic of those within the Ozark Highland Parks: They are low-order, often high-gradient, clear, cold, rocky streams with riffles and pools. All of these bodies of water originate within the park boundaries with the exception of Little Sugar Creek, which runs across the southern boundary of the park adjacent to the Federal earthworks. The aquatic systems of Pea Ridge are not well understood: The park has fairly limited surface water-quality data, no ground water data, has undertaken very few studies, and knows little about area aquifers and historic waterways. A water-quality study was initiated at the park in 2004 and is ongoing. Data are collected from five individual sites, twice a year. Indicators tested include temperature, dissolved

oxygen at the surface, flow, orthophosphates, carbon dioxide, conductivity, hardness, nitrates, pH, chlorides, alkalinity, and turbidity. Data indicate these parameters are generally within accepted U.S. Environmental Protection Agency parameters, though turbidity exceeded these standards for all sites sampled.

There is very little information on the air quality at Pea Ridge. The nearest air-quality monitoring stations are located 50 miles from the park, and some indicators such as dry deposition are monitored at stations more than 150 miles from the park. Despite these great distances, data gathered at these stations are used to extrapolate air quality for the park. While these extrapolated data do not suggest the presence of any severe air-quality issues, the Park Service is concerned about both the effects of increased vehicular traffic on Pea Ridge's air quality, and how State of Arkansas air-quality standards will affect their ability to use prescribed burns as a management tool.

The Park Service is concerned that State of Arkansas air-quality standards may limit the use of prescribed burns to control invasive non-native plant species and to manage areas of the park's landscape to achieve its Civil War-era appearance.

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While the park's interpretive waysides provide important information, this may be the only interpretation that visitors receive because a lack of funding and staff limits the number of programs park staff can offer.

STEWARDSHIP CAPACITY
FUNDING AND STAFFING—LACK OF FUNDING HAMPERS INTERPRETIVE PROGRAM

The most significant factor affecting a park's ability to protect its resources is the annual funding it receives from Congress and the administration. In fiscal year 2008, Pea Ridge National Military Park had an annual operating budget of \$997,000 to support staff and fund resource protection projects. Although the park's budget has been steadily increasing for the past decade, a variety of factors—including employee cost-of-living pay

increases and the increase in utility costs (e.g., fuel, propane, trash pickup, and telephone service) have cut into the real funds that are available to the park. This has resulted in an overall lack of funding that has forced the Park Service to scale back certain programs. For example, the Park Service's interpretive staff at Pea Ridge can no longer offer as many on- and off-site programs for schoolchildren, although they do try to offer every school group that comes to the park a short ranger-led program. Park staff are only able to perform a handful of off-site programs a year because of a lack of staff. A lack of staffing caused by funding shortfalls also means the park must rely more

heavily on already overburdened staff from the Park Service's Midwest Regional Office.

The cooperation between cultural and natural resources managers and staff at Pea Ridge is a major factor in the park's overall good condition of cultural landscapes and progress made on restoration projects. Even so, the small size of the Park Service staff at Pea Ridge (15 full-time employees) is insufficient to provide adequate maintenance, resource management, law enforcement, and interpretation services. The Park Service has identified interpretive programs, visitor services, and a survey of the park's boundary as important activities that cannot be conducted due to staffing and funding shortfalls. To accomplish these goals, two interpretive park ranger positions and one park historian position need to be funded and filled.

PLANNING—GENERAL MANAGEMENT PLAN UP-TO-DATE

Pea Ridge National Military Park updated its general management plan in 2005, and the Park Service regularly uses it to guide resource management. Pea Ridge also has a fire management plan from 2005 that outlines the goals of using prescribed burns to restore the landscape to its historic 1862 condition. The park has an administrative history that dates from 1997, which is currently being updated. The Park Service is also currently writing a historic vegetation management strategy. The park has identified several additional plans and studies that are needed: a historic resource study, comprehensive interpretive plan, historic structures reports, trail management plan, resource stewardship plan, cultural landscape plan, and a vegetation management plan. These plans will remain undone until additional funding and staff become available.



KELLY COURKAMP

Pea Ridge employs just 15 full-time staff, so cooperation among various disciplines (e.g., cultural resources, natural resources, and maintenance) is crucial to accomplish resource protection and restoration projects.

The Civil War battle and events surrounding the fighting are well interpreted at the park through waysides, such as this one that describes how wounded soldiers were taken to Leetown for treatment during the battle.

RESOURCE EDUCATION—CIVIL WAR BATTLE THOROUGHLY INTERPRETED

The overwhelming focus of the park's interpretation is the Battle of Pea Ridge, including the battlefields themselves and areas associated with troop movements and similar activities. Just a fraction of the interpretation concentrates on the natural resources of the park, although some natural resources within the park are interpreted on waysides and exhibits along the park's hiking trails.

During 2007, the Park Service provided 328 interpretive programs at Pea Ridge, which engaged 110,190 visitors. Over the last decade, the Park Service has had to reduce the number of interpretive programs offered due to a lack of funding and staff. Today, the park's interpretive staff consists of two people: a program supervisor and a visitor use assistant who collects fees and staffs the information desk. This dearth of staffing forces the park to rely heavily on volunteers; in 2007, volunteers conducted 97 percent of the park's interpretive programs. Park staff also consider the visitor center to be too small and understaffed to provide an adequate visitor experience.

Educational and interpretive opportunities at the park include traveling the tour road, which features interpretive waysides that were last updated in 2006; visiting the small museum that is located within the visitor center; watching the half-hour audiovisual program presented at the visitor center; and attending interpretation performances and living-history events put on by staff and volunteers at the Elkhorn Tavern and the visitor center. The Park Service is in the process of updating the museum's exhibits, which date from 1963. The museum is scheduled to be remodeled in 2010, which will include installation of 14 new museum exhibits. Interpretive exhibits at the Elkhorn Tavern include a display of Civil War surgical implements, period furnishings, and replicas of military supplies. The park also interprets the Trail of Tears, although in a limited fashion, via waysides placed throughout the park. The Park Service plans to expand the area's hiking and equestrian trails, which would entail the development of new interpretive exhibits and waysides as funding allows.

KELLY COURKAMP



EXTERNAL SUPPORT—VOLUNTEERS PROVIDE ESSENTIAL ASSISTANCE TO PARK STAFF

Faced with significant funding and staffing shortfalls, the Park Service increasingly relies on partners and volunteers to bridge the gap between what it would like to accomplish and what it can afford. In fiscal year 2007, 405 volunteers contributed 5,451 hours of service, helping to conduct interpretive programs for the public, staff the information desk, assist with battlefield restoration, and perform maintenance chores. All 17 miles of fence the battlefield is known to have had are now restored, in part because of a partnership with Wal-Mart and Unilever. These companies have provided hundreds of volunteers for the project. In an effort to reintroduce the apple orchard that was historically present at Pea Ridge, the Park Service enlisted the help of the local Boys and Girls Clubs and Unilever employees to plant 25 apple trees at the Elkhorn Tavern in 2007. Volunteers have also assisted with replanting more than 2,000 trees in areas that had been forested in 1862. The interpretive program supervisor coordinates volunteer duties.

The park also receives support from its friends group, the Pea Ridge National Military Park Foundation. The foundation provides funding, materials, and volunteers to support battlefield restoration, among other things. Additional groups that are affiliated with or provide assistance to the park include the Cherokee Nation and the Midwest Archeological Center. The Park Service maintains very good relationships with the surrounding communities and participates in outreach activities. For example, the park works closely with the Shiloh Museum in Springdale and the Rogers Historical Museum in Rogers, Arkansas. Park staff have performed children's programs for the Shiloh Museum, both on- and off-site, and the park is displaying several paintings at the Rogers Museum.



Volunteers assist with providing interpretation for park visitors. This volunteer in period dress is stationed at the Elkhorn Tavern.

WHAT YOU CAN DO TO HELP:

- Support or become a member of a group helping to protect the parks, such as NPCA (www.npca.org/support_npca), the Wilson's Creek National Battlefield Foundation (www.wilsonscreek.com), or the Pea Ridge National Military Park Foundation (www.pearidgefoundation.com).
- Volunteer. Many parks are looking for dedicated people who can lend a helping hand. To learn about opportunities at Wilson's Creek National Battlefield, contact the park at 417.732.2662. Inquiries regarding volunteer opportunities at Pea Ridge can be directed to the park at 479.451.8122.
- Become an NPCA activist and learn about legislative initiatives 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 Wilson's Creek National Battlefield and Pea Ridge 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, soil, 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 includes discussion of funding and staffing levels, park planning documents, resource education, and external support.

For this report, researchers collected data and prepared technical documents that summarized the results. The technical documents were used to construct this report, which underwent peer review and was also reviewed by staff at Wilson's Creek National Battlefield and Pea Ridge National Military Park prior to publication.

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.

A panoramic view of the battlefield at Pea Ridge National Military Park highlights the park's natural beauty and historic landscape.



ACKNOWLEDGMENTS

For more information about the
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